U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

December 5, 1967 Volume 845 Number 1

PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of October 1967

Examiner affirmed	201
Examiner affirmed in part	31
Examiner reversed	74
Total	306

Guidelines for Disclosures of Utility in Patent Applications for Drugs

The following are guidelines which the Patent Office proposes to adopt in the examination of applications for patents for drugs. Comments as to these guidelines will be considered if received on or before January 16, 1968, on which date a public hearing on the matter will be held at 10:00 a.m. in Building 34 (3rd floor) at Crystal Plaza. All persons wishing to be heard orally at that time are requested to notify the Commissioner of their intended appearance.

EDWARD J. BRENNER,
Commissioner of Patents.

Oct. 24, 1967.

GUIDELINES FOR DISCLOSURES OF UTILITY IN DRUG CASES

Introduction

It is felt that special consideration be accorded utility disclosures in drug cases in view of the public interest, particularly as expressed in Public Law 87–781.

SEC. 702(a) • • •

(d) The Secretary is authorized and directed, upon request from the Commissioner of Patents, to furnish full and complete information with respect to such questions relating to drugs as the Commissioner may submit concerning any patent applications. The Secretary is further authorized, upon receipt of any such request, to conduct or cause to be conducted, such research as may be required.

The Food, Drug and Cosmetic Act defines a drug—

The term "drug" means (A) articles recognized in the official United States Pharmacopeia, Official Homeopathic Pharmacopeia of the United States, or official National Formulary, or any supplement to any of them; and (B) articles intended for use in the diagnosis, cure mitigation, treatment, or prevention of disease in man or other animals; and (C) articles (other than food) intended to affect the structure or any function of the body of man or other animals; and (D) articles intended for use as a component of any articles specified in clause (A), (B), or (C); but does not include devices or their components, parts, or accessories.

SEC. 201(g)(1) Federal Food, Drug, and Cosmetic Act as amended.

In addition, compositions adapted to be applied to or used by human beings e.g., cosmetics, dentifrices, mouthwashes, etc. may be treated in the same manner as drugs if there is a question that their use may affect the health or well being of the person.

35 U.S.C. 101

Since predictability in this field is limited, a question should be raised as to the adequacy of the disclosure that a claimed genus possesses the asserted utility or operativeness under Section 101. That it does is reasonably inferable from a disclosure or showing of a sufficient number of representative examples together with a statement applicable to the genus as a whole.

Utility must be definite and in currently available form; not merely for further investigation or research. Thus generalized and vague assertions such as "therapeutic agents," "for pharmaceutical purposes," "biological activity," "intermediates," and for making further unspecified preparations are regarded as too nebulous and insufficient.

If the asserted utility is believable on its face and not unreasonable the burden is on the examiner to give adequate reasons for disbelief. On the other hand, incredible statements such as the cure or remission of malignant tumors, cure of tuberculosis or diabetes or of any disease condition or symptom known to be intractable to treatment will require adequate proof on the part of applicants for patents. It is presumed that applicants for patents are in the best position to supply evidence to support the assertions.

A spectrum of credibility exists between the noted limits. Criteria for testing the compliance of the assertion of the utility with Section 101 and the credibility of these assertions depends, inter alia, upon the nature of the disease, the seriousness of the use contemplated, the scope of the results claimed, the similarity to known successful drugs, the specificity with which the use is identified, the pattern of the biological response and the art knowledge concerning such response, and the safety of the drug, where necessary.

In instances where a question of proof to satisfy Section 101 is involved, the evidence offered is to be tested by the same criteria. If the specified or implied utility involves humans, clinical evidence is necessary; however, there is authority that animal tests are acceptable if the tests are of a kind that the results are known to be closely correlated with human utility. In accordance with the present case law, if there is no assertion of human utility, operativeness for use on standard test animals is adequate for patent purposes. Further, if the evidence shows that the drug is not safe in the dosage or mode of use for which it is effective, the disclosure will not satisfy the utility requirement of Section 101. Absolute safety is not necessarily required.

35 U.S.C. 112

The standards of disclosure for compliance with Section 112 in respect to the statutory language of "written description of • • • using" the invention "as to enable any person skilled in the art to which it pertains • • • to use the same" are to be strictly construed in view of the special public

New Applications Received During October 1967

Patents	7650
Designs	428
Plant Patents	13
Reissues	14
Total	8105

Issue—December 5, 1967

Patents	1282	No. 3,355,744 to No.	3,357,025, incl.
Designs	54	No. 209,444 to No.	209,497, incl.
Plant Patents	2	No. 2,781 to No.	2,782, incl.
Reissues	7	No. 26,315 to No.	26,321, incl.
Total	1345		

interest involved. Thus the extension of specific utilities to classes of compounds must be adequately supported by sufficient and typical exemplification and by a representation that the class as a whole possesses the asserted utility.

A mere statement of pharmacological and chemotherapeutic use for a new compound will raise a question of compliance with Section 112. If however the statement of utility contains within it a connotation of how to use and the art recognizes that standard modes of administration, including parameters, are contemplated Section 112 is satisfied. If on the other hand, the use disclosed is of such nature that the art is unaware of successful treatments with chemically analagous compounds a more complete statement of the parameters of utility and mode of administration should be set forth.

In the case of mixtures formulated including a drug as an ingredient or mixtures which are drugs or methods of treating a specific condition with a drug, whether old or new, a specific example of how to use must be set forth, which will include the organism treated and mode and parameters of administration.

General Principles

In those instances where several distinct utilities are disclosed, each should be investigated for compliance with Sections 101 and 112 as though it existed alone and such utility as fails to satisfy these guidelines should be required to be deleted.

The standard for statements and showings in this field is that which is the practice in the United States rather than the country of origin.

Inquiries Re Status of Pending Applications

The Office has lately received a large number of status inquiries relative to the expected action date on pending applications. These require substantial time on the part of the clerical and examiner forces to answer. In many instances it seems that these inquiries are unnecessary since the OFFICIAL GAZETTE notes by Group the filing date of the oldest new and amended case awaiting action.

It appears that many attorneys are routinely sending in status letters because of a misunderstanding of the 826 O.G. 372 notice "Duty of Inquiry as to Status of Pending Applications." Under that notice the question as to applicant's diligence in checking the status of an application arises in connection with petitions to revive applications which become abandoned through failure to respond to an Office action which had been mailed but not received.

That notice seeks to cut down the number of status letters for both new and amended applications. For new applications, no lack of diligence will be attributed if inquiry is made within a reasonable time *after* the OFFICIAL GAZETTE indicates that the date for the Group in which the application is assigned for examination is more recent than applicant's filing date. For amended applications, lack of diligence will not be attributed if inquiry is made within six months after filing the response; obviously an inquiry after only about two months would be premature.

Thus, no status letter or inquiry is needed for new applications until *after* the application date becomes *older* than the reported Group date in the OFFICIAL GAZETTE, and none is needed in an amended case until at least three months after date of filing the amendment or response.

If an inquiry as to the expected time an application will receive an action is found necessary, such inquiry should be accompanied by a stamped return-addressed envelope.

RICHARD A. WAHL,
Assistant Commissioner.

Oct. 17, 1967.

Disclaimers

3,262,625.—*David A. Russell*, Springfield, and *Edgar E. Hardy*, Longmeadow, Mass. INSULATING SURFACES. Patent dated July 26, 1966. Disclaimer filed Sept. 20, 1967, by the assignee, *Monsanto Company*.

Hereby enters this disclaimer to claims 6, 7 and 8 of said patent.

3,283,382.—*Herbert Howard Wood*, and *Clarence Martin Wilson*, Birmingham, England. HOOK FASTENING DEVICES FOR GARMENT MATERIAL. Patent dated Nov. 8, 1966. Disclaimer filed Sept. 20, 1967, by the inventors and the assignee, *Thomas Walker Limited*.

Hereby enters this disclaimer to claim 2 of said patent.

3,290,416.—*Roger M. Christenson*, Gibsonia, *Samuel Porter, Jr.*, Tarentum, and *Andrew Holcoussis*, Pittsburgh, Pa. METHACRYLATE POLYMER COATING COMPOSITION MODIFIED WITH AN ALKYLENIMINE. Patent dated Dec. 6, 1966. Disclaimer filed Sept. 29, 1967, by the assignee, *Pittsburgh Plate Glass Company*.

Hereby enters this disclaimer to claims 4, 5, 7, 15 and 16 of said patent.

Foreign Patents Received in the Scientific Library as of Oct. 31, 1967

Source	Date received	Highest number
Australia:		
(*Abstracts*)	Oct. 23, 1967	22,764/67
(*Patents*)	Oct. 23, 1967	272,277
Austria	Oct. 26, 1967	257,300
Belgium	Oct. 25, 1967	667,500
Canada	Oct. 27, 1967	770,335
Czechoslovakia	Oct. 30, 1967	121,850
Denmark	Oct. 17, 1967	108,050
East Germany	Oct. 24, 1967	58,080
Egypt	June 28, 1967	6,873
Finland	Aug. 25, 1967	36,291
France:		
(*Patents*)	Oct. 19, 1967	1,484,300
(*Additions*)	Oct. 19, 1967	89,300
(*Medicaments*)	Sept. 21, 1967	4,550 M
(*Additions*)	May 24, 1967	112 CAM
Germany:		
(*Auslegeschriften*)	Aug. 25, 1967	1,240,000
(*Patents*)	Aug. 25, 1967	1,227,841
Great Britain	Oct. 25, 1967	1,086,300
India	Aug. 17, 1967	100,376
Ireland	Aug. 25, 1967	26,750
Italy	Aug. 30, 1967	660,000
Japan	Oct. 16, 1967	18,080/67
Netherlands:		
(*Octrooiaanvragen*)	Aug. 25, 1967	7,456/67
(*Patents*)	Sept. 14, 1967	122,832
Norway	Oct. 2, 1967	111,370
Pakistan	Feb. 3, 1964	112,446
Philippine Republic	Apr. 13, 1962	458
Poland	Oct. 16, 1967	53,709
Rumania	July 26, 1967	48,332
Sweden	Oct. 2, 1967	214 357
Switzerland	Sept. 19, 1967	440,003
U.S.S.R.	Oct. 18, 1967	198,582

Australia: First 2,000 incomplete
Belgium: First printed 493,079/1950
Canada: First printed 445,931/1948
Czechoslovakia: Not received between 81,300/1952 and 91,901/1959
Finland: First printed 19,428/1941
First 500 incomplete
Hungary: First received 5,792/1896
Latest 140,582/1951
Ireland: First received 10,000/1929
Italy: First 243,000 incomplete
Rumania: First received 40,380/1957
U.S.S.R.: Not received between 2,496/1928 and 116,000/1958
Yugoslavia: First received 10,001/1933
Latest 16,461/1941

Dedications

3,082,483.—*Warren H. Bickford*, Norwich, Conn. METHOD FOR PRODUCING A FLEXIBLE, RESILIENT LOW DENSITY WEB OF CELLULAR PLASTIC. Patent dated Mar. 26, 1963. Dedication filed July 12, 1967, by the assignee, *Sinclair-Koppers Company*.

Hereby dedicates to the Public the remaining term of said patent.

3,155,141.—*Arnold W. Doyle*, Watertown, *Robert R. Perron*, Beverly, and *John R. Swanton, Jr.*, Newton, Mass. APPARATUS FOR ATOMIZING AND BURNING A LIQUID FUEL. Patent dated Nov. 3, 1964. Dedication filed Sept. 22, 1967, by the assignee, *American Petroleum Institute*.

Hereby dedicates to the Public the entire term of said patent.

3,214,101.—*Robert R. Perron*, Beverly, Mass. APPARATUS FOR ATOMIZING A LIQUID. Patent dated Oct. 26, 1965. Dedication filed Sept. 22, 1967, by the assignee, *American Petroleum Institute*.

Hereby dedicates to the Public the entire term of said patent.

3,319,692.—*Imants Reba*, Chicago, Ill., and *Paul W. Cooper*, Albuquerque, N. Mex. OIL BURNER. Patent dated May 16, 1967. Dedication filed Sept. 22, 1967, by the assignee, *American Petroleum Institute*.

Hereby dedicates to the Public the entire term of said patent.

PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner

CONDITION OF PATENT APPLICATIONS AS OF OCTOBER 9, 1967

PATENT EXAMINING OPERATIONS AND GROUPS	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
CHEMICAL EXAMINING OPERATION—I. MARCUS, Director.		
GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—R. L. CAMPBELL, Manager. Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices.	5-27-64	5-31-62
GENERAL ORGANIC CHEMISTRY, GROUP 120—M. STERMAN, Manager. Heterocyclic; Amides; Alkaloids; Axo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	5-11-64	7-23-62
HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING; GROUP 140—L. J. BERCOVITZ, Manager. Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping and Treating Processes.	2- 3-65	5-14-62
COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—J. R. LIBERMAN, Manager. Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography.	8- 7-64	6-15-62
SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Manager. Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Gas; Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	4-27-64	7-23-62
ELECTRICAL EXAMINING OPERATION—N. H. EVANS, Director.		
INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—E. J. SAX, Manager. Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous.	8-10-64	9- 6-63
SECURITY, GROUP 220—S. BOYD, Manager. Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedoes, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	5- 9-66	4-18-64
INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—M. L. LEVY, Manager. Communications; Multiplexing Techniques; Facsimile; Data Processing, Computation and Conversion; Storage Devices and Related Arts.	1-20-64	3-15-62
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—W. L. CARLSON, Manager. Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring.	2-10-64	2- 2-62
PHYSICS, GROUP 280—R. L. EVANS, Manager. Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	1-18-65	6-24-63
DESIGNS, GROUP 290—S. BOYD, Manager. Industrial Arts; Household, Personal and Fine Arts.	4-20-66	9- 3-65

Total number of pending applications (excluding Designs)	182,046
Total number of Design applications pending	4,202
Total number of applications awaiting action (excluding Designs)	130,962
Total number of Design applications awaiting action	2,205
Date of oldest new application awaiting action	Jan. 20, 1964
Date of oldest amended application awaiting action	Feb. 2, 1962

EXPIRATION OF PATENTS

The patents within the range of numbers indicated below expire during December 1967, except those which may have been extended under the provisions of the Veterans Patent Extension Act (64 Stat. 316 as amended by 66 Stat. 321) and those which may have expired earlier due to shortened terms under the provisions of Public Law 690. A list of Veterans' patents which have been extended appears in the *Annual Index of Patents—1953*.

Patents ..... Numbers 2,532,276 to 2,536,015, inclusive

Plant Patents ..... Numbers 996 to 1,000, inclusive

PATENT EXAMINING OPERATIONS AND GROUPS (Continued)	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
MECHANICAL EXAMINING OPERATION—F. H. BRONAUGH, Director.		
HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Manager. Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid Flexible and Special Receptacles and Packages.	1-28-66	10-16-64
MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—N. BERGER, Manager. Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders; Woodworking; Tools; Cutlery; Jacks; Fasteners.	7- 8-65	3-18-63
AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, Manager. Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Toiletry; Printing; Typewriters; Stationery; Information Dissemination.	5-24-65	4-22-63
HEAT AND POWER ENGINEERING, GROUP 340—C. F. GAREAU, Manager. Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission.	3- 4-66	4-19-65
FIXED CONSTRUCTIONS, SUPPORTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Manager. Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports; Cabinet Structures.	10-15-65	4-30-63
TEXTILES, CLEANING AND FLUID HANDLING, GROUP 360—W. S. COLE, Manager. Fluid Handling, including Valves; Conduits; Filling Receptacles; Lubrication; Joint Packing; Bathroom Fixtures; Centrifugal Separators; Cleaning; Coating; Pressing; Agitating; Foods; Textiles; Apparel and Shoes and their Manufacture; Sewing Machines; Winding and Reeling.	9-15-65	11- 8-62

DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

IN RE SOL D. GERSHON, MELVIN A. GOLDBERG, AND OSCAR NEIDITCH

No. 7722. Decided February 16, 1967

[— CCPA —; 372 F.2d 535; 152 USPQ 602]

1. PATENTABILITY—COMPOSITION—OBVIOUSNESS—OVERLAPPING RANGES.

"The reference discloses buffering 'the compositions to within the desired pH range, which is from about pH 5.7 to about pH 7.5.' The Patent Office tribunals take the position that a buffered dentifrice having a pH of 5.7 as conventionally measured in water would have only a slightly higher pH, still within the claimed weakly acidic range of 5 to 6, in the presence of weakly alkaline saliva in the mouth. If the Patent Office may rely on the pH of 5.7 at one extreme of the desired range, we think it is equally fair for appellants to rely on the pH of 7.5 at the other extreme of the range. From a realistic point of view, one of ordinary skill in the art would attach no more special significance to the acidic pH of 5.7 than to the slightly alkaline pH of 7.5. Consequently, we consider this reference to be equally as persuasive of the unobviousness of buffering to maintain the claimed slightly acidic pH range of 5 to 6, and we accord no weight to this inconclusive reference."

2. SAME—OBVIOUSNESS—EXPECTED BENEFICIAL RESULTS.

"Expected beneficial results are evidence of obviousness of a claimed invention, just as unexpected beneficial results are evidence of unobviousness thereof."

3. SAME—SAME—EVIDENCE—PROBLEM NOT DISCUSSED IN THE ART.

"Since appellants stress that they were first to recognize a problem which allegedly has still not been recognized by others ordinarily skilled in the dentifrice art, one may question whether in fact such a 'problem' objectively existed, as distinguished from its acknowledged subjective existence in the minds of the inventors and their patent counsel. Even if the problem did objectively exist in fact, the absence of discussion of it in the cited art may be due to a variety of factors. As we pointed out in *In re Goodman*, 52 CCPA 895, 900, 339 F.2d 228, 232, 144 USPQ 30, 33: 'The failure of the prior art to mention a problem may be due to the fact that in practice the problem is not a serious one or that a large number of satisfactory solutions is readily apparent.'"

4. SAME—SAME—SAME—SAME.

"Since the alleged problem in this case was first recognized by appellants, and others apparently have not yet become aware of its existence, it goes without saying that there could not possibly be any evidence of either a long-felt need in the dentifrice art for a solution to a problem of dubious existence or failure of others skilled in the art who unsuccessfully attempted to solve a problem of which they were not aware. Accordingly, no evidence of such relevant 'secondary considerations' tending to prove unobviousness is in the record before us. See *Graham* v. *Deere*, 383 U.S. 1, 148 USPQ 459, 467."

5. SAME—SAME—PRIOR ART NEED NOT CONTAIN THEORETICAL EXPLANATION.

"Although the cited prior art does fail to disclose or suggest either the existence of appellants' problem or its cause, we cannot agree that the art does not teach or suggest a solution to the problem. The cited art, especially the Gershon article, unquestionably teaches the superiority of 'buffered acidic fluoride solutions' in effectively reducing dental enamel solubility *in vitro*. We think that one of ordinary skill in the dentifrice art would thus be persuaded to use buffered acidic fluoride dentifrices for the purpose of reducing dental enamel solubility *in vivo*. Such obvious use of buffered dentifrices would *inherently* provide a solution to appellants' problem, even though an adequate theoretical explanation of the reason why incorporation of buffering agents in acidic fluoride dentifrices achieves superior RES values is not found in the cited art. We think it is sufficient that the prior art clearly suggests doing what appellants have done, although an underlying explanation of exactly why this should be done, other than to obtain the expected superior beneficial results, is not taught or suggested in the cited references."

6. SAME—PARTICULAR SUBJECT MATTER—"FLUORIDE DENTIFRICE."

The refusal of certain claims in an application entitled "Fluoride Dentifrice," as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 209,279.

AFFIRMED.

Eben M. Graves, Allen G. Weise for appellants.

Joseph Schimmel (*Jack E. Armore*, of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and RICH, SMITH, and ALMOND, *Associate Judges*, and Judge WILLIAM H. KIRKPATRICK *

ALMOND, *J.*, delivered the opinion of the court.

This is an appeal from the decision of the Patent Office Board of Appeals affirming final rejection of claims 1 to 14 of application Serial No. 209,279, filed July 12, 1962, entitled "Fluoride Dentifrice."

The invention relates to a buffered fluoride dentifrice, in the form of either tooth paste or tooth powder, comprising at least one fluoride-compatible polishing agent; a water-soluble, ionizable, anti-caries fluoride; a buffering agent in an amount sufficient to maintain a pH from 5 to 6 for the dentifrice in saliva; and optionally, a germicide.

Claim 1 is illustrative of the invention and reads as follows:

1. A dentifrice comprising from about 7% to about 80% by weight of at least one fluoride-compatible polishing agent; from about 0.01% to about 2% by weight of a water-soluble, ionizable, anti-caries fluoride, calculated as fluoride ion; and from about 0.02% to about 10% by weight of a buffering agent, said buffering agent being present in an amount within the said range sufficient to impart a pH from 5 to 6 to the dentifrice in saliva.

The references relied on are:

Gershon et al. (Gershon), 2,723,217, November 8, 1955.
Gershon (Australia), 207,489, April 17, 1957.
Jordan et al., Journal of the American Dental Association, vol. 54, No. 5, pp. 589–594, May 1957.
Gershon et al., Drug and Cosmetic Industry, vol. 82, No. 2, pp. 160, 161, and 251–257, February 1958.
Chemical Abstracts, vol. 53, entry 3367*e*, 1959.

The Gershon American patent is relied on as a secondary reference disclosing the use of a bactericide, tyrothricin, in a dentifrice. The reference is also of interest in that it discloses the desirability of buffering "to keep the pH of the dentifrice within the desired range, approximating the neutral point, and preferably within the range from 6 to 7." Thus the patent also teaches buffering to maintain the dentifrice pH within the slightly acidic range.

Chemical Abstracts discloses the known bactericidal activity of hexachlorophene, the preferred bactericide or germicide used in appellants' dentifrices. The Patent Office position is that the substitution of hexachlorophene for the bactericide tyrothricin in a dentifrice would be obvious, in view of the aforesaid secondary references. In the absence of any evidence or substantial argument to the contrary, we agree with this position. We also note that appellants' brief contains the following statement:

Prior to appellants' invention it was known that dentifrices containing a water-soluble, ionizable, anti-caries fluoride and a fluoride-compatible polishing agent decrease the solubility of dental enamel. This makes the enamel more resistant to the acid attack which occurs in the mouth and thereby reduces the incidence of dental caries. * * *.

* Senior District Judge, Eastern District of Pennsylvania, sitting by designation.

Thus the issue in this case is whether, in a dentifrice comprising a polishing agent, a fluoride and a germicide, it would have been obvious under 35 U.S.C. 103 to incorporate a buffering agent in an amount sufficient to maintain the pH for the claimed composition in the range from 5 to 6 in saliva.

On this issue the Gershon Australian patent, which is primarily directed to a dentifrice composition comprising a water-soluble fluoride and a mixture of polishing agents, is inconclusive. [1] The reference discloses buffering "the compositions to within the desired pH range, which is from about pH 5.7 to about pH 7.5." The Patent Office tribunals take the position that a buffered dentifrice having a pH of 5.7 as conventionally measured in water would have only a slightly higher pH, still within the claimed weakly acidic range of 5 to 6, in the presence of weakly alkaline saliva in the mouth. If the Patent Office may rely on the pH of 5.7 at one extreme of the desired range, we think it is equally fair for appellants to rely on the pH of 7.5 at the other extreme of the range. From a realistic point of view, one of ordinary skill in the art would attach no more special significance to the acidic pH of 5.7 than to the slightly alkaline pH of 7.5. Consequently, we consider this reference to be equally as persuasive of the unobviousness of buffering to maintain the claimed slightly acidic pH range of 5 to 6, and we accord no weight to this inconclusive reference.

The Jordan article contains the pertinent disclosure that, in an abrasive-compatible stannous fluoride dentifrice, "Laboratory evidence indicated that a pH of around 5.0 was most likely to be suitable from the standpoints of stability and effectiveness of stannous fluoride but that this degree of acidity in a control dentifrice (without stannous fluoride) could introduce a real danger to dental enamel under usage conditions." Thus the references considered so far, especially the Jordan publication and the Gershon American patent, indicate the desirability in a dentifrice of a weakly acidic pH ranging from 5 or 6 up to the neutral point (7) and the possibly dangerous effect on dental enamel of a strongly acidic pH, the Gershon Australian patent being inconclusive on the former point, since it equally indicates the desirability of a weakly alkaline pH of 7.5.

The most pertinent primary reference is the Gershon article, which, inter alia, contains the following statement:

> Since the solubility of enamel in acid decreased as the pH of the sodium fluoride treatment solution decreased and the pH of the treatment solution increased during the treatment, additional studies were made in which the sodium fluoride solutions were buffered to minimize pH changes. By this means, greater reductions in enamel solubility could be expected. * * *

This statement suffices to show that the greater reductions in enamel solubility obtained during the *in vitro* tests of the buffered dentifrices of appellants' invention in simulated saliva, in comparison with results obtained with unbuffered fluoride dentifrices, were "expected," as distinguished from unexpected, beneficial results. [2] Expected beneficial results are evidence of obviousness of a claimed invention, just as unexpected beneficial results are evidence of unobviousness thereof.

With respect to the desirability of using buffering agents to maintain an *acidic* pH for fluoride dentifrices, Gershon comments as follows:

> Since acidic sodium fluoride solutions are more effective than neutral solutions in reducing enamel solubility and buffered solutions exhibit maximum activity, it would be logical to use buffered, acidic sodium fluoride solutions for topical applications. * * *

We agree with the logic of this position, which renders obvious the practical use of buffered acidic fluoride dentifrices in general. As for the specific slightly acidic pH range of 5 to 6, FIGURE 1 of the Gershon article graphically portrays the facts that, as summarized in the article, "[b]uffered acidic fluoride solutions are more effective in reducing enamel solubility than unbuffered solutions," and that the maximum slope of the curve occurs between pH 5 and 6, when percent reduction of solubility is plotted against pH as in FIGURE 1. Better results are obtained for the 5 to 6 pH range than for the nearly neutral 6 to 7 range. It is also true that even better reductions in enamel solubility are obtained for buffered fluoride solutions in the pH range of 4 to 5. However, the point of diminishing returns, in terms of increased percentages of solubility reductions as the pH values are lowered, is reached at the point where the slope of the curve is maximized, and the locus of this point is in the claimed pH range between 5 and 6. Thus, further decreases in pH below 5 would increase the percent reduction in enamel solubility according to the results of the *in vitro* tests reported by Gershon, but this would also involve the corresponding risk that, as stated by Jordan et al. in their article reporting the results of clinical testing of a fluoride dentifrice, "this degree of acidity * * * could introduce a real danger to dental enamel under usage conditions."

For the above reasons, we think the cited art clearly suggests that the most desirable pH range for a buffered acidic fluoride dentifrice would be the claimed slightly acidic range of 5 to 6, rather than a more strongly acidic, and possibly dangerous, range of, say, 4 to 5 or a nearly neutral, and less effective, range of 6 to 7. The use of a buffering agent in an amount sufficient to maintain this most desirable pH range of 5 to 6 for a fluoride dentifrice in the presence of the slightly alkaline saliva which is normally present in the human mouth is obvious in our opinion from the teachings and clear suggestions of the prior art, especially the Gershon article.

Appellants argue that they were first to recognize the problem that fluoride dentifrices having a desirably acidic pH of less than 7 as conventionally measured in water have unsatisfactorily low RES (reduction in dental enamel solubility) values in saliva compared to their RES values in water. Since appellants were the first and only ones to recognize this problem, it is further contended that they naturally were also first to determine its cause, namely that alkaline saliva raises the pH of an unbuffered dentifrice in the mouth to undesirable values over 6. Finally, appellants urge that only after recognition of the problem and its cause were they then able to solve the problem by buffering fluoride dentifrices with a buffering system in amounts adequate to maintain a pH of 5 to 6 in saliva, hence achieving relatively high RES values of 27 to 42%.

[3] Since appellants stress that they were first to recognize a problem which allegedly has still not been recognized by others ordinarily skilled in the dentifrice art, one may question whether in fact such a "problem" objectively existed, as distinguished from its acknowledged subjective existence in the minds of the inventors and their patent counsel. Even if the problem did objectively exist in fact, the absence of discussion of it in the cited art may be due to a variety

of factors. As we pointed out in *In re Goodman*, 52 CCPA 895, 900, 339 F.2d 228, 232, 144 USPQ 30, 33:

> The failure of the prior art to mention a problem may be due to the fact that in practice the problem is not a serious one or that a large number of satisfactory solutions is readily apparent.

[4] Since the alleged problem in this case was first recognized by appellants, and others apparently have not yet become aware of its existence, it goes without saying that there could not possibly be any evidence of either a long-felt need in the dentifrice art for a solution to a problem of dubious existence or failure of others skilled in the art who unsuccessfully attempted to solve a problem of which they were not aware. Accordingly, no evidence of such relevant "secondary considerations" tending to prove unobviousness is in the record before us. See *Graham* v. *Deere*, 383 U.S. 1, 148 USPQ 459, 467.

[5] Although the cited prior art does fail to disclose or suggest either the existence of appellants' problem or its cause, we cannot agree that the art does not teach or suggest a solution to the problem. The cited art, especially the Gershon article, unquestionably teaches the superiority of "buffered acidic fluoride solutions" in effectively reducing dental enamel solubility *in vitro*. We think that one of ordinary skill in the dentifrice art would thus be persuaded to use buffered acidic fluoride dentifrices for the purpose of reducing dental enamel solubility *in vivo*. Such obvious use of buffered dentifrices would *inherently* provide a solution to appellants' problem, even though an adequate theoretical explanation of the reason why incorporation of buffering agents in acidic fluoride dentifrices achieves superior RES values is not found in the cited art. We think it is sufficient that the prior art clearly suggests doing what appellants have done, although an underlying explanation of exactly why this should be done, other than to obtain the expected superior beneficial results, is not taught or suggested in the cited references.

[6] We find no reversible error in the decision of the Board of Appeals holding the claimed subject matter to be obvious and unpatentable under 35 U.S.C. 103. Accordingly, the decision of the Board is affirmed.

AFFIRMED.

SMITH, *J.*, concurs in the result.

U.S. Court of Customs and Patent Appeals

IN RE ARTHUR S. NEAVE, JR.

No. 7664. Decided January 19, 1967

[54 CCPA —; 370 F.2d 961; 152 USPQ 274]

1. PATENTABILITY—EVIDENCE—COMPARATIVE TESTS.

"• • • the Board challenged the credibility of tests 1 and 2. As to test 1, the Board inferred that the tests would not be given 'full credence' because no international standard existed regarding light fastness [of dyestuffs]. This objection is similar to the objection based on admissibility. As a general statement, it is true that one of ordinary skill in the art might favor results compared to an international standard if such a standard was available. Thus the Board's position has merit in regard to credence. But appellant argues test 1 is recognized by AATCC. The Solicitor does not dispute this. AATCC standards are apparently accepted by industry. In absence of international standards • • • we do not find that one of ordinary skill in the art would seriously question the credibility of the results of test 1. The law should not require greater proof concerning credibility than what those in the art accept."

2. SAME—SAME—SAME—DYESTUFFS—VISUAL INSPECTION.

"It would be an unreasonable burden upon inventors in the dyestuff art to require that each new dye be superior in all important qualities. We are also convinced, considering the evidence of record, that appellant's invention is unobvious. Appellant selected in a crowded art and here claims, a single compound which has been demonstrated to possess advantages over all prior art compounds. We are not persuaded by the Solicitor's arguments that because the factual evidence offered by appellant results from visual inspection and estimation it is of little weight. The affiant's qualification to make this evaluation was established in the affidavit and was not challenged."

3. SAME—PARTICULAR SUBJECT MATTER—MONOAZO DYESTUFF.

The refusal of a certain claim to a monoazo dyestuff, as unpatentable over the prior art, is reversed.

APPEAL from the Patent Office. Serial No. 165,654.

REVERSED.

Laurence and Laurence (*Dean Laurence*, *Herbert I. Sherman*, of counsel) for appellant.

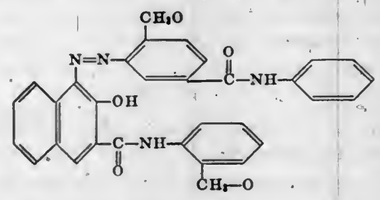
Joseph Schimmel (*Jack E. Armore*, of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, JR., *Associate Judges*

SMITH, *J.*, delivered the opinion of the court.

The single claim on appeal,[1] defining a water-insoluble monoazo dyestuff, stands rejected on the basis of obviousness,[2] 35 U.S.C. 103. The compound is defined in the claim as follows:

1. The water-insoluble monoazo dyestuff having the structural formula:



The prior art references relied on are:

Wagner et al. [I], 1,522,089, January 6, 1925.
Wagner et al. [II], 1,549,822, August 18, 1925.
Fischer [I], 2,915,518, December 1, 1959.
Farben (Germany), 602,064, August 31, 1934.
Fischer (Germany) [II], 889,739, September 14, 1953.

The Board in its opinion found that "The Examiner's answer has no precise statement of the several grounds of rejection." It reviewed the structural similarities of the claimed compound and the prior art compounds. Appellant submitted evidence attempting to show superiority of the claimed invention over the teachings of the prior art. The Board concluded, after considering appellant's evidence, that the alleged superiority of the claimed compound over the prior art compounds had not been proven.

Appellant does not here dispute the facts found by the Board concerning the structural closeness of the prior art compounds. According to appellant:

• • • The overall *issue* involved in this case is the sufficiency of the affidavit evidence presented in a situation where the invention is of the "selection variety" i.e., it involves the unexpected finding that a particular compound, which is a

[1] Application Ser. No. 165,654, filed January 11, 1962, entitled "Compound."
[2] A dispute as to whether the claimed compound is anticipated, 35 U.S.C. 102, apparently has been resolved as the parties here agree that the compound is novel.

member of a large class whose members would be expected to impart color, can be used for textile printing where each reference compound cited has some deficiency which limits its usefulness.

The Solicitor apparently agrees as he argues:

• • • the only real issue on this appeal is whether the affidavit evidence of record is sufficient to rebut the finding of obviousness made by the Examiner and Board.

We may therefore turn to a consideration of the evidence submitted by appellant. This evidence is explained in appellant's brief as follows:

Appellant filed two affidavits under Rule 132 by an expert, Schroeder, who is the Director of Research and Development in Pigments and Allied Products for the Hilton-Davis Chemical Company. The Schroeder affidavits • • • show the comparative evaluation as pigments of 8 dyestuffs, i.e., that of the claim here on appeal and of the seven most pertinent prior art reference dyestuffs compounds. The 8 compounds were tested for their usefulness for the specific use proposed in appellant's specification, i.e. for textile printing, and the results were evaluated by six different test methods:

Test Method 1: Resistance to fading in ultra-violet light.
Test Method 2: Resistance to Plissé printing.
Test Method 3: Resistance to discharge printing.
Test Method 4: Resistance to aqueous washing in the absence of chlorine bleach.
Test Method 5: Resistance to aqueous washing in the presence of chlorine bleach.
Test Method 6: Resistance to dry cleaning.

Appellant summarized the test results in the form of a chart. A specific finding for each of the eight compounds tested, according to each of the test methods above, is set forth.

The Board's criticism of the test results falls into three types. First, the Board seriously questions the admissibility of the results of certain of the tests. It reasoned that neither test 1 or test 2 was "standard." As to test 1, the Board cited the following from 2 Color Index 2,698 (2nd ed. 1956):

• • • At present there are no internationally accepted standard conditions for carrying out light fastness tests nor fully accepted numerical standards.

Appellant comments on the above statement as follows:

• • • the dyestuff manufacturers, the companies that belong to the American Association of Textile Chemists and Colorists, test all new dyestuffs and materials so that they know what will happen under use conditions. We mention the American Association of Textile Chemists and Colorists (AATCC) because it is their tests, which are industry standard tests, that were mainly used in the affidavit submitted here. These are the routine tests, run exactly as set forth by the AATCC,* used for test methods 1, 4, 5, and 6.

* One of the objects of the above organization is to promote increase of knowledge of the application of dyes and chemicals in the textile industry. In 1961 this organization had some approximately 250 corporate members including such companies as Du Pont, Dow, General Electric and the company that owns the application here on appeal, Sterling Drug, Inc. through their "Hilton-Davis Chemical Company Division."

• • • • • • •

The Board, throughout its opinion, appears to question various of the tests made as not meaningful, as not based on internationally accepted standard conditions, as being inconclusive, as not being standard, and because of there being possible protection afforded by the resin coating. The Board is wrong. Most of the tests are well accepted tests by industry standards, since they are tests formulated by the American Association of Textile Chemists and Colorists, published annually and revised and updated periodically. • • • the fact the test procedure followed is that promulgated by the AATCC shows that the Board statement is either inaccurate or immaterial. The tests do not require absolute standards to be meaningful.

The main important reason the Board is wrong is the fact that all the tests conducted were parallel tests conducted in exactly the same way at the same time. • • • absolutely identical conditions were used. The tests used do not favor applicant's claimed compound over any of the other compounds. • • •

The Solicitor acknowledges the Board's statement but does not disagree with appellant's arguments.

As to test 2, the Board stated "The test does not appear to be a standard one," absent further explanation. Appellant does not disagree. Rather it is argued that "Resistance to Plisse Printing" is a proper quality to test for in the type of dye claimed and that all compared dyes were tested under identical conditions. Appellant thus argues that this test produced results which are comparable and which show differences between the claimed dyestuff and the dyestuffs of the prior art. The Solicitor does not disagree.

We think the Board, in view of the arguments of record, erred in its objection to the comparative tests. While no international standards exist, the facts shown have rational probative value, 1 Wigmore, Evidence 289 (3rd ed. 1940). We therefore find that the evidence concerning tests 1 and 2 was admissible.

Second, the Board challenged the relevancy of tests 2, 3, 4, 5 and 6. As to test 3, "Resistance to Discharge Printing," the Board stated "we are not aware that any such quality • • • is a commonly desired quality in pigments that are used for emulsion printing." Appellant argues in response:

The Board is wrong, as a very simplified explanation of the technology involved will show. Discharge printing is a method of simultaneously applying a color remover and a color. Suppose the colorist wants to have red polka dots on a grey background. First the grey is applied so the entire cloth is solid gray. Now he wants to print the red polka dots, but if he prints the red over the grey he won't get the true red. So it is desirable to remove the grey from the places where the red is to go. Formaldehyde sodium sulfoxylate is an example of a "discharge" agent which is used to remove the grey color. Naturally it is vital to know that the color remover will not affect the new color that is being applied simultaneously.

• • • The Board fails to appreciate that it is desirable to have only the ground color dye (i.e. the grey background in the above example) easily destructible, but that the dye to be overprinted (i.e the red polka dots) must be resistant to and not destroyed by the discharge agent. Colored polka dot effects are not ordinarily produced by in situ azoic dyeings, but rather by printing. Under these circumstances, resistance to "discharge" is an important consideration.

The Solicitor does not disagree with appellant's argument. As to tests 2, 4, 5 and 6, the Board stated:

• • • When it is considered that appellant's pigment is coated and held on the fabric by a resinous coating, it is not clear that tests 2, 4, 5 and 6 were tests made on the pigments as such; they seem to be tests made on the combination of resin and pigments and the claim is not drawn to a resin-pigment combination. Noting again that such pigments are often used as formed-in-situ azo dyestuffs, it seems that these tests could more pertinently have been made on fabrics having these dyes and nothing else.

Appellant responded as follows:

• • • While the Board may be correct that the claimed dyestuff could have been evaluated differently, realistically the best possible evidence of unexpected beneficial properties is in a test for the specific utility set forth in the specification. In the present case this utility is as a "pigment, particularly for textile printing." These compounds are to be used in a resin-pigment combination. The manner of using the claimed dyestuff as a pigment in textile printing is set forth in the specification • • •. Certainly a test designed to compare the claimed dyestuff and the reference dyestuff in the *actual* setting of its intended end use would seem to be the most pertinent test, and the one which is of the least "dubious" nature possible.

One could say the tests, in a sense, were made on the combination of resin and pigments, while the claim is not drawn to such a resin-pigment combination. Yet when the Board suggested that the tests should have been made on fabrics having these dyes and nothing else it was really advocating a test of at least a

"fabric-pigment combination," and the claim is not drawn to that combination either. The Board is wrong in its narrow view of what is actually being tested. The test is of the pigment in a selected "use setting."

• • • • • • • •

The claim is directed to a particular "water-insoluble monoazo dyestuff." The dyestuff itself exists as a solid. Think of it existing as a powder. How can a powder be used to stick to and thereby dye cloth? If it were water-soluble, a colorist might dissolve it in water and soak the cloth in the solution. But it is not water soluble. One way to get this powder to stick to the cloth and thereby color it, is to first form the compound in the cloth by reacting its components within the cloth fibers, thus actually trapping the dyestuff particles within the unicellular structure of the fiber. That is the formed-in-situ azo dyestuff to which the Board referred, A different way is to fix the powder to the cloth. That is the method which appellant prefers his claimed dyestuff be used. The "resin" is the "binder" that by polymerizing and being cured fixes the dyestuff molecules to the cloth fiber. The two methods of application, i.e., the formed-in-situ mentioned by the Board and the printing used by appellant, are quite different and dyestuffs with suitable properties when used one way, are not necessarily usable the other way.

The Solicitor does not disagree with appellant's arguments. We find appellant's arguments convincing. All of the test results are comparative and we find no reason of record which convinces us that one of ordinary skill in the art would find these results to be due to some factor not associated with the claimed invention. *In re Widmer*, 53 CCPA 762, 353 F.2d 752, 147 USPQ 518; see also *In re Hostettler*, 53 CCPA 1069, 356 F.2d 562, 148 USPQ 514.

[1] Third, the Board challenged the credibility of tests 1 and 2. As to test 1, the Board inferred that the tests would not be given "full credence" because no international standard existed regarding light fastness. This objection is similar to the objection based on admissibility. As a general statement, it is true that one of ordinary skill in the art might favor results compared to an international standard if such a standard was available. Thus the Board's position has merit in regard to credence. But appellant argues test 1 is recognized by AATCC. The Solicitor does not dispute this. AATCC standards are apparently accepted by industry. In absence of international standards and considering the arguments of record, we do not find that one of ordinary skill in the art would seriously question the credibility of the results of test 1. The law should not require greater proof concerning credibility than what those in the art accept.

As to test 2, the Board stated:

• • • the plisse test 2 seems quite inconclusive if its purpose is to show that Wagner [II] • • • is in error in holding that halogen substituents will further improve the kier boiling fastness of a Naphthol ASOL dye. Such a test, in which the alkali-overprinted fabric is steamed, is not thought to be as rigorous a test of hot alkali resistance as kier boiling. • • •

Appellant answers:

Appellant's compound has no halogen substituent, so there is no need to dispute the reference statements. Evidently the Board does not appreciate the purpose of the plisse printing test which is to duplicate a processing step likely to be encountered by the claimed pigment, and to show many of the reference compounds could not be used there. The kier boiling the Board refers to is a method of preparing the cloth (removal of pectins, waxes, etc.) prior to dyeing and/or printing. Cloth is not subjected to this treatment after it has been dyed and/or printed.

The Solicitor mentions that kier boiling does "not, at least always," occur before dyeing or printing. We do not find the results of test 2 lacking in credibility.

In summary, we find no valid objection as to the test results based on admissibility, relevancy or credibility. We will therefore consider the objections as to the weight to be accorded this evidence.

As to test 4 and 5, the Board found the results not "meaningful." According to the chart all compounds tested were rated "satisfactory." The Board stated the tests should have been continued until some difference was proven. We do not find this criticism to be valid. Appellant has no burden to prove a difference. The fact that all compounds tested were rated satisfactory as to tests 4 and 5, absent evidence to the contrary, is entitled to consideration. Moreover, this fact tends to operate more to the advantage of the Patent Office. We see no reason for objection to it.

Finally, the results of test 1 are characterized as showing a "difference in degree" only. While we think this comment is broadly directed at the weight to be accorded this evidence, it is conclusionary in nature and of no help in determining the weight to be accorded the evidence.

We shall now set forth precisely what the evidence demonstrates. We observe that almost all of the Solicitor's argument is directed to an evaluation of this evidence.

Concerning the claimed compound, it was rated "satisfactory" in all of the tests. The prior art compounds were rated as either "poor" or deficient by a certain numerical amount in certain of the tests. The prior art compounds were rated deficient in either 2 or 4 of the tests.

The Solicitor apparently takes no exception to eliminating from consideration those compounds that were rated "poor" in one or more tests. Rather, our consideration is directed to prior art compounds 3 (Fischer II) and 4 (Fischer I). Compound 3 was rated in tests 1, 3 and 6 as having a 15%, 20%, and 20% "loss in color value," respectively, compared to the claimed compound. Compound 4 in tests 1 and 3 was rated as having a 10% and 20% "loss in color value," respectively.

According to the affidavits, the term "satisfactory" means a color value loss estimated by visual inspection to be less than 5%, 10% and 5% for tests 1, 3 and 6, respectively. As to test 1, the Board detected a "slight superiority of appellant's pigment 1 over" pigments 3 and 4. It did not detect a difference as to tests 3 and 6.

The Solicitor in his brief quotes approvingly from the Examiner's answer as follows:

• • • the Examiner properly stated that "the affidavits show no more than a difference in degree over the art compounds and not a difference in kind"; that "An alleged color value loss of 10%, 15% or 20% with respect to 5% or 10% for the instantly claimed compound is not considered to represent a patentable superiority"; significantly adding that "the percentage color loss values alleged are the result of visual inspections only and accordingly subjective in nature" • • •. The results set forth in Table I • • • clearly show, at a minimum, that the claimed compound is not significantly superiod to test pigment No. 3 from the Fischer [II] • • • patent or to test pigment No. 4 from the Fischer [I] • • • patent • • •.

Appellant answers the above argument as follows:

A 5 to 10 percent difference in loss of color value is a significant difference in determining the suitability of an azo pigment for a specific use • • •. Moreover, it is precisely because the claimed compound *is* in a crowded art, that what might otherwise appear to be relatively insignificant property differences, must be regarded as major. Naturally smaller steps forward in the art are required for [a patentable] invention in crowded arts, as constrasted to pioneer inventions which are major steps forward. The protection sought here is commensurate with the advance. Here appellant seeks a patent on a single com-

pound, which is superior to its neighbors in a number of respects. It is an outstanding dyestuff while each of its neighbors suffers certain deficiencies. That is submitted to be sufficient as a step forward in a crowded art. Appellant has shown that his pigment has an unusual combination of desirable properties, which its neighbors do not have, and this is the reason the properties are unobvious.

Our basic dispute is with the Board's belief that a 10 percent loss in color value in the dry cleaning test is insignificant. To colorists, clothing manufacturers, dry cleaners, and the consuming public, a 10 percent loss in color value of clothes sent to be dry cleaned would be a very great significance. The industry is continually seeking pigments and dyestuffs with improved fastness properties. Its standards are the practical tests by which "significance" is to be measured. Ultimately unobviousness and patentability must be based on the same standards.

Also, appellant argues the Board erred in finding no apparent differences in the result of tests 3 and 6, stating:

The Board held that the tests shown in the affidavit gave "no apparent differences in the results" between the claimed compound and the reference compounds, or at most only a "possible slight superiority, which we would ordinarily regard as nothing more than a difference in degree." It thereby failed to give any credence whatsoever to the expert who evaluated the test, and who was clearly aware of the significance of such tests by reason of his 31 years' experience in this area. The expert's evaluation of what is shown by the tests appears in the table * * *. There the claimed compound, test pigment No. 1, is compared with seven reference compounds. Refer for the moment to the results for test pigment No. 5. It proved "poor" in two out of the six tests (test method Nos. 1 and 2), where the claimed compound was "satisfactory." The affidavit * * * defines "poor" for test method No. 1 as referring to a color value loss estimated to be 50 percent or more, and in test method No. 2 as referring to a color value loss estimated to be 10 percent or more and/or a definite undesirable change in shade. Now, whether the Board believes that these changes are or are not significant, the fact is that workers in the industries most concerned feel that such changes are very significant, and those labeled "poor" would not be considered usable by persons concerned with that property.

In concluding that the claimed invention was obvious, the Board observed:

* * * While we agree with appellant that a showing of over-all superiority in all of the important qualities desired of such a pigment or dyestuff might be a sufficient indication of patentability, we do not think such a showing has been made.

Appellant argues the Board erred in its view of the requirements of the law:

The Board is incorrect in its statement of the requirements of the law. It is not necessary to make a showing of over-all superiority in *all* of the important qualities desired of such a pigment or dyestuff. It is only necessary to make such a showing as to *some* of the important qualities. * * *

We agree with appellant. [2] It would be an unreasonable burden upon inventors in the dyestuff art to require that each new dye be superior in all important qualities. We are also convinced, considering the evidence of record, that appellant's invention is unobvious. Appellant selected in a crowded art and here claims, a single compound which has been demonstrated to possess advantages over all prior art compounds. We are not persuaded by the Solicitor's arguments that because the factual evidence offered by appellant results from visual inspection and estimation it is of little weight. The affiant's qualification to make this evaluation was established in the affidavit and was not challenged. In his judgment,

The test results set forth above established that test pigment No. 1, the monoazo compound disclosed and claimed in the above-identified Neave patent application Serial No. 165,654, is a brilliant and strong red pigment of distinctive shade with highly valuable properties for textile printing. Moreover, the said test results demonstrated that test pigment No. 1 is clearly superior to each of test pigments Nos. 2–8 inclusive, in that it was the only one of the eight test pigments which gave satisfactory results in all of the comparative tests.

We observe that the perception of color is in all cases a personal and hence a "subjective" determination. It is known that the human eye of one trained in the dyestuffs art may have a very different reaction to and judgment of color values than is the case with the eye of an untrained observer. We think, therefore, that though an expert's opinion in this field is necessarily predicated on his subjective judgment it is not therefore a capricious value such as might be observed in a layman's evaluation of the same colors.

We therefore conclude from the evidence of record that appellant has shown by convincing evidence the superiority of the claimed dyestuff over the prior art dyestuffs. We do not find the claimed compound to be obvious from the closely related compounds in the prior art for the simple reason that we fail to find teachings of record which are sufficient to make obvious to one of ordinary skill in the art the selection of the claimed compound for its over-all superior dyeing properties in view of the prior art compounds.

[3] The decision of the Board is therefore reversed.

REVERSED.

MARTIN, *J.*, participated in the hearing of this case but died before a decision was reached.

In the United States Patent Office
Before the Board of Appeals

EX PARTE LEROY VIRGIL ROBBINS, JR. AND WALTER JAMES PORTER, JR.

Appeal No. 650—16. Decided June 12, 1967

1. PATENTABILITY—STATUTORY BASIS FOR REJECTION—DIFFERENT INVENTORS WITH COMMON ASSIGNEE—DOUBLE PATENTING UNWARRANTED—35 U.S.C. 102(e).

"The use of 'double patenting' language in this case is unwarranted. The Porter et al. patent issued on a prior application, filed one and a half years before the present application [the patent and application having a common assignee] * * * the disclosure of the patent is available as prior art under section 102(e)."

2. SAME—AFFIDAVIT UNDER RULE 131—EVIDENCE OF COMPLETION OF INVENTION.

"Appellants have submitted two affidavits [under Rule 131] in practically identical terms, one by each joint applicant, asserting that the invention was completed prior to July 6, 1960, the filing date of the Porter et al. patent. We find the affidavits deficient on one particular. Each affidavit has attached 'as evidence of the completion of their invention' a photocopy of 'their patent memorandum or invention disclosure.' The dates on this memorandum have been deleted but the affidavit itself contains no allegation with respect to the time the memorandum was made. If the memorandum was prepared after and is dated after July 6, 1960, it is, of course, not evidence that the invention was completed prior to that date."

3. SAME—STATUTORY BASIS FOR REJECTION—DIFFERENT INVENTORS WITH COMMON ASSIGNEE—35 U.S.C. 102(g).

"However, assuming that the affidavits [under Rule 131] were sufficient, the reference is not necessarily removed in view of the relationship of the parties [there being different inventorship] and the common ownership. There is still section 102(g) to consider. Under this provision the prior invention of another, meeting the conditions specified, is prior art with respect to a later invention. The invention claimed in the Porter et al. patent is taken as having been made prior to the date the invention claimed in the present application was made, in view of the facts present in this case, and hence available as prior art. What is being used by the Examiner in any case is the

claimed invention and we are not concerned with unclaimed disclosure. The application for the Porter et al. patent was filed a year and a half before the present application and it may properly be assumed, when appellants and their assignee are in possession of all the facts with respect to the prior patent and have not shown or stated otherwise, that the inventions were made in the respective order of the filing dates of the applications."

4. SAME—PROCESS—CATALYST—OBVIOUSNESS.

"Since the pure pelleted zinc oxide is shown to be more active than the pelleted zinc oxide plus activator of Porter et al., while being just as selective and less expensive, and considerably more active (about five times) than supported zinc oxide, we do not see how a rejection as obvious can be sustained."

5. SAME—PARTICULAR SUBJECT MATTER—"PREPARATION OF HIGHER MOLECULAR WEIGHT KETONES."

The rejection of certain claims to a catalytic process for the "Preparation of Higher Molecular Weight Ketones," as unpatentable over the prior art, is reversed.

APPEAL from the Examiner (Leon Zitver) of Group 120. Serial No. 163,834.

REVERSED.

Small, Thomas, Dunham & Marx and *R. D. Manahan* for appellants.

Before FEDERICO and LIDOFF, *Examiners-in-Chief*, and STONE, *Acting Examiner-in-Chief*

FEDERICO, *Examiner-in-Chief*.

This is an appeal from the final rejection of claims 2, 3 and 5 to 9, all the claims in the case.

Claim 3 reads as follows:

3. Process for making a higher molecular weight ketone which comprises contacting vapors of a C_3 to C_6 saturated aliphatic oxygenated hydrocarbon feed selected from the group consisting of alcohols, ketones and mixtures thereof with a fixed bed of catalyst pellets consisting essentially of zinc oxide in a reaction zone maintained at temperatures between 300 and 700° F. for a sufficient time to convert said feed to said higher molecular weight ketone.

The remaining claims are each dependent from claim 3 and do not appear to include anything which needs separate consideration.

The references relied on are:

Fuchs et al., 2,064,254, December 15, 1936.

Porter et al., 3,153,068, October 13, 1964 (filed July 6, 1960).

The process claimed, using a catalyst, is old. The Porter et al. patent discloses the process using a catalyst consisting of zinc oxide activated with zirconium oxide; the catalyst being unsupported and pelleted. The second component of the catalyst is said to stimulate the action of the first and the disclosure and claims are limited to such mixtures. The feature of the patented invention is the use of the mixed catalyst in unsupported and pelleted form, which is said to give a higher conversion rate than a supported catalyst such as zinc oxide-zirconium oxide on coke. The feature of the claimed process is the use of zinc oxide alone, unsupported and in pellet form, as the catalyst. Omission of the "activator" of the patent gives a higher conversion rate with even a cheaper material.

The Examiner has rejected the claims "on the ground of double patenting" over certain claims of the Porter et al. patent in view of Fuchs et al. as showing the use of zinc oxide alone, and separately as unpatentable (obvious) over Fuchs et al. in view of Porter et al. based on sections 102(e) and 103.

The first questions which arise relate to the use of the Porter et al. patent. The present application and the patent are owned by the same

assignee and the Examiner speaks of "double patenting." Appellants have submitted affidavits under Rule 131 to overcome the filing date of the Porter et al. patent which the Examiner has refused to consider on the ground that they are irrelevant to a double patenting rejection or a rejection akin to double patenting.

[1] The use of "double patenting" language in this case is unwarranted. The Porter et al. patent issued on a prior application, filed one and a half years before the present application, with different inventors; the joint inventors Porter and Ellerbee of the patent not being the same as the joint inventors Robbins and Porter of the present application. In the first instance the disclosure of the patent is available as prior art under section 102(e). An affidavit under Rule 131 would have the effect of removing a literal reliance on 102(e) and the affidavits should have been considered for this purpose. [2] Appellants have submitted two affidavits in practically identical terms, one by each joint applicant, asserting that the invention was completed prior to July 6, 1960, the filing date of the Porter et al. patent. We find the affidavits deficient on one particular. Each affidavit has attached "as evidence of the completion of their invention" a photocopy of "their patent memorandum or invention disclosure." The dates on this memorandum have been deleted but the affidavit itself contains no allegation with respect to the time the memorandum was made. If the memorandum was prepared after and is dated after July 6, 1960, it is, of course, not evidence that the invention was completed prior to that date.

[3] However, assuming that the affidavits were sufficient, the reference is not necessarily removed in view of the relationship of the parties and the common ownership. There is still section 102(g) to consider. Under this provision the prior invention of another, meeting the conditions specified, is prior art with respect to a later invention. The invention claimed in the Porter et al. patent is taken as having been made prior to the date the invention claimed in the present application was made, in view of the facts present in this case, and hence available as prior art. What is being used by the Examiner in any case is the claimed invention and we are not concerned with unclaimed disclosure. The application for the Porter et al. patent was filed a year and a half before the present application and it may properly be assumed, when appellants and their assignee are in possession of all the facts with respect to the prior patent and have not shown or stated otherwise, that the inventions were made in the respective order of the filing dates of the applications. The nature of the subject matter of both cases and the presentation in this case also indicate the order in which the inventions were made. For example, the "invention disclosure" previously referred to states that the catalyst of this case "is more active, as selective and is cheaper than catalysts used heretofore for acetone condensation" and the catalyst of the Porter et al. patent is listed in the accompanying tables as a catalyst previously used in the process.

In view of the above considerations the Examiner's rejections of the claims are restated as a single rejection as follows: The claims are rejected as unpatentable over Porter et al. and Fuchs et al. on the basis of sections 102 and 103 of the statute, the Porter et al. invention being available as prior art on the basis of 102(e) as disclosed in the specification of the patent, no proper affidavit having been filed, *and* on the basis of 102(g) as the prior invention of another.

With respect to the merits of the rejection, we do not agree with the Examiner. Fuchs et al. is cited as disclosing the use of zinc oxide alone (supported and not pelleted) as the catalyst. This disclosure must be dug out of the patent. The patentees are concerned with a mixed catalyst comprising hydrogenating and dehydrating components. The former comprise a list of fourteen named metals, including zinc, which may be used as metals or in the form of their "oxides, hydroxides, carbonates, acetates, nitrates, or in the form of other salts, and also as complex salts" (page 2, lines 19 to 25) and the latter comprise a list of eight named metals, including magnesium, "oxides, hydroxides or salts (nitrates, acetates) thereof" (page 2, lines 6 to 9); then it is stated that "The magnesium may be replaced by calcium, barium or zinc or oxygen-containing compounds thereof, such as carbonates, hydroxides, etc." However appellants appear to acknowledge that zinc oxide alone, but supported and unpelleted, has been used since it is so listed in the "invention disclosure." [4] Since the pure pelleted zinc oxide is shown to be more active than the pelleted zinc oxide plus activator of Porter et al. while being just as selective and less expensive, and considerably more active (about five times) than supported zinc oxide, we do not see how a rejection as obvious can be sustained.

[5] The decision of the Examiner is reversed.

REVERSED.

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

2,656,508, W. H. Coulter, MEANS FOR COUNTING PARTICLES SUSPENDED IN A FLUID; **2,869,078**, Coulter and Coulter, FLUID METERING APPARATUS; **2,985,830**, Coulter, Berg and Heuschkel, SCANNER ELEMENT FOR PARTICLE ANALYZERS, **filed** Sept. 6, 1967, D.C., N.D. Ill. (Chicago), Doc. 67c1530, *Coulter Electronics, Inc.* v. *Evanston Hospital Association.*

2,673,194, J. M. Grim, SUSPENSION POLYMERIZATION; **2,692,260**, G. F. D'Alello, CATALYTIC POLYMERIZATION PROCESS FOR VINYL ARYL COMPOSITIONS, **filed** Aug. 2, 1967, C.A. Mass. (Boston), Doc. 6971, *Koppers Company, Inc.* v. *Foster Grant Co., Inc.*

2,692,260. (See 2,673,194.)

2,757,672, R. W. Ogle, SYRINGE, **filed** Sept. 11, 1967, D.C., C.D. Calif. (Los Angeles), Doc. 67–1330–FW, *Robert W. Ogle* v. *Becton, Dickinson and Company.*

2,806,331, E. J. Hoye, GRINDING WHEELS, **filed** Sept. 15, 1967, D.C., E.D. Wis. (Milwaukee), Doc. 67–C–299, *Emmett J. Hoye* v. *Manhattan Rubber Mfg. Co. et al.*

2,869,078. (See 2,656,508.)

2,892,463, Frommelt and Frommelt, LOADING DOCK SHIELD; **3,181,205**, same, PAD STRUCTURES, **filed** June 9, 1967, D.C., W.D.N.Y. (Buffalo), Doc. C–1967–242, *Dubuque Awning & Tent Company* v. *Weather-Shield Corporation.* Final judgment upon consent, Sept. 6, 1967.

2,985,830. (See 2,656,508.)

3,029,150, W. Bickel, METHOD OF CURING MEAT AND COMPOSITION THEREFOR, **filed** Nov. 1, 1965, D.C.N.J. (Newark), Doc. 1164–65, *Joh. A. Benckiser G.m.b.H.* v. *Hygrade Food Products Corporation.* Consent judgment for dismissal, Sept. 15, 1967.

3,046,526, J. R. Scantlin, SELECTOR APPARATUS, **filed** Sept. 18, 1967, D.C., C.D. Calif. (Los Angeles), Doc. 67–1364–EC, *Scantlin Electronics, Inc.* v. *Motorola, Inc. et al.*

3,093,177, J. P. Villo, THREAD LOCK AND METHOD OF MAKING THE SAME, **filed** Oct. 18, 1966, D.C.N.J. (Trenton), Doc. C1047–66, *Elastic Stop Nut Corporation of America* v. *Standard Pressed Steel Co.* Stipulation and order of dismissal, Sept. 18, 1967.

3,120,056, O. F. Gerry, POWER-OPERATED KNIFE; **3,152,398**, A. H. Freeman, POWER-OPERATED SLICING KNIFE; **3,152,399**, G. W. Knab, POWER-OPERATED SLICING KNIFE HAVING FLUID FLOW CONTROL MEANS; **3,153,852**, A. H. Freeman, BLADE CONNECTION MEANS FOR POWER-OPERATED SLICING KNIFE; **3,189,998**, Belsheim and Stephens, CUTTING BLADES FOR POWER-OPERATED KNIFE; **3,203,095**, T. F. Nelson, POWER-OPERATED KNIFE; **3,203,096**, Belsheim and Gerry, ELECTRIC SLICING KNIFE, **filed** May 31, 1966, D.C., E.D.N.Y. (Brooklyn), Doc. 66C–504, *General Electric Company* v. *Atlas Corporation.* Stipulation of dismissal, Aug. 30, 1967.

3,152,398. (See 3,120,056.)

3,152,399. (See 3,120,056.)

3,153,852. (See 3,120,056.)

3,189,998. (See 3,120,056.)

3,203,095. (See 3,120,056.)

3,203,096. (See 3,120,056.)

3,216,083, E. O. Acker, METAL FORMING MACHINE; **3,295,345**, Acker and Kimball, FORMING MACHINE, **filed** Aug. 31, 1967, D.C., W.D. Okla. (Oklahoma City), Doc. 67–331, *Acker Industries, Inc. et al.* v. *American Rand Expanded Metals Corporation.*

3,295,345. (See 3,216,083.)

3,315,011, Coover and Joyner, DYEABLE POLYPROPYLENE FIBERS CONTAINING POLYMERS OF VINYL PYRIDINES, **filed** Sept. 18, 1967, D.C., S.D.N.Y., Doc. 67–C–3595, *Sidney O. Sampson* v. *Sony Corporation of America.* Same, Doc. 67–C–3596, *Sidney O. Sampson* v. *Ampex Corporation.*

REISSUES

DECEMBER 5, 1967

Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

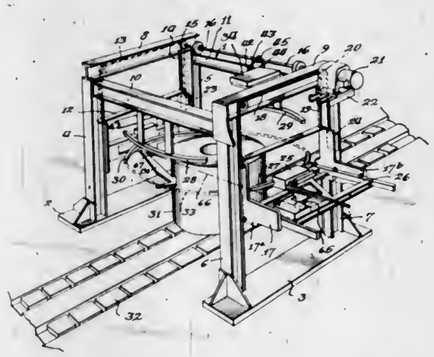
26,315

STRAPPING MACHINE CONTROL

Donald W. Rhea, Norridge, Ill., assignor to Interlake Steel Corporation, a corporation of New York

Original No. 3,225,683, dated Dec. 28, 1965, Ser. No. 352,562, Mar. 17, 1964. Application for reissue Oct. 17, 1966, Ser. No. 595,549

14 Claims. (Cl. 100—4)



12. The combination in a strapping machine comprising, strapping means, a work piece support, means for causing relative movement between a work piece supported on the work piece support and the strapping means, arresting means to arrest said relative movement, and control means responsive to the movement of the strapping means and the work piece relative to each other to cause the arresting means to arrest the relative movement at a predetermined location relative to one end of the work piece, said control means including a light sensitive relay and a light beam impinging upon said relay with the light beam directed to be interrupted by interference of the work piece during the relative movement between the strapping means and the work piece.

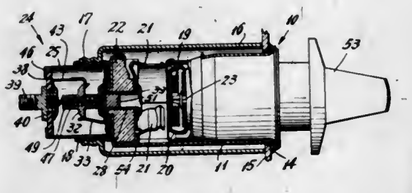
26,316

ELECTRIC CIGAR LIGHTER

Laurence G. Horwitt, New Haven, Conn., assignor to Casco Products Corporation, a corporation of Connecticut

Original No. 3,230,345, dated Jan. 18, 1966, Ser. No. 304,087, Aug. 23, 1963. Application for reissue Mar. 17, 1967, Ser. No. 637,024

7 Claims. (Cl. 219—265)



7. In an electric cigar lighter having an elongate holder having a cavity for supporting an igniting unit for removal and replacement therein through an open end of the holder, and support means in the holder; heat responsive electric contact means in said holder including means mounted on said support means adapted to engage the inner end of the igniting unit for completing an electric circuit from a source of current supply to the igniting unit when the latter is to be energized and for opening said circuit when the igniting unit reaches normal operating temperature for use, the improvement comprising a normally closed heat-responsive circuit breaker in said electric circuit between said source of current supply and said contact means in the holder, said circuit breaker having means normally maintaining said circuit closed but responsive to heat substantially in excess of said normal operating temperature to open the circuit to said contact means, and means accessible through the open end of the holder when the igniting unit is removed from the holder for manually resetting the circuit breaker.

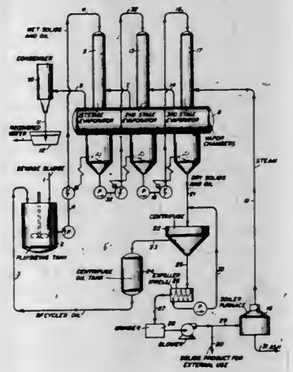
26,317

PROCESS AND APPARATUS FOR DEHYDRATING WASTE SOLIDS CONCENTRATES

Charles Greenfield, 35 Walnut St., Murray Hill, N.J. 07971

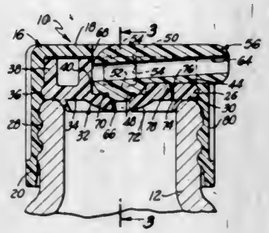
Original No. 3,251,398, dated May 17, 1966, Ser. No. 311,792, Sept. 26, 1963. Application for reissue Oct. 27, 1966, Ser. No. 597,497

10 Claims. (Cl. 159—17)



1. A process for dehydrating *initially water-containing* waste solids concentrates which comprises the steps of (*1*) admixing *such* a waste solids concentrate with a relatively non-volatile oil to obtain a mixture which will remain fluid and pumpable after the removal of the water content therefrom; (*2*) *separately* subjecting the resultant oil-containing mixture to a plurality of sequential dehydration steps by heat evaporation wherein each of the successive dehydration steps is at a successively higher temperature and the resulting oil-containing mixtures are of successively higher concentrations because of increasing dehydration, the evolved vapors from each heat evaporation step supplying a substantial portion of the heat requirements of the preceding heat evaporation step, (*3*) and withdrawing a resultant substantially anhydrous waste solids concentrate *and* oil slurry.

26,318
CLOSURE
Woodrow S. Wilson, Pasadena, Calif., assignor to Polytop Corporation, Slatersville, R.I., a corporation of Massachusetts
Original No. 3,163,337, dated Dec. 29, 1964, Ser. No. 235,092, Nov. 2, 1962. Application for reissue Apr. 20, 1965, Ser. No. 457,540
12 Claims. (Cl. 222—512)



13. A closure in combination with a container which includes:

a cap member, a fitment member, a spout member and a container having a neck,

said cap member including a top and a skirt dependent from the periphery of said top, attaching means formed on the interior of said skirt for attaching said skirt to said container neck, said cap member also including a top slot formed in said top, said top slot having ends,

said fitment member fitting within said skirt adjacent to said top,

means on said spout and on said fitment pivotally mounting said spout for movement between a dispensing position and an inoperative position,

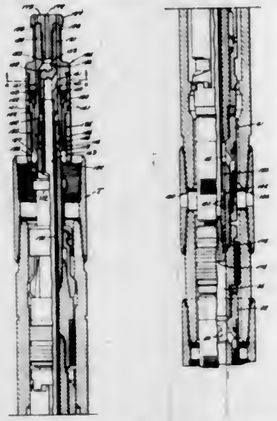
an opening leading from a central area through said fitment member,

said spout member including a cylindrical central portion, a spout extending from said central portion, a passage extending through said spout and said central portion, said mounting means consisting of side openings located on said fitment and aligned trunnions fitting within said side openings, said trunnions on said spout being engaged by said top of said cap member so as to rotatably hold said spout member against said fitment member, said spout member being capable of being rotated so as to place said passage in alignment with said opening and normally fitting against said fitment member so as to form a seal with respect to said opening;

said cap member being secured to said container neck with said fitment member abutting against said container neck so that said cap member, by virtue of being secured to said container neck, holds said spout member against said fitment member in order to create a seal around said opening in said fitment member.

26,319
FLOW CONTROL DEVICES FOR FLOW CONDUCTORS
Jack W. Tamplen, Denton County, Tex., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey
Original No. 3,079,996, dated Mar. 5, 1963, Ser. No. 809,936, Apr. 30, 1959. Application for reissue June 15, 1967, Ser. No. 653,585
15 Claims. (Cl. 166—115)

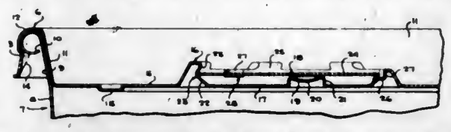
5. A main flow control device, for a well flow conductor having a longitudinal flow passage and a first lateral port communicating with the flow passage intermediate the ends thereof, including: an elongate mandrel positioned in the well flow conductive and provided with an internal flow passage for communicating at its upper end with the flow passage [of] *in* the well flow conductor and *with* a second lateral port intermediate the ends of the mandrel for communicating with the exterior of the mandrel and said internal flow passage and with said first lateral port; seal means carried by the mandrel for sealing between the well flow conductor and the mandrel below said lateral ports[,]; said mandrel having an aperture *for* communicating with the flow passage of the well flow conductor below the seal means; [means carried by the mandrel permitting flow in one direction only into the internal flow passage of the mandrel through said second lateral port and said aperture;] and an auxiliary flow control device releasably securable to the upper end of the mandrel having means extending into said internal flow passage providing with said internal flow passage, when the auxiliary flow control device is secured to the



main flow control device, a first flow passage communicating with said second lateral port and opening into the well flow conductor above said first lateral port and providing a second flow passage communicating with said aperture and opening into the well flow conductor above said first lateral port[,]; *means carried by the mandrel (a) permitting flow in one direction only into the internal flow passage of the mandrel through said second lateral port when said auxiliary flow control device is secured to the main flow control device and (b) preventing flow from said last-named flow passage through said second lateral port when said auxiliary flow control device is not secured to said main flow control device; means carried by the mandrel permitting flow in one direction only into the internal flow passage of the mandrel through said aperture when said auxiliary flow control device is secured to the main flow control device;* and means in each of said first and second flow passages providing restricted orifices of predetermined relative sizes.

26,320
NON-SPILL VENTED CLOSURE FOR HOT CUPS
William L. Miller, Skokie, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Original No. 3,193,130, dated July 6, 1965, Ser. No. 101,979, Apr. 10, 1961. Application for reissue June 30, 1967, Ser. No. 651,642
10 Claims. (Cl. 220—44)

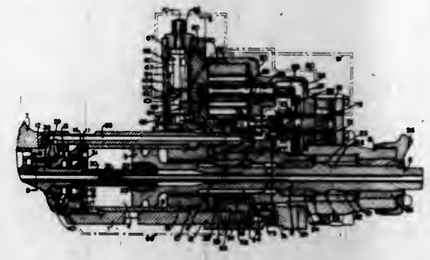
1. A closure of the character described comprising a disk-like body having means at its periphery for effecting attachment to a cup or other container and including an upstanding annular bead defining therewithin a floor portion and a chamber, a disk supported on said bead and closing over said chamber, means providing for ingress of vapor through the floor *portion* into the chamber from within a container on which the closure may be mounted and egress of vapor from said chamber past said disk to



the atmosphere, the disk and bead having cooperating snap together disk retaining portions, and said snapped together disk retaining portions including means for vapor escape clearance.

26,321
DUAL ROTATION FOR ROCK DRILLS
John Clark Curtis and Toimi Antero Parssinen, Newport, N.H., assignors to Joy Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania
Original No. 3,044,448, dated July 17, 1962, Ser. No. 804,366, Apr. 6, 1959. Application for reissue Mar. 24, 1964, Ser. No. 366,675
40 Claims. (Cl. 173—96)

39. A device for actuating a rock drilling tool comprising a pressure fluid-actuated percussive motor operable to impact said tool; a pressure fluid-actuated rotary driving motor independent of the first mentioned motor and operable to rotate said tool bidirectionally; control means for said percussive motor and said rotary motor comprising independent pressure fluid valves selectively



operable for effecting tool impacting without tool rotation, bidirectional tool rotation without tool impacting, and tool impacting with bidirectional tool rotation; and, said valve for said rotary driving means having opposed operating positions for effecting reversible tool rotation and a neutral position.

PLANT PATENTS

GRANTED DECEMBER 5, 1967

Illustrations for plant patents are usually in color and therefore it is not practicable to reproduce the drawing.

2,781
AZALEA PLANT
Hubert B. Lewis, 16562 E. Leffingwell Road, Whittier, Calif. 90603
Filed Sept. 28, 1966, Ser. No. 582,769
1 Claim. (Cl. Plt.—56)

A new and distinct variety of azalea plant, substantially as herein shown and described, characterized particularly as to novelty by the unique combination of a general similarity to the parent variety "Dr. Bergman" in resepct to the color of its foliage and flowers, but having a larger foliage size, a much faster rate of growth than the parent variety aforesaid, larger and more attractive flowers than those of the parent variety, and a ruffled flower form.

2,782
AZALEA PLANT
Hubert B. Lewis and Helen H. Lewis, both of 16562 E. Leffingwell Road, Whittier, Calif. 90603
Filed Sept. 28, 1966, Ser. No. 582,768
1 Claim. (Cl. Plt.—57)

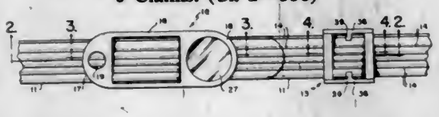
A new and distinct variety of azalea plant, substantially as herein shown and described, characterized particularly as to novelty by the unique combination of a very heavy texture of the flower petals which appear almost as if waxed, a slow opening habit of the flowers, with consequent longer than normal flower life, and a distinctive and attractive bright red general color tonality of the flowers corresponding to Cardinal Red in both the bud and open flower stages.

PATENTS

GRANTED DECEMBER 5, 1967

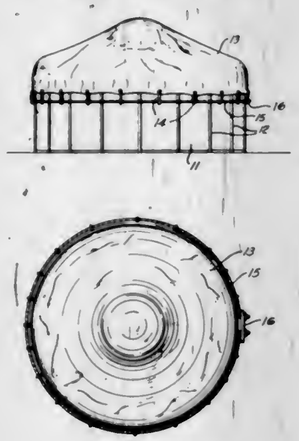
GENERAL AND MECHANICAL

3,355,744
ADJUSTABLE BELT
Porter C. Wilson, 320 E. Elvira Road, Tucson, Ariz. 85706
Filed Mar. 31, 1965, Ser. No. 444,343
6 Claims. (Cl. 2—338)



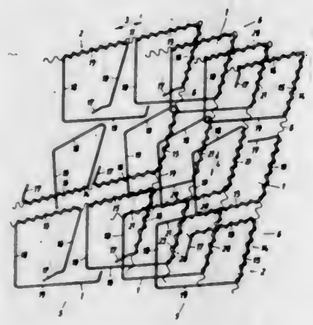
1. An adjustable belt comprising: a strip of flexible material; a buckle having a pair of spaced openings therein for receiving a first free end of said strip of flexible material and a second pair of openings disposed on either side of said first pair of openings for receiving a second free end of said strip of flexible material; a keeper having a channel therein and a pair of spaced openings opening into said channel for receiving said first free end of said strip of flexible material; and shoulder formed on said keeper and extending over said channel for releasably receiving and securing a midportion of said strip of flexible material thereby forming an adjustable loop in said strip of flexible material between said buckle and said keeper, the size of said loop in said strip of flexible material being determined by the relative position of said keeper and said midportion of said strip of flexible material to provide an adjustable belt.

3,355,745
COVER FOR POOLS
Frank Jannuzzi, 239 Maple Ave., North Plainfield, N.J. 07060
Filed Oct. 23, 1965, Ser. No. 503,125
5 Claims. (Cl. 4—172)



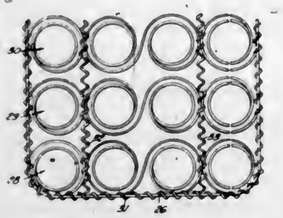
1. A protective installation, comprising, in combination, a cover adapted to cover a pool, a cable adapted to enclose said pool, means connecting the edges of said cover to said cable, means interconnecting opposite ends of said cable, and a floating support for engaging an inner surface of said cover and adapted to be moved in different directions by air currents acting on the outer surface of said cover, whereby any substantial accumulation on top of said cover is effectively prevented.

3,355,746
SPRING CORE FOR INNERSPRING MATTRESSES AND THE LIKE
Walter Lehmann, Pleidelsheim, Germany, assignor to Gottlob Gussmann Suddeutsche Bettpolsterfabrik, Pleidelsheim, Germany
Filed Mar. 29, 1966, Ser. No. 538,332
6 Claims. (Cl. 5—248)



1. A spring core, especially for innerspring mattresses, seats and upholstered furniture, which includes: a plurality of identical coil springs arranged behind and alongside each other so as to form rows of springs extending in the longitudinal direction and in the transverse direction of said spring core, the windings of each of said coil springs when viewing the coil spring in its longitudinal direction being such that a projection of each of said coil springs in the longitudinal direction thereof defines a quadrangle, each winding of each said coil spring comprising two interconnected legs extending substantially parallel to the plane of the spring core and at right angles to each other while the other two legs incline toward the next winding of the respective spring, the said two interconnected legs of each of the two outermost windings of each coil spring respectively being located in substantially the outer planes of said spring core, each coil spring along the margin of the core having a said interconnected leg in the adjacent margin of the core, adjacent rows of coil springs in at least one of said directions of said spring core having adjacent ones of said interconnected legs in approximately axial alignment with each other, the coil springs of each longitudinal row of springs being in one and the same rotated position while the coil springs in each row are displaced 90° from those of the adjacent rows, and fine wire means coiled around and interconnecting said approximately axially aligned legs of adjacent coil springs pertaining to adjacent rows of coil springs, the rotated relation of said coil springs providing that the said fine wire means are located in adjacent pairs extending through the spring core in the longitudinal direction while said fine wire means extending transversely of the core are spaced the same distance apart as adjacent spring coils.

3,355,747
SPRING ASSEMBLY
Harry H. Norman, Manhattan Beach, Calif., assignor to Percy A. Ross, Los Angeles, Calif.
Filed Oct. 4, 1965, Ser. No. 492,734
8 Claims. (Cl. 5—252)



1. As a new article of manufacture, adjacent rows of helical spring wire coils, the consecutive coils of each row having connections with each other integrally and alternately at their tops and bottoms, said connections being continuations of the wire of the coils, and pig tail wires connecting adjacent coils of adjacent rows at other points than at said integral connections.

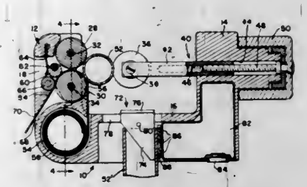
3,355,748
BEDDING DEVICE
Johan E. Tuvert, Kungsportsavenyen 22, Goteborg, Sweden
Filed Aug. 31, 1965, Ser. No. 483,998
9 Claims. (Cl. 5—334)



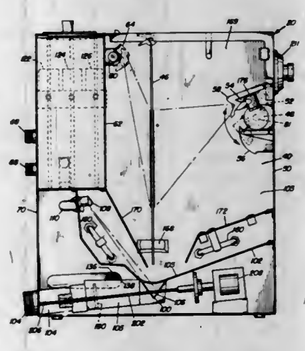
1. A bedding coverlet comprising; a coverlet body of a suitable fabric material, a plurality of first button hole structures longitudinally spaced closely adjacent one edge of said coverlet body and extending over the major part of the length thereof, a plurality of second button hole structures longitudinally spaced closely adjacent the opposite edge of the coverlet body, said first and second button hole structures being transversely aligned, each of said button hole structures comprising at least one inset of elastic material stitched to an opening in said coverlet body and having one free edge forming a button hole, each of said first plurality of button hole structures including a button member, said button member being affixed to said elastic inset closely adjacent the free edge thereof.

3,355,749
COMBINED TUBE CUTTING AND CLEANING DEVICE
James C. Steffen, Scott County, Iowa (R.R. 3, Davenport, Iowa 52804)
Filed May 17, 1965, Ser. No. 456,118
8 Claims. (Cl. 7—14.1)

5. In a tubing cutter of the type having frame, a pair of parallel cradling members mounted on the frame, a cutting means mounted on the frame for movement toward and away from the cradling members to releasably clamp a section of tubing, the cutting means cutting the clamped tubing upon rotation of the frame relative to the tubing about the tubing axis, the combination therewith of an elongated, flexible, relatively thin abrasive member having an abrasive surface, said abrasive member being stored in said frame and longitudinally trained around one of said cradling members, the thin dimension of the abrasive member extending between said one cradling member and a clamped tubing with the abrasive surface engaging the periphery of the tubing adjacent the cut to abrade the tubing periphery upon the relative rotation of the frame and tubing and locking means mounted on the frame and operably engaging said abrasive member for releasably locking said abrasive member against its associated cradling member.



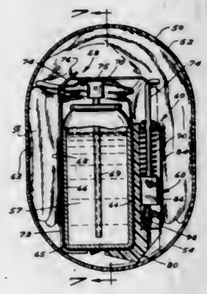
3,355,750
DIAPER WASHING MACHINE
David E. Wisdom, 4843 Voltaire St., San Diego, Calif. 92107
Filed Oct. 21, 1966, Ser. No. 588,521
7 Claims. (Cl. 8—158)



1. The steps in a method for washing sheet material having a soiled area on one side, which steps comprise:
(A) suspending the sheet in a container and intermediate two relatively low intensity wide pattern spray nozzles with the soiled area facing a relatively high intensity narrow pattern spray nozzle;
(B) washing the sheet by flowing a pressurized cold water through both low intensity nozzles and the high intensity nozzle;
(C) simultaneously with step (B) moving both low intensity nozzles to direct their spray patterns over substantially the entire facing area of the sheet;
(D) simultaneously with steps (B) and (C) moving the high intensity nozzle to direct its spray pattern over substantially the entire soiled area;
(E) then draining the cold water from the container;
(F) then washing the sheet by flowing a pressurized hot water and detergent mixture through both low intensity nozzles and the high intensity nozzle;
(G) simultaneously with step (F) moving both low intensity nozzles to direct their spray patterns over substantially the entire facing area of the sheet;

(H) simultaneously with steps (F) and (G) moving the high intensity nozzle to direct its spray pattern over substantially the entire soiled area;
(I) draining the hot water and detergent mixture from the container;
(J) then rinsing the sheet by flowing a pressurized clear water rinse through both low intensity nozzles and the high intensity nozzle;
(K) simultaneously with step (J) moving both low intensity nozzles to direct their spray patterns over substantially the entire facing area of the sheet;
(L) then drying the sheet material.

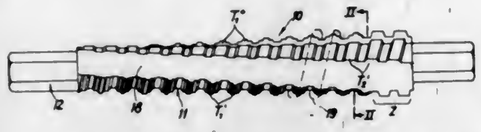
3,355,751
AUTOMATICALLY INFLATABLE OBJECTS
Bryan M. McGroarty, 9307 15th Ave. S., Minneapolis, Minn. 55420
Filed Dec. 27, 1965, Ser. No. 516,443
5 Claims. (Cl. 9—323)



1. In combination with an inflatable body, an outer housing forming upper and lower sections, said sections cooperating to define a hollow interior chamber for storing said inflatable body in its collapsed condition and being of a size to be manually thrown, water releasable closure means holding said sections together, a fluid pressure source mounted inside said housing in fluid communication relation with the interior of said inflatable body, fluid stop means adapted to normally interrupt the fluid communication between said fluid pressure source and said inflatable body, a firing mechanism normally activated upon contact with a liquid such as water and being adapted to release said fluid stop means to thereby inflate said inflatable body, said firing mechanism including: a support member located adjacent a valve portion of said inflatable body, said support member defining an interior piston chamber, a spring loaded piston slidable within said piston chamber and having inner and outer ends, said outer end of said piston being operatively connected to said fluid stop means, a moisture distintegratable body normally positioned at one end of said piston chamber and restraining the piston from movement under its spring load until moisture contacts said distintegratable body, and a manually releasable stop means releasable from the exterior of said housing restraining said piston from movement independent of said moisture distintegratable body.

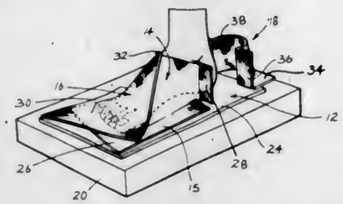
3,355,752
TAPPING TOOL
Ilija S. Haralampiev and Assen A. Valev, Sofia, Bulgaria, assignors to Nautchno-Izsledovatelski i Proektnokonstruktorski Institut za Metalo-Obrabotvashti Mashini i Instrumenti, Sofia, Bulgaria, a corporation of Bulgaria
Filed Aug. 4, 1965, Ser. No. 477,215
4 Claims. (Cl. 10—141)

1. A tapping tool for the cutting of internal threads, comprising an elongated substantially cylindrical body with several peripherally spaced rows of teeth extending in a generally longitudinal direction from one end of said body to the other, the teeth of adjacent rows respectively comprising teeth of a first shape and teeth of a second shape alternating with mutual peripheral spacing along a helicoidal line, said first shape having a stepped outline with a central land rising above a pair of outer lands flanking said central land, said second shape having a substantially trapezoidal outline of a base width substantially



equal to that of the outline of an adjoining tooth of said first shape and of a height substantially equal to that of said outer lands of said adjoining tooth, said teeth of said first shape and said teeth of said second shape progressively increasing in height along said helicoidal line and from one end of the body to the other, any tooth of said first shape having a height greater than that of two teeth of said second shape immediately preceding and succeeding same, respectively, along said helicoidal line.

3,355,753
METHOD OF MAKING SHOES
Ralph Lagana, 157 Beacon St., Hartford, Conn. 06105
Filed Jan. 4, 1965, Ser. No. 423,109
8 Claims. (Cl. 12—142)

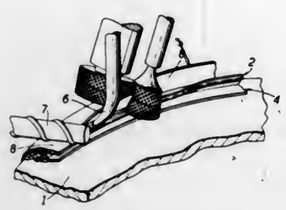


1. In a method for making a shoe conforming to the shape of an individual human foot, the steps of providing a plurality of moldable pieces adapted to set and harden, positioning each of the said pieces on a portion of the foot to form an impression of the associated portion of the foot therein, folding marginal portions of each of the said pieces outwardly from the foot to form abutting marginal portions on adjacent said pieces, permitting said pieces to set, removing said pieces from the foot, and assembling said pieces by fastening means applied at the said abutting marginal portions to collectively form a unitary structure having defined therein a cavity substantially complementing the shape of the foot.

3,355,754
MANUFACTURE OF FOOTWEAR AND PREFABRICATED RIBS FOR FOOTWEAR INSOLES
Leslie Charles William Odell, Wymington, England, assignor to Faire Brothers & Company Limited, Leicester, England
Filed July 20, 1964, Ser. No. 383,805
Claims priority, application Great Britain, July 29, 1963, 30,021/63; Dec. 10, 1963, 48,808/63
1 Claim. (Cl. 12—145)

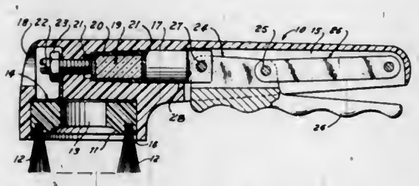
In a method of manufacturing footwear, the steps of: providing a length of ribbing having an upstanding rib portion and oppositely extending attachment flanges prefabricated from flexible strip material and bearing a dry

but heat activatable cement coating with said coating present on the bottom faces of said attachment flanges and on only one side of said rib portion and on the upper face of the adjacent flange; providing an insole; disposing said length of ribbing on said insole with said rib portion adjacent a side edge of said insole and having said coated side of said rib portion facing outwardly and with the attachment flange, which is uncoated on its upper face, extending inwardly from said rib portion and having the coated bottom faces of said flanges in contact with said insole; adhesively securing said ribbing to said insole;



providing an upper; cement-lasting the lasting margin of said upper to said ribbing by pulling said lasting margin of said upper over said ribbing, activating said cement coating on said rib portion and said upper flange face, and wiping the upper margin inwardly by wiper means with said rib portion being progressively and temporarily folded inwardly flat against the attachment flange having the uncoated upper face and with said lasting margin of said upper being pressed firmly against said coated side of the flattened rib portion and said coated flange whereby the margin of said upper is side cement-lasted to said attached ribbing and thereby to said insole.

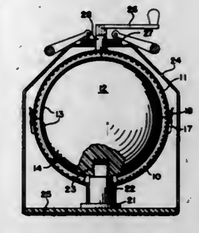
3,355,755
ELECTROSTATIC BRUSH
Jerry R. Brooks, 1716 Merrywood Way, Gainesville, Tex. 76240
Filed June 4, 1965, Ser. No. 461,301
4 Claims. (Cl. 15—1.5)



1. An electrostatically charged hand brush for the removal of lint, dust, dandruff, and other foreign particles from clothes, furniture, and other articles having incorporated therein a piezo-electric ceramic crystal and manually operable means for applying pressure to said crystal to thereby generate an electric current.

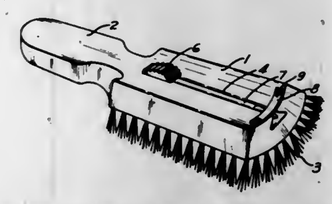
3,355,756
BOWLING BALL CLEANING APPARATUS
Ralph M. Casbarro, 332 W. Valley Forge Road, King of Prussia, Pa. 19406
Filed Mar. 18, 1966, Ser. No. 535,396
11 Claims. (Cl. 15—21)

1. A bowling ball cleaner comprising:
spindle means for concurrently supporting a bowling ball to be cleaned by a hole therein while securing said bowling ball against rotation thereon,
cleaning means dimensioned to engage the circumference of the bowling ball to be cleaned and having an aperture therein through which said spindle means may pass to allow said cleaning means to rotate about the bowling ball, and



said cleaning means including surface elements for cleaning and polishing said bowling ball when said cleaning means is rotated.

3,355,757
HAIRBRUSH WITH RETRACTABLE STYLE-LIFT
Roy J. O'Searo and Carmella O'Searo, both of 1218 George St. Extension, Sharon, Pa. 16146
Filed Oct. 15, 1965, Ser. No. 496,541
1 Claim. (Cl. 15—105)



A hairbrush comprising a body having a front and a back, bristles projecting from the front of the body, the back of the body being provided with a longitudinal slot open at one end of the body, a handle rigidly joined to the opposite end of the body, the slot having a flat bottom wall and side walls converging therefrom toward the back of the brush body, an elongated slide triangular in cross section slidably mounted in the slot in frictional engagement with the three walls thereof, the slide extending out of the open side of the slot and then laterally in opposite directions to form an actuating button outside of the slot overlying the back of the brush body, a cylindrical rod-like style-lift disposed in the slot and having an inner end joined to said slide and having an outer end located at said one end of the brush body when the slide is at the inner end of the slot, the style-lift engaging the three walls of the slot, said slide being movable by its button toward the open end of the slot to project the style-lift from said body, a separate stop strip extending across said slot adjacent its open end, and means fastening the ends of the stop strip to the back of the brush to form a stop in the path of said button for limiting movement of the slide toward the open end of the slot.

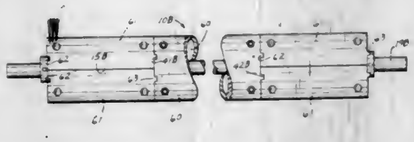
3,355,758
ROTARY BRUSH CONSTRUCTION
Gaylord J. Clark, P.O. Box 216, Coloma, Mich. 49038
Filed Jan. 14, 1966, Ser. No. 520,786
10 Claims. (Cl. 15—181)

1. In a rotary brush construction mountable upon a shaft means, the combination comprising:
a plurality of substantially identical cylindrical brush

sections coaxially mounted on said shaft means, opposite ends of each section being defined by annular end faces with each end face being positioned within a single plane substantially transverse to the longitudinal axis of said shaft means, the end faces of adjacent sections being closely adjacent one another to form a substantially continuous rotary brush;

each brush section comprising a pair of substantially semicylindrical shells and each shell having a pair of substantially semicircular and integral end walls near the opposite axial ends thereof, each end wall having in the diametrical edge thereof a substantially concentric recess adapted for snug reception of said shaft means;

a plurality of elongated and flexible elements secured to and extendable radially away from closely adjacent positions on the peripheral surfaces of said shells, said positions being located substantially uniformly over the full extent of said peripheral surfaces;

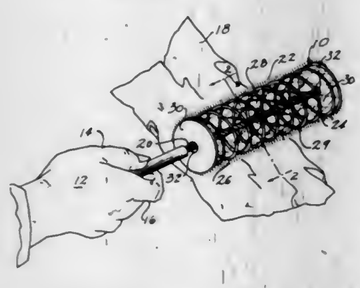


means disposed within the cylinder defined by said peripheral surfaces rigidly holding each pair of shells together to form a section;

collar means detachably fixed to said shaft means closely adjacent the remote end walls of those sections defining the opposite ends of the brush construction; and

coupling means, including axially extending elements, interconnecting the end walls of adjacent sections and the end walls of the outermost sections to said collar means for preventing relative rotation therebetween, each section being capable of removal from a brush construction without removing any other section thereof.

3,355,759
BRUSH
Louise M. Sloan, Rte. 2, Gwinett County, near Stone Mountain, Ga. 30083
Filed June 1, 1966, Ser. No. 554,424
2 Claims. (Cl. 15—206)



1. In a brush for engaging the surface of a fabric, such as a knitted sweater fabric made from yarns which separate on the surface and form irregular balls or pills, and to have limited engagement with the surface thereof:

(a) a brush filament retaining means,

(b) a brush comprising a plurality of brush filaments extending outwardly from said brush filament retaining means,

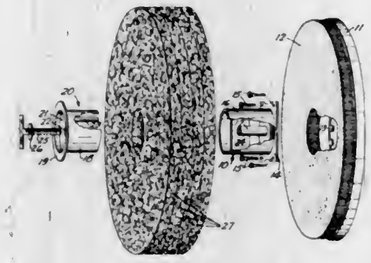
(c) means limiting the exposed end of the brush filaments and the penetration into the fabric,

(d) a handle on said brush,

(e) said limiting means being a foraminous surface having said brush retaining means mounted therewith and the brush filaments protruding from each opening therein for a limited distance, wherein

(f) said foraminous surface is a coil and said brush filament retaining means is supported inside thereof.

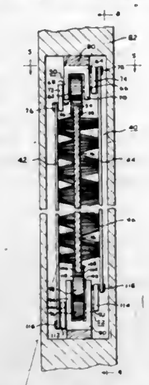
3,355,760
SURFACE FINISHING
Donald L. Thomsen and John R. Anderson, White Bear Lake, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed Feb. 17, 1965, Ser. No. 433,330
6 Claims. (Cl. 15—246)



1. An adapter for operatively attaching a plurality of annular fibrous pads of given inner diameter and outer diameter to a smaller diameter driving element having means for operative connection to a floor maintenance machine, whereby said machine becomes capable of cleaning baseboards with the peripheral portions of said pads, comprising in combination: a first member having a base adapted to be mounted in the central portion of the driving element on the lower face thereof and a body portion extending perpendicularly from said base, a second member having a pad-holding flange and a body portion extending perpendicularly from said flange, the diameter of said body portions being substantially the same as the inner diameter of said pads, means connecting said first and second members for holding said body portions in telescoped relation with a desired spacing between said flange and said base, and cooperative means on said members for limiting rotation of said members with respect to each other.

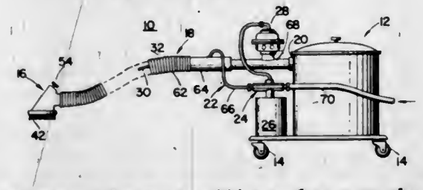
3,355,761
WINDOW CONSTRUCTION
Charles C. Mayhew, P.O. Box 184, Griffith, Ind. 46319
Filed Oct. 21, 1965, Ser. No. 499,882
7 Claims. (Cl. 15—250.1)

1. A mechanism for cleaning windows of the type having one or more sliding panes mounted in a frame, said mechanism comprising racks secured to opposite edges of the pane, a pinion engaging each of said racks to be rotated as said pane is slid from one position to another, a second pinion engaging one of said first mentioned pinions, a shaft connected to said other first mentioned pinion, a shaft connected to said second mentioned pinion, brackets supporting said pinions in fixed position in the frame, arms connected to one end of each of said shafts on the same side of said pane for revolving in the same direction, a member interconnecting the outer ends of said arms, and scrubbing means mounted on said member



and adapted to engage the surface of the pane for circular movement thereon when the pane is slid in the frame.

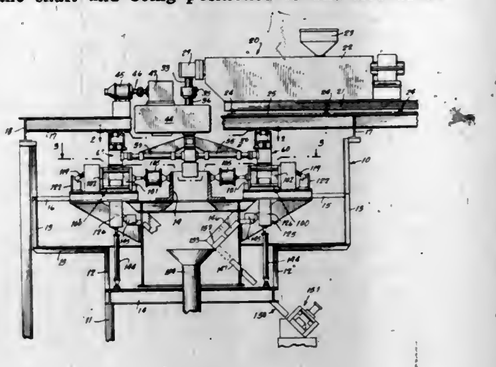
3,355,762
WET SCRUBBING AND VACUUM CLEANING APPARATUS
Matthew S. Cayell, 3521 Saginaw Drive, and Stan H. Fishman, 3744 S. Washington Road, both of Fort Wayne, Ind. 46804
Filed Oct. 14, 1965, Ser. No. 495,795
12 Claims. (Cl. 15—321)



1. Apparatus for wet scrubbing and vacuum cleaning a surface comprising: cleaning head means for scrubbing a surface and including liquid passage means for applying a cleaning liquid to said surface and vacuum passage means for removing said liquid from said surface; vacuum conduit means having one end coupled to said vacuum passage means and its other end adapted to be coupled to a vacuum source, said vacuum conduit means having an aperture therein intermediate said ends; first selectively actuable valve means having first and second positions for respectively opening and closing said aperture; liquid conduit means having one end coupled to said liquid passage means and its other end adapted to be coupled to a source of liquid under pressure; second selectively actuable valve means operatively connected to said liquid conduit means for admitting said liquid to said liquid passage means; and means coupling said liquid conduit means and said first valve means for actuating the same to its first position in response to liquid flow in said liquid conduit means thereby to spoil the vacuum in said vacuum passage means while liquid is being applied to said surface.

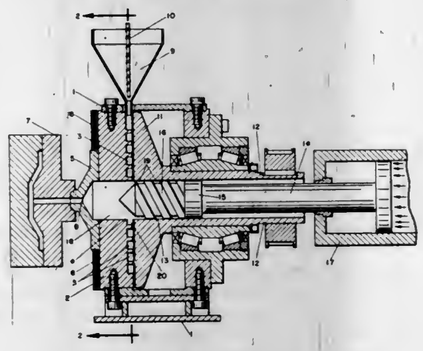
3,355,763
ROTARY PARISON HEAD BLOW MOLDING MACHINE
William H. Willert, North Plainfield, N.J., assignor to Frank W. Egan & Co., Somerville, N.J., a corporation of New Jersey
Filed May 17, 1965, Ser. No. 456,327
16 Claims. (Cl. 18—5)

1. In a machine for manufacturing blown hollow articles, support means, a source of semi-fluid plastic material mounted on the support means, a parison head including an extrusion nozzle adapted to extrude the plastic material in tubular form, flow means for transmitting a stream of the plastic material from the source to the nozzle and comprising a hollow rotary shaft communicating with the source of plastic material and the nozzle, said parison head being carried by and rotatable with the shaft and being positioned to one side of the



axis of rotation of the shaft, a plurality of mold assemblies secured to the support means and spaced along the circumference of a circle having a center that is coincident with the axis of rotation of the shaft, and drive means for imparting rotation to the shaft and effecting sequential alignment of the nozzle with each mold assembly in the course of each complete revolution of the shaft.

3,355,764
INJECTION MOLDING APPARATUS
Richard L. Moyer, Windy Hills, Del., assignor to Hercules Incorporated, a corporation of Delaware
Filed July 8, 1965, Ser. No. 470,515
4 Claims. (Cl. 18—12)



1. A molding machine comprising a frame,

a stationary plate mounted on said frame and having an axial bore and an extruder face substantially normal to the axis thereof,

a sprue orifice collinearly of and in communication with the axial bore of said stationary plate,

a rotatable plate having having an elongated shaft and an extruder face substantially normal to the axis thereof, said elongated shaft extending axially from said rotatable plate in the direction opposite from said extruder face and having an axial bore the diameter of the leading end of which is substantially equal to the axial bore of said stationary plate,

means for mounting said rotatable plate on said frame collinearly of said stationary plate for rotation and with the extruder face thereof in close proximity to the extruder faces of said stationary plate whereby relative rotation of said extruder faces will force molten polymer into the axial bore of said rotatable plate,

an injection ram having a leading end fitting the axial bores of said stationary and rotatable plates with a close tolerancy, said injection ram being mounted in the axial bore of said rotatable plate for movement endwise thereof to advance the leading end of said ram into and to retract the same from the axial bore of said stationary plate and thereby to force molten polymer from said bore out said sprue orifice and to provide for the accumulation in said bore of molten polymer delivered thereto by said extruder faces,

means for rotating said rotatable plate,

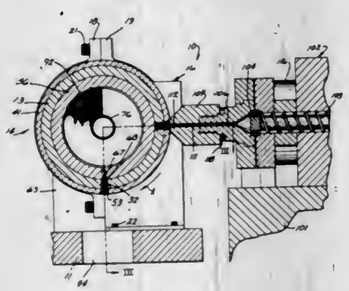
means for imparting endwise movement to said ram, and means at the leading end of said ram for receiving molten polymer from said polymer outlet when said ram is advanced into the axial bore of said stationary plate and for discharging the molten polymer when said ram is retracted into the axial bore of said rotatable plate.

3,355,765

PELLETIZING MACHINE

James W. Hendry, Scottsburg, Ind., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois

Filed Sept. 2, 1965, Ser. No. 484,689
9 Claims. (Cl. 18—12)



1. In a pelletizing machine for making pellets from plasticized material, the combination comprising:

an elongated cylindrical member having a multiplicity of axially and circumferentially spaced, pellet-forming openings therein, said openings being arranged in a zone which extends for a substantial portion of the length of said cylindrical member, said cylindrical member having wall means defining a stationary bottom wall for each opening and having passage means communicating with each opening adjacent the bottom wall thereof, said passage means including portions adjacent each opening which portions are of reduced size so that the plasticized material cannot enter thereinto;

means for rotatably supporting said cylindrical member;

elongated manifold means disposed closely adjacent said cylindrical member and having an internal chamber extending at least the entire length of said zone and communicating with the openings in a portion of limited circumferential extent of said cylindrical member;

extrusion means communicating with said internal chamber for forcing plasticized material through said internal chamber and into said openings in said cylindrical member;

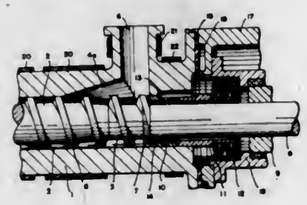
fluid supply means circumferentially displaced from said manifold means and communicating with said cylindrical member for supplying ejection fluid under pressure to said passage means and thence to said openings to eject the pellets from said openings, said portions of said passage means being of sufficient size to permit the flow of ejection fluid therethrough into said openings.

3,355,766

HOT MELT SCREW EXTRUDER

Karl Causemann, Wermelskirchen, Germany, assignor to Barmer Maschinenfabrik Aktiengesellschaft, Wuppertal-Oberbarmen, Germany

Filed Nov. 5, 1965, Ser. No. 506,491
Claims priority, application Germany, Nov. 12, 1964, B 79,300
9 Claims. (Cl. 18—12)



1. In a hot melt screw extruder having a stationary housing with an elongated barrel longitudinally bored to receive a screw shaft connected to a drive shaft, said screw being adapted to convey a molten thermoplastic material through said barrel, and sealing means in the longitudinal bore of said housing to prevent the axial flow of said thermoplastic melt backwardly along said drive shaft, the improvement comprising mechanical sealing means at the point of transition between said screw shaft and said drive shaft including a cylindrical collar on said screw shaft having an outer diameter larger than the diameter of the screw shaft and smaller than the diameter of the screw thread, a cylindrical bearing sleeve positioned around said drive shaft adjacent said collar so as to close off an annular space between said housing and said drive shaft, said sleeve being slidable longitudinally along the axis of said drive shaft and secured against rotation to the housing, pressure means to urge the sleeve in contact against the opposing annular face of said collar, at least one of the contacting faces of said sleeve and said collar being constructed of a wear-resistant material, and a screw thread extension running continuously over the circumference of said collar up to the plane of the annular face of said collar which contacts said sleeve.

3,355,767

GRANULATING APPARATUS FOR MELT EXTRUDED POLYMERS

Walter Niemeyer, Remscheid, Germany, assignor to Barmer Maschinenfabrik Aktiengesellschaft, Wuppertal-Oberbarmen, Germany

Filed Nov. 23, 1965, Ser. No. 509,355
Claims priority, application Germany, Nov. 27, 1964, B 59,858
6 Claims. (Cl. 18—12)

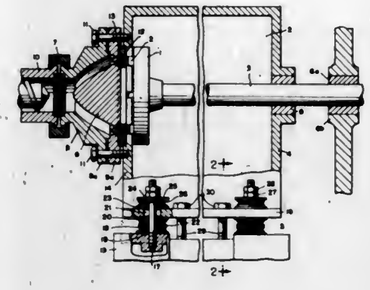
1. An improved apparatus for granulating a melt extruded synthetic thermoplastic polymer comprising:

a granulating chamber having oppositely disposed bearing walls;

a carrying frame adapted to hold said chamber in a predetermined position;

melt extrusion means including a perforated die plate for injecting at least one polymer strand into said chamber, said extrusion means being adapted to receive one of said oppositely disposed bearing walls of said chamber removably attached in a fixed position thereto;

rotary cutting means mounted on said chamber and including a drive shaft rotatably journalled in the other of said bearing walls of said chamber; and



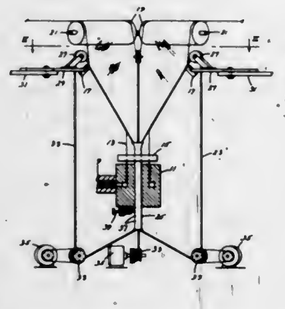
elastic means interposed between said granulating chamber and said carrying frame, said elastic means including a plurality of vertically adjustable elastic supporting members arranged to counterbalance the bearing forces being placed on said granulating chamber and to maintain the plane of said rotary cutter means parallel to the adjacent face of said die plate.

3,355,768

APPARATUS FOR MAKING THERMOPLASTIC FILMS

Daniel J. Ryan, Chester, Pa., assignor to FMC Corporation, Philadelphia, Pa., a corporation of Delaware

Filed June 5, 1964, Ser. No. 372,909
6 Claims. (Cl. 18—14)



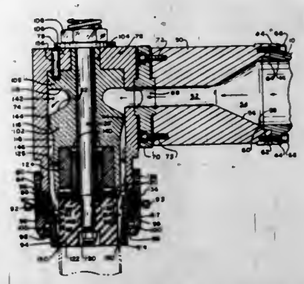
1. Apparatus for making oriented films from thermoplastic polymeric materials including an annular die, means for continuously extruding heated thermoplastic material from the annular die in the form of a tubing, means spaced from said die for slitting the extruded tubing into at least two films, means engaging with the films for advancing the same away from said slitting means, at least two movable endless cables, each of said cables having one reach extending through said annular die for engaging with the internal surface of the extruded tubing and means for directing said reaches of the endless cables along diverging paths to thereby stretch the tubing in a transverse direction concomitantly with its advancement.

3,355,769

APPARATUS FOR FORMING HOLLOW TUBING

Clement V. Fogelberg, Boulder, Colo., assignor to Ball Brothers Research Corporation, Boulder, Colo., a corporation of Colorado

Filed Dec. 4, 1964, Ser. No. 415,998
8 Claims. (Cl. 18—14)



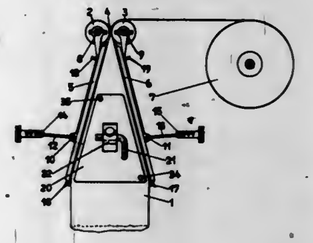
1. Apparatus for forming hollow tubing comprising a hollow body portion, a forming member extending longitudinally within and radially spaced from said hollow body portion defining a substantially toroidal cavity, an inlet passage tangentially connected to said chamber, an outlet passage opening from said mixing chamber parallel to the axis of said toroid, and an annular extrusion die at the outlet portion of said outlet passage.

3,355,770

DEVICE FOR THE WRINKLE-FREE FLATTENING AND COOLING OF A SEAMLESS THERMOPLASTIC FOIL TUBE

Guenter Augustin, Eanepetal, Ruggeberg, Germany, assignor to Barmer Maschinenfabrik Aktiengesellschaft

Filed Feb. 10, 1966, Ser. No. 526,493
Claims priority, application Germany, Feb. 28, 1965, B 80,770
6 Claims. (Cl. 18—14)



1. An extrusion apparatus for forming flattened thermoplastic foil tubing, comprising:

extrusion means including an extrusion head for forming unflattened thermoplastic foil tubing;

inflating means for inflating the newly extruded tubing with an inflating fluid under superambient pressure;

a pair of closely spaced squeeze rolls mounted for rotation about parallel axes spaced from said extrusion head,

said tubing passing between said squeeze rolls, and said squeeze rolls forcing the opposite walls of said tubing into contact and thereby substantially impeding the escape of said inflating fluid from within said newly extruded tubing;

a pair of main guiding and cooling plates having closely spaced edges adjacent said rolls,

said tubing passing between said closely spaced edges just prior to passing between said rolls,

and contacting said main plates over cooling areas extending substantially to the maximum diameter of the unflattened tubing;

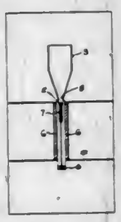
cooling means for cooling said main plates by circulation of a cooling fluid in heat exchanging relationship therewith;

auxiliary cooling plates contacting substantial areas of said tubing,

said main and auxiliary cooling plates being of such configuration that said tubing is cumulatively subjected to substantially uniform cooling throughout its circumference during its passage from said extruding head to said rolls;

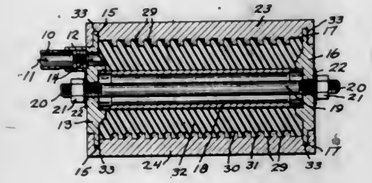
and cooling means for cooling said auxiliary cooling plates by circulation of a cooling fluid in heat exchanging relationship therewith.

3,355,771
INJECTION MOLDING APPARATUS FOR MANUFACTURING ZIPPERS
Herbert Alberts, Rua Capitao Luiz Ramos 312, Sao Paulo, Brazil
Filed July 26, 1965, Ser. No. 474,566
Claims priority, application Brazil, July 27, 1964, 7,129/64
10 Claims. (Cl. 18—30)



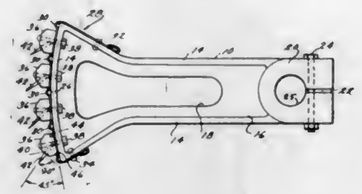
1. A molding apparatus for making zippers comprising two steel band means, each band means being mountingly supported upon at least two support rollers, said support rollers having axes parallel to each other and to the faces of the band means, a portion of each of the faces of the band means being in mutual contact, the contacting faces of the steel band means having textile band support recess means and zipper hook element mold recess means.

3,355,772
MOULD FOR FOAMING RUBBER ROLLERS
Frithjof N. Kolberg, 2613 W. 29th St., Sioux Falls, S. Dak. 57105
Filed Oct. 21, 1965, Ser. No. 499,215
1 Claim. (Cl. 18—36)



A mould for forming rubber rollers comprising end plates, a centrally positioned core member normally secured to said end plates, a pair of opposed arcuate sections bolted to said end plates, means for injecting semi-cured rubber into the space between said core member and said sections for providing a homogeneous rubber roller adherent to said core member, said sections having arcuate end grooves, said end plates including peripheral flange portions received in said end grooves, one of said end plates having an opening for receiving said injected semi-cured rubber.

3,355,773
OSCILLATABLE FIBER RAKE
Kenneth G. Lytton, Gastonia, and Cecil S. Wise, Dallas, N.C., assignors to Fiber Controls Corporation, Gastonia, N.C., a corporation of North Carolina
Filed July 8, 1964, Ser. No. 381,015
5 Claims. (Cl. 19—105)



1. A rake for use as an oscillating fiber comb or doffer, comprising:

an aluminum sheet curved substantially in an arc of a circle and having a plurality of spaced strengthening humps formed in the sheet in the lengthwise direction thereof,

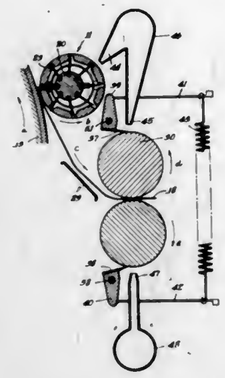
a pair of arms respectively secured to opposite ends of said sheet for effecting an oscillatable mounting therefor, and

a plurality of elongated spike holders each having a base surface and angularly spaced outwardly therefrom a given surface from the length of which a multiplicity of spikes protrude substantially perpendicularly,

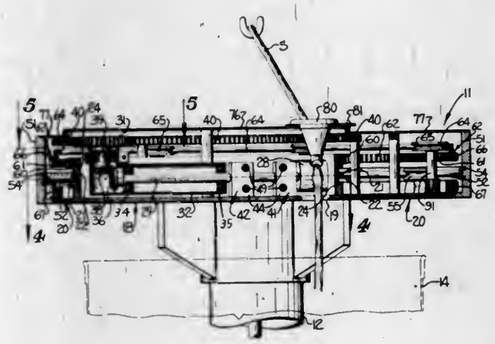
said spike holders being secured to said curved aluminum sheet in alternation with said strengthening humps with said base surfaces contiguous to said sheet so that said spikes extend at an angle acute relative to their respective tangent of said arc.

3,355,774
DOFFING DEVICE USED FOR TEXTILE MACHINERY
Yukimasa Miyagi, 160–4 Donoura, Gunge, Mikage-cho, Higashinada-ku, Kobe, Japan
Filed June 11, 1965, Ser. No. 463,193
Claims priority, application Japan, Mar. 28, 1963, 38/15,835
3 Claims. (Cl. 19—106)

1. A textile machine comprising: a rotatable cylinder adapted to carry a plurality of fibres to be doffed on its surface; a rotatable drum aligned with its axis substantially parallel to the axis of said cylinder, said drum having a plurality of transverse, arcuately spaced, elongate slits; a doffing member aligned with each of said slits; operating means connected to said doffing members for periodically extending said members through said slits and toward said cylinder whereby to doff said fibres and for periodically retracting said members generally inwardly of said drum to clean waste material from said members, including a rotatably driven shaft residing eccentrically within said drum; slidably interfitting means, including cooperating guide bars and receiving grooves, coupling said shaft and said drum whereby to drive said drum from said shaft; upper and lower, closely disposed, pressure rollers spaced from said cylinder and said drum to receive doffed fibres from said members; first and second scraper knives associated respectively with said upper and lower pressure rollers; mounting means for pivoting said scraper knives into cleanable contact with substantially the entire length of the associated pressure rollers, including a mounting arrangement for situating said first scraper knife substantially in the space between said upper pressure roller and said drum; and suction-type waste material removal means, including first and second accumulator members associated respectively with said first and second scraper knives, said second accumulator member having suction inlet means opening along the length of said second scraper knife and said first accumulator member having suction inlet means opening along the length of said first knife and along the length of said drum at the retracted position of said doffing members, whereby waste material is removed from the surface of said drum adjacent said slits and from said pressure rollers at said scraper knives.



3,355,775
PLANETARY COILER HEAD
Joe R. Whitehurst, Bessemer City, N.C., assignor to Ideal Industries, Inc., Bessemer City, N.C., a corporation of North Carolina
Filed July 21, 1966, Ser. No. 566,870
12 Claims. (Cl. 19—159)



1. A planetary coiler head adapted to package textile sliver in a stationary receptacle positioned therebeneath by depositing the sliver in a plurality of successive convolutions compacted into the receptacle and comprising:

a first member having an opening therein for the passage of sliver therethrough and a substantially planar lower surface,

means carried by said first member for advancing sliver through said sliver passage,

a second member encircling said first member and having a substantially planar lower surface,

first support means mounting said first member on said second member for rotation relative thereto about a first predetermined axis and with the lower surfaces thereof substantially aligned and for substantially restraining vertical movement therebetween so as to facilitate compacting of sliver advanced through said sliver passage opening,

said first member upon rotation thereof forming sliver advanced by said sliver advancing means into successive coils,

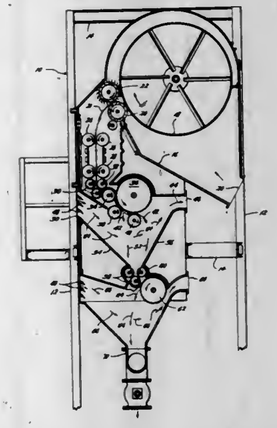
a third member encircling said second member,

second support means mounting said second member on said third member for rotation relative thereto about a second predetermined axis parallel to and spaced from said first axis and for substantially restraining vertical movement between said second and third members so as to facilitate compacting of sliver advanced through said sliver passage opening,

said second member upon rotation thereof precessing the location of the sliver coils formed by said first member, and

means for driving said first and second members in coordinated rotation about said first and second axes respectively to translate said sliver passage opening along a predetermined convoluted path of travel.

3,355,776
LINTER CLEANER
John A. Reddick, Houston, Tex., assignor to Anderson, Clayton & Co., Houston, Tex., a corporation of Delaware
Filed Dec. 16, 1965, Ser. No. 514,210
4 Claims. (Cl. 19—202)



1. An improved method of cleaning lint cotton to remove trash particles contained therein comprising the steps of:

forming the lint cotton fibers into a thin bat,

progressively presenting the bat endwise between the nip formed by a plurality of saw cylinders in adjacent space relation and rotating in the same peripheral direction whereby the fibers of the bat are finely dispersed,

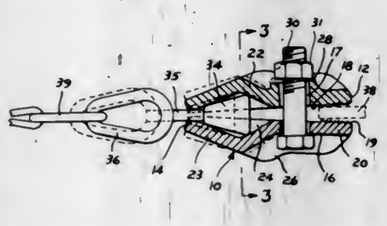
passing a stream of air through the fiber dispersion whereby the lint fibers are pneumatically conveyed away from the trash particles,

passing the trash particles gravitationally between the nip formed by a further plurality of saw cylinders

in spaced relation whereby the trash particles and remnants of lint fibers not initially conveyed therefrom are again finely dispersed, and

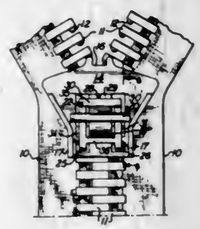
passing a stream of air through the trash particle dispersion whereby the remnant lint fibers are pneumatically conveyed away from the trash particles.

3,355,777
TENSION ACTUATED CLAMP
William Mojelski, 965 Lilian, Port Coquitlam, New Westminster, British Columbia, Canada
Filed Mar. 30, 1966, Ser. No. 538,685
4 Claims. (Cl. 24—81)



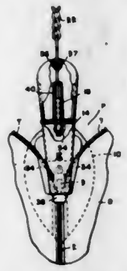
1. A clamp comprising a pair of plates, means securing the pair of plates in face-to-face relation, said securing means being adjustable to vary the spacing between the pair of plates and to provide at least one of said pair of plates with limited universal movement, said pair of plates having jaws at one end and converging levers at the opposite end, a wedge block between the converging levers and means for securing the wedge block to a pulling member.

3,355,778
LOCKING SLIDER FOR SLIDE FASTENERS
Charles W. Elsenheimer, Meriden, Conn., assignor to Prentice Corporation, Kensington, Conn., a corporation of Connecticut
Filed Dec. 12, 1966, Ser. No. 600,810
10 Claims. (Cl. 24—205.14)



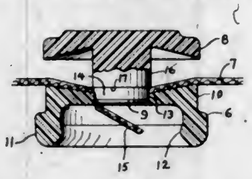
1. A locking slider for a slide fastener comprising a body having front and rear plates, the front plate of which is provided with an opening at its lower end, a lug provided on the front plate of said body, a rocker member seated on said front plate and having an opening through which said lug extends, the portions of said front plate underlying said rocker member being configured to enable said rocker member to rock longitudinally on said front plate, a locking tooth on the lower end of said rocker member and extending inwardly through said front plate opening to enable it to come into locking engagement with the interlocking elements of the slide fastener, a pull tab pivoted on said lug and permanently connecting said rocker member to the slider, said pull tab having a portion bearing against said rocker member to maintain the latter positioned on said underlying plate portions so that said locking tooth is withdrawn from locking position when the pull tab is used to operate the slider, such bearing relation of said pull tab portion being discontinued and said pull tab pressing the lower end of said rocker member to cause said locking tooth to move inwardly to locking position when said pull tab is released in its down position.

3,355,779
DEVICE FOR CLOSING ZIPPERS
Tim Hurst, 1322 W. Bristol St., Philadelphia, Pa. 19140
Filed Mar. 3, 1966, Ser. No. 531,591
5 Claims. (Cl. 24—205.15)



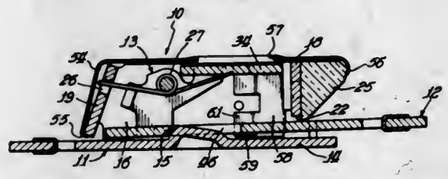
1. In a device for closing zippers, the combination comprising a sheet material base member having a broad, flat main body, and a pair of flanges rising respectively from opposite sides thereof, a sheet material top member having a main body, a pair of flanges depending respectively from opposite sides thereof terminating in coplaner laterally outward extending flange parts, and a flange depending from the fore end thereof, said members being disposed in mutually overlying relation with the opposite side flanges of each member respectively disposed adjacent to the opposite side flanges of the other member, the opposite side flanges of the base member being disposed a substantial distance rearwardly from the flange depending from the fore end of the top member, a pin extending through the opposite side flanges of said members and pivotally interconnecting said members, the flanges depending from the fore end of said top member being at a substantial distance from the fore end of said base member and being engaged with the main body of said base member, the flanges at the opposite sides of said top member being disposed in superimposed spaced relation to the main body of said base member, and spring means on said pin yieldably urging the flange depending from the fore end of said top member into engagement with the underlying main body of said base member.

3,355,780
SNAP FASTENER ASSEMBLIES
Domenic J. Daddona, Jr., Waterbury, Conn., assignor to Scovill Manufacturing Company, Waterbury, Conn., a corporation of Connecticut
Filed Jan. 7, 1966, Ser. No. 519,358
3 Claims. (Cl. 24—208)



1. A fastener element assembly comprising a fabric support, a fastener member of thermoplastic material having a base, adapted to bear against one side of said fabric support, an attaching member of thermoplastic material adapted to bear against the other side of said support, one of said members having a centrally arranged hole therethrough, and a solid post integral with and projecting from the central portion of the other of said members, said post having a leading end portion with a diameter only slightly larger than the diameter of said hole whereby it will at least partially shear out a piece from the interposed fabric support as the post is forced into said hole, the remaining portion of said post having a slightly larger diameter than said leading end portion and shaped to provide a sharply cornered step between said portions which acts to complete the shearing of said piece of supporting material as said post is forced further into said hole.

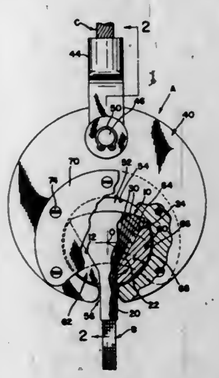
3,355,781
SAFETY BELT BUCKLE
Russell E. Silberschlag, Glen Ellyn, Ill., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed Sept. 20, 1965, Ser. No. 488,544
2 Claims. (Cl. 24—230)



1. A belt connector assembly comprising: a buckle body having a base and a frame extending outwardly of said base, said frame including a guard surface extending transversely of said body in spaced parallel relation to said base defining a wide thin slot near one end of said base, said base including a transverse abutment spaced longitudinally from one end thereof; locking means pivotally connected to said frame including a keeper spaced longitudinally from the said one end of said base, said keeper having a stepped configuration defining a foot adapted to rest on said base and a locking surface spaced above and parallel to said base, said keeper foot and locking surface being arcuately movable longitudinally and outwardly of said base; a substantially wide thin tongue having one end thereof proportioned for insertion into said buckle body through said wide thin slot to a position beyond said keeper, said tongue including a wide thin latch face interlockingly engageable with and disengageable from said transverse abutment of said buckle body responsive to combined tilting and sliding movement of said tongue along said base, said tongue including a relieved portion extending longitudinally from said one end thereof terminating in at least one shoulder, said shoulder adapted to extend beneath said keeper locking surface, and said relieved portion adapted to extend alongside said keeper foot when said latch face and transverse abutment are engaged with each other; and means for connecting one belt end to said buckle body and another belt end and said other end of said tongue.

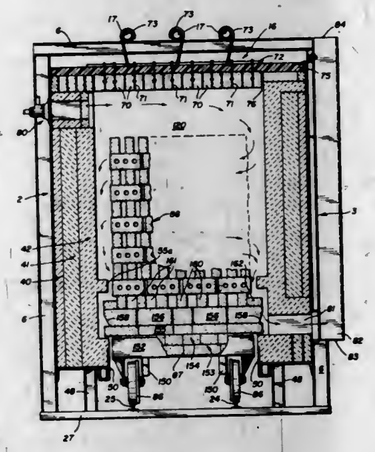
3,355,782
COUPLING FOR A FLAT WOVEN BAND OR TAPE
Charles S. Thompson, Vincentown, N.J., assignor to E. W. Bliss Company, Canton, Ohio, a corporation of Delaware
Filed Aug. 18, 1966, Ser. No. 573,276
15 Claims. (Cl. 24—265)

1. In a coupling for a flat woven band having a lug on the end thereof, said lug having two opposed bearing faces, said faces diverging from each other so that said lug has a smaller inner end and a larger outer end, said coupling including a body with means for connecting a support element thereon and there being a lug receiving cavity in said body, said cavity terminating in an opening through which said band extends, the improvement comprising: at least one floating insert in said cavity; said insert having



a first surface generally matching one of said bearing faces and a second surface, and said cavity having a cam surface, said cam surface coacting with said second surface of said insert to force said first surface of said insert against said outer end of aid lug when tension is applied to said band.

3,355,783
SHUTTLE KILN
Fred W. Miller, Albuquerque, N. Mex., and Frederick E. Blair, Denver, Colo., assignors to M.K.B. Industries, Inc., Denver, Colo., a corporation of Colorado
Filed July 30, 1964, Ser. No. 386,137
18 Claims. (Cl. 25—142)



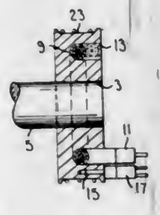
1. A shuttle kiln comprising a plurality of separable modular sections joined in end-abutting and open-ended relation forming an elongated, one-car width kiln, each modular section including refractory-lined side walls and a top wall, said plurality of sections being of corresponding size and shape to accommodate brick cars positioned in said kiln, and the side walls of the kiln being supported in a common plane above floor level thereby providing a

space thereunder for circulation of atmospheric air as a coolant between the coolant circulating space and upper portions of said cars, surfaces of the side walls and brick cars positioned in said kiln cooperating to form a gas-pressure holding seal, a plurality of burners mounted in a top portion of each modular section side wall with the burners in one side wall being in staggered relation to the burners in the opposite wall of the section and arranged for directing flame and products of combustion toward the opposite side wall and above the bricks loaded on the brick cars in alternate clockwise and counterclockwise circulation paths lengthwise of the kiln, an outlet for each burner positioned in a lower portion of the side wall opposite each said burner to form a top to bottom hot gas path, each outlet connected to a flue, and a fuel supply and temperature controlling means for each modular section for establishing a heating and cooling cycle therein independent of the other said modular sections.

3,355,784
HEATER FOR TEXTILE MACHINERY

Robert S. Byers, Chamblee, Ga., and Francis Finnegan, Plainville, Mass., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Jan. 5, 1966, Ser. No. 518,840
2 Claims. (Cl. 28—62)



1. A yarn heater comprising a spool having an exterior peripheral surface and a first horseshoe-shaped recess extending therein from one end, said recess lying adjacent said peripheral surface, a horseshoe-shaped heater in said recess, a potting compound retaining the heater in the recess, said heater having terminals extending axially from the recess, a second recess in the spool adjacent said exterior surface, a thermistor in said second recess having terminals extending axially from the spool, said exterior peripheral surface of said spool being composed of a material selected from the group consisting of graphite, tungsten and molybdenum, and a film of vapor-deposited coating of silicon carbide on said peripheral surface.

3,355,785
STRETCH FABRIC AND METHOD OF MAKING SAME

Richard P. Barber, Mooresville, N.C., assignor to Burlington Industries, Inc., Greensboro, N.C., a corporation of Delaware

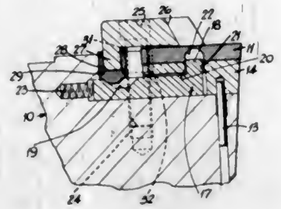
No Drawing. Filed June 9, 1965, Ser. No. 462,750
11 Claims. (Cl. 28—76)

1. A process for preparing a cellulosic stretch fabric which comprises (1) providing a plied yarn made by plying together at least two ends of cellulosic yarn having an initial twist therein which is in the same direction as the ply twist, said ply twist being accomplished without significant stretching of the yarn and the degree of twist being less than that which will cause the yarn to snarl or kink; (2) making a fabric with this plied yarn; (3) washing the resulting fabric so that the fabric shrinks; and (4) then stabilizing and finishing the fabric by treating with a material selected from thermoplastic and thermosetting resins and cross-linking or reactive agents.

3,355,786
TOOLHOLDERS FOR USE WITH DETACHABLE CUTTING INSERTS

James Hargreaves, Finham, Coventry, England, assignor to Wickman Wimet Limited, Coventry, England

Filed June 21, 1965, Ser. No. 465,259
Claims priority, application Great Britain, June 30, 1964, 26,931/64
5 Claims. (Cl. 29—96)

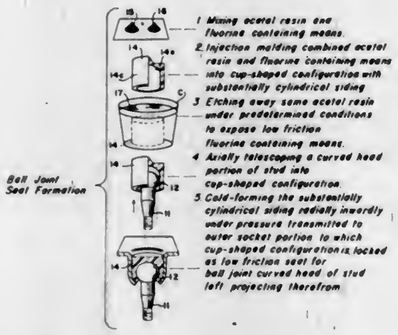


1. A tool holder comprising in combination a shank having at one end thereof a recess adapted to receive a cutting insert, the recess defining a shoulder with the remainder of the shank, a first clamping member engageable with an insert positioned in said recess and movable transversely relative to the shank to clamp the insert against the base of said recess, a screw extending through the first clamping member into screw threaded engagement with shank so that rotation of the screw moves the first clamping member transversely relative to the shank, a second clamping member engageable with the insert and movable longitudinally relative to the shank to clamp the insert against said shoulder, and co-operating cam surfaces on the first and second clamping members, movement of the first clamping member transversely relative to the shank to clamp the insert against the base of said recess acting through said cam surfaces to move the second clamping member longitudinally relative to the shank to clamp the insert against said shoulder.

3,355,787
METHOD FOR MAKING A BALL JOINT

Leo S. Sullivan, Jr., Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Nov. 30, 1964, Ser. No. 414,662
10 Claims. (Cl. 29—149.5)

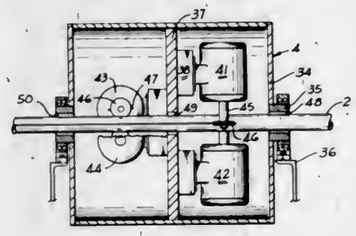


1. Ball joint assembly procedure, comprising, steps of extruding, chopping and mixing granulated acetal resin and fluorine-containing means, injection molding the combined acetal resin and fluorine-containing means into a cup-shaped configuration with substantially cylindrical siding of substantially uniform thickness, etching away the acetal resin under predetermined conditions of temperature, time and chemical action including rinse and drying whereby there is an exposing of fluorine-containing means, axially telescoping a curved head portion of a stud into the cup-shaped configuration, assembling a deformable metal socket having substantially cylindrical sides over the telescoped assembly and cold forming the substantially cylindrical siding radially inwardly under pressure transmitted to the outer socket portion, thereby pre-loading and deforming radially inwardly the substantially cylindrical siding of substantially uniform thickness to complement the curvature of the head portion of the stud.

3,355,788
A METHOD OF SAWING SLITS IN FINNED TUBING

Addison Y. Gunter and Thomas E. Owen, Houston, Tex., assignors to Hudson Engineering Corporation, Houston, Tex.

Filed Oct. 20, 1964, Ser. No. 405,143
12 Claims. (Cl. 29—157.3)



1. A process for slitting finned tubing, which comprises the steps of passing finned tubing in an axial direction through an assembly of rotary saws, said tubing having a series of extruded aluminum fins 5/8-inch wide and 0.016 inch thick thereon supported only by the tubing; and therein sawing slits in each fin by controlling the speed of movement of the saws relative to speed of movement of the tubing to provide an average saw tooth cut per impact in the range from 0.02 inch to 0.003 inch according to the following equation:

$$M=\frac{A\times B\times C}{X\times Y\times Z}$$

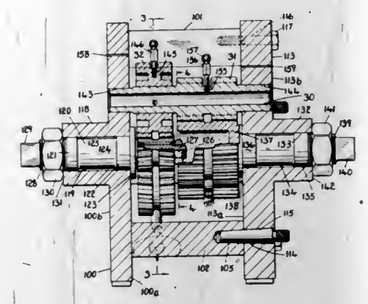
wherein M is the saw tooth cut per impact in inches, A is the linear speed of the finned tubing in inches per minute, B is the number of fins per inch of tubing, C is the total depth in inches of slits to be cut, X is the revolutions per minute of a rotary saw, Y is the number of saw teeth on the saw blade and Z is the number of fins contacted per tooth in a single revolution of the saw.

3,355,789
MULTI-STAGE PARALLEL-AXIS GEAR TRANSMISSION AND MANUFACTURING METHOD THEREFOR

Edwin Clifford Tetsull, Oakville, Ontario, Canada, assignor to Hawker Siddeley Canada Ltd., Toronto, Ontario, Canada, a company of Canada

Filed Oct. 13, 1965, Ser. No. 495,442
9 Claims. (Cl. 29—159.2)

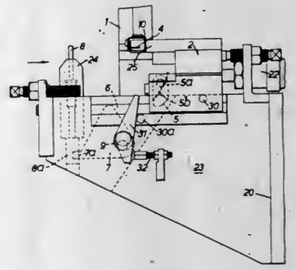
1. A method for achieving substantially even distribution of the running load among layshafts in a parallel axis gear transmission system including a first and a second sun gear, a plurality of layshafts spaced about the sun gears, a first planetary gear on each layshaft mounted to be initially adjustable both angularly and axially of the layshaft and intended to mesh with the first sun gear, and a second planetary gear fixed to each layshaft and intended to mesh with the second sun gear, comprising:
meshing the planetary gears with their respective sun gears,
locking the sun gears against rotation with respect to the layshafts,
loading the first planetary gears into backlashless engagement with the first sun gear, and the second planetary gears into backlashless engagement with the second sun gear,
and fixing the first planetary gears to their respective layshafts.



3,355,790
MACHINE FOR ASSEMBLING A PIN AND A COMPONENT

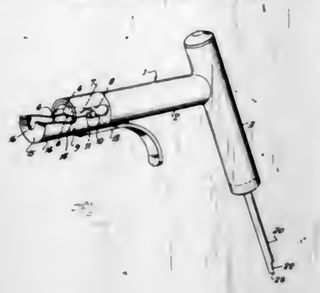
Henry Edward Robson, Aylesbury, Buckinghamshire, England, assignor to The Bifurcated & Tubular Rivet Company Limited

Filed Aug. 3, 1965, Ser. No. 478,789
Claims priority, application Great Britain, Aug. 4, 1964 31,668/64
7 Claims. (Cl. 29—211)



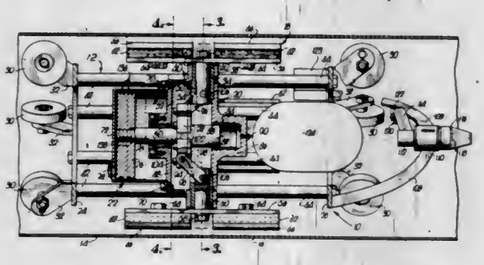
1. A machine for assembling a pin and a component capable of being located about a receiving pin, comprising a carrier member movable between a first position adjacent a supply station providing a supply of such components in predetermined sequence and a second position adjacent a receiving pin, a first slot in said member opening towards said pin and also opening towards said supply station, a second slot in said member at right-angles to said first slot and opening towards said pin so as to coincide with the pin or a projection thereof when said member is at the second position, lever means actuated as said member moves from the first to the second position to retract said pin from a rest position in which it would otherwise coincide with said second slot, and latch means operable to permit the pin to return to its rest position so as to lie within said second slot when said member reaches said second position; whereby a component inserted edgewise in said first slot is located about said pin and retained thereabout when said member is returned to said first position.

3,355,791
TOOL FOR BRAKE SHOE HOLD DOWN SPRINGS
John H. Castoe, 6438 Foothill Blvd., Tujunga, Calif. 91042
Filed Sept. 20, 1965, Ser. No. 488,508
3 Claims. (Cl. 29—227)



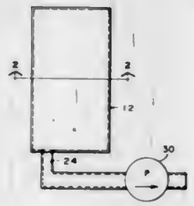
1. A tool for removing and installing compression type automobile brake shoe hold down springs comprising a body including two tubular members united in a substantially L-shaped configuration and including a spring manipulating member and a handle member, the distal end of said manipulating member terminating in an annular spring washer engaging end face, a cooperating spring coil engaging member slidably mounted on said distal end and terminating in a spring coil engaging face opposed to and spaced from said end face of said spring manipulating member, said coil engaging face being of less than a complete circle in extent, compression spring means interposed between said spring manipulating member and spring coil engaging member normally operative to move said spring coil engaging member to increase the distance between said faces, stop means limiting the extent to which said spring means may move said spring coil engaging member, and a handle means on said spring coil engaging member affording means for engagement by the hand of the user holding said handle portion to simultaneously move said spring coil engaging member against the bias of said spring means with resultant compression of a brake shoe hold down spring and a locating washer therefor contained between said faces.

3,355,792
PIPE COME-ALONG APPARATUS
Joseph A. Cunningham, Tulsa, Okla., assignor to Crose-United Corporation, Tulsa, Okla., a corporation of Oklahoma
Filed July 16, 1965, Ser. No. 472,607
6 Claims. (Cl. 29—237)



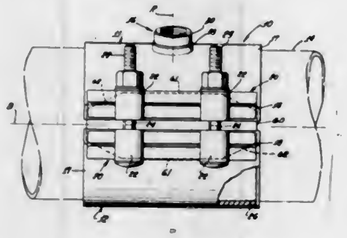
1. Apparatus for coupling a pair of pipe sections together in end-to-end relationship comprising:
an elongated carriage adapted to be moved relative to and to extend into the proximal ends of a pair of pipe sections disposed in end-to-end relationship;
a plurality of stub shafts mounted on said carriage for movement along respective paths of travel radially outwardly from said carriage toward the inner surface of said pipe sections;
pipe engaging means including a resilient bar for each stub shaft respectively, the bars being secured to the outer ends of respective stub shafts intermediate the ends of the bars and being disposed longitudinally of said carriage; and
power means mounted on said carriage and coupled with said stub shafts for moving the same in opposed directions relative to said carriage to thereby move said pipe engaging means into and out of frictional engagement with the inner surfaces of respective pipe sections when the latter are disposed in end-to-end relationship and said carriage is disposed at the junction of said pipe sections.

3,355,793
METHOD OF MAKING A REFRACTORY DELIVERY APPARATUS AND APPARATUS PRODUCED THEREBY
John H. Bruns, Jr., and Allen C. Ihrig, Corning, and Luther W. Knapp, Big Flats, N.Y., assignors to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Apr. 24, 1964, Ser. No. 362,429
9 Claims. (Cl. 29—421)



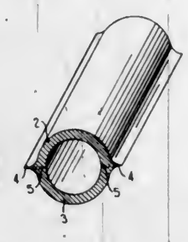
1. A process of cladding a bare refractory delivery system part comprising sheathing the bare refractory delivery system part with a liner of refractory metal, substantially removing atmospheric pressure from between the liner and the delivery system part through an evacuation tube; and compressing the evacuation tube thereby preventing atmosphere from re-entering the liner.

3,355,794
METHOD OF MAKING A PIPE CLAMP DEVICE
Philip N. Adams, West Covina, Calif., assignor, by mesne assignments, to Mueller Co., Decatur, Ill., a corporation of Illinois
Filed Apr. 1, 1963, Ser. No. 269,605
5 Claims. (Cl. 29—479)



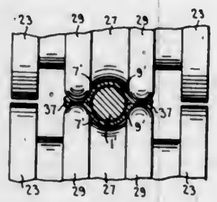
2. A method of making a flexible service outlet including a flexible metal band adapted to peripherally engage a generally cylindrical conduit throughout at least a substantial proportion of the circumferential extent thereof and a generally tubular member on said band projecting generally radially outwardly therefrom and communicating through the band comprising the steps of: forming a generally elliptical opening through the band aligned so that the opening major axis is generally parallel to the band longitudinal axis; upsetting the band peripherally of said opening substantially cylindrically, thereby defining a margin having a generally planar upper extent; inserting a tubular outlet member in said upstanding margin for circumferential engagement thereby and sealingly securing said outlet member to said upstanding margin.

3,355,795
MANUFACTURE OF TUBING AND CLAD RODS OR WIRE
Kenneth B. Clark, Sprague ville, R.I., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed June 10, 1964, Ser. No. 374,023
2 Claims. (Cl. 29—481)



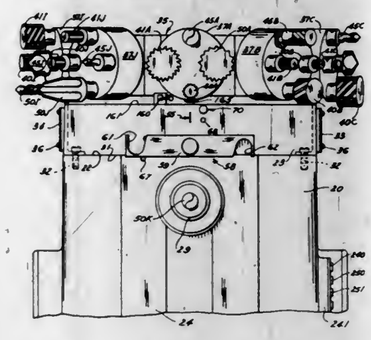
1. The method of forming a well-bonded hard-metal cylinder without fins comprising transversely bending by rolling at least one clean hard-metal strip to bring together margins thereof and by said rolling effecting a squeezing together of said margins to green-bond the margins in the solid phase to form the cylinder with at least one fin wherein the best bonding is in the fin and a weaker bond occurs interiorly of the region of the fin, subjecting the finned green-bonded cylinder to heating at a sintering temperature to improve the interior weaker bond in the solid phase, and thereafter mechanically eliminating the fin from the cylinder.

3,355,796
MANUFACTURE OF CLAD RODS, WIRES AND THE LIKE
Gerald H. Frieling, Jr., Barrington, R.I., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed May 26, 1965, Ser. No. 458,912
6 Claims. (Cl. 29—528)



1. The method of producing clad wires, rods and the like, comprising feeding a length of clean base-metal core material between two lengths of composite bonded strips each of which comprises a base-metal layer and a clean soft precious-metal layer, said layers being bonded, the precious-metal layers being located adjacent the core material and in opposition to each other, feeding the core material and the composite strips thus arranged between roll squeezing means to solid-phase bond the precious metal to and around the periphery of the core material and to solid-phase bond the opposing transverse stripes of the precious-metal layers thereby to provide the core material with a jacket which by its precious-metal layer protects the base metal of the core but exposes the base metal of the jacket, and subjecting the jacket to a selective pickling to remove only its exposed base metal.

3,355,797
MACHINE TOOL WITH A TOOL CHANGER
Earl R. Lohneis, Milwaukee, Wis., assignor to Kearney & Trecker Corporation, West Allis, Wis., a corporation of Wisconsin
Filed July 27, 1966, Ser. No. 568,238
8 Claims. (Cl. 29—568)



1. In a tool storage apparatus for storing tools that are to be employed in the operating station of a machine tool which is provided with tool transfer means for transferring the tools between the storage apparatus and the operating station;
an indexable magazine;
a plurality of tool supporting members carried by said magazine for independent indexing movement relative to said magazine as well as for movement with said magazine so that each indexing movement of said magazine will move one of said tool supporting members into a tool change station, each of said tool supporting members carrying a plurality of tools for use in the operating station;
a tool ready station located in the tool change station to present tools for withdrawal and transfer by the tool transfer means and to receive tools therefrom;
means connected to actuate said magazine in its indexing movement for successively locating said tool supporting members in a tool change station; and,
means connected to index each of said tool supporting members one increment of movement prior to their arrival at the tool change station so that each time a supporting member moves into the tool change station a different one of the tools in that tool supporting member is moved into the tool ready station so that the plurality of tools carried by said tool storage apparatus are moved sequentially into the tool ready station with each succeeding tool being carried by a different tool supporting member.

3,355,798
MACHINE TOOL WITH A TOOL CHANGER
Erich F. Drechsler, Milwaukee, Wis., assignor to Kearney & Trecker Corporation, West Allis, Wis., a corporation of Wisconsin
Filed July 27, 1966, Ser. No. 568,335
9 Claims. (Cl. 29—568)

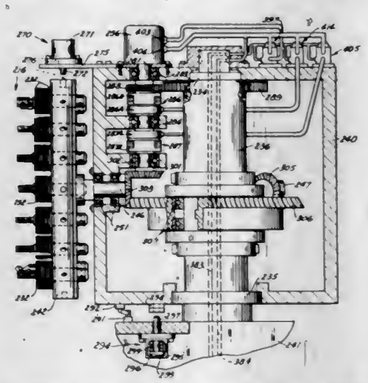
1. In a tool storage apparatus for storing tools that are to be employed in the operating station of a machine tool

which is provided with a tool transfer means for transferring tools between the storage apparatus and the operating station;

a movable magazine;

a tool change station;

a plurality of tool storage members carried by said magazine for independent movement relative to said magazine in a tool selecting operation as well as for movement with said magazine so that the movement of said magazine will move said tool storage members into said tool change station for locating a selected one of the storage members at the tool change station, each of said storage members carrying a plurality of tools for use in the operating station;

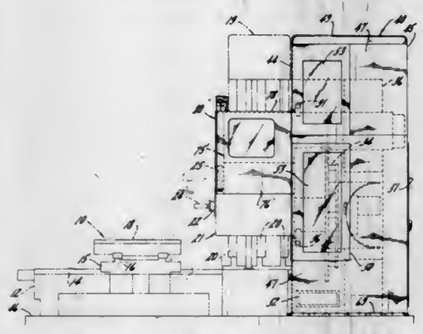


a tool ready station located at the tool change station wherein selected tools are presented for withdrawal and transfer by the tool transfer means;

means operable to actuate said magazine in its movement for locating said tool storage members at the tool change station selectively; and,

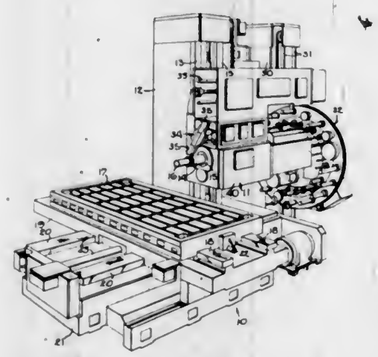
means operable to move said tool storage members relative to said magazine in a tool selecting operation for positioning the selected tool so that the movement of said magazine containing the selected tool into the tool change station will locate the selected tool in said ready station for subsequent transfer to the operating station by the tool transfer means.

3,355,799
ENCLOSURE FOR AUTOMATIC TOOL CHANGER AND MACHINE TOOL
Jesse Daugherty, Hollywood, Fla., assignor to Giddings & Lewis Machine Tool Company, Fond du Lac, Wis., a corporation of Wisconsin
Filed Sept. 19, 1966, Ser. No. 580,413
14 Claims. (Cl. 29—568)



1. In a machine tool having a spindle and an automatic tool changing apparatus including a tool storage matrix and means for transferring tools between said matrix and said spindle, the combination comprising an enclosure mounted in surrounding relation with said matrix and transfer means so as to prevent chips and foreign material from entering into and accumulating upon the tool changing apparatus, and an automatically controlled closure member adapted to be opened and closed in timed relation with tool changer cycle to permit entry of a tool into, or exit of a tool from, said enclosure.

3,355,800
MACHINE TOOL HEADSTOCK
Jesse Daugherty, Fond du Lac, Wis., assignor to Giddings & Lewis Machine Tool Company, Fond du Lac, Wis., a corporation of Wisconsin
Continuation of application Ser. No. 386,272, July 30, 1964. This application Dec. 21, 1966, Ser. No. 603,685
13 Claims. (Cl. 29—568)

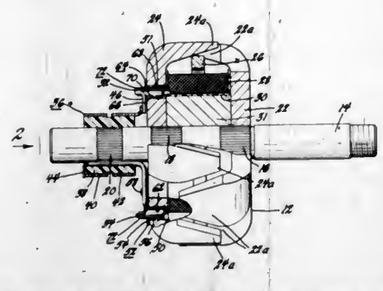


1. A machine tool headstock comprising, in combination, a housing, a spindle sleeve rotatably mounted in said housing, means in said housing for rotatably driving said spindle sleeve, a spindle bar fitted within said sleeve for axial sliding movement, means in said housing for axially positioning said spindle bar, means including a resilient device mounted in said sleeve for mechanically clamping said spindle bar to said sleeve so as to lock the spindle bar in axial position for rotation with said sleeve, an actuator formed in said sleeve to exert a force in opposition to said resilient device, and means to energize said actuator so as to unlock said spindle bar for axial movement within said sleeve.

3,355,801
CONNECTING ROTOR COIL LEADS TO SLIP RINGS BY USING TUBULAR, ROTOR CONTAINING TERMINALS
Jack N. Priddy, Middletown, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Original application Nov. 21, 1962, Ser. No. 239,184, now Patent No. 3,271,604, dated Sept. 6, 1966. Divided and this application Jan. 19, 1966, Ser. No. 539,599
1 Claim. (Cl. 29—598)

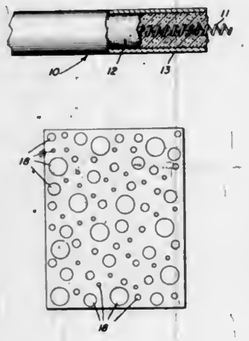
A method of electrically connecting the field coil of a rotor and one of the slip rings of a rotor of a type having a rotor segment, the steps comprising, forming an opening in said rotor segment, fitting a tubular insulator into said opening, press fitting a member formed of electrically conductive material into the opening in said insulator whereby the insulator is forced against the internal wall of the opening in said rotor segment, assembling the rotor, field coil and slip ring upon a rotor shaft, positioning conductors coming respectively from

said field coil and slip ring in said member formed of electrically conductive material, crimping portions of said



member into engagement with said conductors and then welding said conductors to said crimped portions.

3,355,802
METHOD OF MAKING ELECTRICAL HEATING ELEMENTS
John W. Rutter, Schenectady, N.N.Y., and Edward M. Clausen, Warrensville Heights, Ohio, assignors to General Electric Company, a corporation of New York
Filed Jan. 3, 1966, Ser. No. 518,233
4 Claims. (Cl. 29—614)



1. A method of making an electrical heating element which comprises producing finely divided spheroidal particles of magnesium oxide by producing a radio frequency plasma in a stream of gas having at least 0.1 atmospheric pressure of oxygen, then introducing finely divided magnesium oxide into said gas at the upper end of said plasma, allowing said particles to fall through said plasma and quenching the same in a fluid, packing the resulting spheroidal fused magnesia particles around an electrically resistive conductor, and enclosing the resulting magnesia powder compact-conductor assembly in a jacket.

3,355,803
TWEEZER-LIKE TOOL FOR LONGITUDINALLY SLITTING THE WEB CONNECTING A JOINED CONDUCTOR-PAIR
George Andrew Hanlon, Branford, and John A. Brazee, Wallingford, Conn., assignors to The Whitney Blake Company, New Haven Conn.
Filed Oct. 20, 1965, Ser. No. 498,218
2 Claims. (Cl. 30—91.1)

1. A tool for isolating and separating a conductor-pair formed of two web-connected insulated conductors in a communication cable comprising

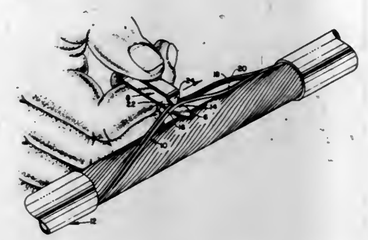
(A) a first elongated leg

(1) having a substantially flat anvil portion for supporting a conductor-pair apart from other cable pairs, and

(2) an end extending beyond said anvil portion for isolating a conductor-pair from other cable pairs;

(B) a second elongated leg

(1) substantially parallel and opposite to said first leg, and



(2) having a cutter extending substantially perpendicularly therefrom toward said anvil portion,

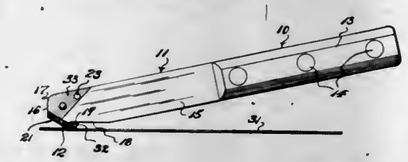
(a) said cutter including a knife edge aligned transverse to said first and second legs; and

(C) spring means

(1) interconnecting said first leg and said second leg and

(2) resiliently urging said cutter and said anvil portion apart.

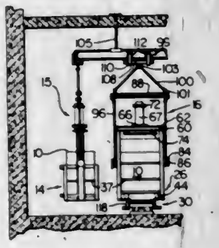
3,355,804
CUTTING AND SCORING TOOL
William H. Rothe, 44 Bruen Ave., Irvington, N.J. 07111
Filed June 7, 1965, Ser. No. 461,741
1 Claim. (Cl. 30—317)



In a cutting tool to be manually drawn across the surface of a work piece and which comprises a handle, elongated shaft means extending from the handle, and a blade removably mounted in said shaft, the improvement which comprises, providing said shaft with a straight-sided slot in the forward portion thereof, said slot traversing the shaft with the straight edges of the slot at an angle with respect to the longitudinal edges of the shaft, said blade including a body portion and a cutting member adjacent at least one end thereof, the body portion of said blade having straight sides and being dimensioned so as to closely and slidably fit within the straight sided slot, means for positioning said blade in said slot at a predetermined position relative to said shaft whereby the cutting member of said blade projects from said slot, and means to releasably lock said blade in said slot, said cutting member having a transverse face, said face having at the lower end thereof a transversely V-shaped cutting point formed by a pair of beveled surfaces meeting in a sharp edge terminating at the apex of said point, said transverse face and cutting point being concavely curved in the longitudinal direction, said shaft having a portion of the lower edge thereof adjacent the forward end cut away to form a concavely curved surface adjacent the concavely curved face and cutting point of said cutting member when said blade is in operative position in said slot, the two concavely curved surfaces together forming a smooth continuous concavely

curved surface adjacent the cutting point over which surface a curl of material removed from a work piece by drawing the tool thereover may ride smoothly without breaking, and guard means adjacent the forward end of said shaft, said blade being adapted to fit in said slot in reverse non-operative position with the cutting point thereof adjacent to and protected by said guard means when the tool is not in use.

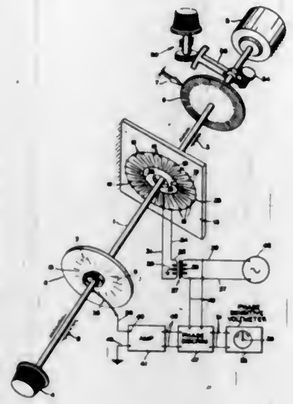
3,355,805
CHEESE MANUFACTURING APPARATUS
Grant E. Krueger and Harold F. Mohr, Green Bay, Wis., and Otto Charles Huber, Jr., Oak Park, Ill., assignors to National Dairy Products Corporation, Chicago, Ill., a corporation of Delaware
Filed Jan. 12, 1966, Ser. No. 520,177
9 Claims. (Cl. 31—46)



7. Apparatus for use in the manufacture of cheese comprising a holder for supporting a continer for a mixture of curd and whey, reciprocating type pressing means attached to said holder for applying force to said mixture to separate the whey from the curd, suspension means supporting said holder in an elevated position and rotatably connected thereto for pivotal movement of the holder and the container to a plurality of different orientations in which the whey is drained from the container, and conveyor means connected to said suspension means for moving such means and said holder to a plurality of locations.

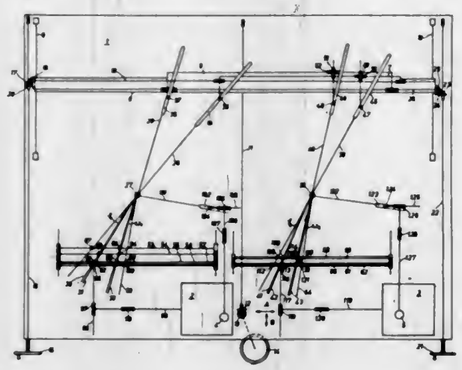
3,355,806
TEST STANDARD DEVICE FOR DISCRETE ANGLE VALUES
James E. Brook, Maywood, N.J., assignor to The Bendix Corporation, Teterboro, N.J., a corporation of Delaware
Filed Mar. 2, 1964, Ser. No. 348,394
4 Claims. (Cl. 33—1)

4. An apparatus for determining a precise angular position of a rotatable part of a device under test comprising a shaft operatively connected to said part, bearing means for supporting the shaft, means carried by the shaft for visually providing an indication of an angular position of the shaft approximating a predetermined degree count, a first variable capacitive coupling means, a second variable capacitive coupling means, a bridge circuit including said first and second variable capacitive coupling means at opposite arms thereof, means operatively connecting said shaft to said first and second variable capacitive coupling means to inversely adjust the capacitance of said first and second variable capacitive coupling means to effect a differential output signal from said bridge circuit, means responsive to said signal for indicating an adjustment of the shaft to a precise angular position corresponding to said predetermined degree count, the first and second variable capacitive coupling means includes a first plate carried by said shaft, a second plate fixedly mounted relative to said first plate, a plurality of radiating first capacitive lines mounted on said first plate, said first capacitive lines being equally angularly spaced apart, a plurality of radiating second capacitive lines mounted on the second plate, said second capacitive lines being equally angularly spaced apart and arranged upon said second plate in cooperative relation to the first capacitive lines on the first plate, the capacitive lines of the first and second capacitive plates being so arranged that the second capacitive lines may be coupled electrostatically



to the first capacitive lines so as to provide the first and second variable capacitive coupling means, and the first plate being angularly movable so as to adjust the first capacitive lines relative to the second capacitive line so as to inversely adjust the capacitance of the first and second variable capacitive coupling means.

3,355,807
PHOTOGRAMMETRIC APPARATUS FOR STEREOSCOPIC PLOTTING OF PHOTOGRAMS
Horst Schoeler, Jena, Germany, and Franz Manek, deceased, late of Jena, Germany, by Eva Manek, executrix, Berlin, Germany, assignors to VEB Carl Zeiss Jena, Jena-Gera, Germany
Filed May 25, 1964, Ser. No. 371,170
3 Claims. (Cl. 33—1)

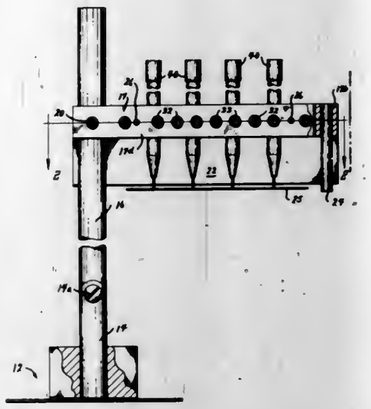


1. A photogrammetric apparatus for stereoscopic plotting of photograms lying in two planes at right angles to each other, comprising a stereo-comparator system having two carriers for each of two photograms and containing a binocular viewing system for plotting said photograms, said carriers and said viewing system being displaceable relatively to each other, a base plate, a cross-

slide system disposed in the model space on said base plate and made up of three slides, said three slides being respectively displaceable in depth, breadth and height, said breadth and height slides being disposed on said depth slide and displaceable at right angles to the direction of motion of said depth slide, means for displacing said three slides, two double levers correlated to each of said photograms and rotatable about axes parallel to each other and at right angles to said base plate, the one of said double levers being pivoted to said breadth slide and the other of said double levers being pivoted to said height slide, the pivotal points of said breadth and height slides with said two double levers correlated to the right of said photograms being respectively displaceable in breadth and in depth direction, two first auxiliary levers being correlated in the image space to each of said double levers pivoted to said breadth slide, and being respectively rotatable about said axes of said double levers, the one of said first auxiliary levers and the double lever correlated to it enclosing an adjustable angle, two other auxiliary levers being correlated in the image space to each of said double levers pivoted to said height slide and being respectively rotatable about said axes of said double levers, said two other auxilary levers enclosing an adjustable angle, a system of five guides parallel to the breadth slide and disposed in parallel planes and correlated in the image space to each photogram, one of said guides at the moment of plotting being arrestable at such a distance from the axes of rotation of the respective levers as corresponds to the focal length at the moment of taking a photogram, the other four said guides being displaceable in depth direction, said double lever pivoted to said breadth slide and correlated to each photogram and said first auxiliary lever secured to it being respectively pivoted to the first and the second of said displaceable guides at distances corresponding to the focal length at the moment of taking a photogram, the securable auxiliary lever being pivoted to the third of said guides at a point lying in a plane at right angles to said guides, said plane containing the pivotal point of the not securable lever with the fourth of said guides, the not securable auxiliary lever being pivoted also to said arrestable fifth guide at a point effecting the relative movement in breadth direction of said photogram and said viewing system, said double lever pivoted to said height slide and correlated to each photogram being pivoted to said first displaceable guide at a point lying in a plane which is at right angles to said guides and contains the pivotal point of the one of said other auxiliary levers with the second displaceable guide, said two other auxiliary levers being respectively pivoted to the third and fourth of said displaceable guides at distances corresponding to the focal length at the moment of taking a photogram, and the other of said other auxiliary levers being pivoted also to said arrestable fifth guide at a point effecting the relative motion in depth direction of said photogram and said viewing system.

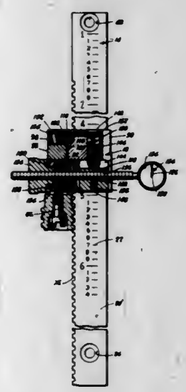
3,355,808
BELT MARKING DEVICE
Joe C. Williams, Vanderburgh County, Ind. (R.R. 1, Schutte Road, Evansville, Ind. 47712)
Filed Feb. 21, 1966, Ser. No. 528,719
5 Claims. (Cl. 33—32)

1. A belt marking device comprising an upstanding supporting framework, a body member adjustably secured on said framework for vertical movement with respect to a work surface on which a sanding belt is positioned, pressure plates mounted on said body member, resilient means urging one of said pressure plates towards another of said pressure plates, a marking device positioned between said pressure plates, and extending below the body member in a vertical direction and securing means mounted on said body member selectively and fixedly maintaining said marking device between said one of



said pressure plates and said another of said pressure plates.

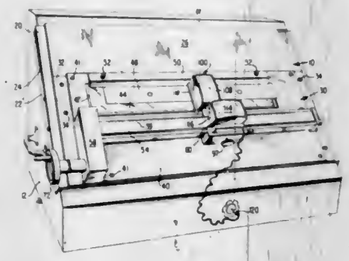
3,355,809
SIGHTING DEVICE
Glen B. Guyton, 1639 E. Pine, Tulsa, Okla. 74106
Filed Apr. 6, 1964, Ser. No. 357,444
4 Claims. (Cl. 33—46)



1. A sighting device comprising a slide bar having a plurality of notches provided along at least one edge thereof, means providing for universal mounting of the bar on a device to be sighted, means providing for lateral angular adjustment of the bar relative to the device to be sighted, a sight body slidably disposed on the slide bar and comprising a housing having a recess extending therethrough for slidably receiving the slide bar therein, a spring urged pivotal lever carried by the housing, first adjustment means journalled on the lever and having a spiral groove thereon of a configuration complementary to the notches on the slide bar, said pivotal lever urging said first adjustment means in a direction toward the bar whereby the spiral groove is in normal engagement with the notches, a sighting element disposed within the housing and laterally movable with respect to the movement of the sight body along the sight bar, second adjustment means carried by the sighting element to provide for lateral adjustment thereof, stabilizing means disposed

within the housing for stabilizing the movement of the sighting element, reference indicia provided on the slide bar and first and second adjustment means whereby a permanent reference number is obtained for each position of the sight body and sighting element whereby the reference numbers may be recorded to increase the accuracy of resetting the sight body and sighting element to substantially any previous position.

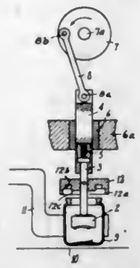
3,355,810
MEASURING DEVICE
Earl W. Franklin, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio
Filed Mar. 19, 1965, Ser. No. 441,285
1 Claim. (Cl. 33—125)



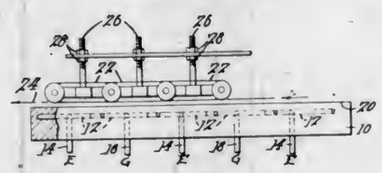
A measuring device comprising a box-like enclosure having an inclined top supporting frame including an aperture, a mounting plate having an aperture therethrough and screws removably securing said mounting plate to said top supporting frame with the apertures of said top supporting frame and mounting plate in alignment, a face plate having a transparent area dimensioned to receive an article to be measured and screws removably securing said face plate on the top surface of said mounting plate with the transparent area overlying said apertures, securing means on said face plate on one side of said transparent area for holding the article to be measured against movement, a linear scale fixed on said face plate on the opposite side of said transparent area, slide means mounted on said scale for movement therealong, a magnifying lens fixed on said slide means above graduations on said scale, a glass plate having a fiducial mark extending across said transparent area in close generally parallel relationship with said transparent area, means fixing one end of said glass plate to said slide means for movement therewith, a second magnifying lens, magnetic means fixing said second magnifying lens on said glass plate over said fiducial mark, a source of light in said enclosure remote from said transparent area leaving a substantial space located between the source of light and said transparent area, and a frosted glass plate fixed in said enclosure over said source of light to diffuse the light for proper illumination while also substantially minimizing transmission of heat from said source of light to said transparent area.

3,355,811
CONTAINER GAGING APPARATUS
André Tailleur, Paris, France, assignor to Compagnie de Saint-Gobain, Neuilly-sur-Seine, France
Filed Oct. 23, 1964, Ser. No. 406,099
Claims priority, application France, Oct. 24, 1963, 951,652
12 Claims. (Cl. 33—174)

8. The method of testing a hollow container for surface imperfections, comprising, urging with yielding force toward contact with an area of the container to be tested, a gage element having a gaging surface shaped complementary to the container surface to be tested, feeding an electric impulse simultaneously through a circuit including switches each under control of a feeler protruding from the gage surface, when said gage element contacts said container, opening the circuit only by and in response to movement of all feelers due to full area contact between the gage surface and the surface to be tested, and testing the circuit before the gage element contacts the container, by feeding an electric impulse successively through each switch to activate alarm means if the gage is defective.

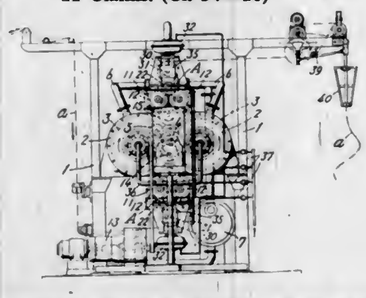


3,355,812
DRYING BY HIGH FREQUENCY ELECTRIC FIELD
William N. Bennett, Fitchburg, Mass., assignor to Fitchburg Paper Company, Fitchburg, Mass., a corporation of Delaware
Filed Aug. 4, 1965, Ser. No. 477,198
7 Claims. (Cl. 34—1)



5. The method of drying material by passing it along and over a smooth surface of a ceramic block and pressing it thereto while simultaneously impressing a high frequency electric field on said material.

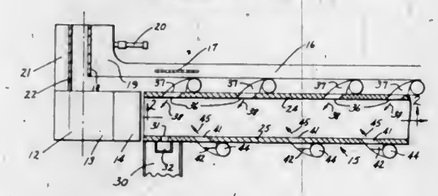
3,355,813
CONTINUOUS VACUUM DRYING APPARATUS FOR CLOTH AND ASSOCIATED METHOD
Mitsuyuki Suzuki and Eiichi Yoshida, Ashikaga-shi, Japan, assignors to Kabushiki Kaisha Kobayashi Kikai Seisakusho, Tochigi-ken, Japan
Filed Nov. 16, 1966, Ser. No. 594,854
Claims priority, application Japan, Nov. 16, 1965, 40/69,959, 40/69,960
11 Claims. (Cl. 34—16)



1. A continuous operation vacuum drying apparatus for cloth comprising a casing having a drying chamber which is adapted for being subjected to a vacuum, said casing having an inlet and an outlet for the passage of cloth through said chamber, a plurality of rotary heating drums in said chamber for, heating the cloth during its passage therethrough to dry the cloth, handling means for said cloth at said inlet and outlet for respectively feeding the cloth into and removing the cloth from the chamber while maintaining a hermetic seal at said inlet and outlet, each handling means comprising a pair of spaced rotatable rollers, each roller having end surfaces and a peripheral surface in hermetically sealed contact with the casing, an idle roller having end surfaces in hermetically sealed contact with the casing, said idle roller having an elastic peripheral surface and extending between and in close contact at said elastic peripheral surface with the peripheral surfaces of said pair of rotatable rollers, and a pressure roller applied to the peripheral surface of said idle roller to urge the idle roller against the rotatable rollers.

11. A method of drying cloth with the apparatus as claimed in claim 1 comprising continuously feeding cloth through a drying chamber by continuously passing the cloth into the chamber at an inlet thereof and continuously drawing it from an outlet thereof, maintaining a suction pressure within the chamber, heating the cloth at relatively low temperature sufficient to dry the same as the cloth passes through the chamber, and hermetically sealing the inlet and outlet of the chamber while continuously advancing the cloth therethrough.

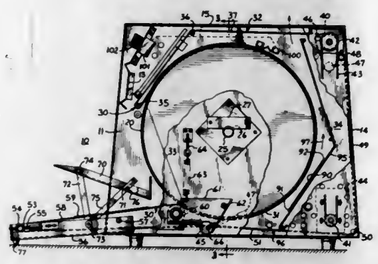
3,355,814
MULTIPLE TRAY DRIER
Darel R. Geske, Hopkins, Minn., assignor to The Mead Corporation, Dayton, Ohio, a corporation of Ohio
Filed Feb. 15, 1966, Ser. No. 527,449
2 Claims. (Cl. 34—22)



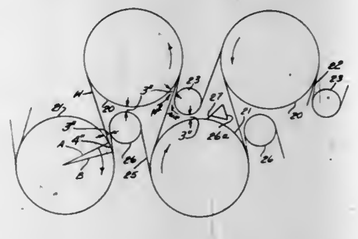
1. A method of drying including the steps of moving material to be dried between oppositely disposed walls of a drying chamber from an entrance thereto along a selected one of a plurality of paths disposed at differing levels within said chamber, introducing heated fluent material into said chamber through said walls in a plurality of individual streams extending across all of said levels and with said streams introduced through one of said walls being displaced along the extent of said paths relative to corresponding streams introduced through the other of said walls, directing said streams angularly relative to said walls and toward a corresponding displaced stream introduced through the opposite wall to cause flow of the fluent material in a direction generally opposite to the direction of movement of the material to be dried and along a sinuous path between said walls and extending across all of said levels, and removing said fluent material from said chamber at a location adjacent said entrance.

3,355,815
DRYER FOR PHOTOPRINTS
Robert E. Zimmer, Niles, Ill., assignor to American Photocopy Equipment Company, Evanston, Ill., a corporation of Illinois
Filed June 22, 1966, Ser. No. 559,607
9 Claims. (Cl. 34—48)

1. In a dryer for photoprints or the like, the combination comprising, a frame, a hollow drum of thermally conductive material rotatable therein, an endless fabric belt of porous construction having a drum engaging portion which extends about the major portion of the drum periphery while leaving the face of the drum accessible and a return portion defining a rear chamber, a set of shafts for guiding the return portion of the belt including a shaft arranged forwardly of the drum defining an apron, a motor for driving the belt, a first electric heating element in the drum for heating the face of the photoprints thereon, a second electric heating element in the lower portion of said chamber and spaced from the rear of the drum for simultaneous heating of the backside of the photoprints, thermostatic means for controlling the temperature of at least one of the heating elements, the second heating element having an associated vertically extending guide surface spaced from the back of the drum to define a chimney for the vertical flow of heated air closely adjacent the rear surface of the drum.



3,355,816
DRYING CYLINDERS WITH FELT IDLERS POSITIONED TO PREVENT FLUTTERING OF THE WEB BEING TREATED
Thomas G. McKie and Elmer C. Crist, Beloit, Wis., assignors to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin
Filed May 24, 1965, Ser. No. 457,922
2 Claims. (Cl. 34—116)

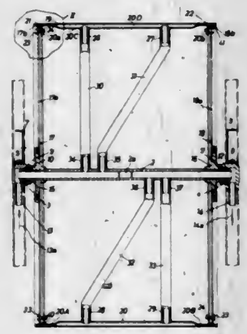


1. In a drying apparatus for fibrous webs,
a series of drying cylinders arranged one after the other in vertically spaced rows and having a fibrous web trained thereabout in a serpentine path,
upper and lower felt runs in association with said upper and lower rows of drying cylinders and partially wrapping the web about said cylinders and absorbing moisture in the web when wrapping the web thereabout,
an upper felt idler between each pair of upper drying cylinders, changing the direction of the upper felt run as it passes from an outgoing to an incoming cylinder,
and a lower felt idler between each pair of lower drying cylinders changing the direction of the felt run as it passes from an outgoing to an incoming cylinder,

each upper felt idler being spaced closer to the incoming upper drying cylinder than the outgoing upper drying cylinder and being spaced from the next adjacent lower outgoing drying cylinder substantially the same distance it is spaced from the incoming upper drying cylinder, and

each lower felt idler being spaced closer to the incoming lower drying cylinder than the outgoing lower drying cylinder and being spaced the same distance from the incoming lower drying cylinder as from the outgoing upper drying cylinder, and said upper and lower felt idlers closing the spaces between the web and said drying cylinders and providing contact of the web with the incoming drying cylinders prior to contact of the felt with the web, and thereby stabilizing the draw on the web and equalizing the air currents on opposite sides of the web.

3,355,817
SEALING MEANS FOR ROTARY DRUM HEAT EXCHANGER
Rudolf Birk, Munich, Germany, assignor to Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany
Filed July 27, 1965, Ser. No. 475,161
Claims priority, application Germany, Aug. 13, 1964, A 46,838
6 Claims. (Cl. 34—124)



1. In a drier for photographic material or the like, a rotary drum having a rim including a central portion of smaller diameter and two end portions of larger diameter; a cylinder spacedly surrounding said rim and defining a fluid receiving chamber with said central portion of the rim; a pair of solid elastic rings interposed between said end portions and said cylinder; and means for deforming said rings into surface-to-surface engagement with said cylinder and said end portions so that said rings seal the respective ends of said chamber and constitute the sole means to transmit torque from said cylinder to said drum or vice versa.

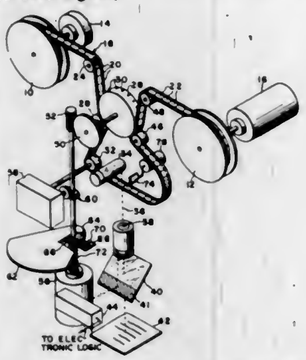
3,355,818
AUTOMATED INSTRUCTION APPARATUS
Richard M. Whitehorn, Menlo Park, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California
Filed Feb. 27, 1964, Ser. No. 347,941
3 Claims. (Cl. 35—9)

1. A teaching machine comprising:

(a) a photographic film having a plurality of frames for storing associated data, each frame having a data portion and a code portion, said code portion including photographic bits selectively opaque and transparent in a predetermined format carrying binary information for directing the machine to display data of different frames in accordance with photographic bits which are selected from those forming the code portion of each frame, said code portion further including photographic frame counting and block counting bits selectively opaque and transparent,

(b) photoelements arranged in a matrix substantially similar to the format of said photographic bits, frame counting bits, and block counting bits of said code portion so that each photoelement senses only the optical characteristics of a corresponding bit, said photoelements responsive to the optical characteristics of the photographic bits carrying binary information of a displayed frame by generating a signal representive of the location of the frame including data to be subsequently displayed;

(c) a film transport for transporting said film in response to said signal;



(d) optical means for directing radiation through said code portion to impinge said photoelements, said photoelements corresponding to said photographic bits carrying binary information responsive to radiation to generate said signal, said photoelements corresponding to said frame and block counting bits responsive to radiation to sense the traverse of frame and block counting bits through the optical means while the film is transported;

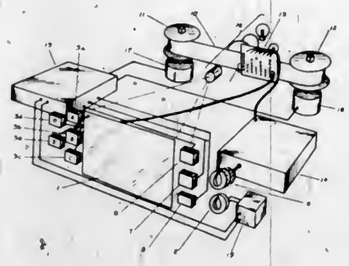
(e) means for coupling said signal to actuate said film transport;

(f) means responsive to photoelements corresponding to frame and block counting bits for sensing the number of frame and block counting bits that traverse the optical means while the film is transported; and

(g) means for stopping the film transport when the number of sensed frame and block counting bits corresponds to the location of the frame represented by said signal.

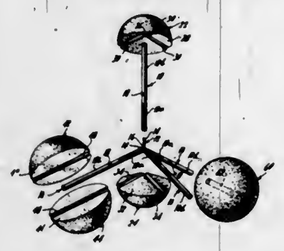
3,355,819
TEACHING MACHINE
Jack W. Hannah, Mansfield, and Harrold E. Hiatt, Galion, Ohio; said Hiatt assignor of four-tenths to Didactics Corporation, Richland, Ohio, a corporation of Ohio
Filed Sept. 16, 1965, Ser. No. 487,695
6 Claims. (Cl. 35—9)

1. A teaching device for visually projecting a logical sequence of individual frames of a self-contained film lesson series and individual lesson frames, comprising a film, a series of frames on said film, each frame containing a coded address and having at least one code identity corresponding to coded addresses on other frames in the film, mechanical means to indicate a response to a visual stimulus from a first frame, electrical means actuated by said mechanical means thereby producing a first signal from a coded address on said first frame, and a second signal which corresponds to the coded address of another frame to be positioned to be projected and viewed, driving means to move said series of frames past the position where a frame can be projected and viewed, a register comparator device to start said driving means upon receiving said first signal from a coded address on said first frame and stop said driving means upon receipt of said second signal through a second frame having a coded address which matches said first signal produced at first frame; further including a memory-override device comprising another electrical means responsive to another code identity on a selected plurality of said frames having either said single predetermined code identity, or said plurality of code identities for initiating



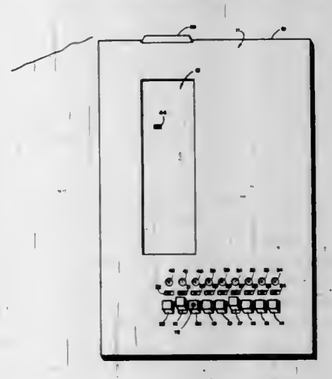
a signal, means for registering and retaining said signal, a third electrical means responsive to a third code identity on a selected one of said frames following said plurality of frames, means for combining said third signal and said registered signal to initiate a fourth signal which actuates said first mentioned electrical means to sense a code identity on the frame having the code identity which matches that of said first signal to initiate a fifth signal which overrides the first of all said signals whereby said frame having the code identity which matches that of said first signal is only momentarily in a projectable position, and a subsequent frame with coding matching that of said fifth signal is projected for extended visual observation.

3,355,820
COMBINED FRAMEWORK AND SPACE-FILLING MOLECULAR MODEL ASSEMBLY
George Charles Brumlik, 165 Pinehurst Ave., New York, N.Y. 10033
Filed Oct. 21, 1965, Ser. No. 499,865
14 Claims. (Cl. 35—18)



1. A molecular model assembly comprising a framework structure and a space-filling member adapted to be mounted upon said framework structure, said framework structure including a plurality of elongated cylindrical arm sections meeting at a central point representing the center of an atom and extending angularly outward from said central point in accordance with the symmetry axes of valence orbitals and bond angles of said atom, said cylindrical arm sections having respective inner color-coded portions of lengths representing to scale the covalent radius of said central atom, and outer color-coded portions representing the covalent radii and Van der Waals' radii of different atoms bonded to said central atom, said cylindrical arm sections being respectively sized to represent accurately to scale the sigma bond distances between bonded atoms, said space-filling members including a sectional spherical body having a radius corresponding to the length of the inner color-coded portion of each cylindrical arm section and being adapted to be assembled over the inner ends of said arm sections with its center located at said central point and said body covering over all of the inner colored portions of said cylindrical arm sections, and means for releasably connecting together the sections of said spherical body.

3,355,821
LOGICAL DEVICE
Raymond Buenger, La Habra, Calif. (161 E. Orangethrope, Apt. 83, Placentia, Calif. 92670)
Filed Mar. 25, 1965, Ser. No. 442,739
10 Claims. (Cl. 35—30)



1. A logical device including a base for supporting a plurality of slidable members, the improvement comprising

said slidable members being arranged in a substantially parallel fashion,

a plurality of said slidable members having a coded mask affixed thereto for movement with its respective slidable member, the coding on each mask being different,

one of said slidable members having thereon a plurality of indicia,

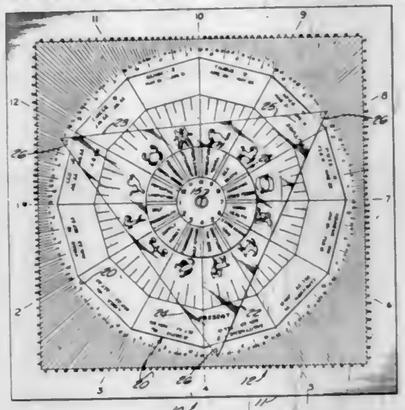
said masks being arranged to overlay said indicia, and

said slidable members being movable between a plurality of operable positions to allow at least one indicia to be exposed as a function of the position of said slidable members.

3,355,822
ASTROLOGIC DEVICE
Alba Elinor Losey, 873 N. Chester Ave., Pasadena, Calif. 91104
Filed Oct. 23, 1965, Ser. No. 503,428
2 Claims. (Cl. 35—44)

1. An astrologic device for use in the rapid and accurate location of interrelated data associated with the Zodiac, the celestial mansions and degrees of the Sun signs, said device comprising a rigid main body plaque having a ring scale consisting of the twelve Sun signs each similarly and equally divided into the degrees of the Sun sign, a transparent spinner, first and second rotary discs

disposed closely adjacent the opposite sides of said spinner, common spindle means passing through the centers of said spinner and said first and second discs and through said plaque centrally of said ring scale, said common spindle means including means for weakly holding each of said first and second discs in their respective adjusted positions until forcibly rotated to a different position relative to one another and including means permitting said spinner to spin rapidly and freely without disturbing the position of either of said first or second discs, said first disc being substantially larger in diameter than said second disc and being positioned adjacent said plaque with



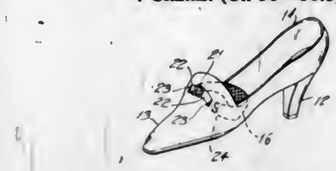
its periphery inwardly of and close to said ring scale, said first disc being divided into twelve equal radial sectors each marked to represent one of the Zodiac signs, said second disc overlying said spinner and divided into twelve radial sectors each marked to represent a different celestial mansion, said spinner comprising an equilateral triangle having its three radially disposed pointed apices terminating opposite said ring scale and cooperating therewith when stationary to designate the same degree position relative to a respective one of said Sun signs, said pointed apices being marked distinctively and differently and respectively representing the past, the present and the future.

3,355,823
SKID PROTECTOR FOR FOOTWEAR
Ewald Vogt, Hannover, Germany, assignor to Continental Gummi-Werke Aktiengesellschaft, Hannover, Germany
Filed Oct. 26, 1966, Ser. No. 589,739
8 Claims. (Cl. 36—7.6)



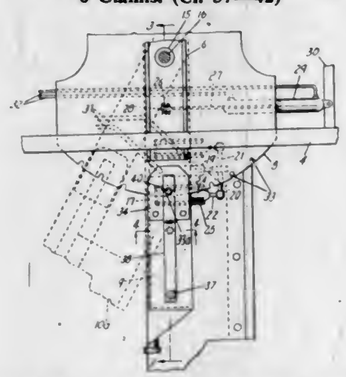
1. A skid protector of elastic material adapted to be placed on and be removed from footwear, which comprises: a sleeve portion to be placed around the front portion of a shoe, and also comprises a loop portion connected to said sleeve portion for placement around the heel cap of a shoe, said sleeve portion including a walking portion for contact with the ground, and anti-skid means connected to said walking portion, said sleeve portion and said loop portion forming integral parts of one and the same single entirety formed by a hose section open at both ends and having at least one peripheral cutout between its ends.

3,355,824
SHOE CONSTRUCTION
Beth Levine, New York, N.Y., assignor to Herbert Levine, Inc., New York, N.Y., a corporation of New York
Filed Jan. 21, 1966, Ser. No. 522,267
4 Claims. (Cl. 36—58.5)



1. A shoe comprised of a sole, a heel, an upper portion, an elastic cinch strap adapted to be brought in direct contact with the sole face of the wearer's foot, and means securing said cinch strap to said upper portion, said cinch strap extending downward from its point of securement to said upper portion and across the entire width of said sole above said sole.

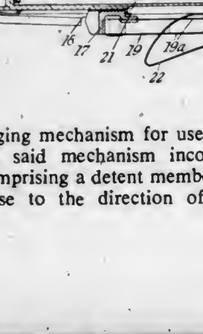
3,355,825
BLADE POSITION LOCK AND RELEASE SYSTEM FOR ROAD SCRAPERS
Warren Daniel Weeks, Kalamazoo, Mich., assignor to Root Spring Scraper Company, Kalamazoo, Mich.
Filed May 12, 1965, Ser. No. 455,240
6 Claims. (Cl. 37—42)



3. Lock and release means for a road scraper having a supporting sector plate, a horizontally swingable blade support beam and a vertically swingable blade mounted on the beam comprising,
a springable element carried by said beam,
a lock pin carried by said springable element and projectable thereby into locking engagement with said sector plate,
a guide and keeper means for said locking pin fixed relative to said beam,
and a spring retracting element movably mounted on said beam and engageable between said blade in the raised position of said blade and said springable element to retract the springable element and said pin from engagement with said sector plate.

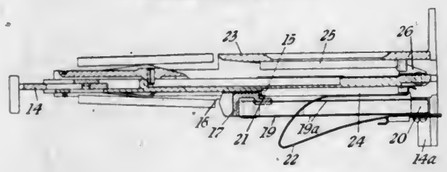
3,355,826
CONVENTION BADGE HOLDER
Erich E. Klein, Chicago, and Richard J. Schwarz, Glen Ellyn, Ill., assignors to Erell Manufacturing Company, Chicago, Ill., a corporation of Illinois
Filed Feb. 25, 1966, Ser. No. 530,205
2 Claims. (Cl. 40—1.5)

1. A convention badge holder comprising:
a vertically elongated body of a pair of separate at least translucent panels in generally laminar relation secured together along the top and bottom and one side edge by a fusion seam, with the remaining side edge open;
a fused connection line extending across the holder body intermediate its top and bottom edges and closer to the top edge than the bottom edge and defining between the panels the lower edge of an upper compartment and the upper edge of a lower compartment between the panels and said compartments having card-receiving respective openings thereinto along said open edge, said lower compartment being adapted to engage within a garment breast pocket to maintain the upper compartment exposed above the top edge of the pocket and the holder having a lower edge which engages the bottom of the pocket for this purpose;



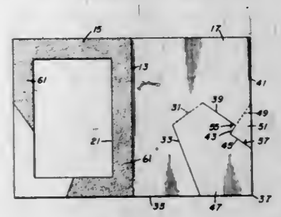
the lower end portion of said body comprising a vertically narrow separable extension which will normally afford a vertical length for the lower compartment to be accommodated within a garment pocket of relatively greater depth than other pockets generally provided on similar garments so as to maintain the upper compartment properly exposed above the top edge of the pocket;
and a fused sealing and tear seam connecting said extension integrally with the remainder of the body and including a narrow tear thinning connection between the extension and the body of such thinness that although it has adequate strength to resist reasonable pressures and tensions it lends itself readily to intentional tearing separation and comprising an integral fusion thinning of less thickness than the individual thickness of said panels, and reinforcing bead means along said connection.

3,355,827
SLIDE CHANGING MECHANISM
Denis Vernon Bosley, 235 Barrows Lane, South Yardley, Birmingham, England
Filed Dec. 13, 1965, Ser. No. 513,509
Claims priority, application Great Britain, Dec. 14, 1964, 50,727/64
3 Claims. (Cl. 40—79)



1. A slide-changing mechanism for use in optical projection apparatus, said mechanism incorporating slide latching means comprising a detent member movable in a direction transverse to the direction of movement of slides into and out of the projection apparatus and resilient means connected to said detent member, said detent member being so shaped that engagement of the leading edge of a slide to be inserted into the apparatus and the outer edge of the detent member will result in the latter being displaced to permit entry of the slide, said resilient means urging the detent member into a position in which its inner edge forms a stop to prevent premature withdrawal of the slide after the trailing edge of the slide has passed the detent member on insertion of the slide.

3,355,828
MOUNT FOR PHOTOGRAPHS OR THE LIKE
Donald A. Betz, Pittsford, N.Y. (15 Bretton Woods Drive, Rochester, N.Y. 14618)
Filed Feb. 28, 1966, Ser. No. 530,610
9 Claims. (Cl. 40—152.1)



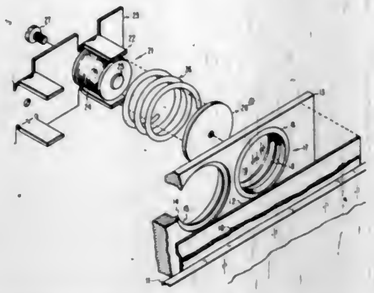
1. A mount for a photograph or the like, comprising sheet material providing
(a) a front panel centrally apertured to provide a window through which a photograph or the like placed behind said front panel may be seen, and
(b) a rear panel behind said front panel and photograph,
(c) said rear panel being cut and scored to provide
(i) an easel leg section connected to the rest of said rear panel by a hinge score line located inwardly from the edges of said rear panel and extending obliquely with respect to such edges, said leg section extending from said score line to one corner of the panel, and
(ii) a strut section connected to the rest of said rear panel by a hinge score line and having an edge adapted to be engaged with an edge of said leg section when both sections are swung on their respective score lines to project outwardly from the rest of said rear panel, so as to hold said leg section in a projecting position where it may constitute an inclined easel leg for holding said front panel and the rest of said rear panel in an upstanding position,
(d) the hinge score line of said leg section being at a slight angle to the hinge score line of said strut section, such that as said leg section swings rearwardly from the plane of the rest of said rear panel, an edge of said leg section swings to a position over the original undisplaced position of said strut section.

3,355,829
DOCUMENT FLATTENER
Dennis P. Butterbaugh, Rochester, Minn., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Oct. 7, 1965, Ser. No. 493,756
8 Claims. (Cl. 40—156)

1. Selectively operable pressure applying apparatus comprising:
a rigid plate having at least one aperture therein;
a flexible diaphragm secured to one side of said plate to cover said aperture;
an expandable and collapsible cup closed at one end

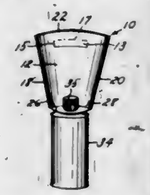
and secured at its open end to the other side of said plate about said aperture; and

means for selectively expanding and collapsing said



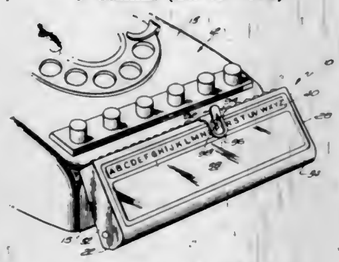
cup whereby the air in said cup is displaced to move said diaphragm against and away from said plate, respectively.

3,355,830
ADVERTISING DISPLAY
Bernard Hoffman, 562 West End Ave., New York, N.Y. 10024
Filed Sept. 20, 1965, Ser. No. 488,433
3 Claims. (Cl. 40—310)



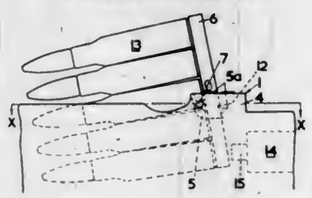
1. Advertising display structure comprising: a main panel element, and a plurality of article-engaging elements connected to said main panel element; said article-engaging elements being adapted in the setup condition thereof to be drawn toward each other and drawing portions of the main panel element toward each other so that they are angularly disposed toward each other; said article-engaging elements being orificed, and in lapped condition upon engaging an article.

3,355,831
TELEPHONE INDEX
Alton L. Shirley, 275 Crestwood Road, Warwick, R.I. 02886
Filed July 20, 1965, Ser. No. 473,431
9 Claims. (Cl. 40—336)



1. In an index device for attachment to a telephone, a casing having a front section on which identifying indicia are located and a rear section pivotally connected to said front section, an index book defined by a plurality of index cards located within said casing and having identifying indicia imprinted thereon corresponding to the indicia appearing on said front section, a mounting member joined to said rear section for attaching said device to said telephone, and a selector assembly mounted for slidable movement on said front section, said selector assembly including a selector element that is adapted to be aligned with one of said indicia on said front section, and a pick-up member interconnected to said selector element and movable into engagement with the index card in said casing corresponding to the indicia with which the selector element has been aligned, said mounting member including an attaching plate that is secured directly to the rear section of said casing, a rear portion joined to said attaching plate and located at an angle with respect thereto, and a plurality of fingers joined to said rear portion at the bottom thereof and extending upwardly in generally parallel spaced relation with respect thereto, said fingers being received behind a front wall of said telephone and cooperating with said rear portion to frictionally receive the front wall therebetween, and a curved bottom portion joined to said attaching plate for engagement on a top of a surface on which said telephone rests for protecting said surface when said device is in the position of use.

3,355,832
CHARGER GUIDE FOR A BOLT OPERATED FIREARM
Keith Burnham Davis, Ware, and Reginald Herbert Greenhill, Wormley, England, assignors to The Secretary of State for Defence in Her Britannic Majesty's Government of the United Kingdom of Great Britain and Northern Ireland, London, England
Filed Nov. 9, 1966, Ser. No. 593,215
Claims priority, application Great Britain, Nov. 10, 1965, 47,688/65
5 Claims. (Cl. 42—18)

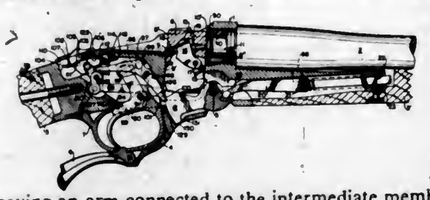


1. A charger guide for a bolt operated small arms weapon comprising a charger guide body in one side of which is formed a charger guide recess; a conversion liner fixed into said recess to reduce the effective dimensions thereof to fit a smaller size of cartridge clip; and a projection extending inwardly from one side wall of the recess to serve the dual purpose of a stop for restraining the clip from falling forward out of the recess and a fulcrum about which the clip can be rotated by forward pressure applied thereto, by operation of the bolt, to eject the cartridge clip.

3,355,833
SINGLE SHOT DROP BREECHBLOCK RIFLE
William B. Ruger, Southport, and Lawrence L. Larson, Bethany, Conn., assignors to Sturm, Ruger & Co., Inc., Southport, Conn., a corporation of Connecticut
Filed May 16, 1966, Ser. No. 550,214
13 Claims. (Cl. 42—23)

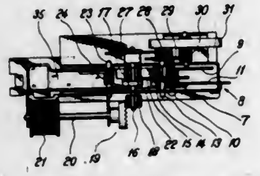
1. The improvement in drop breechblock rifles which comprises a receiver, a drop breechblock movable upward and downward in the receiver, a hand lever and an intermediate member both pivotally mounted on a common pin in the receiver and being rotatable with respect to each other, a hammer pivotally mounted on the pin,

a recess in the breechblock in which the hammer swings from its cocked to its firing positions, a lever arm on the intermediate member in operative connection with the breechblock to open and close the breechblock, a linkage



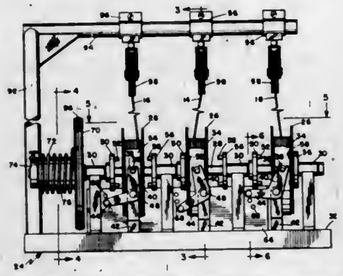
having an arm connected to the intermediate member and an arm connected to the hand lever whereby movement of the hand lever operates the breechblock and cocks the hammer.

3,355,834
HAND-OPERATED TOY MACHINE GUN
Eiji Tada, Ichikawa-shi, Chiba, Japan, assignor to Tada Manufacturing Co., Ltd., Tokyo, Japan
Filed Oct. 12, 1966, Ser. No. 586,279
Claims priority, application Japan, Oct. 23, 1965, 40/85,855
3 Claims. (Cl. 42—57)



1. A hand-operated toy machine gun producing a succession of explosions from a cap tape, comprising in combination, a sector gear connected with a trigger, a shifting shaft which is shifted by turning of said sector gear meshing with a pinion on said shifting shaft, a cam shaft which is driven through said pinion and a gear on said shifting shaft from said sector gear or through a train of gearing by the inertia force of a flywheel which has been driven from said sector gear, a feed roller which is rotated through a train of gearing by said cam shaft to feed a cap tape to an anvil and a hammer which is actuated by a cam on said cam shaft to strike said cap tape on said anvil.

3,355,835
JIG FISHING APPARATUS
Jim Lyons, 5104 N. Harbor Drive, San Diego, Calif. 92106
Filed Apr. 23, 1965, Ser. No. 450,395
5 Claims. (Cl. 43—6.5)



1. A jig fishing line handling unit for mounting on a boat, comprising:

a base member;

at least one line holding reel rotatably and shiftably mounted on said base member;

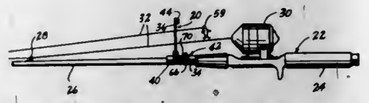
a motor operatively connected to drive means engageable with said reel;

stop means engageable with said reel;

shift means coupled to said reel to shift the reel selectively into engagement with said drive means and said stop means and to a position wherein the reel is freely rotatable;

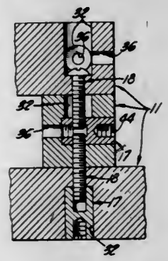
and guide means on said unit spaced from said reel to guide a line extending therefrom.

3,355,836
FISHING LURE PROPULSION DEVICE
Roy R. Hanson, 155 Cumberland Ave., Maryland Heights, Mo. 63042
Filed Mar. 18, 1965, Ser. No. 440,730
4 Claims. (Cl. 43—19)



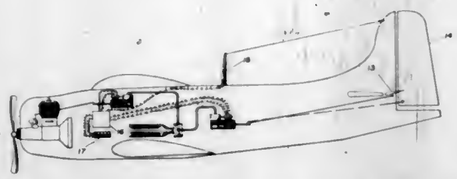
1. A bow device for propelling a fishing lure for use with fishing rods comprising a pair of upwardly diverging arms supported upon a base, means for attaching said base to the shaft of the fishing rod with said arms extending upwardly from said shaft comprising a sleeve-like means adapted to be clamped to the shaft, a bow string attached to the free ends of said arms, said bow string having two parallel flights of strings spaced from one another and means connected to said two stiring flights for receiving a fishing lure.

3,355,837
CONSTRUCTION TOY
Harlan H. Pedersen, 370 N. Lima, Sierra Madre, Calif. 91024
Filed Feb. 25, 1965, Ser. No. 435,225
18 Claims. (Cl. 46—17)



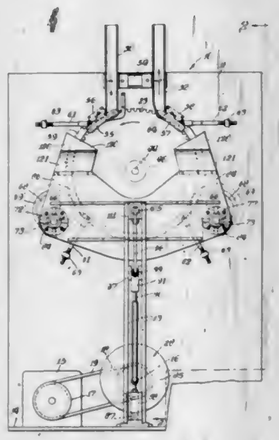
2. A construction toy comprising a plurality of rigid structural members connectable in a variety of different positions and arrangements by internally threaded connectors and externally threaded tie members, said structural members having a plurality of transverse openings therethrough comprising a first relatively long large-diameter portion and a second relatively short small-diameter portion, a plurality of connector members and a plurality of threaded tie members, said connector members corresponding generally to the length and diameter of said first portions so as to be received loosely therein and having a threaded axial bore at each end and at least one threaded diametric bore extending transversely therethrough, said threaded tie members being insertable through aligned openings of two or more of said structural members and adapted to be threaded into the threaded bores of said connector members and effective when tightened to hold said last mentioned structural members in assembled relation.

3,355,838
FLUID PRESSURE CONTROL FOR MODEL AIRCRAFT
Ronald E. Huffman, Tucson, Ariz. (Box 443, Fries, Va. 24330)
Filed June 17, 1965, Ser. No. 464,764
1 Claim. (Cl. 46—78)



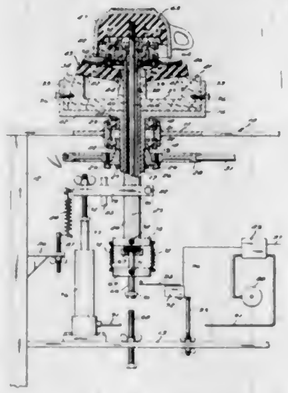
An apparatus for the remote control of a powered model aircraft having a number of discrete maneuvering control means comprising a radio signal transmitter to transmit control signals to said aircraft; a radio signal receiver, carried by said aircraft, to receive said control signals; a container of gas under pressure carried by said aircraft to provide motive force for the actuation and operation of said maneuvering control means of said aircraft; and a number of discrete gas actuators, each of said gas actuators having a piston chamber to carry a reciprocating piston with a shaft linked to one of said discrete maneuvering control means, a gas control valve to control flow of gas into said piston chamber from said container and out of said piston chamber to atmosphere, means providing fluid communication between said containers and said control valve, and a self-neutralizing solenoid to respond to said control signals and operate said gas control valve in response thereto.

3,355,839
METHOD OF AND APPARATUS FOR ROUNDING BRISTLE ENDS
George S. Clemens, Northfield, Ill., assignor, by mesne assignments, to Carlson Tool & Machine Company, Geneva, Ill., a corporation of Illinois
Filed Nov. 12, 1964, Ser. No. 410,394
23 Claims. (Cl. 51—56)



1. Apparatus for rounding the ends of bundled elongated elements comprising:
means for providing a supply of elongated elements to a picking zone;
means movable through said picking zone for segregation and loosely holding a bundle of a plurality of said elongated elements while permitting rotational movement and transverse movement of the elements relative to each other in the bundle;
grinding surface means for grinding an end of the elements; and
means for moving said grinding surface means seriatim against and away from the elongated element ends while concurrently effecting relative movement between said surface and said elements and transversely to the element ends for grinding the element ends while in contact therewith and causing movement of the elements as a result of disengagement of the grinding surface therefrom.

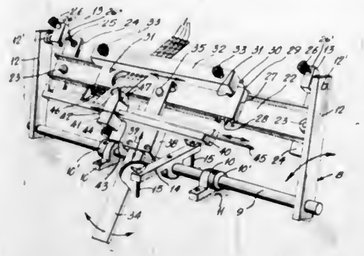
3,355,840
CUP TOPPING MACHINE
Nelson G. Bonning, Warren, Pa., assignor to Buffalo China, Inc., Buffalo, N.Y., a corporation of New York
Filed Jan. 13, 1965, Ser. No. 425,202
16 Claims. (Cl. 51—71)



1. A topping machine for hollowware having a circular rim lying along a plane comprising a chum adapted to support the hollowware with the rim thereof exposed, an abrasive disc having a surface generally normal to the axis of said rim, means connected to said disc operable to progressively deform said disc while said disse engages said rim to a shape having portions of said surface extending more nearly aligned with the axis of said rim, and means connected to produce relative rotation between said disc and said rim, the progressive deformation of said disc causing said disc to progressively shape said rim.

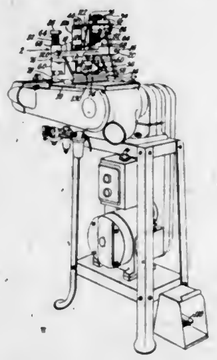
3,355,841
DRILL GRINDING APPARATUS
Samuel Niquet, 172 Bates St., New Bedford, Mass. 02745
Filed Jan. 14, 1965, Ser. No. 425,548
Claims priority, application Canada, Jan. 20, 1964, 893,663, Patent 719,821
6 Claims. (Cl. 51—94)

1. Multiple drill grinding apparatus comprising rotatable abrasive means having a grinding surface presenting a substantially straight transverse operative portion, and drill holding means associated with said abrasive means, said holding means comprising spaced pivot means disposed at the level of said operative portion of said grinding surface and on each side thereof, the line connecting said spaced pivot means being substantially parallel to said operative portion, a rail member extending between said pivot means, blocks secured to said pivot means, bolts freely passing through said blocks and rigidly connected to said rail member, nut means screwed on said bolts and abutting said blocks, said blocks and bolts allowing swinging movement of said rail member with respect to said pivot means in accordance with an arc of a circle of adjustable radius, multiple drill support means carried by said rail member to hold a plurality of drills side by side and in contiguous relationship with the longitudinal axes of said drills inclined to said operative portion of said grinding surface at an angle equal to the



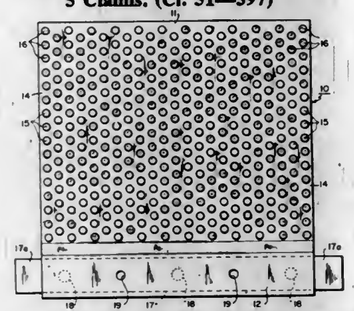
cutting angle of the drill tips and with the tips of said drills in the vicinity of a line joining the axes of said pivot means and offset from said line, whereby, with a cutting lip and associated heel surface of said several drills held in contact with said operative portion of said grinding surface, swinging movement of said rail member and multiple drill support means about said pivot means will produce sharpening of said cutting lip and grinding of said heel surface of each of said several drills.

3,355,842
SHOE PART REDUCING MACHINES
Frank W. Wetherbee, Hamilton, Mass., assignor to United Shoe Machinery Corporation, Flemington, N.J., and Boston, Mass., a corporation of New Jersey
Filed June 9, 1965, Ser. No. 462,661
6 Claims. (Cl. 51—135)



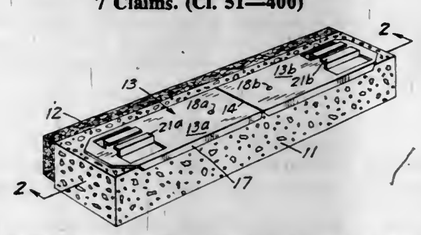
1. In a machine for reducing the thickness of select portions of a shoe part having reducing instrumentalities; means for clamping a shoe part in fixed orientation relative to the reducing instrumentalities comprising a clamping member movable between an inoperative position, a clamping position, and an operative position, a support member having a work supporting surface thereon movable between a clamping position and an operative position, and means normally biasing said support member into its clamping position. presser means associated with said clamping member for urging select portions of said shoe part into frictional engagement with said reducing instrumentalities; and means for moving said clamping member from the inoperative position into its clamping position wherein the shoe part positioned on said work supporting surface is clamped between the clamping member and support member in fixed orientation to said reducing instrumentalities and for thereafter unitarily moving said clamping member, support member, the shoe part clamped therebetween, and said presser means into operative relation to the reducing instrumentalities with the shoe part in the fixed orientation established at the clamping position.

3,355,843
GRINDING AND POLISHING PAD
George E. Bonin, Addison, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Oct. 15, 1964, Ser. No. 404,136
5 Claims. (Cl. 51—397)



1. An improved liner pad construction for finishing contoured surfaces of a curvilinear workpiece which comprises, a body portion of flexible material, an offset connecting portion along one end of said body portion, an upper working surface formed on said body portion, a plurality of spaced-apart flexible fingers extending outwardly from a lower surface of said body portion a distance equal to the offset of said connecting portion, said fingers being formed integrally with said body portion and flexibly maintaining said working surface in spaced-apart relationship from a support surface so as to permit said working surface to conform to the configuration of the workpiece, an attachment bar embedded within said attachment portion to facilitate the securement of said body portion to a support surface, and said body portion together with its integrally formed fingers having a shore A durometer hardness of between about 50 and 90.

3,355,844
UNIVERSAL SPONGE MOP HEAD
Roger L. Abler, White Bear Lake, and John R. Anderson, Maplewood, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed Mar. 10, 1967, Ser. No. 622,128
7 Claims. (Cl. 51—400)



1. A sponge mop head, designed for installation on a wide variety of sponge mop frames having a mounting plate, comprising in combination:
a thin rigid elongate base plate having two sides and two ends,

a plurality of attaching means on said base plate adapted for connection to corresponding means on a plurality of different mop frame mounting plates,

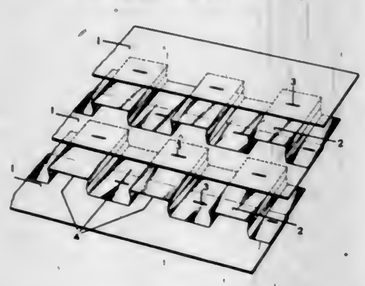
said base plate having a weakened portion, extending between its sides approximately midway between its ends, along which said base plate may be broken into two substantially equi-dimensional parts, and

a prismatic sponge body having two ends and a plurality of sides,

at least one of said sides being both longer and wider than said base plate,

said one side being adhered to one face of said base plate substantially throughout their coextensive areas except for an adhesive-free portion of said areas, said portion being about one inch long and the entire width of said base plate extending from said weakened portion beneath one of said substantially equi-dimensional parts of said base plate.

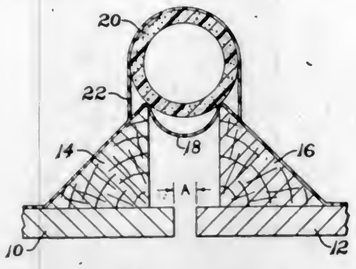
3,355,845
TARPAULIN FOR HARVESTED AGRICULTURAL PRODUCTS STANDING IN THE FIELD IN SHEAVES OR HEAPS
Barteld Pieter Allersma, Noordpolder 9, Den Andel, Netherlands
Filed Apr. 20, 1965, Ser. No. 449,599
1 Claim. (Cl. 52—5)



A ventilated tarpaulin adapted for covering agricultural products standing in the field in sheaves or heaps, comprising a plurality of first longitudinally extending transversely spaced strips of thin flexible material, said first strips being disposed at least substantially parallel and being folded transversely to their lengths to form alternating upwardly and downwardly convex pleats, a plurality of second longitudinally extending transversely spaced strips of thin flexible material, said second strips being disposed at least substantially parallel and being generally straight when the tarpaulin is extended to lie flat, the first and second strips alternating with each other and being disposed in echelon so that successive strips overlap for substantial portions of their widths, and means connecting the convex portions of the pleats of the first strips to the portions of the second strips which such pleats overlap.

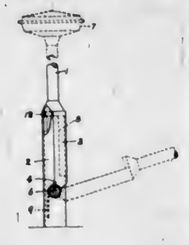
3,355,846
ROOF EXPANSION JOINT
Charles H. Tillson, Akron, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York
Filed Apr. 1, 1966, Ser. No. 546,111
4 Claims. (Cl. 52—58)

3. A roof expansion joint seal comprising two adjacent laterally spaced roofing members, a pair of cant strips each fastened to one of said members, a flexible tube member bridging between and supported lengthwise by said pair of cant strips, and a weather proof flashing which is fastened to said roofing members and which



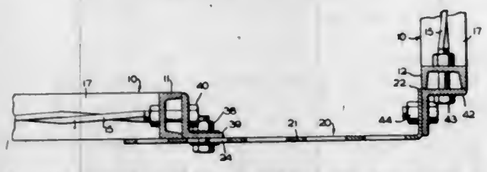
covers and encloses said cant strips and the side of said tube directed away from said cant strips.

3,355,847
STREET LIGHTING COLUMNS
John William Pratt, Mansfield, England, assignor to Abacus Engineering Limited, Nottingham, England
Filed June 16, 1964, Ser. No. 375,440
5 Claims. (Cl. 52—116)



1. A street lighting column comprising normally vertical upper and lower parts hinged together in which the upper part is formed with a downward extension which is mounted on a member which extends through the lower part of the column and forms a pivot for the upper part which is turned about the pivot to lower the lantern on the upper part, in which the lower end of the upper part is formed with a cup to fit over the upper end of the lower part, and in which the downward extension on the upper part is pivoted on a member which when turned by a key means includes means for raising the upper part of the column to disengage the cup thereon from the lower part of the column.

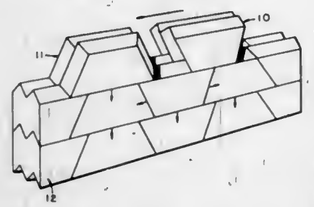
3,355,848
ADJUSTABLE PARTITIONS
Leonard B. Ulery, Jeffersontown, Ky., assignor to Logan Co., Louisville, Ky., a corporation of Kentucky
Filed Dec. 30, 1964, Ser. No. 422,328
5 Claims. (Cl. 52—285)



5. Filler means in a space between two panels one of which is a partition panel, comprising at least one vertical filler unit extending between said panels, said unit comprising a vertical planiform body having a vertical flange perpendicular to said body at one end thereof adjacent said partition panel, said body having a plurality of

sets of horizontally aligned slots said partition panel being vertical and perpendicular to said body, a vertical angle iron having one flange secured to the adjacent end of said partition panel and its other flange extending beyond said end of said panel and lying against the flange of said unit, and fastening elements passing through said other flange of said other angle iron and through said flange of said unit and an additional fastening element passing through one slot of each set of said body and through said other panel.

3,355,849
BUILDING WALL AND TAPERED INTERFITTING BLOCKS THEREFOR
Norman Lee Hancock, 10439 Garibaldi St., St. Louis, Mo. 63122
Filed July 9, 1965, Ser. No. 470,736
11 Claims. (Cl. 52—396)



8. In a building wall:

(a) a plurality of first and second types of blocks arranged in superimposed rows,

(b) the first and second types of blocks each having an inverted substantially W-shaped upper side forming a pair of longitudinal top ribs with a corresponding longitudinal top groove therebetween.

(c) an inverted substantially W-shaped lower side forming a pair of longitudinal bottom grooves with a bottom rib therebetween, and

(d) substantially W-shaped ends tapered from one of said sides to the other, each end of each first type block having a pair of end grooves with an end rib therebetween, the end grooves extending between the top ribs and bottom grooves and the end rib extending between the top groove and bottom rib,

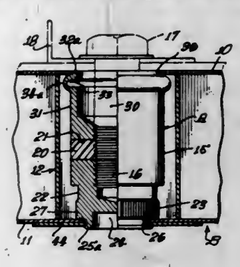
(e) each block of the second type having substantially W-shaped ends tapered from one side to the other side, opposite to the taper of the first type block, each end of each second type block having a pair of end ribs with an end groove therebetween, the end ribs extending between the top ribs and bottom grooves, and the end groove extending between the top groove and bottom rib,

(f) the two types of blocks being alternately disposed in end-to-end relation in each row with the tapers reversed,

(g) each type of block having its bottom grooves receiving and its bottom rib interfitting respectively the top ribs and the top groove of the subjacent block of the same type, and having its W-shaped ends interfitting the W-shaped ends of laterally adjacent blocks of the other type of the same row.

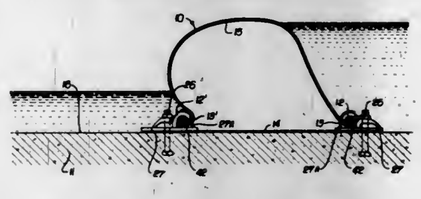
3,355,850
INSERT WITH ENDS RIVETED TO PANEL SKINS
Frederick W. Rohe, 5191 S. Bradford, Placentia, Calif. 92670
Filed Feb. 14, 1964, Ser. No. 344,906
3 Claims. (Cl. 52—617)

3. In combination with a sandwich panel structure comprising spaced parallel skin sheets and a low-density core having respective sides secured to said skin sheets, said skin sheets having respective axially aligned apertures of relatively large and small diameters respectively, and said core having a cavity at least as large in diameter as said relatively large aperture and extending therefrom to said relatively small aperture; a one piece spacer comprising at one end a tubular wall portion terminating in a head of substantially the same diameter as said larger aperture, said head being disposed flush with one skin and tightly received in said relatively large aperture and having at its other end an annular face supported against the inner face of the other skin sheet by abutting engagement therewith, said tubular wall portion including a collapsed weakened section thereof bulbed radially outwardly immediately adjacent said head and providing an annular shoulder abutted against the inner face of the skin sheet defining said relatively large aperture so as to lock said spacer in said panel when



said annular face of said other end is in said abutting engagement with said other skin sheet, an intermediate body portion with a thickened wall section adjoining said tubular portion and having an internal thread defining a threaded socket to receive a fastener bolt, said tubular end portion of the spacer defining an opening through which said bolt may be inserted, and said annular shoulder, in its abutting engagement with its adjacent skin sheet, anchoring said spacer against being stripped through said larger opening in response to the pull of said bolt when tightened in said socket, a tubular lip at the other end extremity of said spacer projecting through said smaller aperture and having an end portion turned outwardly and clamping said other skin sheet against said radial shoulder, and a partition wall sealing the end of said threaded socket intermediate said socket and said lip.

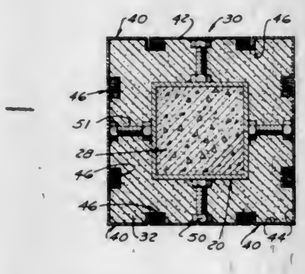
3,355,851
METHOD AND APPARATUS FOR SECURING THIN-SKINNED STRUCTURES
Norman M. Imbertson, 1020 Inverness Drive, Pasadena, Calif. 91103, and Loring E. Tabor, 3563 Motor Ave., Los Angeles, Calif. 90034
Filed Mar. 31, 1965, Ser. No. 444,164
10 Claims. (Cl. 52—698)



5. An elongated clamping device retaining a relatively thin-skinned structure to a generally flat base including tie down means, comprising: a central support body member including a portion supported by said base, a first generally hook shaped arm portion projecting from said body member and including an end supported by said base on

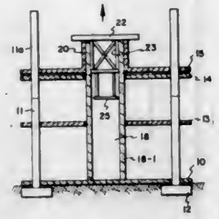
a plane with said central support body member portion supported by said base, at least one opening in said first hook shaped arm portion receiving said tie down means, a second generally hook shaped arm portion projecting from said body member opposite said first generally hook shaped arm portion, said second generally hook shaped arm portion terminating in spaced relation from said base with said clamping device supported by said base, a cavity defined between said second generally hook shaped arm portion and said base, said cavity receiving a portion of said thin-skinned structure, a cylindrical rod fixedly secured to said thin-skinned structure within said cavity and to firmly pressing said thin-skinned structure against the wall of said cavity, whereby said tie down means to secure said clamping device to the base, and said second generally hook shaped arm portion and said cylindrical rod retain said thin-skinned structure against dislodgment from said cavity.

3,355,852
FIREPROOF BUILDING COLUMN ASSEMBLIES
Edward C. Lally, Palos Park, Ill., assignor to Fire-Trol Corporation, Chicago, Ill., a corporation of Illinois
Filed Nov. 12, 1963, Ser. No. 322,936
4 Claims. (Cl. 52—725)



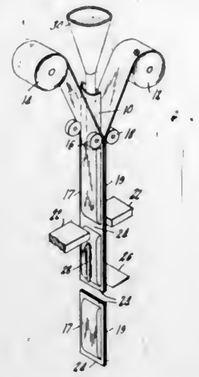
1. In a rectangular fireproof building column assembly, a composite eight-piece, floor-to-ceiling outer column shell adapted to enclose a mass of fireproofing material and comprising four identical corner strips and four intervening wall plates, said corner strips and wall plates being formed of sheet metal of uniform thickness, each corner strip being in the form of a vertically extending angle piece of right angle configuration and presenting diverging side wings, each wall plate being of flat rectangular configuration, each corner strip having a side wing coplanar with a side wing of an adjacent corner strip, each wall plate being interposed in coplanar relationship between the coplanar side wings of the adjacent corner strips, the adjacent vertical edges of the side wings and wall plates being formed with integral slidably and closely interlocked inwardly and laterally offset first and second hook portions respectively by means of which such side wings and wall plates are maintained in contiguity, the first hook portion on each vertical edge of each wall plate consisting of a lateral section and a re-entrant section spaced from the plane of the wall plate a distance equal to the thickness of the sheet metal, the cooperating second hook portions on each vertical side edge of each corner strip consisting of a first lateral section, an inwardly offset section, a second lateral section, and a re-entrant section spaced from the inwardly offset section a distance substantially equal to the thickness of the sheet metal, said second hook portion thus defining an L-shaped slot which slidingly receives the first hook portion with the inwardly offset section and the re-entrant hook portion thereof embracing the opposite sides of the re-entrant portion of the first hook portion in substantially contiguous face-to-face relationship, the transverse dimension of each pair of interlocking hook portions being equal to four thicknesses of sheet metal.

3,355,853
METHOD OF BUILDING CONSTRUCTION
John D. Wallace, Salt Lake City, Utah, assignor to Intermountain Lift Slab Corporation, Salt Lake City, Utah, a corporation of Utah
Filed Feb. 23, 1965, Ser. No. 434,235
6 Claims. (Cl. 52—745)



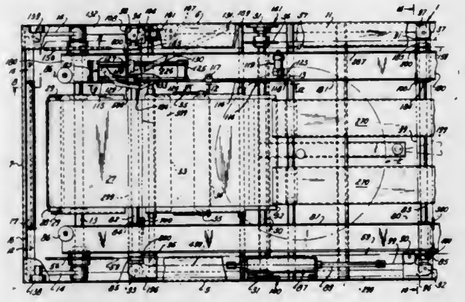
1. A method of building construction which comprises the steps of
erecting a plurality of vertical supporting members for a building, secured adjacent their lowermost ends to a foundation support;
forming a grade slab to surround each of the supporting members;
covering the grade slab with a separating layer of bond-preventing material;
casting a monolithic concrete floor slab above said separating layer, with openings therein around each of said supporting members and with at least one opening adapted to receive a vertically extending structural component;
covering the floor slab with a second separating layer of bond preventing material;
casting a monolithic roof slab above said second separating layer, with openings therein around each of said supporting members and with an opening or openings overlying said at least one opening, respectively, in the floor slab that is adapted to receive a vertically extending structural component;
erecting inner and outer wall forms so as to be carried by the roof slab, the outer wall form surrounding a corresponding opening in the roof slab and said inner wall form being spaced from said outer wall form and extending downwardly into the corresponding overlying opening;
lifting said roof slab vertically to a position above the permanent position of the floor slab, while maintaining said roof slab in sliding engagement with each of the supporting members;
lifting said floor slab vertically to its permanent position, while maintaining it in sliding engagement with the supporting members, and fixing the floor slab to the supporting members at its permanent position;
continuing upward movement of the roof slab to its permanent position, and then fixing it to the supporting members;
placing concrete in the wall forms carried by the roof slab during upward movement of the slab to form walls belonging to the vertically extending structural component; and
controlling the rate of travel of the roof slab such that the initial set of the walls is obtained before the forms are moved therepast.

3,355,854
METHOD OF MAKING A DISPENSER PACKAGE
Robert D. Lowry, Winchester, Mass., assignor to Lowry Development Corporation, Winchester, Mass., a corporation of Massachusetts
Original application, May 18, 1964, Ser No. 367,969, now Patent No. 3,315,801, dated Apr. 25, 1967. Divided and this application Dec. 22, 1966, Ser. No. 619,103
7 Claims. (Cl. 53—28)



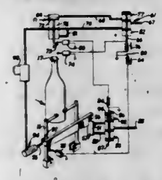
3. The method of making a dispenser package comprising sealing a relatively stiff sheet of material to the marginal edge portions of a sheet of limper material while loading a flowable commodity into the enclosure defined by said marginal seals, folding the composite sheet substantially medially to sandwich the commodity and the limper sheet between folds of the stiffer sheet, and adhering the walls of the folded limper sheet together to retain the package in folded configuration.

3.355.855
CONTROL MANIPULATING ARM EMBODIED IN A PACKAGE HANDLING MACHINE
Winton Loveland, Freeport, and Saul Warshaw, New York, N.Y., assignors to The Loveshaw Corporation, Farmingdale, N.Y., a corporation of New York
Filed Aug. 6, 1965, Ser. No. 477,868
4 Claims. (Cl. 53—75)



1. In a package handling machine the combination with conveyor means to transport a plurality of package units successively in spaced relation along a predetermined path past equipment located adjacent to this path to perform certain operations on each package unit with the transport path having an equipment control station located to one side thereof, each of the package units having a sidewall to be transported past this station in opposed relation and a trailing end wall arranged transversely of this sidewall and joined to the latter in a substantially sharp corner, of
(a) control means mounted at said station to dictate successive operation of equipment on each package unit, and
(b) a control means-manipulating arm movably mounted to said control means and having an outside edge opposed to said sidewall of each package unit when the latter is at said station,
(c) said outside edge having an intermediate section and a forwardly-extending terminal section meeting at a junction point with said terminal edge section arranged obliquely to said intermediate edge section and extending forward from the latter progressively farther back away from said path so that at least the junction point of said edge sections contacts each such package unit sidewall located at said station with said terminal edge section diverging away from said sidewall for progressive wipe against each said package unit corner as the latter is transported forward past said edge junction point.

3,355,856
INDEXING DEVICE
Benjamin F. Randrup, 423 Roberta Ave., Pleasant Hill, Calif. 94523
Filed Apr. 28, 1965, Ser. No. 451,524
17 Claims. (Cl. 53—76)

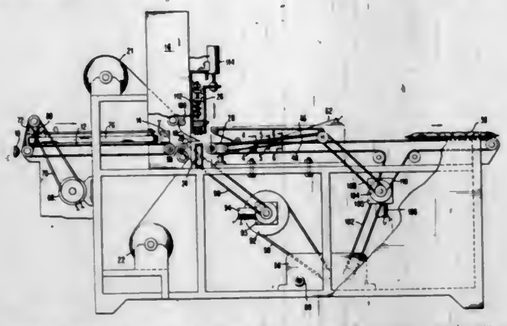


1. An indexing device for indexing containers and the like having surfaces presenting a horizontal circular cross-section during movement of the containers on a conveyor, comprising positioning means carrying a pair of opposed members adapted to abut the surface of the container in two lateral locations on the circular portion thereof whereby the container will be pushed into central alignment between said members, said opposed members being mounted for lateral movement, yieldable means for urging said members relatively toward each other, said yieldable means being sufficiently yieldable to allow the members to be moved relatively apart on movement of a container into indexing position by said conveyor, centering means associated with said opposed members for maintaining the members in bilateral symmetry with respect to a central alignment during lateral movement of said members, latch means associated with said members for holding the members in an adjusted lateral location during positioning of the unit being positioned, and means for releasing said latch means and allowing said members to move laterally an amount sufficient to allow the container being indexed to pass through said indexing device.

3,355,857
METHOD AND APPARATUS FOR PACKAGING ARTICLES
Hubert E. Tobey, Rochelle Park, N.J., assignor to Continental Baking Company, Rye, N.Y., a corporation of Delaware
Filed Jan. 21, 1965, Ser. No. 427,075
8 Claims. (Cl. 53—182)

1. Apparatus for closing a package including upper and lower layers of a resilient thermoplastic sheet material comprising means for conveying the package in a direction essentially parallel to the edge to be sealed, means for gripping together and conveying the upper and lower layers at the edge to be sealed at two portions thereof laterally spaced apart with respect to the direction of con-

veyance, a single continuously upwardly inclined elongated heated member positioned between the two paths of the laterally spaced portions and extending substantially beyond the plane which is common to said paths, said gripping means being operable to convey the portion of



said gripped side edge of said layers between the laterally spaced portions into tension over said heated member with the tension continuously increasing until the layers are softened and severed while fusing and joining the upper and lower layers at the severed edges thereof.

3,355,858
CONTINUOUS CONTAINER CLOSING DEVICE
Marion C. Jahn, Highland Park, Ill., assignor to Colborne Manufacturing Company, Chicago, Ill., a corporation of Illinois
Filed Jan. 25, 1965, Ser. No. 427,989
11 Claims. (Cl. 53—303)

1. A device for continuously securing lids and the like to successive open top pans conveyed in a straight line and comprising a housing

power operated movable conveyor means for transporting said pans in succession in a straight line longitudinally of said housing;

a lid applicator for feeding and applying lids to the pans transported by said conveyor;

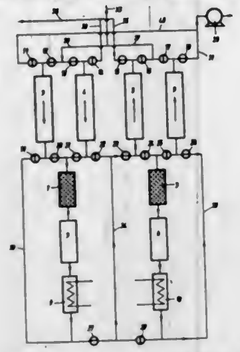
a carrier and means for moving said carrier in an orbital path in a plane normal to and parallel with said conveyor, said carrier mounting a lid fastener tool for engaging and securing applied lids on successive pans, and

means for moving said lid fastener tool laterally relative to said carrier during fastener engagement with a pan and at a lineal speed equal to that of the conveyor.

3,355,859
SELECTIVE ADSORPTION OF GASES AT LOW TEMPERATURE
Ernst Karwat, Pullach, Isartal, Germany, assignor to Lind Aktiengesellschaft, a corporation of Germany
Filed Feb. 13, 1964, Ser. No. 344,785
Claims priority, application Germany, Feb. 15, 1963, G 37,076; Jan. 17, 1964, G 39,640 (addition)
6 Claims. (Cl. 55—25)

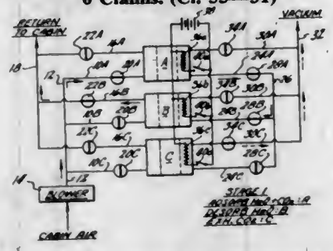
1. In a process for producing an oxygen enriched stream from air, the steps of:

cooling a stream of air to a temperature of −60° C. to −100° C. by contact with the surface of a regenerator thereby depositing water and reducing the water content of the air to less than $20/p$ milligrams per standard cubic meter (0° C. and 1 atmosphere) where p represents the total absolute pressure of the gaseous mixture in kg./cm.²; and passing the cooled dry air stream at a temperature of from −60° C. to −100° C. into contact with a solid adsorbent selective for nitrogen thereby selectively removing at



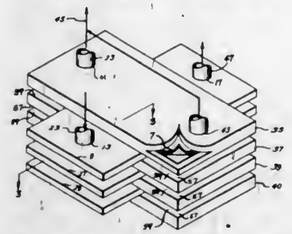
least part of the nitrogen, and the further steps of recovering the oxygen enriched gas from the adsorber, cooling the resultant gas, and passing same through a regenerator alternating with said first-recited regenerator, said cooling of the resultant gas comprising passing same through a second regenerator and then through an externally cooled heat exchanger.

3,355,860
THREE CANISTER REGENERATIVE CO_2 SYSTEM
Walter E. Arnoldi, West Hartford, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Feb. 18, 1965, Ser. No. 433,633
6 Claims. (Cl. 55—31)



3. The three stage method of operating a three canister regenerative CO_2 system for cabin air purification which includes in the first stage the steps of circulating H_2O and CO_2 laden air from the cabin through the first of the three canisters to adsorb the H_2O and CO_2 content of the air, returning the air from the first canister through the second canister to desorb the H_2O content of said second canister, returning the moist air from said second canister to the cabin, and simultaneously connecting the third canister to vacuum; in the second stage circulating H_2O and CO_2 laden air from the cabin through the second canister to adsorb the H_2O and CO_2 content of the air, returning the air to the cabin through the third canister to adsorb the H_2O content of said third canister, and simultaneously connecting the first canister to vacuum to exhaust its CO_2 content; and in the third stage circulating the H_2O and CO_2 laden air from the cabin through the third canister to adsorb the H_2O and CO_2 content of the air, passing the air from the third canister through the first canister to desorb the H_2O content of the first canister, returning the moist air from the first canister to the cabin, and simultaneously connecting the second canister to vacuum to exhaust the CO_2 content of the second canister.

3,355,861
MIXTURE SEPARATION CELL
James E. Webb, Administrator of the National Aeronautics and Space Administration, with respect to an invention of Coleman J. Major, Tallmadge, Ohio, and Karl Kammermeyer and Richard W. Tock, both of Iowa City, Iowa
Filed Jan. 6, 1966, Ser. No. 519,160
6 Claims. (Cl. 55—158)



1. A cell for separating fluid mixture components by permeation through a plurality of stacked permeation units therein, said units each operatively connected to a supply conduit for receiving the mixture and to removal conduits for withdrawing mixture components therefrom, each said unit comprising:

a perm-selective membrane having sealed therewithin a porous substrate sheet for transmitting the permeated component to one of said removal conduits which is in communication therewith;

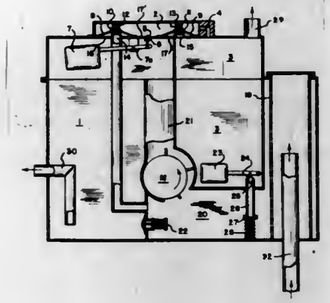
a porous member in fluid communication with the supply conduit and in abutting relation to said perm-selective membrane so as to conduct the fluid mixture therethrough;

another of said removal conduits also in fluid communication with said porous member so as to remove unpermeated mixture from the unit, said permeation units being in abutting relation to each other with each said porous member disposed intermediate and in surface contact with adjacent membranes to thereby act as a supply and component removal means for a pair of said membranes, said perm-selective membranes being generally elongate in plan view and in aligned relationship with respect to each other, said porous members being also generally elongate in plan view and in aligned relationship with respect to each other with the longitudinal axes of said elongate membranes transverse to the longitudinal axes of said porous members so that only a portion of the surface areas of the abutting membranes and porous members are in contact with each other and provide the permeating surface for the mixture; and

said supply conduit and said one of said removal conduits being connected to said porous members on opposite sides of the contacting surface areas.

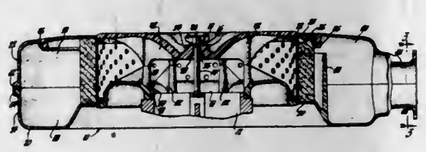
3,355,862
LIQUID-GAS SEPARATOR
André Francois Blanchet, Le Perreux, and Pierre Umbdenstock, La Varenne-St.-Hilaire, France, assignors to S.A.T.A.M.—Societe Anonyme Pour Tous Appareillages Mecaniques, la Courneuve, France, a French company
Filed May 13, 1965, Ser. No. 455,484
Claims priority, application France, May 14, 1964, 974,527; July 3, 1964, 980,612
5 Claims. (Cl. 55—166)

3. In an apparatus for degasifying liquids having a pump, a separating chamber provided with an inlet for liquid to be degasified, an outlet for degasified liquid, a gas and foam outlet to a purging chamber, and a gas and foam outlet to the suction side of the pump, the improvement which comprises an auxiliary chamber, a conduit between the separating and auxiliary chambers, a conduit between the auxiliary and purging chambers, said conduits having unlike resistance to flow, a first valve in the one of said conduits of lesser resistance to flow, a second valve controlling the gas and foam outlet to the purging chamber, a third valve controlling the gas and foam



outlet to the suction side of the pump, means responsive to liquid level in the separating chamber to control said first valve, first resilient means biasing said second valve to closed position and permitting said second valve to open for a first excess of presusre in said separating chamber over said auxiliary chamber, and second resilient means biasing said third valve to closed position, said second resilient means permitting said third valve to open for a second excess of pressure in said separating chamber over said auxiliary chamber greater than said first excess.

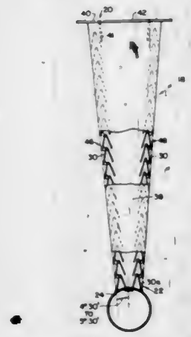
3,355,863
AIR CLEANER AND SILENCER ASSEMBLY
William D. Pittsley, Flint, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Mar. 8, 1966, Ser. No. 532,758
3 Claims. (Cl. 55—276)



1. An air cleaner and silencer assembly for an internal combustion engine having an air intake port provided with an upstanding stud, comprising a plastic housing having an air inlet and an air outlet the latter of which registers with said air intake port, an air filter element positioned in said housing between said air inlet and air outlet, said housing comprising an upper housng member and a lower housing member, a mating surface on each of said members for contacting each other to form said housing, sealing means on said mating surfaces, said sealing means including a groove formed on said mating surface of one of said members, a tongue formed on said mating surface of the other of said members for cooperating with said groove for providing a seal at the mating surfaces of said members whereby movement of air into and from said assembly is limited to said air inlet and said air outlet, a pilot aperture centrally located in said

upper housing member for accommodating said stud, locking means for holding said mating surfaces of said members together for forming said housing and effectively maintaining said sealing means, and said air inlet taking the form of a tube and being formed by an integral portion of both the upper housing member and the lower housing member when said two members are held together by said locking means, said locking means including a fork keeper on the inlet tube forming portion of one of said members and a lock pin on the inlet tube forming portion of the other of said members and cooperating with said fork keeper by securing said housing members together to form said housing.

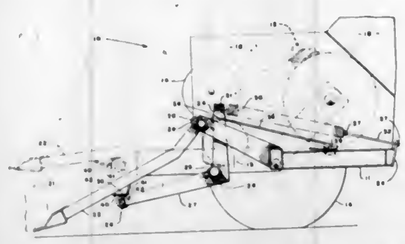
3,355,864
DUST AND LIKE PARTICLE SEPARATOR
Harold R. Sobeck, Novelty, Ohio, assignor to Rockwell-Standard Corporation, Pittsburgh, Pa., a corporation of Delaware
Filed Sept. 11, 1964, Ser. No. 395,671
9 Claims. (Cl. 55—443)



1. Apparatus for removing dust and like solid particles from air and like gases comprising a housing, a plurality of similar funnel-shaped open ended cells mounted in side-by-side relation within the housing with the larger ends of said funnels open to receive air to be cleaned, a separate tubular exhaust conduit secured to the smaller end of each cell, each said conduit having a slotted side wall region coextensive with and enclosed by the open smaller end of the associated cell, means in the side walls of each of said cells extending into the outer portions of the air stream flowing through the cell for deflecting solid particles inwardly toward the medial portion of the stream and shaped for forming non-linear passages through said side walls for conducting the major part of the air passing therethrough into a cleaned air space defined within said housing around said cells, said deflecting means at the smaller outlet end of each said cell comprising opposed converging vanes defining at said slotted region a discharge opening of predetermined width, means securing said vanes to the associated conduit, and means interconnecting said converging vanes for thereby determining and maintaining said predetermined opening width and a cleaned air outlet conduit connected to said housing space.

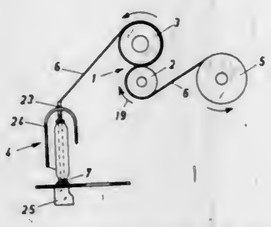
3,355,865
FORAGE HARVESTER
Thomas W. Waldrop, Ronks, Pa., assignor to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware
Filed June 30, 1965, Ser. No. 468,334
5 Claims. (Cl. 56—208)

1. A forage harvester comprising a main frame, a sub-frame, pivot means mounting said sub-frame on said main frame for vertical pivotal movement between lower and upper positions, a lever engaging said sub-frame, means fulcruming said lever on said main frame, a spring interconnected between said lever and said main frame and biasing said lever in one direction about said fulcruming means to support said sub-frame in said lower position, the spring force supporting said sub-frame decreasing as said frame rises above said lower position, manually operable means connected to said lever for



moving the lever in said one direction to raise said sub-frame about said pivot means, and interengaging cam and cam follower means on said sub-frame and said lever at the point of engagement of said lever with said sub-frame for increasing the mechanical advantage of said lever relative to said sub-frame as the sub-frame raises to compensate for the decrease in the supporting force of said spring.

3,355,866
APPARATUS FOR MAKING YARN FROM PLASTIC STRIPS
Nils Josef Nilson, Prastgatan 19, Varberg, Sweden
Filed Aug. 27, 1964, Ser. No. 392,553
Claims priority, application Sweden, Aug. 28, 1963, 9,353/63
5 Claims. (Cl. 57—31)

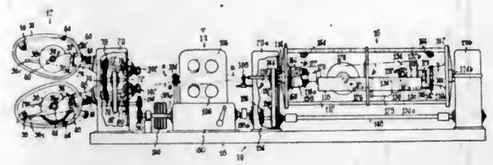


1. Apparatus for forming transverse slots in a plastic strip, and subsequently twisting the resultant slotted strip comprising means for forming said slots in combination with twisting means for receiving and twisting the resultant slotted strip, said means for forming said slots comprising a first rotatable roll and a second rotatable roll, each of said rolls having a mantle and said rolls being adapted to be pressed against each other, the surface of the mantle of the first roll being smooth, and rods mounted on the surface of the mantle of the second roll.

3,355,867
WIRE-TWISTING MACHINE
Tokuji Yoshida, 27-go, 21 2-chome, Zenpukuji, Suginami-ku, Toyko, Japan
Filed Mar. 15, 1965, Ser. No. 439,863
Claims priority, application Japan, Mar. 23, 1964, 39/15,556
5 Claims. (Cl. 57—58.54)

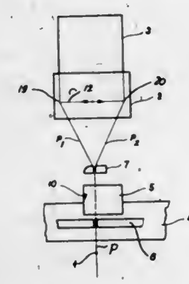
1. A wire communication cable and rope twisting machine comprising a plurality of double twisting delivery apparatus in each of which a rotatable flier is positioned

around a floating frame carrying a delivery bobbin so that an element wire withdrawn from said delivery bobbin may be double twisted per revolution of the flier by being withdrawn while being rotated around the floating frame together with said flier along the flier and a double twisting winding apparatus so made that a plurality of element wires withdrawn from said delivery apparatus may be wound on a winding bobbin carried by a floating frame



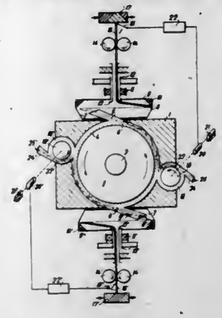
while being twisted double per revolution of a flier rotating around the floating frame by being rotated around the floating frame along said flier, an outside capstan positioned between the delivery apparatus and the winding apparatus, and inside capstan located within said floating frame of said winding apparatus capable of selective and simultaneous use.

3,355,868
YARN CONTROLLING APPARATUS
Ladislav Člvrný, Josef Havel, Zdeněk Havránek, Vítězslav Pllecky, and Ladislav Svoboda, Usti nad Orlici, Czechoslovakia, and Vitalij Žestkov, Tashkent, U.S.S.R., assignors to Vyzkumny ustav bavlnarsky, Usti nad Orlici, Czechoslovakia
Filed Sept. 6, 1966, Ser. No. 577,369
Claims priority, application Czechoslovakia, Sept. 6, 1965, 5,463/65
10 Claims. (Cl. 57—58.95)



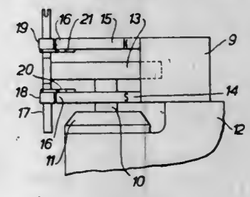
1. Yarn controlling apparatus comprising, in combination, means for supplying a yarn at a supply point; winding roller means for winding up said yarn and for moving said yarn along an axially extending surface line between two end points; and a pair of first and second rotary transporting rollers forming a nip and located between said winding roller means and said supply point, said first roller being disposed so that a yarn extending between said supply point and said surface line rests on the peripheral surface thereof spaced from said nip, and angularly oscillates thereon while moving between said end points, said first roller having on said peripheral surface a gripping means engaged by said oscillating yarn during rotation of said first roller, and moving said yarn into the nip between said first and second rollers so that the same transport said yarn from said supply point to said winding roller means.

3,355,869
TREATING OF FIBROUS MATERIALS
Premysl Vorisek, Chocen, Czechoslovakia, assignor to Vyzkumny ustav bavlnarsky, Usti, nad Orlici, Czechoslovakia
Filed Feb. 21, 1967, Ser. No. 618,301
Claims priority, application Czechoslovakia, Feb. 24, 1966, 1,223/66
10 Claims. (Cl. 57—58.95)



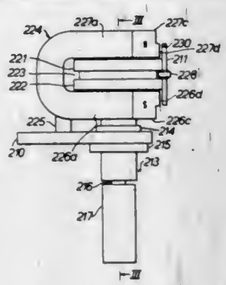
1. Apparatus for treating fibrous material, comprising, in combination, carding means operative for converting fibrous sliver into oriented fibers; a plurality of feeds arranged for respectively supplying sliver to said carding means; a plurality of spinning means each associated with one of said feeds and arranged to receive oriented fibers obtained from sliver supplied by said one feed; detector means associated with the respective spinning means for detecting breakage of yarn issuing therefrom; and arresting means operatively connected with said detector means and the respective feeds and responsive to signals produced by said detector means, for arresting the supply of sliver by a feed in response to breakage of the yarn issuing from the spinning means associated with said feed.

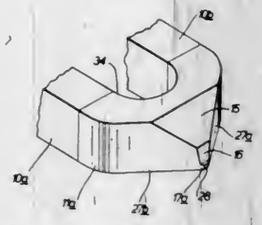
3,355,870
DRIVING TRANSMISSIONS FOR HIGH SPEED ROTARY SPINDLES
Denis Albert Edward Mattingly, London England, assignor to The Klinger Manufacturing Company Limited, London, England, a British company
Filed Dec. 1, 1964, Ser. No. 414,961
Claims priority, application Great Britain, Dec. 2, 1963, 47,501/63, 47,502/63; Jan. 17, 1964, 2,230/64
20 Claims. (Cl. 57—77.45)



1. Transmission means for supporting and rotating a false twist spindle for use in false twisting yarn, said transmission means comprising track means for contacting and rotating the spindle, magnetic means for drawing the spindle into contact with the track means, said magnetic means having two limb portions which end in pole pieces, each limb portion having two fingers connected by the appropriate pole piece, the fingers being spaced apart in a direction perpendicular to the axis of the spindle and forming a part of a permanent magnet system, the pole pieces being spaced apart with the track means passing between them and a shaft for supporting the track means passing through the space between the fingers of at least one limb portion.

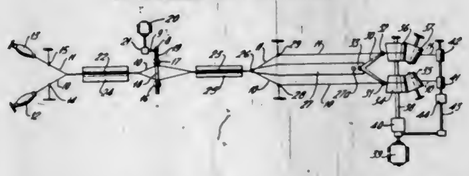
3,355,871
TRANSMISSION MEANS FOR DRIVING AND ROTATING FALSE TWIST SPINDLES
Denis Albert Edward Mattingly, London, England, assignor to The Klinger Manufacturing Company Limited, London, England, a British company
Filed Jan. 12, 1965, Ser. No. 424,952
Claims priority, application Great Britain, Jan. 17, 1964, 2,230/64
15 Claims. (Cl. 57—77.45)





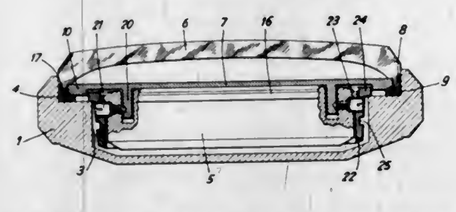
1. A device for use in false twisting yarn comprising two horseshoe magnets disposed side by side with like poles adjacent and bridged by pole pieces of material having a higher magnetic permeability than that of the magnets, the pole pieces each reducing to a tip of small area to concentrate the magnetic flux at said tip, track means passing between the two pole pieces and being supported by a shaft extending between the two horseshoe magnets and being rotatable about an axis parallel to the general direction of the magnetic field between said tips, and a false twist spindle drawn by the concentrated magnetic flux at said tips into contact with said track means, there being a small air gap between each tip and the spindle.

3,355,872
METHODS AND APPARATUS FOR CRIMPING YARNS
Reginald Selby Gilchrist and Denis Albert Edward Mattingly, London, England, assignors to The Klinger Manufacturing Company Limited, London, England, a British company
Filed Dec. 15, 1964, Ser. No. 418,480
Claims priority, application Great Britain, Dec. 20, 1963, 50,491/63
19 Claims. (Cl. 57—157)



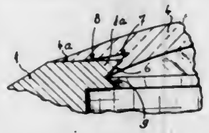
1. A method of crimping at least two lengths of yarn comprising the steps of: (a) combining the lengths of yarn to form a number of twists in each length; (b) setting the combined yarns to impart a crimp to each length; (c) separating the lengths of yarn after said setting step; (d) combining the lengths of yarn a second time to again form a number of twists in each length; (e) setting the yarns when they are combined the second time; and (f) separating the yarns after said second setting step.

3,355,873
WATERTIGHT SHAPED WATCH
Ernest Morf, Vaudijon, Colombier, Neuchatel, Switzerland
Filed July 8, 1965, Ser. No. 470,434
Claims priority application, Switzerland, July 9, 1964, 9,017/64; June 24, 1965, 8,846/65
7 Claims. (Cl. 58—90)



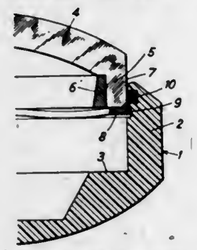
1. In a watertight shaped watch, in combination, a movement, a casing having, in plan view, a non-circular shape and an axis perpendicular thereto, said casing comprising a movement receiving section and a glass removably secured to the movement receiving section, said movement receiving section including a case-band having a projection forming a bezel and said glass having a shape similar to that of the casing and a wall located at its periphery and being parallel to the casing axis, said glass wall being shaped to conform to the opening defined by said bezel so as to enter the same, a pair of parts spaced apart from and facing each other in the direction of the casing axis, one of said parts comprising a ledge on said movement receiving section, and the other comprising the outer face of said glass wall, a sealing gasket located between the parts of said pair, and a dial secured to said movement and adapted to the glass wall so as to enter the same and to produce thereon, between the bezel and the dial and at least in two diametrically opposed points of the glass wall, a strong clamping action capable of maintaining the glass in such an axial position relative to said movement receiving section that an axial pressure establishing a tight seal between said glass and said movement receiving section is exerted by said pair of parts on said sealing gasket.

3,355,874
ARRANGEMENT FOR WATERTIGHT ASSEMBLY OF A WATCH-CASE CRYSTAL
Charles Paratte, Viganello-Lugano, Tessin, Switzerland
Filed Jan. 7, 1966, Ser. No. 519,264
Claims priority, application Switzerland, Jan. 21, 1965, 898/65
4 Claims. (Cl. 58—90)



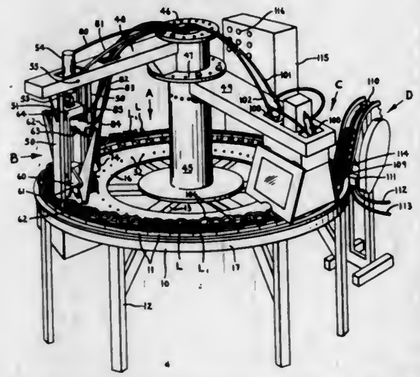
1. An arrangement for effecting a watertight assembly of a watch-case comprising a watch-case crystal, a mounting for said crystal, said crystal having a peripheral groove, said mounting including an annular projection which resiliently engages in said peripheral groove in the crystal to exert an axial force on the crystal which causes the crystal to bear against the mounting on the outer surface thereof, said crystal including an elongated lip with a peripheral portion which is flexible and resilient, said lip bounding said peripheral groove in the crystal and being disposed on the outer surface of the mounting with the annular projection of the mounting engaged in said peripheral groove such that said peripheral portion of the said lip is in deformed engagement with the mounting through the action of said axial force, thus forming a watertight joint therewith.

3,355,875
WATCH CASE
Maurice Jeanmonod, La Chaux-de-Fonds, Jean Pierre Dubois, Le Locle, and Jean-Claude Schneider, La Chaux-de-Fonds, Switzerland, assignors to Fabrique d'horlogerie Chs. Tissot et Fils S.A., Le Locle, Neuchatel, Switzerland, a company of Switzerland
Filed Nov. 22, 1965, Ser. No. 508,935
Claims priority, application Switzerland, Dec. 22, 1964, 16,479/64
10 Claims. (Cl. 58—91)



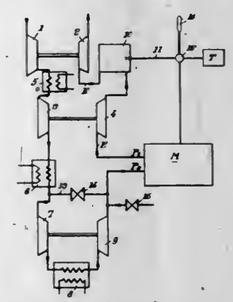
1. In a watch case having a closed side wall and a transparent cover providing a peripheral flange tightly engaging said wall, said wall being composed of plastic material and having an inner surface containing an intermediately disposed annular groove, and a closed metallic annular ring received in said groove and engaging said flange.

3,355,876
CHAIN MAKING MACHINE
John F. Oettinger, Portland, Oreg., Robert P. Donovan, Danville, Ill., and Floyd O. Smith, Portland, Oreg., assignors to Esco Corporation, Portland, Oreg., a corporation of Oregon
Filed Jan. 22, 1965, Ser. No. 427,388
17 Claims. (Cl. 59—22)



1. A chain making machine comprising an assembling station where closed links amy be assembled on open links, a pressing station having means to press said open links closed, a welding station having means to weld said pressed links, a series of link holders for holding said open links, and means to move said link holders in step-by-step movement from said assembling station to said pressing station and thence to said welding station.

3,355,877
SUPERCHARGED DIESEL ENGINE POWER PLANTS
Pierre Philippe Chaffiotte, Cormeilles-en-Parisis, France, assignor to Societe d'Exploitation des Materiels Hispano-Suiza, Bois-Colombes, France
Filed May 24, 1965, Ser. No. 458,056
Claims priority, application France, June 9, 1964, 977,626
4 Claims. (Cl. 60—13)



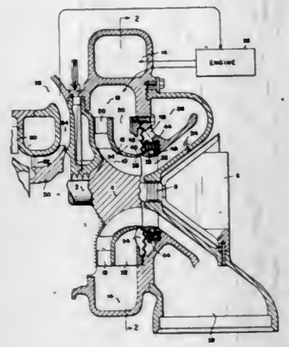
1. A power plant which comprises in combination,
a supercharging unit including,
a compressor having its input open to the atmosphere, and
a turbine having its shaft coupled with the shaft of said compressor,
a turbo-cooling unit including,
a supercompression compressor having its input connected with the output of said compressor,
a cooling air turbine having its shaft coupled with the shaft of said supercompression compressor, and
a heat exchanger including an air circuit having its input connected with the output of said supercompression compressor and its output connected with the input of said cooling air turbine and a cooling fluid circuit mounted for heat interchange with said last mentioned air circuit,
a diesel engine having an air intake connected with the output of said cooling air turbine, the exhaust of said internal combustion engine being connected with the input of said first mentioned turbine,
adjustable fuel feed means for feeding fuel to said diesel engine,
a combustion chamber having an inlet and an outlet, said last mentioned inlet being connected with the exhaust of said diesel engine, said last mentioned outlet being connected with the input of said first mentioned turbine, the output of which opens to the atmosphere,
adjustable fuel feed means for feeding fuel to said chamber, and
means for placing said second mentioned fuel feed means under control of said first mentioned fuel feed means so that the flow rate of fuel feed varies in the same direction for both of said fuel feed means.

3,355,878
TURBOCOMPRESSOR SYSTEM
Rudolph Birmann, Highland Farm, R.D. 1, Newtown, Bucks County, Pa. 18940
Filed Aug. 30, 1965, Ser. No. 483,398
16 Claims. (Cl. 60—13)

1. In a turbocharged engine power plant, an internal combustio· ·ngine, a turbine, a compressor driven by said

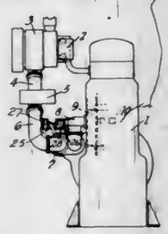
turbine, means for leading exhaust gases from said engine to said turbine to drive the latter, means for leading air delivered from said compressor to said engine to support combustion of fuel in the engine, a nozzle, and means for leading exhaust gases from said engine to said nozzle, said nozzle being directed to provide a high velocity jet of the exhaust gases to mix with, and provide an eductor action on, the gases exhausted from said turbine.

10. In combination with a device for producing combustion gases, means for supplying fuel to said device, a



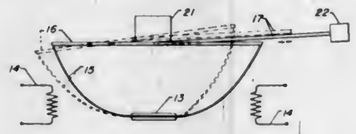
turbine, a compressor driven by said turbine, means for leading combustion gases from said device to said turbine to drive the latter, means for leading air delivered from said compressor to said device to support combustion of fuel therein, a nozzle, and means for leading combustion gases from said device to said nozzle, said nozzle being directed to provide a high velocity jet of the combustion gases to mix with, and provide an eductor action on, the gases exhausted from said turbine, and a diffuser receiving the admixed gases from the nozzle and turbine.

3,355,879
TURBOCHARGED TWO-STROKE CYCLE INTERNAL COMBUSTION ENGINES
James John Stewart Smith and Donald Wilfred Tryhorn, Slough, England, assignors to Sir W. G. Armstrong & Company (Engineers)-Limited, London, England
Continuation of application Ser. No. 376,890, June 22, 1964. This application Sept. 16, 1966, Ser. No. 580,128
Claims priority, application Great Britain, July 4, 1963, 26,586/63
6 Claims. (Cl. 60—13)



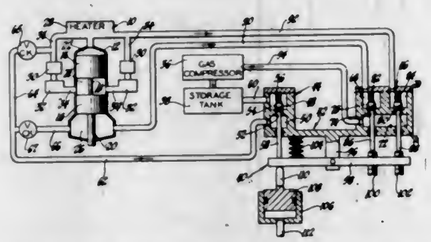
1. In a variable speed compression ignition engine of the type having an intake manifold and exhaust and in which exhaust gases from the engine operate a turbine, a supercharging blower driven by said turbine, a positive displacement engine driven compressor, conduit means leading from said supercharging blower to the intake of said compressor, further conduit means leading from the discharge of said compressor to the manifold of said engine to normally supply air to said manifold at a pressure higher than that supplied by said supercharging blower, the improvement comprising fluid pressure responsive means operatively associated with the intake to and discharge from said engine driven compressor to limit the effective throughput capacity and thereby the pressure difference between said intake to and discharge from said compressor whereby the pressure at the discharge cannot exceed the pressure at the intake of said compressor by more than a predetermined amount.

3,355,880
BI-METAL MOTOR
James R. Senft, Chicago, and Maurice M. Light, Oak Park, Ill., assignors to Personal Service Mfg. Corp., Chicago, Ill., a corporation of Illinois
Filed Dec. 9, 1965, Ser. No. 512,638
13 Claims. (Cl. 60—23)



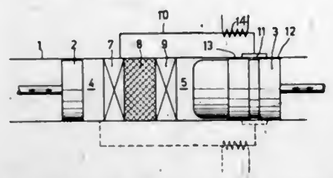
1. A motor which comprises:
a base;
a first bi-metallic arm connected at one end to said base;
a second arm connected at one end to said base;
connecting means from the other end of the first bi-metallic arm to the other end of the second arm, said arms and said means forming a rocking member; and
at least one temperature source having a temperature different from ambient located sufficiently close to the first bi-metallic arm to change the temperature of said first arm when the rocking member approaches the temperature source.

3,355,881
GAS PRESSURE CONTROL MEANS FOR A HOT GAS ENGINE
Roy H. Brandes, Utica, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Jan. 24, 1966, Ser. No. 522,553
8 Claims. (Cl. 60—24)



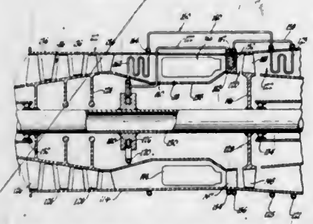
1. In a hot gas engine having a working space, a buffer space and gas storage means, gas pressure control means comprising first means interconnecting the storage means and each of the working and buffer spaces for transferring gas therebetween, first valve means controlling the first means, second means interconnecting the working space and the storage means for transferring gas therebetween, second valve means controlling the second means, third means interconnecting the buffer space and the storage means for transferring gas therebetween, third valve means controlling the third means, and engine speed responsive means for selectively operating the valve means to vary the quantity of gas in the working and buffer spaces to maintain engine speed within a desired range.

3,355,882
LEAKAGE PREVENTION ARRANGEMENT FOR HOT-GAS RECIPROCATING APPARATUS
Jacob Willem Laurens Kohler, Herman Fokker and Roelf Jan Meijer, Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Jan. 14, 1966, Ser. No. 536,207
Claims priority, application Netherlands, Jan. 20, 1965, 65—680
15 Claims. (Cl. 60—24)



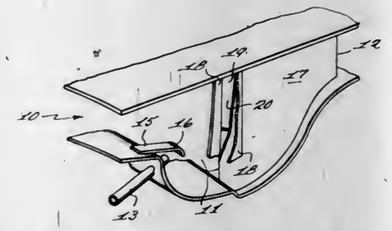
1. A hot-gas reciprocating apparatus comprising at least one cylinder, at least one compression space of variable volume and at least one expansion space of variable volume, different average temperatures prevailing in said spaces during operation, means communicating said spaces, at least one regenerator in said communicating means, a working medium flowing from the compression space to the expansion space and vice versa, a pair of piston-shaped members in at least one cylinder reciprocating with a mutual phase difference for varying the volume of said compression and expansion spaces respectively, at least one of said piston-shaped members varying the volume of said expansion space with one of its sides and the adjacent part of said cylinder co-acting therewith, said one of said piston-shaped members being provided with two spaced seals, a space between said two seals, means communicating said space between said two seals with a second space in which a pressure variation occurs whereby the differential pressure with respect to the pressure in the space on one side of said piston-shaped member is smaller than the differential pressure with respect to the pressure prevailing in the space on the other side of said piston-shaped member, the communication being such that the medium between the two seals has a temperature which is at least substantially equal to the temperature in that space in which the pressure prevails which has the greatest difference relative to the pressure in said space.

3,355,883
CLOSED LOOP HEAT EXCHANGER FOR A GAS TURBINE ENGINE
Paul E. Beam, Jr., Indianapolis, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Jan. 24, 1966, Ser. No. 522,569
9 Claims. (Cl. 60—39.51)



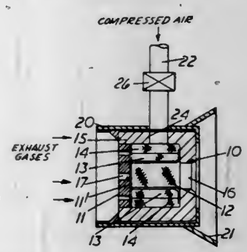
1. A heat exchanger for a gas turbine engine having a casing with a compressor, a combustor, a turbine drivingly connected to said compressor, and an exhaust in axial alignment therein comprising, in combination: a magnet carried by said gas turbine engine, a closed loop heat transfer circuit, said closed circuit having a first portion disposed within the magnetic field of said magnet, a second portion located in said compressor and a third portion located in said turbine, an electrically conductive liquid contained in said closed loop circuit, and means to cause relative rotation between said magnet and said conduit whereby said electrically conductive fluid is circulated through said closed loop conduit to transfer heat from said turbine to said compressor.

3,355,884
ANNULAR COMBUSTION CHAMBERS FOR GAS TURBINE ENGINES WITH IMPROVED GUIDE VANES FOR MIXING AIR WITH COMBUSTION GASES
Michael Poucher and Arthur Bill, Derby, England, assignors to Rolls-Royce Limited, Derby, England, a British company
Filed Nov. 19, 1965, Ser. No. 508,760
Claims priority, application Great Britain, Dec. 2, 1964, 49,100/64
5 Claims. (Cl. 60—39.74)



1. An annular combustion chamber for a gas turbine engine having an annular axially directed air inlet at one end thereof through which the combustion chamber may be supplied with air and an annular outlet at the other end through which combustion gases may be delivered, a fuel injector for injecting fuel into the combustion chamber, said fuel injector being radially offset from said inlet, a plurality of angularly spaced substantially aerofoil-shaped guide vanes disposed in and extending radially completely across said combustion chamber, said guide vanes extending axially within the combustion chamber, and whirl-causing means on the leading edges of each guide vane for directing the axially flowing air radially to promote mixing of said air with combustion gases.

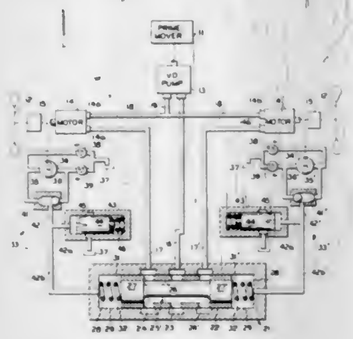
3,355,885
PRIME MOVER IGNITION DEVICE
Brian Toone, Littleover, Derby, England, assignor to Rolls-Royce Limited, Derby, England, a British company
Filed Nov. 15, 1965, Ser. No. 507,809
Claims priority, application Great Britain, Nov. 19, 1964, 47,264/64
9 Claims. (Cl. 60—39.82)



1. An improved prime mover ignition device for more reliably promoting ignition of fuel injected into a stream of combustion supporting gas containing contaminates harmful to catalytic agents, the device being disposed in

the gas stream, said improved device comprising a mass of refractory material having a flow passage therethrough which is open to flow therein of said gas stream and in which is mounted at least one catalytic element, and including compressed air supply means for flushing the flow passage with compressed air at least while the ignition device is not brought into operation to prevent said gas stream from flowing into said flow passage.

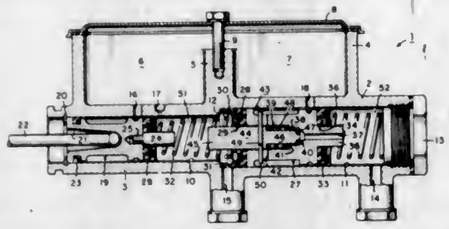
3,355,886
HYDROSTATIC TRANSMISSION
Charles O. Weisenbach, Watertown, N.Y., assignor to The New York Air Brake Company, a corporation of New Jersey
Filed Oct. 23, 1965, Ser. No. 503,903
6 Claims. (Cl. 60—53)



1. A hydrostatic transmission comprising
(a) a main pump;
(b) first and second motors;
(c) conduit means connecting the motors in parallel flow relation with the pump in a closed transmission circuit;
(d) throttling valve means in the closed circuit and effective to selectively throttle the flows through the motors;
(e) first and second means for developing control pressures that vary linearly with the speeds of the first and second motors, respectively, each means including a control pump which is driven by the motor and whose output is proportional to motor speed, and control means for creating a pressure that varies linearly with the discharge rate of the control pump; and
(f) motor means responsive to the differential between said control pressures for causing the throttling valve means to restrict flow through the first motor when the first control pressure exceeds the second control pressure by a predetermined amount, and to restrict flow through the second motor when the second control pressure exceeds the first control pressure by a predetermined amount.

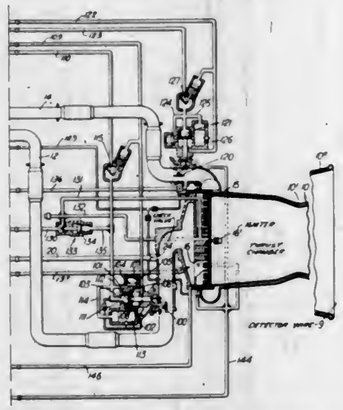
3,355,887
TANDEM MASTER CYLINDER
Frederick W. Balster, Cedar Rapids, Iowa, assignor, by mesne assignments, to Tung-Sol Electric Inc., Newark, N.J., a corporation of Delaware
Filed Apr. 4, 1966, Ser. No. 540,061
8 Claims. (Cl. 60—54.6)

1. A tandem master cylinder comprising a housing having a pair of aligned piston means movable therein, a fluid pressure generating chamber defined in said housing between said piston means, reservoir means in said housing, passage means in said housing normally connecting said chamber in pressure fluid communication with said reservoir means, one of said piston means defining with said housing another fluid pressure generating chamber, the other of said piston means being movable in response to an applied force toward a position in said housing interrupting pressure fluid communication through said passage means between said first named chamber and reservoir means and establishing fluid pressure in said first named chamber, opposed ends on said one piston means respectively responsive to fluid pressure in said first named and other chambers, means in said housing including said one piston means defining other passage means normally connecting said other chamber in pressure fluid communication with said reservoir means, and other means



movable in said one piston means for controlling said other passage means and having a free end portion extending into said first named chamber, said other means being movable in response to the established fluid pressure in said first named chamber acting on the free end portion thereof toward a position in said other passage means interrupting pressure fluid communication therethrough, the established fluid pressure in said first named chamber acting on one of the opposed ends of said one piston means to move said one piston means toward a position establishing fluid pressure in said other chamber acting on the other of said opposed ends thereof when pressure fluid communication through said other passage means is interrupted.

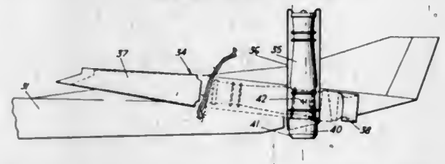
3,355,888
ROCKET PROPULSION MOTORS
Philip Gordon Binns, Littleover, Derby, England, assignor to Rolls-Royce Limited, Derby, England, a company of Great Britain
Filed Feb. 19, 1960, Ser. No. 9,993
Claims priority, application Great Britain, Mar. 11, 1959, 8,500/59
15 Claims. (Cl. 60—223)



1. A rocket propulsion motor comprising combustion equipment, a fluid conduit for supplying the combustion equipment with a fluid adapted to take part in combustion, a valve for controlling flow through said fluid conduit, said valve comprising a valve closure member which

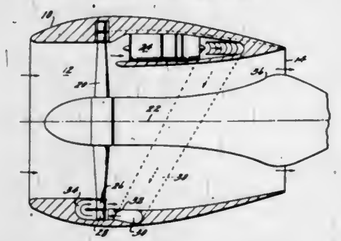
is movable between a closed and an open position, and two devices for effecting movement of the valve closure member, the first of said devices comprising retaining means for normally retaining the valve closure member in the open position and overriding means for overriding the retaining means and moving the valve closure member to the closed position, and the second device comprising retaining means for normally retaining the valve closure member in the closed position and overriding means for overriding the retaining means and moving the valve closure member to the open position.

3,355,889
MOVABLE POWER PLANT FOR DIRECT LIFT AND FORWARD PROPULSION
Maurice Ian Taylor and Addison Charles Maguire, Derby, England, assignors to Rolls-Royce Limited, Derby, England, a British company
Filed Nov. 15, 1965, Ser. No. 507,795
Claims priority, application Great Britain, Nov. 27, 1964, 48,433/64
7 Claims. (Cl. 60—228)



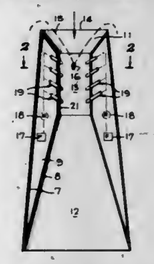
1. Power plant comprising a jet propulsion engine having a supersonic air intake which is movable axially into and out of engagement with the engine, an exhaust pipe, a first propulsion nozzle mounted at the downstream end of the exhaust pipe, a jet pipe, and a further propulsion nozzle mounted at the downstream end of the jet pipe, the engine, with its exhaust pipe, being movable relative to said jet pipe to dispose the engine selectively in a first position in which air is drawn into the engine through said air intake and exhaust gases from the engine are exhausted through the further propulsion nozzle and a second position in which the intake is inoperative and the exhaust gases from the engine are exhausted through the first propulsion nozzle.

3,355,890
CRUISE FAN POWERPLANT
Peter Gottfried Kappus, Cincinnati, Ohio, assignor to General Electric Company, a corporation of New York
Filed June 9, 1965, Ser. No. 462,694
5 Claims. (Cl. 60—262)



1. A fan assembly for producing propulsive thrust, said fan assembly comprising:
a generally annular nacelle having a streamline outer surface,
air duct means extending through said nacelle for forming an inlet and outlet for air,
a fan rotatably mounted in said duct means to pressurize air from said inlet for discharge through said outlet,
a plurality of turbine blade means mounted on the periphery of said fan,
at least one gas turbine engine mounted in said nacelle downstream of and radially outward from the axis of said fan, and adjacent the outer periphery of said nacelle, said gas turbine engine having an air inlet for receiving pressurized air from said fan and generating a hot gas stream,
duct means extending from said gas turbine to said turbine blade means for causing said hot gas stream to impinge on said turbine blade means and drive said fan,
said duct means extending generally circumferentially from said gas turbine engine so that the air inlet for said engine and the outlet end of said duct are substantially peripherally spaced from one another,
whereby the aerodynamic resistance of said fan assembly is minimized and said gas turbine engine is supercharged.

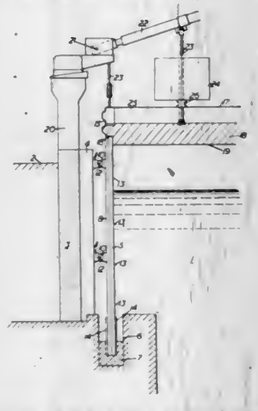
3,355,891
RAM JET ENGINE AND FUEL INJECTION SYSTEM THEREFOR
Barry V. Rhodes, 22358 Baltar, Canoga Park, Calif. 91304
Filed May 2, 1966, Ser. No. 548,029
1 Claim. (Cl. 60—270)



An aerothermodynamic duct comprising:
an open-ended elongated tubular passage therethrough having:
a relatively short wide-angle inlet diffuser,
a relatively long narrow-angle outlet diffuser, and
an elongated tubular throat interconnecting said inlet diffuser and said outlet diffuser and having a throat-to-inlet area ratio substantially lower than unity whereby on acceleration of said aerothermodynamic duct axially through air to a supersonic velocity there is created a converging shock wave located at least partially within said tubular passage and having its trailing end positioned to create a hot spot of compressed air within said throat;
a source of fuel under pressure;
fuel injection means communicating with said fuel source for injecting said fuel into said tubular passage,
said means directing said fuel into said hot spot when said thermodynamic duct is operated at a supersonic velocity, and imparting to said fuel a spiral motion along the major length of said tubular passage, and comprising:
a plurality of inwardly and rearwardly directed extensible injector heads spaced around the periphery of said tubular passage,
means for extending said heads into said tubular passage when said ram jet is operating at subsonic and transonic velocities, and
means for withdrawing said heads from said tubular passage when said ram jet is operating at a supersonic velocity; and

fuel ignition means associated with said fuel injection means for igniting said fuel in said passage while said thermodynamic duct is operating at subsonic and transonic velocities.

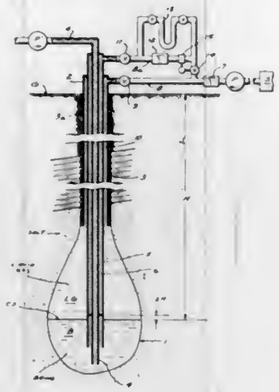
3,355,892
SEALING MEANS FOR A RESERVOIR FOR A LIQUEFIED GAS
William Hamilton, Frimley Green, near Aldershot, and Robert Glover Jackson, Hornchurch, Essex, England, assignors to Conch International Methane Limited, Nassau, Bahamas, a Bahamian company
Filed June 25, 1964, Ser. No. 377,959
Claims priority, application Great Britain, Oct. 24, 1963, 42,094/63
8 Claims. (Cl. 61—.5)



1. Sealing means for use in a ground reservoir having a main storage cavity and a roof for storing a liquefied gas comprising a continuous fluid-impervious membrane defining an enclosing sidewall of said cavity, said membrane being of insufficient strength and rigidity to form a self-supporting tank and having vertical corrugations extending from the bottom of the membrane to the upper region of the membrane and horizontal corrugations in the upper region of the membrane above the vertical corrugations, the top line of said membrane being sealed to the roof of the reservoir, a plurality of vertical elongated stiffening members which are slidably secured to the outside of the membrane at respective vertical lines of the vertical corrugations and which are of sufficient length spaced at intervals close enough for the membrane to be stable against hydrostatic forces exerted thereon, fixed rigid supporting means external to said membrane supporting said roof, expansion-joint supporting means securing said stiffening members to said fixed supporting means and a peripheral gutter region into which the lower end of the membrane extends, which gutter region contains a material which is liquid at ambient temperature but which is solid when the membrane is in contact with a liquefied gas.

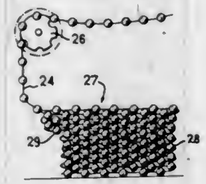
3,355,893
APPARATUS FOR LOCATING THE CONTACT SURFACE BETWEEN LIGHTER AND HEAVIER LIQUIDS IN UNDERGROUND CAVERNS
Gerhard Kuhne, Pinneberg, Germany, assignor to Deutsche Erdol-Aktiengesellschaft Hamburg, Hamburg, Germany
Filed Mar. 22, 1966, Ser. No. 536,447
Claims priority, application Germany, Mar. 25, 1965, D 46,895
18 Claims. (Cl. 61—.5)

1. An apparatus for locating the contact surface between lighter and heavier fluids in underground caverns wherein first and second conduits respectively extend downwardly into a cavern below and above the surface of the heavier fluid, comprising a third conduit dipping into the heavier fluid and having a predetermined volume, said second and third conduits being arranged to convey lighter fluid and said first conduit being arranged to convey heavier fluid whereby the combined amount of lighter fluid which is admitted into or evacuated from said cavern via said second and third conduits equals the amount of heavier fluid which is evacuated from or



admitted into the cavern through said first conduit and the level of contact surface between the fluids in said third conduit at least approximates the level of contact surface in said cavern; and flow meter means for determining the total amount of lighter fluid flowing into or rrom said third conduit so that the extent to which said third conduit is filled with lighter fluid allows for determination of such levels.

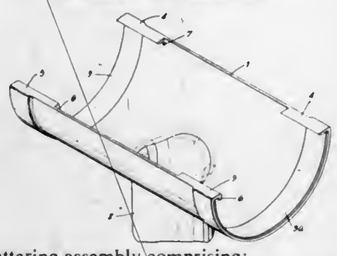
3,355,894
STRUCTURE FOR USE IN RIVER AND SEA
Henri Charles Vidal, 17 Rue Armengaud, Saint-Cloud, France
Filed Mar. 23, 1964, Ser. No. 354,038
Claims priority, application France, Mar. 27, 1963, 929,422
5 Claims. (Cl. 61—4)



5. A structure, such as a tower, in particular for use in river and sea, said structure comprising at least one unit consisting of a plurality of rigid blocks constituting heads on a flexible tie which is thin relative to the blocks, said blocks being rigidly secured to said tie and spaced apart from each other and defining recesses opening upwardly and downwardly between successive blocks, said unit having a plurality of portions respectively disposed one above the other in a plurality of superimposed adjoining layers, some of said portions respectively extending spirally in every other of said layers and others of said portions extending radially back and forth relative to the centre of said structure in layers interposed between and adjoining said every other layers,

said blocks of each of said portions of the layers intermediate the uppermost and lowermost layers extend into said recesses of the adjoining portions of the adjacent layer above and below said respective intermediate layer portion, whereby said structure has sufficient stability to retain its shape.

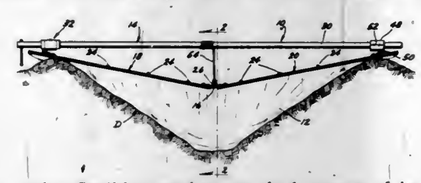
3,355,895
GUTTERING
Ronald Curtis Bayes, Ware, and David Harold Sands, Ashford, England, assignors to The Ruberoid Company Limited, London, and Chemidus Plastics Limited, Ashford, England, both British companies
Filed June 1, 1965, Ser. No. 460,428
Claims priority, application Great Britain, June 3, 1964, 23,038/64
2 Claims. (Cl. 61—14)



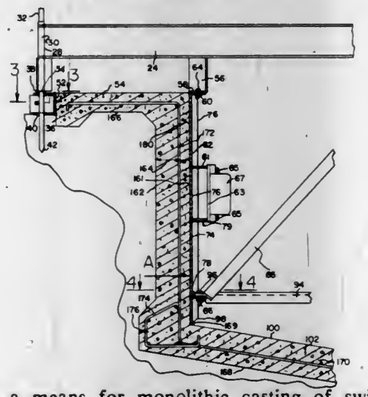
1. A guttering assembly comprising:
a one-piece gutter union having a channel-shaped seating portion, said seating portion having an intermediate portion and opposite end portions, the end portions having internal walls which are offset outwardly from the internal wall of said intermediate portion to form sockets at the ends of said gutter union, a spout extending downwardly from said intermediate portion, the upper end of said spout defining a spout opening in the wall of said intermediate portion, said end portions having inwardly directed flanges extending from the upper edges thereof over said sockets, stops fixedly connected to and projecting inwardly from the inner surface of said intermediate portion on opposite sides of said spout opening and located between said spout opening and said sockets;
a sealing strip seated in each socket and having its opposite ends extending underneath said flanges for being held in place thereby;
two lengths of channel-shaped guttering extending into said seating portion at the opposite ends thereof and having their adjacent ends spaced apart, the adjacent ends being adapted to engage said stops to prevent said lengths of guttering from overlying said spout opening, said lengths each overlying and sealingly contacting one of said sealing strips and extending therebeyond into sliding contact with the intermediate portion of said seating portion, the upper edges of said lengths of guttering extending substantially to said flanges for being held in place thereby.

3,355,896
ADJUSTABLE IRRIGATION DAM
Douglas M. Price, Hensler Post Office, Price, N. Dak. 58547
Filed Dec. 15, 1965, Ser. No. 513,976
8 Claims. (Cl. 61—29)

1. An adjustable irrigation dam comprising a sheet of flexible material adapted to be disposed in transverse blocking relation to an irrigation ditch, a pair of elongated members adapted to have an edge of said sheet attached thereto, means pivotally connecting said elongated members together in end-to-end relation, the length of said elongated members being such that the respective free ends thereof may rest on the banks of said ditch with said connecting means disposed centrally of said ditch, a transverse shaft disposed above said elongated members, means movably connecting said shaft on said elongated members, and a flexible member attached at one of its ends to said elongated members and at the other of its ends to said shaft, whereby rotation of said shaft will wind or unwind said flexible member on said shaft to adjust the position of said elongated members.



3,355,897
METHOD AND APPARATUS FOR MONOLITHIC CASTING OF SWIMMING POOLS OR TANKS
Clarence T. Mullen, Jr., 6502 E. Exeter Blvd., Scottsdale, Ariz. 85251
Filed Apr. 17, 1963, Ser. No. 273,793
26 Claims. (Cl. 61—35)

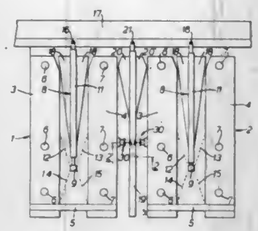


1. In a means for monolithic casting of swimming pools or tanks the combination of: an excavated earthen structure in and below the surface of the earth said excavated earthen structure having earthen side walls and an earthen bottom; an assembly of wall forms disposed inwardly of and spaced relative to said walls of said excavated earthen structure in the ground; said assembly of wall forms comprising; a plurality of form sections; and means removably connecting said sections together whereby they may be disconnected from each other and removed from cast concrete swimming pool walls subsequent to hardening of the concrete thereof; support members supported on the ground and disposed above said excavated earthen structure and said wall forms; said wall forms suspended from said support members; and lower edges of said wall forms being thus suspended in spaced relation with said side walls and said bottom of said excavated earthen structure; said lower edges of said wall forms being considerably below the surface of the earth adjacent said excavated earthen structure.

3,355,898
ROOF SUPPORT ASSEMBLY
Wesley H. Barrett, Cheltenham, and Kenneth Law, Tewkesbury, England, assignors to Dowty Mining Equipment Limited, Tewkesbury, England, a British company
Filed Nov. 15, 1965, Ser. No. 507,730
Claims priority, application Great Britain, Nov. 17, 1964, 46,777/64
10 Claims. (Cl. 61—45)

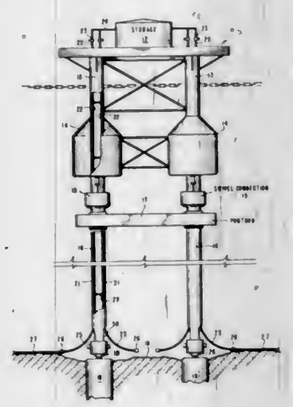
1. In combination with two individually advanceable and laterally spaced roof support assemblies and a snake-

ably advanceable anchorage, suitable for use in mines the floor whereof slopes laterally with respect to the direction of advance, means extending in the direction of advance and connected at one end to said anchorage and at its opposite end to each roof support assembly, said means being operable to advance each individual roof support assembly relative to the other, and to advance said anchorage relative to the roof support assemblies, and guide means including an element extending



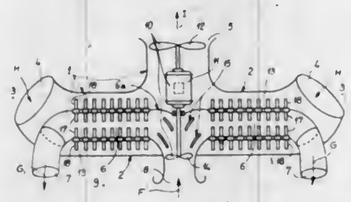
in the direction of advance and connected at one end to said anchorage, said guide means also including a cooperating guide assembly and means connecting the same to each roof support assembly, said guide assembly and said connecting means including means arranged to allow free vertical but substantially no lateral movement of either roof support assembly relative to the other during advance, whereby to prevent substantial lateral slippage of either roof support assembly.

3,355,899
OFFSHORE OPERATIONS
Kenneth T. Koonce, Joseph A. Burkhardt and Richard P. Knapp, Houston, Tex., assignors to Esso Production Research Company
Filed May 31, 1966, Ser. No. 553,940
11 Claims. (Cl. 61—46.5)



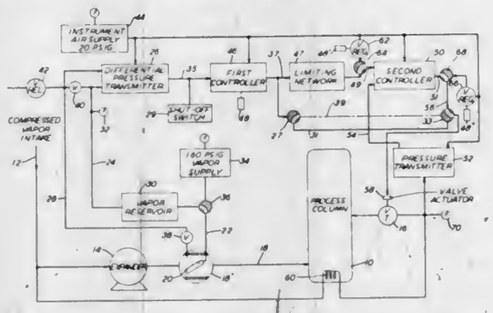
1. A method for connecting an underwater conduit to a floating vessel which comprises:
lowering at least one conduit member from water surface to water bottom;
said conduit member having upper and lower ends and being provided with at least one tubular member having a first end adjacent to the bottom end of said conduit and a second end adjacent to the top end of said conduit;
pivotally anchoring said conduit member to water bottom such that the upper end of said conduit member is below water surface;
connecting a buoyantly supported vessel to the upper end of said conduit member; and
connecting said tubular member at its first end to the conduit for fluid on water bottom and at its second end to said vessel.

3,355,900
AIR-CONDITIONING DEVICES USING THE PELTIER EFFECT FOR AUTOMOBILE VEHICLES AND THE LIKE AND FOR MACHINES
Gaëtan de Coye de Castelet, Billancourt, France, assignor to Regie Nationale des Usines Renault, Billancourt, France
Filed June 28, 1966, Ser. No. 561,234
Claims priority, application France, Aug. 3, 1965, 27,058, Patent 1,452,822
11 Claims. (Cl. 62—3)



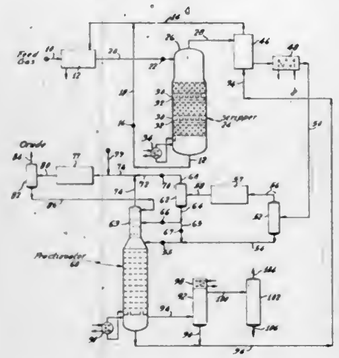
1. An air-conditioning device for passenger spaces of vehicles and the like utilizing the Peltier effect, comprising a first conduit, thermo-electric elements utilizing the Peltier effect disposed in the surface of said conduit, at least one internal radiator means mounted inside said first conduit, at least one external radiator means mounted externally of said first conduit the internal faces of the elements being thermally coupled to said internal radiator means, and the other faces of said elements being thermally coupled to said external radiator means, a second conduit substantially concentric with the first conduit and enclosing the external radiator means, one of the conduits communicating by its orifices with the air external to the passenger space while the other conduit communicates by its orifices with the passenger space.

3,355,901
CONTROL OF DEGREE OF SUPERHEAT IN EXPANSION ENGINE EXHAUST
Alvin W. Angerhofer, Edison, N.J., assignor to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York
Filed Aug. 10, 1964, Ser. No. 388,515
11 Claims. (Cl. 62—21)



1. The method of controlling the degree of superheat in the vapor in the exhaust of a vapor expansion engine, which method comprises the steps of developing a pressure signal which measures the said degree of superheat, measuring the inlet pressure of said engine, comparing said pressures to obtain a differential signal, and using said differential signal to regulate the said inlet pressure to maintain a substantially constant degree of said superheat.

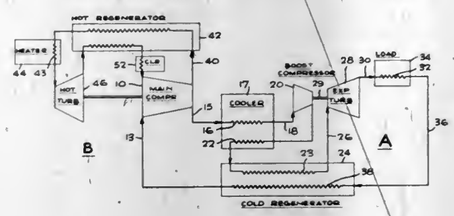
3,355,902
HELIUM RECOVERY PROCESS
Duffer B. Crawford, Westfield, N.J., and Maxim Karafian, Cold Spring Harbor, N.Y., assignors to Pullman Incorporated, Chicago, Ill., a corporation of Delaware
Filed May 11, 1964, Ser. No. 366,458
16 Claims. (Cl. 62—28)



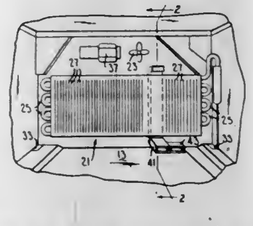
1. A method for recovering helium from natural gas feedstock which comprises: cooling a gaseous mixture containing helium, carbon dioxide, nitrogen, and methane to separate a first liquid fraction containing dissolved helium and a first helium enriched gaseous fraction, stripping helium from said first liquid fraction into an overhead gaseous fraction, cooling said overhead gaseous fraction and said first gaseous fraction to separate a second liquid fraction containing dissolved helium and a second helium enriched gaseous fraction, passing said second liquid fraction to a fractionation zone maintained under conditions to recover helium from the second liquid fraction, cooling said second gaseous fraction to separate helium-rich gaseous material from methane enriched liquid under conditions to avoid carbon dioxide precipitation, and passing at least a portion of said methane enriched liquid to said fractionation zone to provide reflux therein.

3,355,903
SYSTEM OF POWER-REFRIGERATION
James K. La Fleur, Hermosa Beach, Calif., assignor to The La Fleur Corporation, Los Angeles, Calif., a corporation of California
Filed Jan. 4, 1965, Ser. No. 422,955
9 Claims. (Cl. 62—88)

1. A power-refrigeration process which comprises compressing a gaseous refrigerant, cooling said compressed refrigerant, further compressing said refrigerant, subjecting said so compressed refrigerant to regenerative cooling, expanding said further cooled refrigerant to accomplish work and further reducing the temperature of said refrigerant, said work being employed for said further compression of said refrigerant, passing said expanded and cooled refrigerant to a refrigeration load to cool same, employing the exciting refrigerant for said regenerating cooling of said compressed refrigerant, subjecting a portion of said further compressed refrigerant to additional compression, subjecting said additionally compressed refrigerant portion to regenerating cooling, expanding said cooled refrigerant portion to accomplish work and further reducing the temperature of said refrigerant portion, said work being employed for said additional compression of said refrigerant portion, passing said expanded and cooled refrigerant portion to a second refrigeration load to cool same, employing the exiting refrigerant portion for said regenerative cooling of said compressed refrigerant portion, and returning refrigerant heated in the above regenerative cooling stages for said first mentioned compression of said refrigerant.



3,355,904
DIFFERENTIAL FLUID VELOCITY SENSING
Walter T. Sutton, Jr., and James D. Broyles, Lexington, Ky., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Jan. 21, 1966, Ser. No. 522,260
12 Claims. (Cl. 62—151)



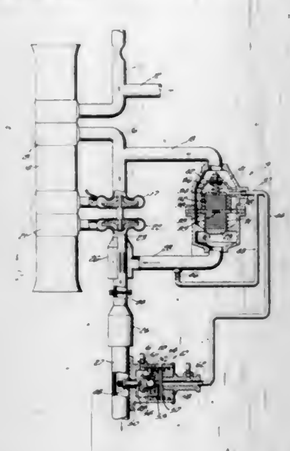
1. Apparatus for sensing differences between the relative velocities of fluids flowing in a pair of fluid flow paths, said apparatus comprising:
a heater;
a pair of heat dissipating thermal conductors each of which extends from said heater into a respective one of said paths to be cooled by fluid flow therein; and
means for sensing the respective temperatures of said conductors at respective points spaced from said heater whereby a difference between the sensed temperatures is a measure of a difference between the fluid velocities in the two flow paths.

3,355,905
AIR CONDITIONING SYSTEM WITH MEANS FOR PREVENTING THE FORMATION OF ICE
Edwin D. Berhold, Northridge, and Robert C. Kinsell, Los Angeles, Calif., assignors to The Garrett Corporation, Los Angeles, Calif., a corporation of California
Filed Aug. 19, 1966, Ser. No. 573,713
9 Claims. (Cl. 62—156)

1. An air conditioning system comprising:
a first duct carrying a stream of relatively warm air,
refrigeration means for receiving said warm air and cooling the air to a lower temperature,
a second duct for receiving the cool air from said refrigeration means,

a member disposed in said second duct adopted to accumulate any ice that may be formed in the cool air and producing a pressure drop across said member when ice is accumulated,

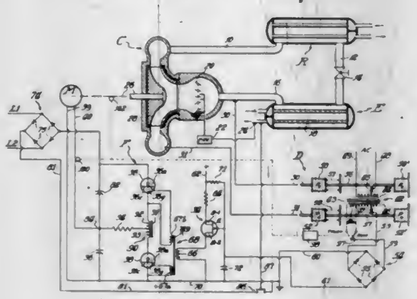
duct by-passing means including a valve connected between said first duct and said second duct for by-passing said relatively warm air from said first duct into said second duct upstream of said member when said valve is open,



a temperature sensor disposed within said second duct downstream of said member for sensing the temperature of the air, and

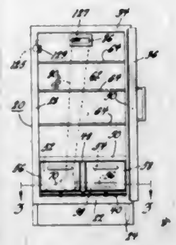
control means responsive to said sensor and the pressure drop across said member for opening and closing said valve to provide a maximum flow of cool air through said member.

3,355,906
REFRIGERATION SYSTEM INCLUDING CONTROL FOR VARYING COMPRESSOR SPEED
Alwin B. Newton, York, Pa., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed Nov. 8, 1965, Ser. No. 506,661
8 Claims. (Cl. 62—209)



1. A refrigeration system comprising a compressor, a condenser, and an evaporator connected to provide a closed refrigeration circuit; infinitely variable drive means operatively connected to drive said compressor; means for deriving a control signal which is a function of the ratio between the discharge pressure and the suction pressure of said compressor; and regulating means for modulating the speed of said infinitely variable drive means in response to said control signal.

3,355,907
MULTIPLE COMPARTMENT REFRIGERATOR
Edward C. Simmons, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Mar. 11, 1966, Ser. No. 533,605
5 Claims. (Cl. 62—229)



1. A refrigerator including insulating means enclosing and separating an upper above freezing compartment and a lower below freezing compartment to be cooled and having a rear wall, a refrigerant evaporating means, first duct means extending from said upper compartment into heat transfer with said evaporating means, fan means having an inlet connected to said duct means for drawing air from said first compartment into heat transfer relation with said evaporating means, second duct means connecting the outlet of said fan means with said upper compartment for delivering cold air to said first compartment, wherein the improvement comprises third duct means extending within said rear wall from said lower compartment without passing in heat transfer with said evaporating means directly to the inlet of said fan means, and fourth duct means having a portion extending through said rear wall from the outlet of said fan means and in heat transfer with said evaporating means and to said lower compartment to reduce the temperature of the air delivered to said lower compartment below the temperature of the air delivered to the upper compartment, said first and fourth duct means comprising an evaporating chamber beneath said compartments containing said evaporating means and a dividing wall separating said chamber into portions of said first and fourth duct means, said evaporating means extending on opposite sides of said dividing wall.

5. A refrigerator as defined in claim 1 in which a liquefying means is provided for supplying liquid refrigerant to and for withdrawing evaporated refrigerant from the evaporating means, and thermostatic control means having a thermosensitive element located adjacent the outlet of said second duct means for controlling said liquefying means.

3,355,908
METHOD AND APPARATUS FOR REMOVING HEAT FROM A REFRIGERANT
William E. Anglin, Dallas, Tex., assignor to Capitol Refrigeration, Inc., Dallas, Tex., a corporation of Texas
Filed Aug. 23, 1965, Ser. No. 481,829
4 Claims. (Cl. 62—244)

1. An air conditioning system comprising in combination:

(a) a first means to raise the pressure of a gaseous refrigerant to a substantially increased pressure, with an increase in the heat energy thereof;

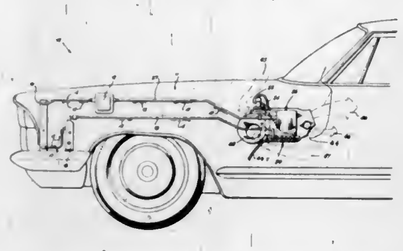
(b) means for delivering said compressed refrigerant to a first heat exchanger, wherein said refrigerant is substantially cooled and condensed;

(c) means for delivering said cooled and condensed refrigerant to a receiver;

(d) a compartment having air therein to be cooled by said refrigerant, said compartment having positioned therein an evaporator means, a receptacle for water which is positioned adjacent to and immediately below said evaporator means, said receptacle being formed to retain a significant amount of water, and a second heat exchange means which is positioned in said water;

(e) means for delivering refrigerant from said receiver to said second heat exchange means in said receptacle;

(f) means for conducting refrigerant from said second heat exchange means to an expansion means;

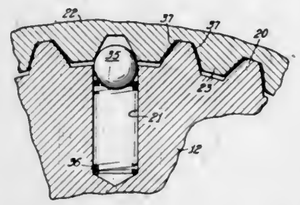


(g) means for delivering said refrigerant from said expansion means to said evaporating means; and

(h) means for returning refrigerant from said evaporator means to said first means for raising the pressure of said refrigerant;

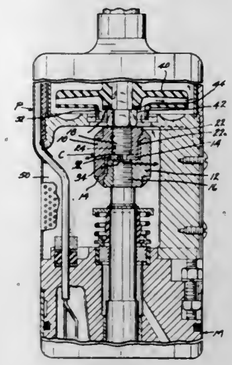
said second heat exchange means in combination as defined increasing the volumetric efficiency of said system by utilizing the maximum amount of heat absorbency potential of the water in said receptacle, and at the same time returning moisture to the cooled air in said compartment.

3,355,909
ANTI-RATTLE DEVICE FOR A TORQUE TRANSMITTING MECHANISM
Edward S. Russey and Emmett B. Duncan, Muncie, Ind., assignors to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed Oct. 18, 1965, Ser. No. 497,398
3 Claims. (Cl. 64—6)



1. In a torque transmitting mechanism, a hub member having external spline teeth, an axially slidable torque transmitting member having a bore therein and encircling said hub member, said bore having internal spline teeth, said internal and external spline teeth being enmeshed to provide a torque transmitting connection between said member and said hub, means on one of said members yieldably engaged between two of said teeth on said other member to prevent oscillation of one member with respect to the other, and including a clearance provided between the enmeshed internal and external teeth whereby said means is operative to center the teeth of one member with respect to the teeth on the other.

3,355,910
FLEXIBLE COUPLING
Harold W. Pruner, Mansfield, Ohio, assignor to Barnes Manufacturing Co., Mansfield, Ohio, a corporation of Ohio
Filed Apr. 14, 1966, Ser. No. 542,547
9 Claims. (Cl. 64—14)



1. A flexible shaft coupling device for connecting a pair of substantially aligned shafts and compensating for misalignment between the shafts, comprising, a pair of relatively rigid axially interfitting couplings, and an interfitting intermediate member interposed between and inwardly of the couplings and formed of a non-bonding semi-resilient material permitting flow of fluid lubricant through the joints between such intermediate member and the couplings, said intermediate member having a longitudinal aperture in communication with said joints, each of said couplings having a longitudinal open-ended bore in communication with said aperture for axially receiving an associated shaft in the outer end thereof with a fit permitting fluid lubricant to flow therethrough and to and through the aperture and through said joints to lubricate the same to substantially prevent frictional heat and excessive wear from developing in the device, each of said couplings including a hub having a plurality of circumferentially spaced elongated lugs extending axially inwardly from the hub whereby the lugs of one coupling loosely interfit with the lugs of the other coupling to provide spaces between such interfitting lugs and between said hubs, and said intermediate member being disposed in said spaces and substantially covering the outer longitudinal surfaces of each of said hubs whereby said intermediate member forms openings in the outer surface thereof with said lugs being disposed in said openings, said openings being bounded by interconnected side and end walls of the intermediate member.

3,355,911
WARP-KNITTING MACHINE
Hugo Paul Landgraf, Limbach-Oberfrohna, Germany, assignor to Veb Wirkmaschinenbau Limbach-Oberfrohna, Limbach-Oberfrohna, Germany
Filed Jan. 6, 1965, Ser. No. 423,748
3 Claims. (Cl. 66—84)

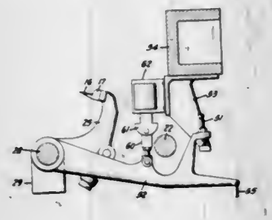
1. A warp-knitting machine comprising, in combination, two rows of reciprocable eye needles adapted for mutual loop transfer, a needle bar for each row of said eye needles, means for independently reciprocating each needle bar substantially at right angles with respect to one another, said eye needles being obliquely bent off with respect to said needle bars toward one direction in one row and toward the opposite direction in the other row, each needle having a shaft portion and a front portion substantially coaxial therewith, and each needle having

a depression between said shaft and said front portions, said depressions being on that side of said eye needles toward which said eye needles are bent off, said ends of



the front portions in one eye-needle row being approximately opposite said depressions in the other eye-needle row.

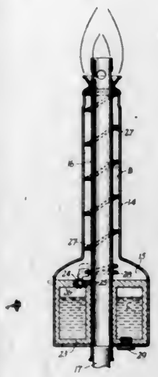
3,355,912
PRESSER OPERATING MEANS FOR WARP KNITTING MACHINES
John D. Wenrich, Fleetwood, Pa., assignor to Textile Machine Works, Wyomissing, Pa., a corporation of Pennsylvania
Filed Aug. 13, 1965, Ser. No. 479,383
8 Claims. (Cl. 66—86)



5. In a warp knitting machine having spring bearded needles adapted to be operated through stitch drawing movements, a presser member, a shaft, eccentric means on said shaft for supporting said presser member for movement to close the beards of said needles during said stitch drawing movements thereof, a first means for rotating said shaft to move said eccentric means to a first position to cause said presser member to move along a first path during said beard closing movements thereof, a second means for rotating said shaft to move said eccentric means to a second position to cause said presser member to move along a second path during said closing movements thereof, and means for moving said presser member along said first and second paths.

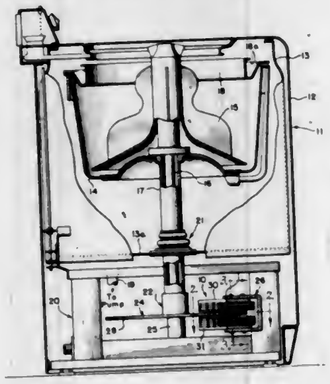
3,355,913
PERFUME CANDLES
John Frangos, Brooklyn, N.Y., assignor to Revlon Inc., New York, N.Y., a corporation of Delaware
Filed July 12, 1966, Ser. No. 564,691
8 Claims. (Cl. 67—87)

1. A perfume candle comprising in combination a closed container for a supply of perfume material and a gas flame heated vaporizer operatively related thereto and including a burner having an upright tubular gas conducting stem arranged in heat exchanging relation to inner wall portions of said container, said container including outer wall portions laterally spaced from said inner wall portions thereof and arranged and adapted to laterally confine the perfume supply in effective contact with said inner wall portions and valve means permitting escape of perfume vapors from said container when in open position during use of said candle and confining said perfume in said container when in closed position, said tubular stem being open at its top and bottom ends and having laterally directed openings through its upper end portions arranged and adapted to discharge a combustible gas fuel to produce when ignited a candle-like flame at the top end of the stem whereby heat is generated by said flame



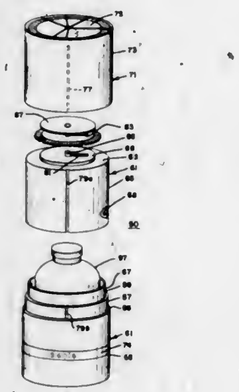
at the top end of said stem and is conducted downwardly through the stem into vaporizing relation with the perfume supply, and means arranged and adapted to conduct perfume material in vapor form from the container along with a current of air and discharge the same into the ambient atmosphere.

3,355,914
CLOTHES WASHING MACHINE AND LINEAR MOTOR THEREFOR
Harry J. Venema, Wheaton, and George H. Studtmann, Mt. Prospect, Ill., assignors to Borg-Warner Corporation, a corporation of Illinois
Filed Nov. 2, 1964, Ser. No. 408,209
8 Claims. (Cl. 68—23)



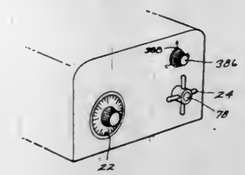
1. In an electrical motor energizable by an A-C source, the combination comprising a frame, an armature movably supported by said frame, a stator supported on said frame and positioned in predetermined spaced relation to said armature, a first winding wound on said stator to establish a first set of flux stations producing a flux varying time-wise in magnitude and polarity as a function of applied first phase voltage, a second winding wound on said stator to establish a second set of flux stations producing a flux varying time-wise in magnitude and polarity as a function of applied second phase voltage, said respective first and second windings wound with said respective first and second winding flux stations spatially offset so that an effective flux resulting from the combined fluxes produced by contributions of each winding moves as a function of time relative to said stator, control means coupled to said respective first and second windings and operable to reverse currents in at least a portion of said first and second phase windings, respectively, said control means in a first position effecting current flow through said windings so that said fluxes at said respective stations combine to establish a first number of individual magnetic poles in said first winding and in said second winding, respectively, moving as a function of time relative to said stator, said control means in a second position effecting current flow through said windings so that said fluxes at said respective stations combine to establish a second number of individual magnetic poles in said first winding and in said second winding, respectively, moving as a function of time relative to said stator, said first number of poles effecting a first armature speed and said second number of poles effecting a second different armature speed.

3,355,915
COMBINATION LOCK MEANS FOR A CONTAINER
Joseph A. Saunders, 1660 18th Ave., San Francisco, Calif. 94122
Filed Feb. 26, 1965, Ser. No. 435,625
5 Claims. (Cl. 70—63)



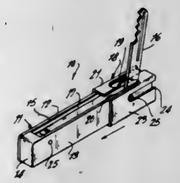
1. A lockable container including a base and cover means, means associated with the base and cover means for releasably securing them together, said last named means including combination lock means comprising a disc removably mounted between said base and cover means, said disc having a plurality of cuts extending inwardly from at least one free edge thereof to form a plurality of fingers along the periphery of the disc at said edge, predetermined ones of said fingers being broken out to leave blanks, and means mounted to one of said base and cover means for selective alignment and engagement with various portions of the periphery of said disc means so that release of the cover means from the base can only be effected when said last named means is aligned with said blanks.

3,355,916
COMBINATION LOCK DEVICE
Robert B. McFiggans, Stamford, Conn., assignor to Pitney-Bowes, Inc., Stamford, Conn., a corporation of Delaware
Filed June 18, 1965, Ser. No. 464,911
17 Claims. (Cl. 70—314)



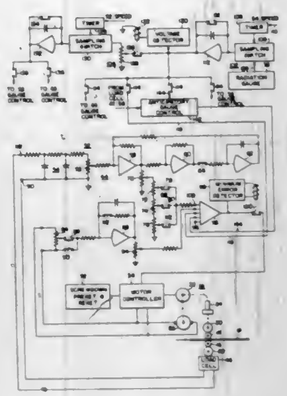
1. Apparatus comprising a combination lock adapted to be unlocked upon entry of the correct combination, and an actuating member operatively arranged for actuating movement when said lock is unlocked and prevented from effecting said actuating movement when said lock is locked; said combination lock including first means for entering the correct combination, second means adapted to be driven for altering said correct combination, variable output mechanism connected to said second means and operative to drive said second means a variable amount according to a predetermined random pattern, and third means for operating said variable output mechanism independently of said first means and said actuating member.

3,355,917
KEY CASE
Daniel Albert, 1834 Caton Ave., Brooklyn, N.Y. 11226
Filed Aug. 17, 1965, Ser. No. 480,375
3 Claims. (Cl. 70—456)



1. A key holder comprising a hollow rectangular case open at its top consisting of spaced side walls, spaced end walls and a bottom, latch means slidably mounted on the case overlying a portion of the case opening to be engageable with keys positioned in the case to retain said keys within said case, said latch means having opposed cutout portions to permit the keys to swing therethrough when said keys are released, spaced transverse pins carried by and extending beyond the case and disposed in the path of the latch means, a key swingably carried by each of the pins within the case, and spring means comprising an elongated coil spring having an end secured under tension to a head portion of each key to interconnect said keys in order to urge the free end of each key to swing upwardly about its respective pin when the latch means are slid away from said portion of the case opening to be out of engagement with the key.

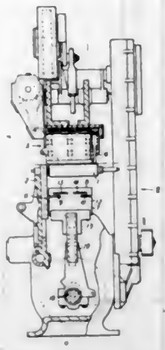
3,355,918
GAUGE CONTROL SYSTEM PROVIDING IMPROVED GAUGE ACCURACY IN A REDUCTION ROLLING MILL
John W. Wallace, Amherst, N.Y., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 31, 1965, Ser. No. 484,046
10 Claims. (Cl. 72—16)



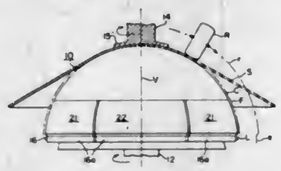
1. A gauge control system for a reduction rolling mill having at least two roll stands and respective gauge control subsystems associated with each of two respective stands, said gauge control system comprising a monitor system having first and second monitor subsystems responsive to delivery gauge error signals generated by a thickness error detector, said first monitor subsystem connected to one of the gauge control subsystems to produce gauge error correction at one of the two stands, said second monitor subsystem connected to the other gauge control subsystem to produce gauge error correction at the other stand, and means for controlling the gauge error level at which said second monitor subsystem becomes operative in relation to the gauge error level at which said first monitor subsystem becomes operative.

3,355,919
APPARATUS FOR FORMING CAN BODIES
Michael Harcourt Christians Buttery, Bushey Heath, England, assignor to The Metal Box Company Limited, London, England, a British company
Filed Mar. 10, 1965, Ser. No. 438,700
Claims priority, application Great Britain, Mar. 18, 1964, 11,493/64
4 Claims. (Cl. 72—51)

1. In apparatus of the character described, the combination of an elongated frame suported horn, means for shaping body blanks having cooperatively engageable seam hooks about the horn to present said hooks in seam forming relation along the horn, and seam bumping means movable towards and from the horn, said seam bumping means including a steel plate having end portions and a profile which opposes the horn where seams are presented therealong, said plate at positions adjacent to said profile being provided with slots which extend towards each other from the ends of the plate thereby to permit deflection of the end portions of the plate profile during impact and the restoration of the profile on movement of said plate away from the horn, whereby during impact against a seam on the horn the end portions of the profile portion of the plate are permitted to allow the profile of the horn and the seam being flattened to provide a side seam of substantially uniform thickness along the length thereof.



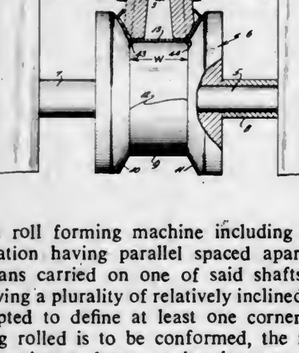
3,355,920
METHOD OF SPINNING CUP-SHAPED ARTICLES AND APPARATUS THEREFOR
George W. Ellenburg, Ardmore, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 28, 1965, Ser. No. 467,247
21 Claims. (Cl. 72—83)



1. A method of making a hollow open-ended cup-shaped metal article, comprising the steps of
heating a sheet metal preliminary workpiece to an initial temperature of at least 1400° F.;
spinning said heated workpiece on a substantially cooler dome-shaped steel mandrel to substantially the same shape as that of said cooler mandrel, and with an annular portion of reduced radius adjacent the open end in the thus spun workpiece, so that the spun workpiece is retained in tightly fitting relation with the mandrel; and
cooling the thus formed workpiece to a temperature below said initial temperature while on the mandrel, thereby effecting shrinkage of the workpiece that is resisted by the mandrel with concomitant yielding and creeping of said workpiece to more precise conformance to the shape and dimensions of the mandrel and to substantially eliminate surface irregularities effected in the spinning step.

3,355,921
SHAPING STAND FOR THE PRODUCTION OF HELICALLY WELDED TUBES
Hans Pferdekämper, Dusseldorf, Germany, assignor to Schloemann Aktiengesellschaft, Dusseldorf, Germany, a German company
Filed Dec. 16, 1964, Ser. No. 418,782
Claims priority, application Germany, Dec. 27, 1963, Sch 34,387
2 Claims. (Cl. 72—171)

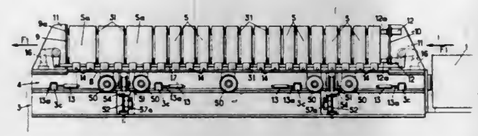
1. A shaping stand for the production of helically welded tubes from strip metal, comprising: bending means, a gantry-like housing including a base frame, vertical longitudinal spars, and transverse members each vertically adjustable along the said spars, four pairs of guiding and centering rollers distributed around the position in which the tube in formation will be located, the axes of the rollers being parallel to the axis of the said tube to be formed, one of the pairs of rollers being located vertically below the said axis, another pair vertically above the said axis, and the two remaining pairs being located opposite to one another, one pair on each side of the said axis, the upper and lateral pairs of rollers being rotatably mounted on the vertically adjustable transverse members, and the individual rollers also being adjustable, relatively to the transverse members that carry them, in straight lines directed approximately towards the axis of the tube in formation.



3,355,922
ROLL FORMING MACHINE
Hiroshi Utashiro and Kenji Ohno, Tokyo, Japan, assignors to Kawasaki Steel Corporation, Kobe-shi, Hyogo-ken, Japan
Filed Sept. 28, 1965, Ser. No. 490,799
Claims priority, application Japan, Sept. 29, 1964, 39/55,574
14 Claims. (Cl. 72—178)

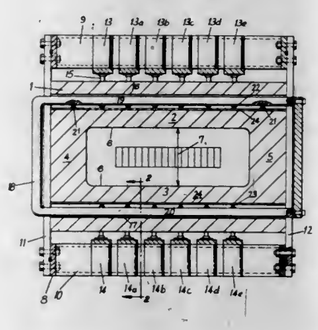
1. In a roll forming machine including at least one rolling station having parallel spaced apart shafts and roller means carried on one of said shafts, said roller means having a plurality of relatively inclined surface portions adapted to define at least one corner to which a strip being rolled is to be conformed, the improvement which comprises at least one bearing means carried on the other of said shafts and a roller element carried one on each of said bearing means, said roller element having a deforming surface portion adapted to coact with said corner to effect deformation of a strip being rolled, said bearing means permitting said roller element to be tilted with respect to the axis of said other shaft, whereby upon the forcing together of said shafts said deforming surface portion is adapted to exert a compressive force on a strip being rolled in the area of said corner, said force having components both parallel and normal to the axes of said shafts.

3,355,923
ROLLING MILL OF THE REDUCING TYPE
Charles Eugene Gillet, Paris, France, assignor to Societe Anonyme dite: Societe de Constructions de Montbard
Filed July 23, 1964, Ser. No. 384,722
Claims priority, application France, July 25, 1963, 942,706, Patent 1,490,464
7 Claims. (Cl. 72—224)



1. In a rolling mill comprising a plurality of roll housings, an elongated common frame for supporting said roll housings, an abutment on said frame, releasable means for clamping said roll housings as a group to said abutment, and a control unit for driving the rolls in said housings when said housings are clamped to said abutment, the improvement which comprises means for forcibly separating said roll housings from each other longitudinally of said frame when said clamping means is released.

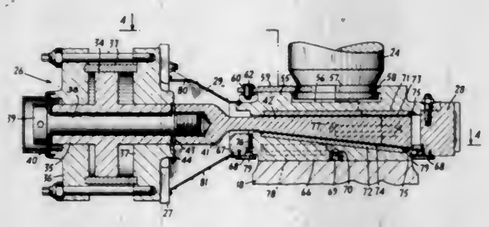
3,355,924
CONTROL OF DEFLECTION IN ROLLING MILLS AND THE LIKE
Tadeusz Sendzimir, % T. Sendzimir, Inc., Waterbury, Conn. 06712
Filed July 10, 1963, Ser. No. 294,048
11 Claims. (Cl. 72—241)



3. In a mechanical device the combination of a pair of mutually opposed relatively rigid structures subject to deflection by reason of separating forces exerted thereon, and means for diminishing said deflection comprising at least one stationary cooperating structure parallel to one of said structures, said latter structure being disposed near and spaced from one of said rigid structures, means fixing said structures against movements at their ends, and at least one pressure element interposed between each

said rigid structure and said parallel structure adjacent thereto at the parts of said rigid structure subject to deflection, whereby to exert pressure upon said rigid structure at said parts in a direction opposite to the direction of the deflecting forces.

3,355,925
SYSTEM FOR DYNAMICALLY ADJUSTING THE WORKING ROLL SEPARATION IN ROLLING MILLS
Peter J. Barnikel, New London, and Robert P. Freedman, Waterford, Conn., assignors to General Dynamics Corporation, New York, N.Y., a corporation of Delaware
Filed Oct. 22, 1964, Ser. No. 405,749
9 Claims. (Cl. 72—244)



1. Apparatus for adjusting the working roll separation in a rolling mill including a frame and first and second relatively movable working rolls disposed within the frame comprising a wedge member having two surfaces disposed at an angle interposed between the frame and the first working roll and movable transversely therebetween so as to increase or decrease the force urging the first working roll toward the second working roll, a first bearing member linked to the mill frame and having a bearing surface coacting with one of the surfaces of the wedge member, a second bearing member linked to the first working roll and having a bearing surface coacting with the other surface of the wedge member, an antifriction layer including polytetrafluoroethylene disposed between each of the surfaces of the wedge member and the coacting surfaces of the first and second bearing members respectively, and hydraulic drive means including a piston connected directly to the wedge member to impart said transverse motion thereto, including removable insert plates mounted in the first and second bearing members to provide the bearing surfaces thereof, and means affixing the layer including polytetrafluoroethylene to each of the insert plates so as to dispose it between the coacting surfaces of the wedge member, and the first and second bearing members.

3,355,926
PRESSURE CONTROL DEVICE FOR A ROLLING MILL
Jeremiah Wagner O'Brien, Mount Lebanon, Pa., assignor to United Engineering and Foundry Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Sept. 21, 1964, Ser. No. 397,981
Claims priority, application Great Britain, Oct. 7, 1963, 39,371/63
2 Claims. (Cl. 72—245)

1. In a fluid control system for a rolling mill or the like apparatus having at least a pair of rolls, including a pair of piston cylinder assemblies arranged at the opposite ends of one of the rolls of the mill to cause said one roll to move towards and away from the other roll of the pair, the improvement comprising:

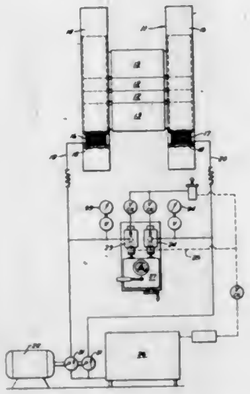
a relief valve connected to each of said piston cylinder assemblies, including displaceable members for controlling the pressure of the fluid delivered to said piston cylinder assemblies,

said displaceable members being received in pressure control chambers formed in said valves which include spring-biased control plugs,

a pair of rotatably mounted, axially displaceable shafts, one of said shafts being connected to one of said control plugs and the other shaft being connected to the other of said control plugs,

first gearing mounted on said shafts for causing rotation thereof,

a worm arranged to interconnect said shafts through said first gearing,



means for rotating said first gearing and worm to effect rotation of said shafts in opposite directions to establish an unequaled output pressure of the fluid delivered from said valves,

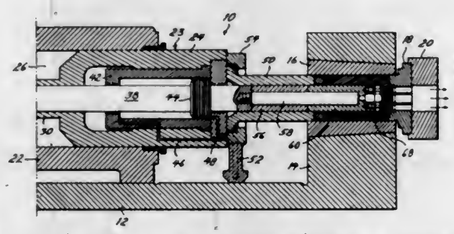
second gearing mounted on said shafts for causing rotation thereof,

a pinion arranged to interconnect said shafts through said second gearing,

means for rotating said second gearing and said pinion to effect rotation of said shafts in the same direction to identically raise or lower the output pressure of the fluid delivered from said valves, and

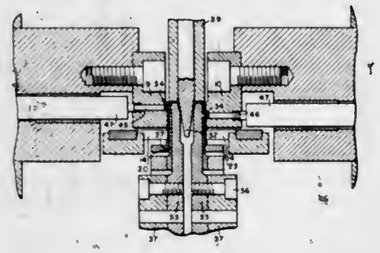
said shafts being caused to move axially through threaded connections.

3,355,927
EXTRUSION PRESS FOR MULTIPLE TUBE CONFIGURATIONS AND THE LIKE
Guenter W. Sibler, Media, Pa., assignor to Baldwin-Lima-Hamilton Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Mar. 5, 1964, Ser. No. 349,575
10 Claims. (Cl. 72—261)



1. Apparatus for simultaneously extruding a plurality of hollow configurations comprising a main ram assembly having a mandrel slidably supported therewithin, means for separately and selectively reciprocating the mandrel with respect to said assembly, means removably coupling a plurality of short piercers to one end of said mandrel, at least some of said piercers being teardrop-shaped in cross-section adjacent the point where the piercers are coupled to the mandrel, with the apex of the teardrop-shape pointing toward the longitudinal axis of the mandrel, a die having a plurality of die openings corresponding in number to the number of piercers, said die openings being in line with said piercers, means for reciprocating the mandrel to a position wherein the piercers extend into the die openings, means for locking the mandrel with the piercers extending into the die openings, and means for reciprocating the ram assembly while said mandrel is in its locked position.

3,355,928
APPARATUS FOR FORMING SIDE PINS ON BASE SHELLS
William P. Malarkey, Nutley, and Carl A. Ricard, Fair Lawn, N.J., and William J. Lally, New York, N.Y., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Feb. 26, 1965, Ser. No. 435,561
7 Claims. (Cl. 72—355)



1. An apparatus for forming the side pins on a lamp base shell, said apparatus comprising:

(a) a supporting stud for telescopically holding a base shell thereon;

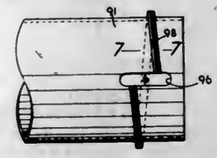
(b) a pair of male forming dies carried by said supporting stud and having a pair of laterally extending projections for engaging the inner surface of said base shell;

(c) a pair of outer female dies movable to surround said base shell and having openings therein coaxially disposed relative to said male forming dies projections, and said female dies being provided with pressure-loaded pins reciprocally movable in said openings and subjected to a preselected pressure in the direction of said base shell; and

(d) means operable to apply pressure to said male forming dies to cause outward lateral drawing of a portion of the wall of said shell into the openings of said female die against the counter-pressure of said pressure-loaded pins to form side pins on the outer surface of said base shell having a uniform wall thickness and sharp corners.

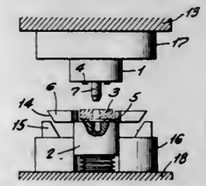
3,355,929
METHODS FOR FORMING SCREW THREADS
John Wallis Shirley, Birmingham, England, assignor to Wellington Engineering Works Limited, Tipton, England, a company of Great Britain
Filed June 8, 1965, Ser. No. 462,316
Claims priority, application Great Britain, June 9, 1964, 23,771/64, 23,772/64
6 Claims. (Cl. 72—367)

2. A method of forming a single start, single turn external screw thread on a tube of a material capable of plastic deformation intermediate the ends of the tube comprising the steps of compressing the tube by acting on the ends thereof to shorten the tube whilst simultaneously supporting the tube so that the metal in a helical zone moves radially outwardly as the tube is shortened to provide a collar having flanks extending outwardly



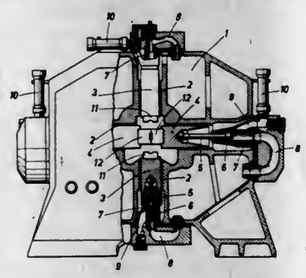
from the remainder of the tube and subsequently compressing the collar by acting on the flanks thereof to consolidate the material of the collar to form it into a discontinuous flange in the form of a helix.

3,355,930
METHOD OF, AND DEVICE FOR, MANUFACTURING PROFILE ARTICLES, PREFERABLY GEARS AND STAR WHEELS
Leonid Ivanovich Fedorov, Minsk, U.S.S.R., assignor to Zavod "Gomselmash," Gomel, U.S.S.R.
Filed Mar. 8, 1965, Ser. No. 437,839
6 Claims. (Cl. 72—377)



1. A method of finish manufacturing apertured profiled articles, such as gears and star wheels, comprising piercing a central datum hole in a blank with a mandrel, subsequently simultaneously upsetting and pressing said blank in the radial direction relative to and while it is on said mandrel by applying active pressing forces in at least three directions simultaneously thereby providing for a multidirectional flow of metal and finish-to-size forming of such article having a central hole, opposite side surfaces and teeth.

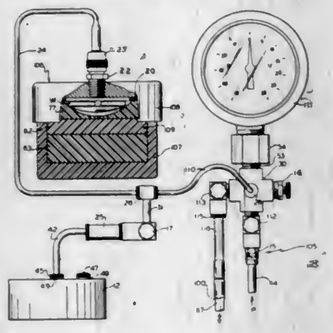
3,355,931
DIE FORGING MACHINE
Bruno Kralowetz, Weinleiten 142, St. Ulrich, near Steyr, Austria
Filed May 25, 1965, Ser. No. 458,661
Claims priority, application Austria, July 10, 1964, A 5,945/64
2 Claims. (Cl. 72—404)



1. A die forging machine, which comprises a first pair of mutually opposite hammers, each of which carries a pre-shaping tool, a second pair of mutually opposite hammers, each of which carries a finishing die, said pairs of

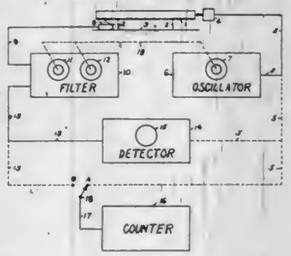
hammers being disposed in a common plane and spaced from each other by an angle of 90°, and hammer drive means for driving said pairs of hammers in alternation to perform blows against opposite sides of bar stock introduced between said hammers in a longitudinal direction which is normal to said plane, said hammer drive means comprising a compressed gas source for driving said second pair of hammers.

3,355,932
METHOD AND APPARATUS FOR TESTING WATERPROOF WATCHES
Edward J. Mulligan, 101 Clark St., Syracuse, N.Y. 13210
Filed Sept. 13, 1965, Ser. No. 486,730
4 Claims. (Cl. 73—49.3)



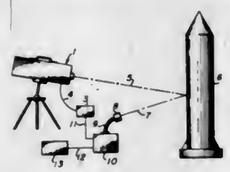
2. The method of testing waterproof watches for a leak comprising the steps:
first, placing the watch unsealed in a pressure tank having an air permeable interior space generally approximating that of the space occupied by the watch;
second, raising the air pressure in the tank to a chosen static pressure;
third, releasing air from the tank into a second tank having approximately equal interior space as the first tank until the pressure in the two tanks is the same while measuring the pressure drop in the first tank;
fourth, sealing the watch and repeating the first three steps with the watch in the first tank; and
fifth, comparing the respective pressure drops, no change in pressure drops indicating a leak.

3,355,933
RESONANCE VIBRATION TESTING APPARATUS
Robert G. Rowe, 8237 Witkop Ave., Niagara Falls, N.Y. 14304
Filed Mar. 16, 1964, Ser. No. 351,984
4 Claims. (Cl. 73—67.2)



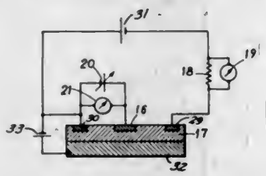
1. In an apparatus for testing articles according to natural frequencies of resonance vibration thereof, means to support an article for vibration, means to produce vibration in said article from electric signals, means to derive electric signals from vibrations of said article, means to detect resonance vibrations in said article, and tracking variable-frequency oscillator and band-pass filter means arranged to produce a single frequency signal adjustable over a frequency range and to attenuate all signals except those in a band of frequencies centered around and tracking said single frequency signal, said oscillator connected to said vibration-producing means and said filter connected between said signal-deriving means and said resonance-detecting means whereby signals outside said band of frequencies are diverted from said resonance-detecting means.

3,355,934
VIBRATION MEASUREMENT WITH COHERENT LIGHT
John V. Foster, 485 Arboleda Drive, Los Altos, Calif. 94022
Filed Apr. 24, 1967, Ser. No. 634,065
8 Claims. (Cl. 73—71.3)



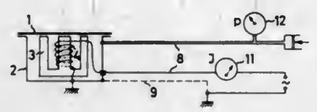
1. A method of measuring the vibration of a selected pin point area of the surface of a stationary object comprising the steps of:
forming and optically focussing a narrow beam of visible coherent light;
projecting said beam against said surface and visually directing said projected beam to said selected pin point area by visually observing the light spot formed on said surface by said projected beam; and
comparing said projected beam with the beam reflected from said selected pin point area.

3,355,935
SEMICONDUCTOR SYSTEMS FOR MEASURING STRESSES
Jean Grosvalet, Paris, France, assignor to CSF-Compagnie Generale de Telegraphie Sans Fil, a corporation of France
Filed July 24, 1963, Ser. No. 297,267
Claims priority, application France, July 25, 1962, 905,004
5 Claims. (Cl. 73—88.5)



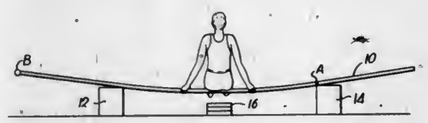
1. A system comprising: a field effect structure having a source, a drain, a gate and a surface for receiving stress, and said structure having a conducting channel in which majority carriers move in response to an energy source, this channel being bound by a space charge created by an electric field produced from said gate; means for applying a voltage between said source and said drain and means for measuring the variation of the current flowing through said structure, as a function of the applied stress; means for applying a further voltage between said source and said gate for cancelling the current flowing through said structure as a function of said stress, said further voltage producing said electric field; and means for measuring said further voltage.

3,355,936
APPARATUS FOR MEASURING MECHANICAL STRESSES AND HYDRAULIC PRESSURES
Franz Glötzl, Karlsruhe-Rupurr, Germany (11 Forlenweg, D–7501 Forchheim-Bahnhof, Germany)
Filed Aug. 9, 1965, Ser. No. 478,286
5 Claims. (Cl. 73—88.5)



1. A pressure cell for measuring mechanical stresses and hydraulic pressures comprising a housing, a thin diaphragm of a magnetically conductive material secured adjacent to its peripheral edge within said housing and having outer and inner sides, said outer side being adapted to be acted upon by an external pressure to be measured, an electromagnet adapted to be connected to an electric circuit and having a large plurality of pole pieces of alternating polarity closely adjacent to each other and facing the inner side of said diaphragm, means for connecting said housing to a pressure line for supplying a pressure medium into said housing so as to build up an internal pressure on the inner side of said diaphragm, said pole pieces engaging with and supporting said diaphragm until said internal pressure has been built up to a strength equal to the strength of said external pressure, said diaphragm being adapted to separate from said pole pieces as soon as said internal pressure slightly exceeds said external pressure, whereby the reluctance of said circuit is changed.

3,355,937
METHOD OF TESTING VAULTING POLES
Thomas O. Olsen, Salina, Kans., assignor to Thermo-Flex, Inc., Salina, Kans., a corporation of Kansas
Filed Jan. 28, 1965, Ser. No. 428,732
2 Claims. (Cl. 73—100)

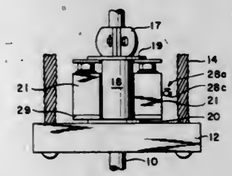


1. The method of testing to determine that a vaulting pole is safe from buckling in use under a vaulter's weight, comprising:
selecting a standard deflection for the pole within the range of maximum deflection of the pole without buckling;
supporting the pole at a first point along the pole coinciding with the location at which the vaulter places his uppermost hand on the pole while using the pole for vaulting;
supporting the pole at a second point measured from the ground engageable end of the pole and equal to the distance from said ground engageable end to said first point less the computed value of the expression:

$$\left(\frac{48 \times \text{said standard deflection} \times \text{said distance squared}}{\pi^2}\right)^{1/3}$$

applying the weight of the vaulter to said supported pole transversely of the pole and between the points of support thereof; and
comparing the actual deflection of said pole from said vaulter's weight with said standard deflection to insure that said actual deflection is no greater than said standard deflection.

3,355,938
LOAD CELL WITH JACK
Aaron B. Neely and James W. Montgomery, Houston, Tex., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed July 29, 1965, Ser. No. 475,643
11 Claims. (Cl. 73—141)



1. A device adapted to be removably attached between a vertically movable supporting hanger bar mounted on the sucker rod of a well pump and a stop element fixedly mounted on the rod and spaced a fixed distance above the bar, and spacer means between the stop element and hanger bar normally supported by the bar and having at least a portion thereof movable relative to said bar, said device comprising:
housing means containing at least one strain gauge for measuring a vertical load on the housing means;
bearing surface means carried by said housing means and abutting against said spacer means;
jack means carried by said housing means and adapted to move downwardly towards said hanger bar; and
said housing means being adapted to be inserted on said spacer means between said stop element and said hanger bar whereby the stress on said stop element is transferred to the bearing surface means when said jack means is actuated to move toward said hanger bar, thereby straining said gauge and measuring the load on said sucker rod.

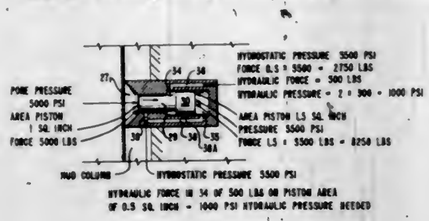
3,355,939
APPARATUS FOR MEASURING THE DIFFERENCE BETWEEN HYDROSTATIC AND FORMATION PRESSURE IN A BOREHOLE
Adrianus W. van Gils, Seria, Brunei, Borneo, assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Sept. 22, 1964, Ser. No. 398,227
3 Claims. (Cl. 73—152)

1. Apparatus for measuring the pressure differential between the hydrostatic pressure of the mud column existing in a borehole annulus and the formation pore pressure at the same depth comprising:
(a) a drill string;

(b) a tubular member connected in said drill string and forming a portion thereof, said tubular member having a transverse cavity formed in the wall thereof which is open to the annulus of the well and communicates with the interior of said tubular member through an aperture;

(c) means mounted within said tubular member for selectively opening and closing said aperture;

(d) a cylinder having one closed end slidably mounted in a fluid-tight manner within said transverse cavity, the end of said cylinder adjacent the wall of said borehole forming an open funnel shaped chamber;



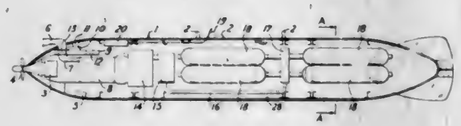
(e) a pair of pistons of different diameters centrally mounted within said cylinder in fluid-tight relationship therewith for movement along the axis of cylinder, said pistons being rigidly joined together with the smaller of said pistons extending into said funnel shaped chamber;

(f) first channel means for providing communication between the annulus and a first chamber formed between the large piston and the closed end of said cylinder;

(g) second channel means for providing communication between a second chamber, which is formed by the wall of said cylinder and the end of said large piston which is connected to said small piston, and the interior of said tubular member via said aperture; and

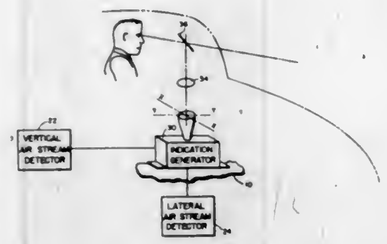
(h) a third channel, communicating with said second chamber, said third channel being closed when said large piston is in its normal position, said third channel also communicating with said first channel.

3,355,940
DEVICE FOR THE STUDY OF ATMOSPHERIC LAYERS
Raymond Pannetier, Massy, France, assignor to Commissariat à l'Energie Atomique, Paris, France
Filed Mar. 1, 1965, Ser. No. 435,870
Claims priority, application France, Mar. 5, 1964, 966,211
5 Claims. (Cl. 73—170)



1. Device for the study of atmospheric layers comprising a conduit provided with an orifice for the admission of atmospheric air, a compressor for compressing the air in said conduit, means for interposing successively a plurality of filters on the path of the airstream within said conduit upstream of said compressor, a plurality of cylinders for receiving the compressed air from said compressor and connection means for successively connecting one of said cylinders to said compressor for each of said filters simultaneously with the interposition of each of said filters in said conduit.

3,355,941
COLLIMATED AIRCRAFT LANDING ASSIST SYSTEM
Henry P. Birmingham, Washington, D.C., assignor to the United States of America as represented by the Secretary of the Navy
Filed Oct. 31, 1963, Ser. No. 320,582
8 Claims. (Cl. 73—178)



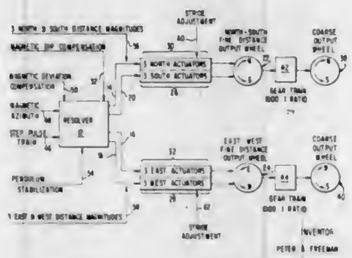
1. A flight path projection system for aiding a pilot in visually navigating or landing an aircraft comprising

first means for sensing the angle of attack of said aircraft and transmitting a first electrical signal proportional thereto,

second means mounted at right angles to said first means for sensing the side-slip angle of said aircraft and transmitting a second electrical signal proportional thereto, and

optical means mounted in a fixed relationship to said aircraft and responsive to said first and second electrical signals for projecting an apparent image along the instantaneous flight path of said aircraft at optical infinity.

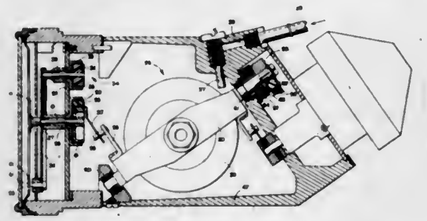
3,355,942
MAN-CARRIED AUTO-NAVIGATION DEVICE
Peter A. Freeman, Baltimore, Md., assignor to Martin-Marietta Corporation, New York, N.Y., a corporation of Maryland
Filed May 14, 1965, Ser. No. 455,804
37 Claims. (Cl. 73—178)



1. A pulse force operated navigation device comprising: a support member, a platform, means for mounting said patform from said support member for relative free movement about at least the vertical axis, means for generating pulses in response to the movement of said device with respect to a reference point, means carried by said plaform tending to continually align said platform with the earth's magnetic field, a distance indicating member, means for positioning said member for relative movement with respect to a stationary reference, means responsive to each pulse for incrementally moving said distance indicating member, and means responsive to the direction of movement of said device with respect to said magnetic field for modifying the extent of said incremental movement, said last means including resolver means formed between said support member and said platform.

37. A fluid operated resolver for sensing the angular displacement of a rotary element with respect to the earth's magnetic field comprising: a circular element magnetically oriented with respect to the earth's magnetic field, a rotary element positioned with respect to said first element for rotational movement relative thereto, a source of fluid carried by one of said elements, and a series of isolated, fluid receiving chambers carried by said other element, said chambers being positioned circumferentially about the axis of rotation of said rotary element, whereby said chambers are in selective fluid communication with said fluid depending upon angular deviation of said rotary element from the earth's magnetic field.

3,355,943
AIRCRAFT TURN COORDINATOR
Allan K. Mills, Canoga Park, and Karl Frudenfeld, Rolling Hills, Calif., assignors to Brittain Industries, Inc., Hawthorne, Calif., a corporation of California
Filed Aug. 13, 1965, Ser. No. 479,487
12 Claims. (Cl. 73—178)



1. In a device for coordinating the turning of an aircraft,

support means,

a rate gyroscope mounted on said support means, said rate gyroscope including a gimbal, bearing means for supporting said gimbal on said support means for rotation about a first axis defining the precession axis of said gyroscope, said first axis being vertically canted with respect to the longitudinal flight axis of said aircraft,

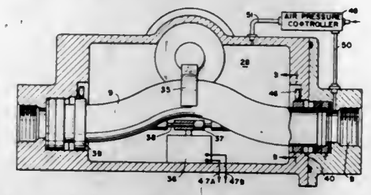
indicator means for providing an indication in accordance with the rotational precession of said gimbal, said indicator means including a rotational dial member rotatably mounted on said support means and a fixed dial member fixedly mounted on said support means adjacent to said rotational dial member, and

means for coupling said gimbal to said rotational dial member, said coupling means including damper means interconnecting said gimbal and said dial member for damping out short term disturbances in the rotational output of said gimbal,

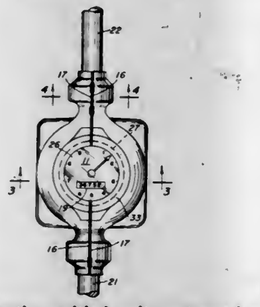
whereby said rotational dial member rotates relative to said fixed dial member to provide an indication in accordance with the sum of the yaw and roll rates of the aircraft.

3,355,944
MASS FLOW METERING MEANS
Anatole J. Sipin, 117 E. 77th St., New York, N.Y. 10021
Filed Sept. 3, 1964, Ser. No. 394,265
11 Claims. (Cl. 73—194)

1. Means of the Coriolis type for metering the rate of mass flow of matter in a line including a fixed member in the line with an inlet port and an outlet port, a curved conduit between the ports with a flow path of a curvature between 0° and 180° having an intermediate section movable in a direction perpendicular to the flow path, a bent inlet section providing an increasing gradient of fluid velocity in the direction of conduit motion between the inlet port and intermediate section, and a bent outlet section providing a decreasing gradient of fluid velocity in the direction of conduit motion between the intermediate section and the outlet port of equal magnitude and opposite direction to the velocity gradient in the bent inlet section, means for moving the conduit to impart transverse angular momentum to the flowing matter in the bent inlet and outlet sections, and means for sensing the Coriolis force couple on the conduit about an axis perpendicular to the flow path and the direction of conduit motion due to the transverse momentum of the matter flowing therein as a measure of the mass flow through the conduit.



3,355,945
TAMPER-PROOF METER ENCLOSURE
Lee D. Perry, Hoffman Estates, Ill., assignor to Robert B. Bishop Inc., Chicago, Ill., a corporation of Illinois
Filed Apr. 23, 1965, Ser. No. 450,324
2 Claims. (Cl. 73—201)

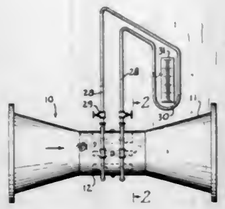


1. A molded-plastic cavitied unit contoured and dimensioned to permit a pair thereof to be bonded together in face to face embracing relation in situ on a meter connected in line with a fluid conduit and including the inlet and outlet conduit connections therewith to enclose the same so as to preclude undetectable tampering therewith, wherein the plastic material is of a character known to have a natural tendency to register therein permanently and visually any strains applied to alter its embracive position on the meter.

3,355,946
PITOT TUBES
Robert Charles Lazell, 8219 Joplin St., Houston, Tex. 77017
Substituted for abandoned application Ser. No. 633,234, Jan. 9, 1957. This application Jan. 19, 1965, Ser. No. 453,233
24 Claims. (Cl. 73—212)

1. A solid, integrally formed orifice block for installation in a conduit, said orifice block including an inner,

substantially cylindrical portion with its longitudinal axis parallel to the conduit axis, and a portion outwardly adjacent to said inner portion and having a cross-section of substantially the length thereof with widest width centrally and of substantially the dimension of the inner portion diameter and streamlined from said widest dimension to a narrow, fine line, feather edge forwardly and rearwardly, a forward and a rearward cone shaped orifice provided respectively in the forward and rearward ends of said inner portion with cone bases longitudinally outwardly

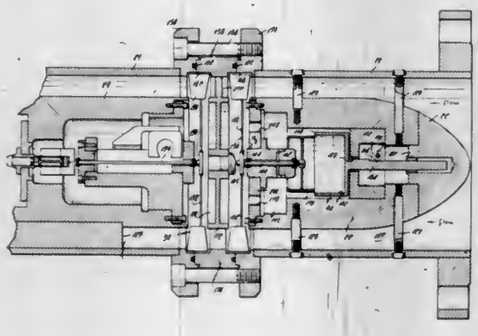


and cone axes co-axial with said inner portion axis and terminating inwardly in spaced relation on opposite sides of a median plane through said Pitot tube and said widest dimension and transversely through said conduit, and forward and rearward radial flow passages extending within said Pitot tube in parallel, spaced relation on opposite sides of said median plane and through said outwardly adjacent portion to comprise, respectively, the only communication with the inner terminals of said forward and rearward cone shaped orifices.

3,355,947
VISCOSITY COMPENSATED TURBINE FLOW METER

Henning Karlby and Winston F. Z. Lee, Pittsburgh, Pa., assignors to Rockwell Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania

Original application Feb. 26, 1959, Ser. No. 795,755, now Patent No. 3,248,945, dated May 3, 1966. Divided and this application Nov. 24, 1965, Ser. No. 559,343
13 Claims. (Cl. 73—230)

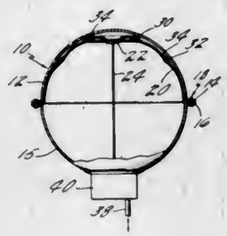


3. A turbine meter comprising a housing having fluid inlet and outlet openings, a bladed metering rotor mounted in said housing for rotation by fluid flow therethrough and adapted to drive a registering mechanism, and viscosity compensating means comprising a bladed counter-rotating rotor independently mounted in said housing at a predetermined distance upstream from said metering rotor and being rotated in a direction opposite to said metering rotor by fluid flow through said housing to apply a supplemental drive torque to said metering rotor and means for controlling said supplemental drive torque by applying a drag to said counter-rotating rotor, said drag applying means being responsive to the viscosity of the fluid flowing through said housing to vary said drag in accordance with the viscosity variations of the fluid being metered.

3,355,948
SPHERICAL TANK GAUGE

Harvey A. Smith, Hampden, Mass., assignor, by mesne assignments, to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed Aug. 26, 1965, Ser. No. 482,670
4 Claims. (Cl. 73—290)



1. Means for measuring the volume of fluid contained in a spherically shaped container subjected to a non-gravitational environment comprising a flexible circular shaped bladder extending laterally internally in the container and having its peripheral edge fastened to the inner walls of the container, a plurality of parallel circular rigid hoops of varying diameter secured to the face of the bladder being in coaxial relation to and spaced longitudinally along the axis of the container for stabilizing and centering the bladder as the volume of fluid in the container empties, resilient means centrally attached to the bladder and having one end extending through an opening formed on the bottom of the container for urging the bladder to empty the fluid, a housing supported to the container for enclosing said end of said resilient means, and means for indicating the relative height of the bladder whereby the height of the bladder is indicative of the volume of fluid in the container.

3,355,949
CRYSTAL TEMPERATURE AND PRESSURE TRANSDUCER

Albert A. Elwood, 3310 NE. 26th Ave. 33064, and Ronald I. Carlson, 1710 NE. 2nd Terrace 33060, both of Pompano Beach, Fla.

Filed Aug. 17, 1964, Ser. No. 390,163
12 Claims. (Cl. 73—345)

2. The method of measuring temperature and pressure including the steps of

(a) inserting at least two quartz crystals of known frequency-temperature characteristics into the material being measured,

(b) protecting said crystals from the effects of pressure,

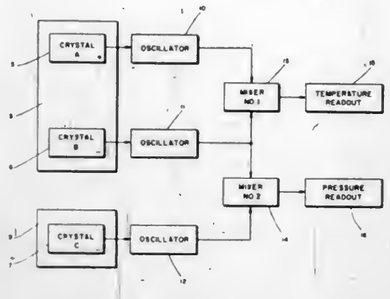
(c) exposing said crystals to the effects of temperature,

(d) inserting a third quartz crystal of the same frequency-temperature characteristics of one of said first crystals,

(e) exposing said third crystal to the effects of both temperature and pressure,

(f) mixing the output frequencies of oscillators controlled by each of the first two crystals and interpreting the difference frequency to indicate the temperature of the material, and

(g) mixing the output frequencies of oscillators controlled by the third crystal and the crystal of the first two which has the same frequency-temperature char-

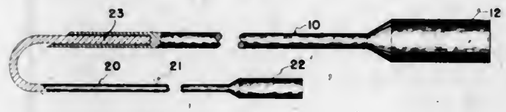


acteristics as said third crystal and interpreting the difference frequency to indicate the pressure of the material.

3,355,950
CHROMATOGRAPHIC SAMPLE INJECTION APPARATUS

Rano Joseph Harris, Sr., Baton Rouge, La., assignor to Precision Sampling Corporation, a corporation of Louisiana

Filed July 1, 1965, Ser. No. 468,743
6 Claims. (Cl. 73—422)



1. In apparatus for direct injection of small accurately measured quantities of fluid into a system the combination comprising

an elongated member of substantially uniform cross-section containing at its forward end a recessed portion which extends from the tip of the member to a location intermediate the opposite end of the member, said recessed portion providing an opening of substantially uniform cross-section, a length ranging from about 10 to about 200 times the inside cross-section of the opening, the over-all length of the elongated member is greater than the length of the recessed portion, and

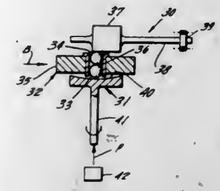
a mating solid member for fitting into the recessed portion of the elongated member.

3,355,951
CONCAVE DISK ACCELERATION INTEGRATOR

Frank Pisciotta, West Hempstead, N.Y., assignor to Sperry Rand Corporation, Ford Instrument Company Division, Long Island City, N.Y., a corporation of Delaware

Filed Aug. 24, 1964, Ser. No. 391,587
11 Claims. (Cl. 73—503)

1. An accelerometer of the class described comprising a disk mounted for rotation about a first axis, a readout means, an inertia mass including coupling means for transmitting motion from said disk to said readout means, biasing means exerting a force directed parallel to said first axis and urging said coupling means and said disk into frictional engagement; said disk having a concave surface in contact with said coupling means; said concave surface being positioned such that a component of

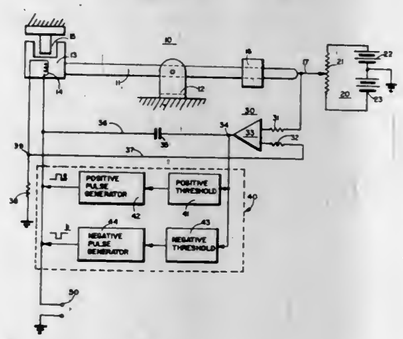


force derived from said biasing means urges said coupling means to contact said surface at a zero point coincident with said first axis.

3,355,952
ACCELEROMETER WITH DIGITAL READOUT

Edgar B. Romberg, Whittier, Calif., assignor to North American Aviation, Inc.

Filed Mar. 31, 1965, Ser. No. 444,353
7 Claims. (Cl. 73—503)



1. In combination:

a pivotal element having an inertial mass mounted thereon adapted to move in response to acceleration;

means for detecting deflection of said pivotal element from a reference position;

electromagnetic means disposed to apply force to said pivotal element;

means responsive to said detecting means in response to deflection of said pivotal element for applying a signal to said electromagnetic means to restore said pivotal element to said reference position, the magnitude of said signal being a function of the amount of deflection of said pivotal element; and

means responsive to the magnitude of said signal reaching a predetermined level for generating a pulse to cancel said signal, whereby said pulse forms a digital output which is a measure of the time integral of force applied to said pivotal element.

3,355,953
NON-CONSTRAINED PENDULOUS GYROSCOPE FOR INERTIAL CONTROL SYSTEMS

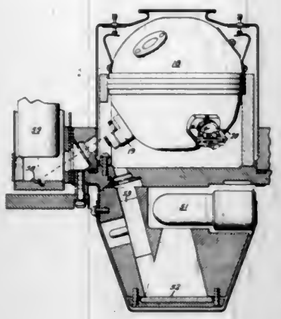
Frithiof V. Johnson, Scotia, N.Y., assignor to General Electric Company, a corporation of New York

Filed Sept. 20, 1963, Ser. No. 310,309
5 Claims. (Cl. 74—5)

1. A linear acceleration sensing gyroscope comprising:

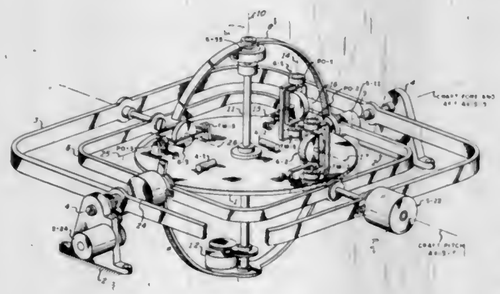
(a) a spherical inertial rotor element adapted for rotation about a spin axis;

(b) means to provide a mass imbalance in said rotor along the spin axis;
(c) electromagnetic suspension means for freely supporting said rotor for rotation about its spin axis and about its center of symmetry;



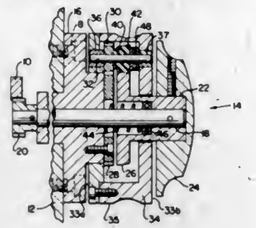
(d) readout means for measuring the orientation of said spin axis; and
(e) said rotor element being mounted for free precession without any restraints.

3,355,954
STABILIZED PLATFORM
Seymour Levine, Centereach, and Emanuel Levinson, Jericho, N.Y., assignors to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware
Filed June 25, 1965, Ser. No. 466,914
12 Claims. (Cl. 74—5.34)



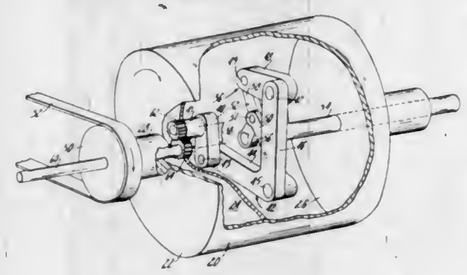
1. A combination for averaging the errors in a gyroscopic stabilization system including a member mounted with freedom about an axis, gyroscopic means for stabilizing the member about its axis having a precession axis normally perpendicular to the axis of the member; and means for oscillating the stabilized member about its axis including motive means operatively connected to the member, a pick-off providing an output for operating the motive means having a part fixed to the member and a exerting a torque about a precession axis of the gyroscope means with respect to the fixed part, means for exerting a torque about the precession axis of the gyroscope, timing means, and a computer connected to the timing means for programming the operation of the torquing means to produce reversing sequences of angular motion of the member about its axis with a cyclic range of at least 720 degrees.

3,355,955
POSITIONING DEVICE
Willis Fay Aller, Dayton, Ohio, assignor to The Sheffield Corporation, Dayton, Ohio, a corporation of Delaware
Filed Oct. 4, 1965, Ser. No. 492,768
5 Claims. (Cl. 74—10.52)



1. A coaxial coarse and fine positioning device comprising,
a base,
a single drive shaft extending through said base,
means attached to one end of said shaft to engage and position an element relative to said base upon rotation of said shaft,
coarse adjustment means attached to said drive shaft for direct rotation of said shaft,
fine adjustment means for imparting a fine rotation to said drive shaft and thereby a fine relative positioning between said base and element including reduction drive means comprising,
a sun gear,
planetary gearing,
and friction elements for relative engagement and and co-action through said shaft,
said fine adjustment means providing a braking action against rotation of said shaft through a motive force applied at said one end thereof,
movement of said coarse adjustment means axially toward said base serving to disconnect said friction elements and render said coarse adjustment means operative for coarse adjustment,
and means for yieldably urging said coarse adjustment means away from said base for rendering said coarse adjustment means inoperative and engaging said friction elements to render said fine adjustment means operative.

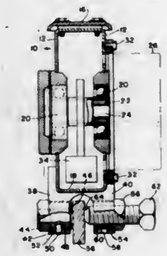
3,355,956
ROTARY MOTION INTERMITTER
Paul Robert Beswick, 347 Main St., Saugus, Mass. 01906
Filed Oct. 21, 1965, Ser. No. 499,693
6 Claims. (Cl. 74—84)



1. A rotary motion intermitter comprising:
a driving member rotatable about an axis;
a driven member independently rotatable about said axis;

linkage means interconnecting said members adapted for causing dwelling of said driven member relative to said driving member in one position of said means and relative rotation of said members and slippage of said driven member relative to said driving member in another position of said means, said linkage means including a rotatable drive link pivotally connected to said driving member at an axis parallel to and spaced from said driving member axis, said link being of length greater than the distance between said parallel axes; and
signal means connected to said linkage means for actuating said linkage means from said one position to said other position, said signal means including a rotatable shaft connected to said drive link at its said axis for actuating said link;
whereby said intermitter is adapted on signaled demand to translate continuous rotation of said driving member to intermediate rotation of said driven member.

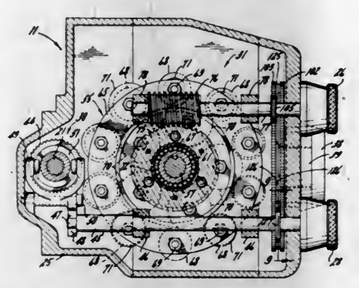
3,355,957
ROTARY VIBRATOR AND MOUNT THEREFOR
Edwin F. Peterson, Neponset, Ill. 61345
Filed Aug. 23, 1965, Ser. No. 481,591
8 Claims. (Cl. 74—87)



1. A vibrator of the class described, comprising a rigid carrier, weight means journaled by the carrier for rotation about an axis of rotation to which the mass of the weight means is eccentric, means for mounting the carrier on a flange-like support disposed normal to said axis of rotation, said mounting means including a part rigid with the carrier for positioning alongside said flange-like support and a member engageable with said support and rotatably connected to said part by screw threads formed about an axis substantially parallel to the axis of rotation of the weight means, the lead of the screw being such that rotation of the member about the axis of the screw threads in one direction causes tightening of the engagement of said member with the support, and means for rotating the weight means about its axis of rotation in the direction opposite to tightening rotation of said member.

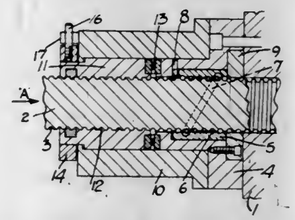
3,355,958
ENGINE LATHE GEAR BOX
Donald J. Oddo, Chicago, Ill., assignor to Sheldon Machine Company, Inc., Chicago, Ill., a corporation of Illinois
Filed May 27, 1965, Ser. No. 459,234
9 Claims. (Cl. 74—353)

6. In an engine lathe having an elongated feed screw and an axially spaced drive member, a gear box for transmitting power from said drive member to said feed screw, comprising, in combination, a housing, gearing in said housing including a pair of ratio changing assemblies, a clutch in said housing for selectively coupling said drive member to said gearing, reversing gears in said housing for coupling said gearing to said feed screw in either forward or reverse drive, means including a first rotatable operator extending from said housing for operating said clutch, means including second and third rotatable operators extending from said housing for selectively setting each of said assemblies independently, means including a fourth rotatable operator extending from said housing for operating said reversing gears, a pair of coaxial adjacent gears journalled in said housing, said second operator being rotatably coupled to one of said gears and said



third operator being rotatably coupled to the other of said gears, said pair of gears having peripherally spaced cam depressions which come into alignment only when said second and third operators have rotated said elements into meshing engagement, a cam on said first operator positioned to be received in said depressions when aligned and said clutch is closed, whereby rotation of either said second or third operators to change the gearing ratio moves the depressions out of alignment and thus rotates the cam and the first operator to open said clutch.

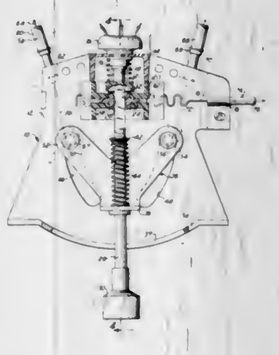
3,355,959
SCREW AND NUT MECHANISM
John Charles Frederick Whicker, Tring, England, assignor to Rotax Limited, London, England
Filed Aug. 17, 1965, Ser. No. 480,289
Claims priority, application Great Britain, Aug. 20, 1964, 34,035/64
3 Claims. (Cl. 74—424.8)



1. A screw and nut mechanism comprising in combination, a housing, a shaft extending through said housing, a helical groove formed in the periphery of said shaft, a ball nut mounted on the housing, a groove formed in the internal periphery of the ball nut, a plurality of balls located in said grooves, passage means through which the balls can return from one end to the other end of the groove as relative rotation occurs between the nut and the shaft, a member mounted within an extension of the housing and having a helical rib formed thereon for engagement with the groove on the shaft, said member being permitted limited axial and angular movement relative to the ball nut so that during relative angular movement of the ball nut and shaft in one direction the rib will freely engage the groove of the shaft, but when relative angular movement of the ball nut and shaft occurs

in the opposite direction relative angular movement of the ball nut and member will occur and a proportion of the load carried by the ball nut will be transferred to the member, and stop means mounted on the housing to limit the extent of relative angular movement of the member when the shaft is moved relative to the ball nut in said opposite direction thereby to ensure that the permitted relative axial movement of the ball nut and member is never completely taken up.

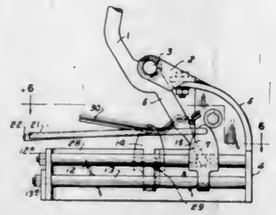
3,355,960
SINGLE KNOB HEATER CONTROL
Frank Bureck, Redford Township, and Donald A. Caley, Dearborn Heights, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Dec. 14, 1965, Ser. No. 513,761
6 Claims. (Cl. 74—471)



1. A control mechanism comprising:
a control shaft,
a housing having a portion defining a linear path for one end of said control shaft,
an electrical switch connected to said housing and having a switching element engageable by said control shaft,
said switching element being constructed to actuate said switch upon axial movement of said control shaft,
a first motion transfer device engaging said control shaft,
a first actuator connected to said first motion transfer device,
said first motion transfer device being constructed to transfer rotary motion of said control shaft to said first actuator;
a second motion transfer device engaging said control shaft,
second and third mutually independent actuators connected to said second motion transfer device,
said second motion transfer device being constructed to transfer movement of said control shaft along the linear path defined by said housing portion to said second and third actuators.

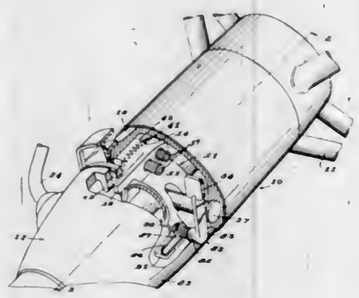
3,355,961
AUTOMOBILE TRANSMISSION SHIFT
William N. Easom, Jr., 3234 San Marcus, Dallas, Tex. 75228
Filed June 28, 1965, Ser. No. 467,629
1 Claim. (Cl. 74—473)

In a transmission shifting device arranged to be attached to an automobile having a transmission housing and a pair of transmission control arms exteriorly of the housing operatively connected to the transmission in the housing; a frame including end members; guide rods on opposite sides of the frame connecting the end members; a central longitudinal wall between the end members; a diagonally disposed passage through the wall substantially mid-way of the length thereof; a shifting member slidably disposed on each rod; each said shifting member including a recess on the inner side thereof facing the passage; a link rod connecting each shifting member with one of the control arms; a transverse pin secured between opposite sides of the frame; a laterally tiltable shifting



stick having an enlarged passage therethrough pivotally mounted about the pin, said shifting stick having a depending portion arranged to pass through the passage to engage the recesses in the shifting members; an elongated spring member attached at one end of the frame and extending longitudinally thereof and being shaped to slidably engage the depending end of the shifting stick to resiliently urge same toward the wall to thereby guide same into the passage; and a spring disposed about the transverse pin arranged to urge the shifting member to vertical position.

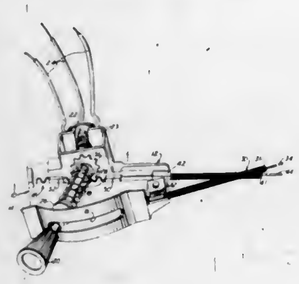
3,355,962
ADJUSTABLE STEERING COLUMN MECHANISM
Edgar J. Gerdes and Dale E. Woolley, Dearborn, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Dec. 10, 1965, Ser. No. 512,988
10 Claims. (Cl. 74—493)



9. A tiltable steering column mechanism for an automotive vehicle comprising, a movable upper steering column section including a steering wheel, a fixed lower steering column section, means pivotally mounting said movable upper steering column section on said fixed lower steering column section for tiltable movement about an axis, releasable latching means coupling said movable upper steering column section and said fixed lower steering column section, a transmission selector means carried by said fixed lower steering column section, linkage means coupling said transmission selector means and said transmission for shifting said transmission into a number of operative driving positions, and cooperating

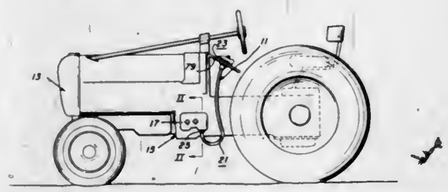
means carried by said transmission selector means and said releasable latching means for releasing said releasable latching means when said transmission selector means is moved to a position other than said operative driving positions.

3,355,963
MOTION TRANSFER DEVICE
David W. Barton, Birmingham, and Charles Haddad, Allen Park, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Dec. 9, 1965, Ser. No. 512,749
5 Claims. (Cl. 74—501)



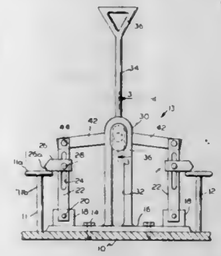
1. A motion transfer device comprising:
a housing,
a rotatable input member having a gear means rotatably connected to said housing and constructed to rotate about a fixed axis,
a control wire,
said control wire having an integral end portion formed into a serpentine configuration,
means connecting said end portion to said housing for sliding movement,
said gear means being in driving engagement with the end portion of said control wire.

3,355,964
TRACTOR SPEED-OF-SHIFT REGULATING MECHANISM
Leon E. Day, West Memphis, Ark., assignor of fifty percent to Ray H. Pulliam, West Memphis, Ark.
Filed Sept. 30, 1965, Ser. No. 491,747
4 Claims. (Cl. 74—504)



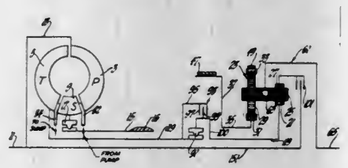
1. The combination with a tractor having support structure and a hydraulically shiftable transmission means including a shift speed adjusting screw located at a place on said tractor remote from the operator thereof, of a mechanism for regulating the speed of shift of said transmission comprising a head assembly located on said tractor in proximity to the operator thereof, said head assembly including handle means adapted to be manually turned to a selected position, an adaptor assembly including bit means engaging said shift speed adjusting screw for the turning thereof, and cable means interconnected between said head assembly and said shift speed adjusting screw for turning said screw to a selected position in response to turn of said handle means to a selected position.

3,355,965
BRAKE LOCK
Lawrence A. Beaudry, Box 546, White Salmon, Wash. 98672
Filed Oct. 28, 1965, Ser. No. 505,526
6 Claims. (Cl. 74—532)



1. In combination with a vehicle having a braking system including at least one brake pedal for actuating the system,
a mechanical brake lock mounted on said vehicle adjacent said brake pedal, but out of contact therewith,
said brake lock including a pivotally mounted link with ends that are shiftable past an over-centered position relative to each other, and
means engageable with said brake pedal when said link has its ends so shifted operable to hold said pedal in a position actuating the braking system.

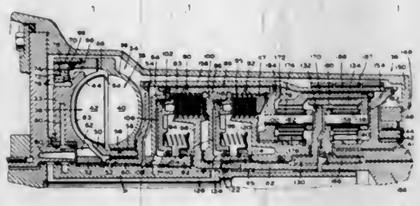
3,355,966
POWER TRANSMISSION
Benjamin F. Boehm, Oak Park, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Aug. 10, 1964, Ser. No. 388,395
3 Claims. (Cl. 74—688)



1. In a power transmission a power input means and output means, a hydrodynamic torque converter, said torque converter including a pump operatively connected to said input means and a turbine and a stator, a planetary gear set having first and second sun gears, first planet gears meshing with said first sun gear, second planet gears meshing with said second sun gear and said first planet gears, a ring gear meshing with said first planet gears, a carrier rotatably supporting said first and second planet gears, means connecting said carrier to said output means, a first drive shaft for transmitting torque from said turbine to said first sun gear, selectively engageable friction means to retard rotation of said second sun gear to condition said planetary gear set for underdrive when said first sun gear is driven by said turbine, a second torque transmitting drive shaft connected to said input means for transmitting

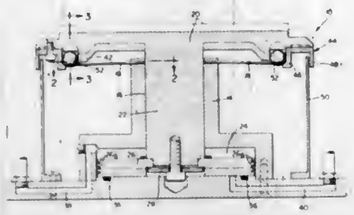
torque from said input means to said ring gear, selectively engageable friction means operatively connected to said second torque transmitting drive shaft engageable to connect said second drive shaft and said ring gear, said first selectively engageable friction means being operative when applied to retard rotation of said second sun gear to condition said planetary gear set for overdrive when said last recited friction means is engaged and said input means drives said ring gear, and one-way friction means in said first drive shaft to prevent said turbine from retarding rotation of said first sun gear and said output member when said planetary gear set is conditioned for overdrive.

3,355,967
TRANSMISSION
Richard D. Moan, Dearborn, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Nov. 9, 1964, Ser. No. 409,641
6 Claims. (Cl. 74—688)



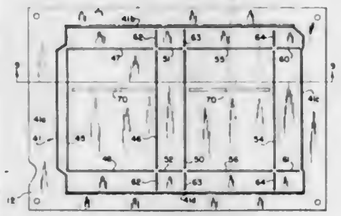
1. A transmission having rotatable power input and output shafts, and means operatively connecting said shafts, said means including a selectively operable hydrodynamic drive device and a plurality of interconnected planetary gearsets, said drive device having a plurality of rotatable elements including a pump and a turbine, means connecting said pump to said input shaft, said gearsets each having a plurality of rotatable members, means operably connecting said turbine to a first member of each gearset, disengageable brake means connected to and holding said first members against rotation, first means operatively connecting said input shaft to a second member of one gearset, selectively operable means operably connecting said input shaft to a second member of another of said gearsets, and means connecting another member of each of said gearsets to each other and to said output shaft for providing: first, a reduction drive by the transmission of torque through said transmission in one path from said input shaft to said output shaft through said pump and first means and one gearset second member when said selectively operable means and hydrodynamic drive device are inoperable and said brake means holds said first members against rotation; secondly, subsequently establishing a fluid direct drive from said input shaft to said output shaft by additionally rendering operable said drive device and disengaging said brake means for the transmission of torque simultaneously through said first path and through a second path including said turbine and first members of each gearset; and, thirdly, subsequently establishing a direct mechanical drive from said input shaft to said output shaft by the subsequent rendering operable of said selectively operable means for the transmission of torque simultaneously through said first path and a third path, said latter path including said pump and second member of said another gearset, thereby bypassing the transmission of torque through said second path.

3,355,968
INDEXING APPARATUS
Thomas D. Sharples, Lansdale, Pa., assignor to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania
Filed July 14, 1965, Ser. No. 471,915
3 Claims. (Cl. 74—826)



1. An indexing mechanism comprising a stationary base, a hub mounted on the stationary base for rotation about an axis and having a central axial opening, a plurality of resilient equispaced spoke-like elements radiating outward from the hub in radial direction relative to said axis and having their outer ends free, a workpiece-supporting platform having a central downward boss extending rotatingly into the central opening, an annular row of hard balls held on the underside of the platform concentrically about the axis of the hub and spaced angularly about the axis to the same degree as the spoke-like elements, and fluid motor means for driving the platform axially relative to the hub from a first position wherein the balls are not in engagement with the spoke-like element to a second position wherein the balls are in engagement with the spoke-like elements.

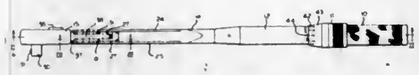
3,355,969
ROTARY DIES
Albert J. Sarka, Cleveland Heights, Ohio, assignor to Harris-Intertype Corporation, Cleveland, Ohio, a corporation of Delaware
Filed Sept. 25, 1964, Ser. No. 399,196
12 Claims. (Cl. 76—107)



1. The method of forming cooperating dies for rotary cylinders which comprises removing material from first sides of flexible flat plates at least to the extent necessary to enable the dies to perform their function, balancing the cross-sectional areas of said plates to provide die plates having similar growth characteristics when bent in a corresponding manner by removing a portion only of the material in the other areas of the dies where the material may be removed or left selectively.

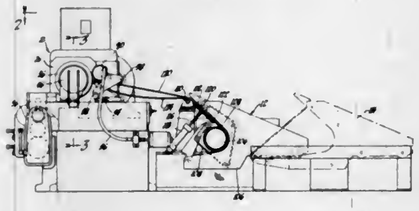
3,355,970
PRE-SET ADJUSTABLE TORQUE WRENCHES
Raymond G. Knudsen and Gene E. Olson, Kenosha, Wis., assignors to Snap-On Tools Corporation, Kenosha, Wis., a corporation of Delaware
Filed Feb. 23, 1966, Ser. No. 529,557
10 Claims. (Cl. 81—52.4)

1. In a torque wrench, the combination with a work engaging member, of an elongated handle member for operative connection with and turning of said work engaging member, an elongated rigid self-sustaining tension load bearing member in operative connection between said work engaging and handle members, complemental clutching and declutching elements pivotally connected to and extending between said work engaging and tension load bearing members, said clutching and declutching ele-



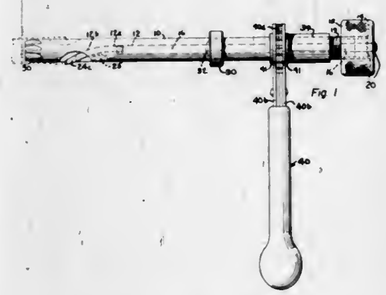
ments embodying interengaging camming linkage for relative movement responsive to a predetermined turning load on and work engaging and tension load bearing members and establishing rigid relationship therebetween when the turning load on said work engaging member is less than the handle member applied pre-set turning load.

3,355,971
METHOD OF PRODUCING METAL STRIPS
Charles W. Vigor, Rochester, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 3, 1965, Ser. No. 484,968
12 Claims. (Cl. 82—47)



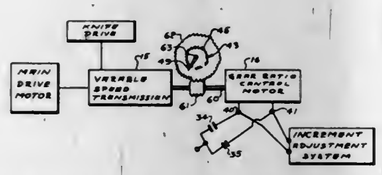
1. A method of manufacturing a metal strip comprising continuously peeling a surface layer from a rotating metal billet by relatively moving the billet and a cutting tool into cutting contact and pulling the resultant metal strip in tension over said cutting tool, said tension being controlled so as to regulate the thickness of the metal strip.

3,355,972
INSIDE TUBE CUTTER
Anton J. Janik, Elyria, Ohio, assignor to Emerson Electric Co., St. Louis, Mo., a corporation of Missouri
Filed Apr. 13, 1967, Ser. No. 630,764
13 Claims. (Cl. 82—82)



1. A tubing cutter for cutting a tube from the inside outward comprising a body for insertion into a tube from the end, a curved cutter bit guiding channel formed in said body and extending outwardly through the side of said body and providing an arcuate cutter bit guiding surface, an arcuate shaped cutter bit disposed in cutter bit channel and in engagement with the arcuate guiding surface, means for moving said cutter bit in said channel outwardly into engagement with a tube wall, and means on said body for rotating the body.

3,355,973
AUTOMATIC SIZE PRE-SET AND AUTOMATIC LENGTH ADJUSTMENT SYSTEM FOR CUT-OFF MACHINES AND THE LIKE
Sidney P. Rubinstein and Harry Star, Franklin Park, N.J., assignors, by direct and mesne assignments, to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware
Continuation of application Ser. No. 182,458, Mar. 26, 1962. This application Mar. 10, 1965, Ser. No. 446,455
11 Claims. (Cl. 83—76)



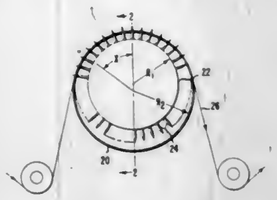
1. In a material processing system having material moving and cutting mechanisms including cutter driving means, cutter movement control apparatus for effecting an accurately controlled length for the pieces to be cut off comprising:
adjustable means presettable to indicate a desired one of a plurality of cutoff lengths for the pieces;
presettable measuring means for measuring a preselected length of material;
means operable independently of the material moving mechanism and responsive to said adjustable means when preset for initially adjusting the cutter driving means for the preset cutoff length;
the nature of the system being such that the length of the pieces that are cut might vary from the length sought by said initial adjustment requiring further adjustment under the control of said measuring means;
means responsive to said measuring means upon measurement of said preselected length for providing a measured-length signal;
means for providing an actual-length signal in response to a cutting operation;
means responsive to non-coincidence of these two signals for providing an error signal indicating the direction in which the actual length differs from the measured length;
and step means controlled by said error signal for effecting a small uniform adjustment in the cutter driving means tending to bring subsequent ones of the two signals toward coincidence.

3,355,974
FILM-PERFORATING APPARATUS
Keith S. Carmichael, Claymont, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Aug. 23, 1965, Ser. No. 481,695
2 Claims. (Cl. 83—171)

1. An apparatus for perforating thermoplastic sheet material which comprises
a frame;
an outer drum having a plurality of perforations mounted on said frame for rotation;

a pin drum having a plurality of tapered pins extending radially therefrom to conform with the perforations of said outer drum, said pin drum mounted within said outer drum for rotation on an axis offset from the rotational axis of said outer drum, and positioned such that said pins protrude through said perforations along a portion of the circumference of said outer drum;

gear means to rotate both said drums in the same direction such that said pins progressively protrude



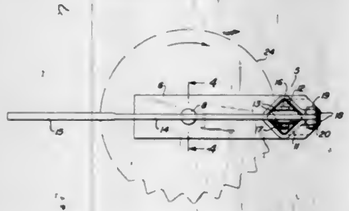
through said perforations and retract with no metal-to-metal contact; said gear means so positioned and constructed to provide for adjustment of said pin drum center relative to said outer drum center;

means to shift the frame so as to vary the perforations across the web of sheet material;

means positioned within said pin drum to uniformly heat said pins; and

means positioned within said outer drum to cool said drum.

3,355,975
APPARATUS FOR NOTCHING A DISC
Frank P. Anfuso, Bethlehem, Pa., assignor to Basic Products, Inc., Butztown, Pa.
Filed Mar. 8, 1965, Ser. No. 437,670
2 Claims. (Cl. 83—411)



1. Apparatus for forming a saw-toothed periphery in a flat disc having a central aperture, said apparatus comprising:

(a) an elongated base having a flat upper surface, a first end and a second end,

(b) a vertical guide element mounted to said base adjacent the first end thereof, said guide element having a square opening extending vertically therethrough,

(c) a square opening in the flat upper surface of said base in registry with the square opening in said guide element,

(d) one corner of said square openings lying along the longitudinal axis of said elongated base,

(e) a notching element slidably mounted in the square opening of said guide element, said notching element having a square horizontal cross-section registering with said square opening of said guide element, said notching element adapted to be reciprocated towards or selectively away from the square opening in the flat upper surface of said base,

(f) a pair of first spaced ears on top of said guide element,

(g) a pair of second spaced ears on top of said notching element,

(h) a lever having a first end and a second end, said lever passing between said first and second pairs of spaced ears with the first end of said lever overlying the first end of said base, said lever overlying the longitudinal axis of said base,

(i) first bolt means passing through said lever and said first pair of spaced ears, thereby pivotally mounting the first end of said lever to said first pair of spaced ears,

(j) second bolt means passing through said lever and said second pair of spaced ears, thereby pivotally mounting said notching element to said lever at a point between the first and second ends of said lever,

(k) a horizontally disposed slot in the lower portion of said guide element adjacent the flat upper surface of said base, said slot extending inwardly of said guide element from that portion of the periphery of said guide element facing the second end of said base to that diagonal between opposite corners of the square opening in said guide element transverse to the longitudinal axis of said base,

(l) a hub slidably mounted to the flat upper surface of said base and adjustable along the longitudinal axis of said base towards or selectively away from said guide element, said hub being adapted to extend through the central aperture of said disc and thereby rotatably support the said disc,

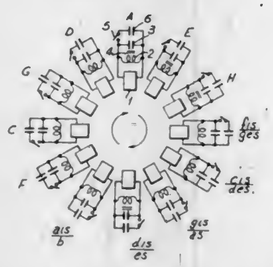
(m) whereby the edge of said disc can be placed in the horizontal slot of said guide element to underlie the notching element,

(n) and whereby the apparatus can accommodate discs of various diameters by adjustment of said hub along the longitudinal axis of said base,

(o) and whereby said lever can be actuated to pass the notching element through the periphery of the disc,

(p) and whereby the disc can be rotated about the hub after each actuation of the lever to provide a saw-toothed edge extending completely around the periphery of the disc.

3,355,976
METHOD OF TUNING AN ELECTRONIC TONE GENERATOR
Andrei Alexandrovich Volodin, ul. Zemljachki 36, Apt. 26, Moscow, U.S.S.R.
Filed Oct. 14, 1964, Ser. No. 403,849
9 Claims. (Cl. 84—1.06)



1. A method of tuning an electronic tone generator to a frequency lower, by an interval of the tempered quint of the classical musical scale, than the frequency of a standard, said generator having a tuned circuit capacity, and including means for smooth variation of frequency near the trimming frequency at a fixed value of the tuned circuit capacity and means for objective comparison of the frequencies as a simple multiple ratio of the frequencies of the generator being tuned and the standard, said method comprising connecting to the capacity of the tuned circuit at the time the frequencies are compared an additional capacitor of relatively small capacitance, said additional capacitor lowering the generator frequency by the difference of the interval of the natural and tempered quint ($3/2-2^{7/12}$), bringing the generator frequency by said means for continuous tuning to the ratio between the natural quint and the frequency of the standard, and disconnecting said additional capacitor whereby the generator is automatically tuned to the interval of the tempered quint and the frequency of the standard and, thus, in the process of tuning the irrational character of the factor of comparison of the frequencies is excluded and a possibility of objective comparison of frequencies in the simple ratio by Lissajous figures is provided.

3,355,977
PROTECTIVE CAPTIVATING COLLAR
Ernest W. Downs, Natick, Mass., assignor to the United States of America as represented by the Secretary of the Army
Filed June 27, 1966, Ser. No. 561,667
5 Claims. (Cl. 85—8.1)



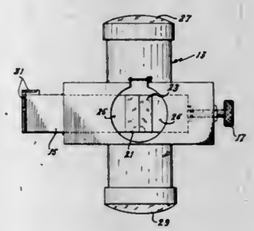
1. In a portable structure comprising collapsible frame members with locking joints and removable locking means for locking said joints, said locking means being held captive by elongated flexible elements attached thereto and to said frame members, that improvement therein which comprises a protective captivating collar for maintaining each of said elongated flexible elements connected to a frame member and protected against damage, said collar being snugly received on a portion of said frame member and having a groove in the inner surface thereof passing substantially completely around said inner surface, said groove having a cross-sectional configuration substantially corresponding to that of said flexible element, said elongated flexible element being received within said groove, said collar having an opening in the sidewall thereof extending from its outer surface to the opposed ends of said groove forming a continuous passage therewith from the outside of said collar and around said frame member and means constraining said collar from removal from said frame member whereby said elongated flexible element is passed through said opening in said collar, around said frame member, and back out through said opening and secured against withdrawal from said opening thereby securing said element to said frame member.

3,355,978
NAIL
Trevor Flintoft, Daventry, England, assignor to Lo-Dense Fixings (Rugby) Limited, Rugby, England, a British company
Filed Oct. 7, 1965, Ser. No. 493,759
4 Claims. (Cl. 85—29)



3. A nail comprising a shank having a pointed leading end and a rear head end and having an open recess in the side thereof a distance from said rear head end but nearer to the head end than to the pointed leading end; and a cross piece blade substantially thinner than the thickness of the shank and rigidly and permanently secured in said open recess so as to be transverse to the shank and provide two arms extending laterally therefrom, said blade lying flatwise against the shank substantially in an axial plane of the shank for self-burying edgewise cutting entry into soft material upon the shank being driven through said material.

3,355,979
ATTACHMENT FOR A SIGHTING DEVICE FOR SIGHTING IN OPPOSITE DIRECTIONS PERPENDICULAR TO THE OPTICAL AXIS OF THE DEVICE
Theodore E. Wirtanen, Chelmsford, Mass., assignor to the United States of America as represented by the Secretary of the Air Force
Filed Dec. 31, 1963, Ser. No. 334,945
2 Claims. (Cl. 88—2.6)

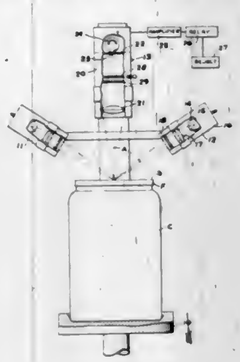


1. A linear collimating attachment apparatus for a telescope sighting device for accurately determining the line of sight between two fixed points, said apparatus comprising, a lens holding tube for attachment to the objective end of said sighting device to extend perpendicular to the optical axis thereof linearly in opposite directions, focussing lenses mounted at each end of said lens holding tube, an adjustably mounted mirror mounting bar positioned partially within said lens holding tube and in perpendicular relationship therewith and with said sighting device, two laterally adjacent crossed mirror surfaces positioned at right angles to each other on said mounting bar, the optical axis of said sighting device forming 45 degree angles with the surfaces of said mirrors and arranged to reflect a part of the images received from said focussing lenses through the eyepiece of said sighting device, each of said mirrors reflecting one-half of the image within the field of view of each corresponding focussing lens, said images being in juxtapositioned relationship to each other producing a split-image presentation of the field of view of the focussing lenses, thereby allowing an observer to determine the alignment between targets in opposite directions perpendicular to the optical axis of said sighting device.

3,355,980
APPARATUS FOR INSPECTING THE RIM OF A BOTTLE OR THE LIKE WHICH EMPLOYS POLARIZED LIGHT AT BREWSTER'S ANGLE
Benny B. Mathias, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio
Filed Feb. 23, 1962, Ser. No. 174,932
2 Claims. (Cl. 88—14)

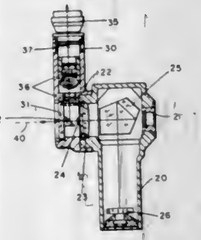
1. An apparatus for inspecting the surface of the circular rim of a hollow article of translucent material for line-over-finish defects in the surface which comprises means for supporting the article with the axis of the rim

generally vertical, means for directing a beam of radiant energy downwardly onto the surface of the rim of the article at an angle to the vertical substantially equal to Brewster's angle, means for focusing said beam at a spot on said rim, means for polarizing said light beam such that the electrical vector is perpendicular to the plane of incidence, light-sensitive means, means for supporting said



light-sensitive means on an axis parallel to said rim axis with its line of vision lying in the plane of incidence intersecting said spot on said rim means for causing relative movement between said article and said beam to scan the rim of the article, whereby a line-over-finish defect in the top surface causes a portion of the light beam to be reflected toward the light-sensitive means.

3,355,981
RIGHT-ANGLE VIEWING ATTACHMENT
Allister L. Baker, Denville, N.J., assignor to Keuffel & Esser Company, Hoboken, N.J., a corporation of New Jersey
Filed Sept. 25, 1963, Ser. No. 311,508
6 Claims. (Cl. 88—14)



1. A right-angle viewing attachment for determining the alignment of a jig transit with respect to a reference line of sight defined by a beam of collimated light and a target image, which comprises:

a first barrel for mounting on a side near one end to the horizontal axle of a transit with the longitudinal axis of said first barrel intersecting the axis of said axle at right angles, said first barrel having an opening on the side directly opposite the mounted side with the center of the opening coincident with the axis of said axle;

a convex lens mounted in the opening of said first barrel with the axis of the lens coincident with the axis of said axle;

a reticle mounted on the center of the outer surface of the convex lens with its axis coincident with the axis of the convex lens, which reticle has a diameter smaller than that of the convex lens;

a penta-prism mounted in the proximal end of said barrel with one of the two image-entering faces perpendicular to the axis of the axle and the other face perpendicular to the longitudinal axis of said first barrel to change the direction of a transmitted image 90 degrees from one axis to the other;

a convex mirror mounted at the distal end of said first barrel with its axis coincident with the longitudinal axis of said first barrel;

a second barrel mounted near one end of said barrel around the opening of said first barrel with the longitudinal axis of said second barrel intersecting the axis of the horizontal axle perpendicularly, said second barrel having an eyepiece opening at the distal end, a common opening with said first barrel, and a window opening near the proximal end directly opposite the common opening;

an eyepiece mounted in the distal end of said second barrel with its axis coincident with the longitudinal axis of said second barrel;

an erector lens system mounted in said second barrel with the axis of each component coincident with the longitudinal axis of said second barrel;

a transparent window mounted in the window opening with its center coincident with the axis of the axle; and

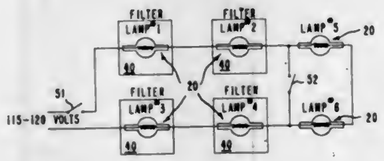
a reflector mounted on the center of the inside surface of said window with the center of its reflecting surface at the intersection of the longitudinal axis of said second barrel and the axis of the axle to direct a beam of light coincident with longitudinal axis of said second barrel into a path coincident with the axis of the axle and vice versa, which reflector has a diameter smaller than that of the window and approximately equal to that of the reticle;

a source of light mounted on said second barrel;

a beam splitter in the second barrel in the path of a beam of light from said source of light whereby the beam of light is reflected to said reflector;

whereby the target image and beam of collimated light define the reference line of sight and pass through the transparent window, convex lens, and pentaprism to the convex mirror where the beam is reflected back through the pentaprism and convex lens to the reticle where the received target image is superposed on the reticle image for visual determination of the relative superposition of the received target image on the reference image, which superposition indicates the alignment of the transit with respect to the reference line of sight.

3,355,982
APPARATUS FOR SIMULATING DAYLIGHT AND ARTIFICIAL LIGHT
John F. Rendina, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Oct. 2, 1963, Ser. No. 313,337
1 Claim. (Cl. 88—14)



An improved simplified apparatus for examining samples of material to determine their color under a first condition simulating normal daylight and under a second condition simulating indoor artificial lighting, said apparatus comprising a housing structure, said housing structure defining a chamber for receiving and supporting samples of material for examination, said apparatus further comprising a lighting system for selectively sequentially subjecting samples positioned in said chamber to light having a first spectral distribution corresponding to ordinary daylight and also to light having a second spectral distribution representing artificial indoor lighting to which the material of the samples would be subjected, said lighting system consisting solely of, in combination, a first plurality of identical electrically actuated light source units which under a first voltage condition produce in said chamber the simulated daylight, a second plurality of electrically actuated light source units, said units being identical with the units of said first plurality which under a second voltage condition, and in cooperation with said first plurality of light source units, produce in said chamber light representing artificial indoor lighting conditions, and electrical means adapted to be conected to a 115–120 volt source of electrical voltage and operatively connected with said light source units for selectively operating said units to produce alternately light of said two spectral distributions, said units of said first plurality each consisting of a lamp having a tungsten filament sealed in an evacuated quartz envelope in combination with a filter which passes blue and ultraviolet light but limits a significant portion of red and yellow light applied thereto, said units of said second plurality each consisting of an unfiltered lamp having a tungsten filament sealed in an evacuated quartz envelope, said electrical voltage source and electrical means being arranged to supply selectively a voltage directly solely to said units of said first group in series sufficient to operate said filaments at 3100° K. which provides radiation corresponding to standard daylight, or alternatively directly to the units of both groups in series to operate said filaments at a significantly lower temperature which provides radiation corresponding to standard (C.I.E. illuminant A) indoor lighting, said first plurality of units consisting of four lamps in series, each lamp having an operating voltage of from 28.75 to 30.0 volts when supplied directly and solely by said source and said second plurality of units consisting of two lamps each having an operating voltage of 18–20 volts when connected in series with each of said lamps of said first plurality across said voltage source, said electrical means comprising a switch device for alternately connecting either the units of said first plurality in series across said source or all of the units of both pluralities in series across said source, the units and switch device arranged so that a single actuation of the switch device also directly and instantly controls the voltage as necessary to achieve the desired filament operating temperature level for the units in each condition.

3,355,983
CARD HANDLING MECHANISM
Ralph E. Bogert, Ontario, and Raymond C. Zoppoth, Pittsford, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Dec. 31, 1964, Ser. No. 422,857
3 Claims. (Cl. 88—24)

1. In a xerographic apparatus for forming reproductions of the data area on data processing cards the combination of:

a xerographic plate,

means for moving the plate at a predetermined rate,

a scanning system for producing and projecting image light rays of the data area onto the xerographic plate,

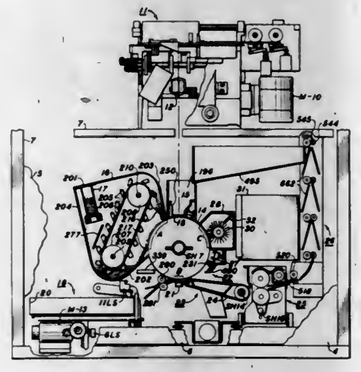
a card transport system,

said card transport system including a card carriage movable between a start-of-scan position and an end-of-scan position for supporting and transporting individual cards,

a card feed mechanism adapted to automatically convey a card to-be-projected into said card carriage and to remove a previously projected card therefrom while said carriage is adjacent said start-of-scan position,

means for moving said card carriage reciprocally in a path extending between said positions for transporting each card therebetween,

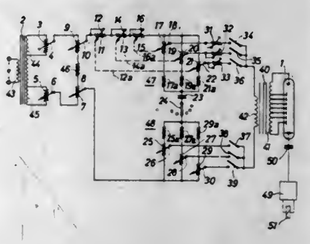
said last named means including a first motor drive for driving said carriage from said start-of-scan position to said end-of-scan position when said first motor drive is activated and a second motor drive for driving said carriage from said end-of-scan position of said start-of-scan position when said second drive is activated,



said second drive including a one-way clutch for permitting continuous operation of said second drive upon said carriage after the same has reached said end-of-scan position thereby maintaining said carriage in that position until said second drive is deactivated,

means to move the card carriage from said start-of-scan position to said end-of-scan position at a rate to effect synchronous motion of the scanned image relative to the xerographic plate.

3,355,984
PHOTOGRAPHIC COLOR PRINTING APPARATUS
Werner Puschmann, Rethelstrasse 144, Dusseldorf, Germany
Continuation of application Ser. No. 842,290, Sept. 25, 1959. This application Aug. 1, 1966, Ser. No. 569,534
Claims priority, application Germany, Sept. 26, 1958, A 30,403
17 Claims. (Cl. 88—24)



1. For use in a photographic color printing apparatus having photoelectric means responsive to a plurality of partial illuminations of diverse colors; illumination control means for controlling said illuminations, comprising,

in combination, a color correction network having a plurality of parallel branches corresponding in number to that of said colors, each of said branches including an adjustable impedance; and a copy density compensation network connected to said color correction network and including a plurality of adjustable impedances that are respectively jointly adjustable with the associated color correction impedances, whereby said impedances may be adjusted to vary the individual partial color illuminations while maintaining the total copy density substantially constant.

3,355,985
DUAL PROPELLANT LAUNCH FOR SOLID ROCKETS
Hugo E. Gauss, Hartford, and Edward N. Hall, Bloomfield, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Mar. 17, 1964, Ser. No. 352,458
3 Claims. (Cl. 89—1.816)



1. Apparatus for launching a rocket from an enclosed silo comprising

a rocket positioned within an enclosed silo, said silo being cylindrically shaped with an open end and a closed end and having a closed outer wall of substantially constant circular cross section along the length of the outer wall, said outer wall being positioned in close proximity to the outside of said rocket,

said rocket having a nozzle at one end thereof, said nozzle being situated at the closed end of said silo,

a primary propellant encased within said rocket for providing thrust thereto,

a ring-shaped sabot mounted within the closed end of said silo and adapted to support said rocket, said sabot being positioned at a distance from the closed end of said silo whereby a chamber is formed at the closed end of said silo,

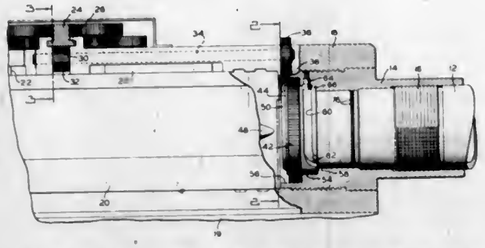
sealing means connected about the periphery of said sabot extending laterally from said sabot and terminating adjacent the outer wall of said silo to substantially seal said chamber, said sealing means comprising a labyrinth type seal forming at least two successive throats which create pressure drops across said seal whereby choked flow is produced,

a secondary propellant having a lower burning temperature than said primary propellant encased within said rocket,

means for igniting said secondary propellant,

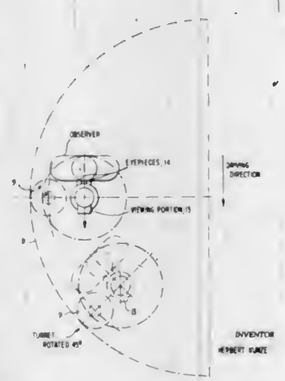
and means for directing the low temperature gases produced by the burning of said secondary propellant into said chamber, said sealing means controlling the expansion of said gases whereby said sabot and said rocket are forced toward the open end of said silo.

3,355,986
BREECH OBTURATING MEANS FOR GUN WITH TRANSVERSELY SLIDABLE BREECHBLOCK
Giuliano D'Andrea, Troy, N.Y., assignor to the United States of America as represented by the Secretary of the Army
Filed Apr. 21, 1966, Ser. No. 545,518
8 Claims. (Cl. 89—24)



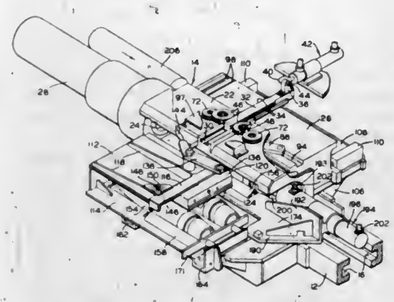
1. In a large caliber gun having a recoiling receiver, a gun tube fixedly mounted in the receiver, a breechblock slidably disposed in the receiver for effecting transverse closure of the breech end of the gun tube, and a forwardly opening firing chamber in the breechblock disposed for axial alignment with the gun tube when the breech thereof is fully closed, means for obturating the interface between the breechblock and the gun tube comprising a tubular sealing ring carrier slidably seated within the breech end of the gun tube for longitudinal reciprocal movement, a sealing ring fixedly projecting from the rear end of said carrier, gear means in the receiver responsive to the transverse movement of the breechblock for imparting corresponding rotation to said carrier, and cam means on said carrier for imparting reciprocal movement thereto during the rotation thereof whereby said sealing ring is actuated into and out of obturating contact with the front face of the breechblock.

3,355,987
VIEWING SYSTEM FOR A COMBAT VEHICLE
Herbert Kunze, Kassel, Germany, assignor to Rheinstahl Henschel A.G., Kassel, Germany, a corporation of Germany
Filed Mar. 21, 1966, Ser. No. 536,063
Claims priority, application Germany, Nov. 5, 1963, H 50,744
4 Claims. (Cl. 89—36)



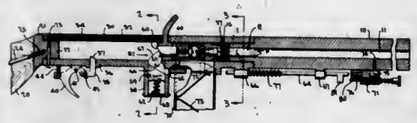
1. A viewing system for a combat vehicle having a heavy weapon mounted thereon in a rotatable turret which comprises a viewing portion of a periscope mounted in the turret roof, means connecting the viewing portion to eyepiece means within the turret, and transmission means connected to the viewing portion whereby the latter is counter-rotated with respect to the rotating turret and a driver in the turret has a field of view which is always in the same direction with reference to the vehicle.

3,355,988
LATERALLY SLIDING BREECHBLOCK FOR LOADING A LARGE CALIBER GUN
Giuliano D'Andrea, Troy, N.Y., assignor to the United States of America as represented by the Secretary of the Army
Filed Mar. 3, 1966, Ser. No. 533,379
7 Claims. (Cl. 89—45)



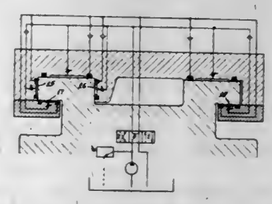
1. In a large caliber gun having a stationary frame, a receiver slidably mounted in the frame for longitudinal recoil and counterrecoil movement, and a firing tube fixed in the forward end of the receiver in communication with the interior thereof, means for loading projectiles into position to be rammed into the firing tube, comprising a breechblock slidably mounted in the receiver for lateral movement into and out of a closed breech position, a projectile loading tray slidably mounted on the stationary frame, means on said tray for retaining a projectile thereon, and means for connecting said loading tray to one side of said breechblock whereby the breech opening movement thereof advances the projectile into axial alignment with the firing tube, said connection between said loading tray and said breechblock being releasable in a longitudinal direction whereby the latter is free to reciprocate jointly with the receiver when the breech is fully closed.

3,355,989
CLOSED BREECH ROCKET GUN
George R. Kruzeil, 4301 Hotchkiss, Bay City, Mich. 48706
Filed Oct. 14, 1965, Ser. No. 495,964
7 Claims. (Cl. 89—187)



1. A firearm comprising a barrel formed with a bore therethrough defining a firing chamber at its rear end, and terminating rearwardly in a breech opening, a receiver operatively connected with said barrel, a bolt guided in the receiver for movement in a pre-determined path between rearwardly retracted and forwardly projected positions, selectively releasable means for retaining the bolt in its retracted position, and spring means for urging the bolt to its projected position, said bolt being formed with a passage therethrough in alignment with said barrel and said firing chamber and opening through the front and mediately releasing same for rearward movement in rerear ends respectively of the bolt, and a firing pin slidably disposed in said passage for operative projection and retraction through the open forward end thereof, the improvement in accordance with which said bolt is formed with a forwardly directed annular sealing surface within said passage, said firing pin being provided with a rearwardly directed sealing surface in said passage for sealing engagement with the sealing surface of said bolt in the retracted position of the firing pin, a piston affixed to said firing pin rearwardly of the forward end thereof and within said passage, a portion of said passage snugly slidably receiving said piston and defining therewith a variable volume chamber forwardly of the piston, said chamber communicating with said breech opening through the open forward end of said passage, and firing pin actuating means for projecting said firing pin forwardly and imsponse to the pressure of exploding gases in the firing chamber.

3,355,990
HYDROSTATIC POSITIONING OF WORKTABLES OF MACHINE TOOLS
Helmut Thum, Obervellmar, Germany, assignor to Henschef-Werke A.G., Kassel, Germany, a corporation of Germany
Filed Aug. 26, 1964, Ser. No. 393,007
5 Claims. (Cl. 90—21)

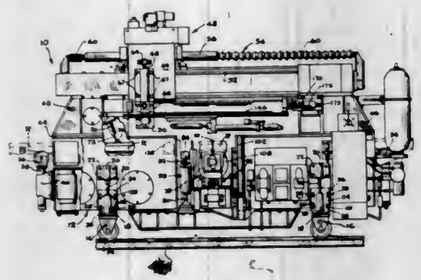


1. A hydrostatic positioning apparatus for the worktables of machine tools of the type wherein a worktable is raised from a guide by means of oil under pressure in order to eliminate frictional resistance, which comprises supply conduit means for supplying oil under pressure to a plurality of cylindrical pressure chambers in the worktable, each of which chambers is surrounded by an annular seal with an annular space being provided between each chamber and each seal, and conduit means for collecting the oil expelled from the pressure chambers.

3,355,991
METHOD AND APPARATUS FOR CONDITIONING WELDED RAIL JOINTS
Earle F. Cox, Birmingham, Mich., assignor to Chemetron Corporation, Chicago, Ill., a corporation of Delaware
Filed Sept. 30, 1965, Ser. No. 491,570
2 Claims. (Cl. 90—24)

1. In combination in a rail joint conditioning machine: a support bed to receive rails, means for cambering the rail to a predetermined curvature, means movably mounted by said bed on opposite sides of the rail for removing metal from the head of the rail, said head metal removing means being angularly offset from each other along the length of the rail, means movably mounted by said bed below the base of the rail for removing metal from the base of the rail, said base metal removing means comprising a pair of axially aligned cutters, said aligned cutters being movable toward and away from each other for bringing the cutters fully into and away from the path of the rail, means for guiding said head metal re-

moving means along angled paths toward and away from the rail joint so that each head metal removing means removes metal from the corresponding offset rail section to provide a smooth blended transition at the head of the rail at the joint, means for guiding said base metal removing means along angled paths toward and away from the base of the rail joint so that said base metal removing means removes metal from the offset rail section to provide a smooth blended transition at the base of the rail at the joint, means movable toward and away from the head of the rail at the rail joint for sensing the positions of adjacent rail sections at both sides of the rail head to determine the rail section which is offset the greater distance from said head metal removing means, means movable toward and away from the base of the rail at



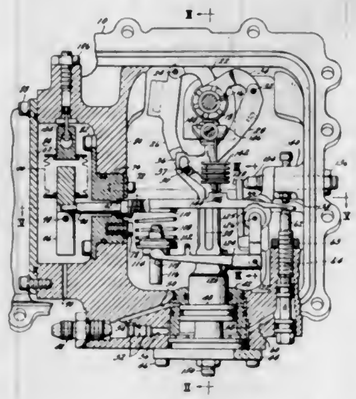
the rail joint for sensing the positions of adjacent rail sections at both sides of the rail joint to determine the rail section which is offset the greater distance from the base metal removing means, means controlled by said head sensing means for positioning said guiding means in accordance with the corresponding rail section which is offset the greater distance to enable the head metal removing means to provide a smooth blended transition between the adjacent sections at both sides of the rail, and means controlled by said base sensing means for positioning said base guiding means in accordance with the rail section which is offset the greater distance to enable said base metal removing means to provide a smooth blended transition between the adjacent sections at the base of the rail.

3,355,992
ALTITUDE OR PRESSURE RESPONSIVE CONTROLS

John W. Jacobson, Melrose, and John W. Poole, Lynn, Mass., assignors to General Electric Company, a corporation of New York

Filed June 21, 1965, Ser. No. 465,631
6 Claims. (Cl. 91—47)

1. An altitude responsive fuel control comprising,
a pivotal input shaft for connection to a throttle control lever,
an output shaft for connection with fuel flow control means and pivotal coaxially of said input shaft,
a lost motion connection between said input and output shafts including
an arm projecting from said input shaft and an arm projecting from said output shaft,
a link connected at one end to the input shaft arm,
a second link connected at one end to the output shaft arm,
said links being pivotally joined at their opposite ends and having a cam roller on their pivotal connection,
a control member having a cam track guidingly receiving said roller and generated in part on a radius swung from the pivotal connection with the output shaft arm when the control member is in a "sea level" position and in part extending radially outwardly of said input and output shafts whereby motion is transmitted between said input and output shafts only when the input shaft is rotated a predetermined distance so that the cam roller passes to the outwardly extending portion of said cam track,
a piston connected to one end of said control member,
a housing for said links and control member and having a cylinder for receiving said piston,
an inlet port in said housing for connection to a pressurized liquid source,
a first passageway leading from said inlet port to one side of said piston,
a second passageway from said inlet port to the other side of said piston,
the effective area of said one side of said piston being greater than the effective area of said other side thereof,
whereby when the liquid pressures on opposite sides of said piston are equal, the liquid pressure force on said one side will be greater and mantain the piston in an extreme, "sea level" position and the control member in its "sea level" position,
a pressure dropping orifice in said first passageway,
a jet nozzle,

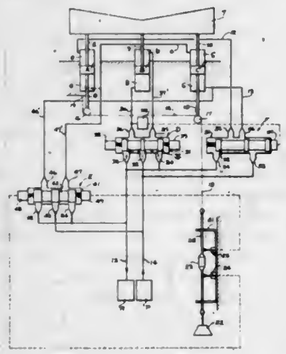


passageway means leading from said one side of said piston to said jet nozzle for the discharge of liquid therefrom,
a pivotally mounted flapper valve, one end of which overlies and controls the discharge of liquid from said jet nozzle to thus control the rate of flow of liquid through said first passageway, the pressure drop across said orifice, and the liquid pressure and liquid pressure force on said one side of said piston,
said housing having an internal wall separating a first chamber in which the jet nozzle is disposed and a second chamber which is sealed from the first chamber and vented to ambient atmospheric pressure,
an evacuated bellows disposed in said second chamber,
said flapper valve being pivotally mounted about an axis at said internal wall with an end thereof projecting into said second chamber,
one end of said evacuated bellows being connected to said housing and the opposite end thereof being connected to the projecting end of said flapper valve to exert a torque force thereon in a direction preventing discharge of liquid from said jet nozzle, said bellows torque force progressively decreasing as the ambient atmospheric pressure decreases at increasing altitudes,
a spring effective upon said flapper valve to exert an opposing torque force thereon tending to permit discharge of liquid from said jet nozzle,
said spring being confined between said flapper valve and means displaceable in response to movement of said piston from said "sea level" position to progressively decrease the spring torque force as the control member is displaced from said "sea level" position,
the bellows torque force being substantially greater than the initial spring torque force at ambient atmospheric pressures below a predetermined altitude and less than the initial spring torque force above said predetermined altitude whereby as the control is elevated above said predetermined altitude, a decrease in the bellows torque force permits discharge of liquid from said jet nozzle, a resultant pressure drop on said one side of said piston and displacement of the piston and the control member from said "sea level" position, such displacement being sufficient to decrease the spring torque force to a force balancing the bellows torque force and with the flapper valve controlling liquid discharge from the jet nozzle at a rate whereat the pressure drop across the orifice in said first passageway equalizes the liquid pressure forces on the opposite sides of said piston and maintains said control member in a stabilized position reflecting the altitude of the control device.

3,355,993
DRIVE BALANCING APPARATUS

Calvin C. Williamson, San Francisco, Calif., assignor to Soule Steel Company, San Francisco, Calif.

Filed Nov. 17, 1965, Ser. No. 513,641
7 Claims. (Cl. 91—171)

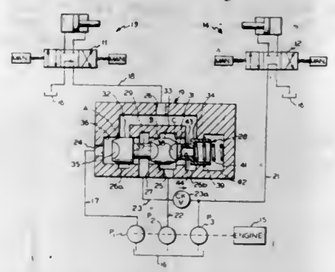


1. A balanced apparatus comprising: an elongate member having a predetermined balanced alignment; at least two fluid actuated balancing cylinders, each having a piston dividing the cylinder into a front and a rear chamber both of which can serve as intake or output chambers, said cylinders spaced apart along the length of said member; piston rods connecting each of said pistons to said member; means providing fluid communication between the front chamber of one of said cylinders and the rear chamber of another of said cylinders; means providing fluid communication between the front chamber of said other cylinder and the rear chamber of said one cylinder; means for detecting an imbalance in the predetermined alignment of said member; and means responsive to said detecting means for providing fluid communication from a fluid pump supply line to the lagging side of the lagging piston and the leading side of the leading piston, and for providing fluid communication from the lagging side of the leading piston and the leading side of the lagging piston to a fluid pump return line to apply correcting forces to said member to correct alignment of said member to said predetermined alignment.

3,355,994
HYDRAULIC SYSTEM

Thomas J. Malott, Kalamazoo, Mich., assignor to The New York Air Brake Company, a corporation of New Jersey

Filed Jan. 13, 1966, Ser. No. 520,536
2 Claims. (Cl. 91—412)



1. An integrated hydraulic system for a vehicle having a propulsion engine comprising
(a) a reservoir;
(b) three pumps connected to draw fluid from the reservoir and driven by the engine;
(c) a steering circuit and an implement circuit;
(d) conduit means establishing continuous communication between the first pump and the steering circuit;
(e) conduit means establishing continuous communication between the second pump and the implement circuit; and
(f) means responsive to the speed of the engine for connecting the third pump with the steering circuit when the engine is running below a first predetermined speed, for diverting a progressively increasing portion of the output of the third pump to the implement circuit as the engine accelerates from said first speed to a second predetermined speed, and for disconnecting the third pump from the steering circuit when the engine is running at a speed above said second speed.

3,355,995
TAPE APPLYING APPARATUS AND METHOD

Frank Frederick Borkmann, Union, and Eugene Cassai, Cranford, N.J., assignors to American Can Company, New York, N.Y., a corporation of New Jersey

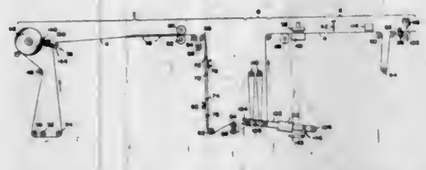
Filed Dec. 31, 1964, Ser. No. 424,471
43 Claims. (Cl. 93—1)



1. A method of applying a strip of tape to an article, so that one end portion is folded to serve as a pull tab, comprising the steps of:
advancing the tape along a predetermined path which is substantially parallel to its longitudinal axis,
folding one side edge portion of the tape as it is advancing,

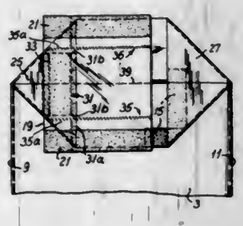
cutting a transverse strip from the leading portion of the tape, said strip having the folded edge portion of the tape disposed at one end thereof,
engaging said folded end of the cut strip to convey said strip toward said article,
placing said tape strip on said article in a predetermined position thereon, and
adhering the unfolded portion of the tape to said article.

3,355,996
BAG MAKING MACHINE
William R. Medleycott, Willingboro, N.J., and Robert F. Nowalk, Hatboro, Pa., assignors to Superpac, Inc., Warrington, Pa., a corporation of Pennsylvania
Filed June 28, 1965, Ser. No. 467,299
2 Claims. (Cl. 93—8)



1. In a machine for making bags of thermoplastic material, a gusset sealer for a web of said material having an inner fold line connecting together two inner panels and a pair of outer fold lines connecting the inner panels to outer panels, comprising a series of spacer rollers adapted to separate the inner panels, a first heater means adapted to contact the web and heat seal one inner panel to its associated outer panel along a seal line without sealing to the other inner panel, and a second heater means adapted to contact the web and heat seal the other inner panel to its associated outer panel along a seal line without sealing to the first-said inner panel, whereby the inner panels form a gusset between the seal lines.

3,355,997
METHOD OF MAKING A VALVE BAG
Milton J. Helmos, Minneapolis, and Avron A. Snabb, St. Paul, Minn., assignors to Bemis Company, Inc., Minneapolis, Minn., a corporation of Missouri
Original application Sept. 22, 1964, Ser. No. 398,316, now Patent No. 3,281,060, dated Oct. 25, 1966. Divided and this application Aug. 3, 1966, Ser. No. 569,912
9 Claims. (Cl. 93—35)



1. The method of making a valve bag of heat-sealable sheet plastic material comprising forming a flat tube of said plastic material with heat-seal-inhibiting material in an area on the inside thereof extending around one corner at one end of the tube, opening up said one end of the tube by folding open a portion of one wall of the tube on a fold line extending transversely across the tube to form a valve flap at said one corner, with said heat-seal-inhibiting material on the inside of said flap, positioning a valve sleeve of heat-sealable sheet plastic material on the opened-up end of the tube with one end of the sleeve constituting its outer end overlying the flap and with the sleeve extending inward from the flap, heat-sealing the sleeve to the flap by applying heat and pressure in the region of said heat-seal-inhibiting material, folding closed the opened-up end portion of the said one wall of the tube with accompanying folding in half of the sleeve and flap on their longitudinal center lines, and forming closures for the ends of the tube.

3,355,998
HIGHWAY MARKER DEVICE
Allen V. Roemisch, 2411 W. 78th St., Inglewood, Calif. 90305
Filed July 24, 1964, Ser. No. 386,106
5 Claims. (Cl. 94—1.5)

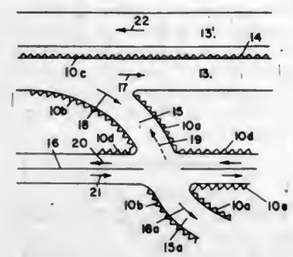


5. In an apparatus for supporting a highway device above a road having a surface and adapted to receive an impact force, the combination of:
a base member rigidly embedable in and supportable by the road, said base member having an upper end portion positionable adjacent the surface of the road;
an elongated support member having upper and lower end portions, said lower end portion of said support member being positionable closely adjacent said upper end portion of said base member, said upper end portion of said support member extending above the road and being connectible to the highway device;
each of said upper end portion of said base member and said lower end portion of said support member including upwardly and downwardly opening threaded recesses, respectively;
fracturable means for substantially rigidly interconnecting said upper end portion of said base member and said lower end portion of said support member closely adjacent the road, said fracturable means including a fracturable member having threaded end portions receivable in said threaded recesses, respectively, said fracturable member having a portion intermediate the ends thereof structurally weaker than either of said members whereby when said support member receives the impact force said fracturable member breaks to cause separation of said members and to leave said base member embedded in the road and substantially unmoved by the impact force; and
said fracturable member having wrench flats on both sides of said weakened portion thereof to assist in the removal of the threaded end portions from said threaded recesses following separation of said base member and said support member.

3,355,999
ROAD OR HIGHWAY MARKERS
Robert B. Rusling, 702 Commerce St., Jackson, Miss. 39201
Filed Nov. 12, 1964, Ser. No. 412,874
10 Claims. (Cl. 94—1.5)

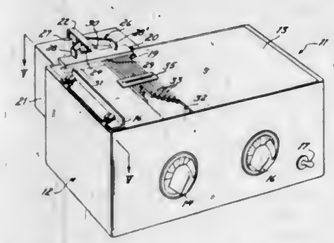
1. The combination of a roadway intended for vehicular traffic in only one direction, and a directional marker positioned at one side of said roadway, said marker being elongated in parallelism to the roadway and being configurated so as to provide two sets of longitudinally

juxtaposed surface portions oriented alternately in relatively opposite directions, one set of said surface portions having a color indicative of safety and being visible only in the direction of intended traffic flow along said road-



way, and the other set of said surface portions having a contrasting color indicative of danger and being visible only in the direction opposite to the intended traffic flow.

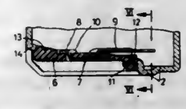
3,356,000
PHOTO-IMPRINTER
Hunter R. Marion, 278 Saxer Ave., Springfield, Pa. 19064
Filed July 12, 1965, Ser. No. 471,183
3 Claims. (Cl. 95—1.1)



1. In apparatus for marking photo-sensitive material or the like, a surface for supporting the material to be marked, at least one marking mask along a margin of the surface, a platen normally spaced away from the surface at the mask location but movable thereto upon being actuated, actuating means adjacent the margin of the surface and adapted to be energized by the arrival of an edge of the photographic material placed on the surface for marking, and exposure means on the opposite side of the supporting surface for exposing the photographic material through the marking mask, the actuating means being so interconnected thereto and effective upon arrival of the edge of the photographic material to actuate the platen to hold the material temporarily against the mask location and to actuate the exposure means while the material is so held.

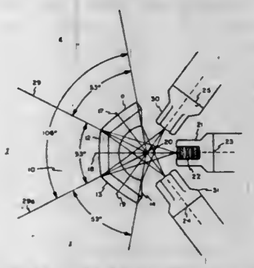
3,356,001
CAMERA ACCESSORY SHOE ARRANGEMENT
Karl Heinz Lange, Bunde-Enniglob, Westphalia, Germany, assignor to Balda-Kamerawerk Rudolf Gruter Kommanditgesellschaft, Bunde, Westphalia, Germany, a German company
Filed July 13, 1965, Ser. No. 471,567
Claims priority, application Germany, July 18, 1964, B 77,735
5 Claims. (Cl. 95—11)

1. A camera accessory shoe arrangement comprising a camera top formed with lateral and vertical guide means slidably to receive the foot of an accessory and with a lateral opening and a bent lug, and an accessory shoe insertable from the exterior of the camera in a horizontal direction into said lateral opening of the camera top, the camera top and the accessory shoe having parts for holding the shoe in the interior of the camera top, said parts including said bent lug of the camera top, which receives



and supports the front end of the accessory shoe, and a nose at the rear end of the accessory shoe which, on insertion, slides resiliently over a rim of the lateral opening into a rest position from which the accessory shoe cannot be withdrawn except with the use of tools.

3,356,002
WIDE ANGLE OPTICAL SYSTEM
Louis P. Raitiere, Far Rockaway, N.Y., assignor to General Precision, Inc., a corporation of Delaware
Filed July 14, 1965, Ser. No. 471,814
13 Claims. (Cl. 95—18)



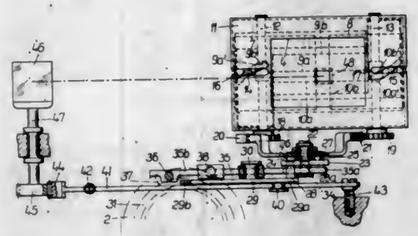
1. A wide angle optical objective system for use with a plurality of cameras for segmenting a continuous wide angle field of view into a plurality of uniform matable segments and providing a plurality of uniform matable images which may be combined to provide a continuous image of the total wide angle field of view, said objective system including, for each of said cameras,
an image forming lens element for projecting an image of a field of view upon a focal plane, said field being viewed through a virtual entrance pupil,
a pupil forming lens element for forming said virtual entrance pupil in free space positioned between said image forming lens element and said pupil forming lens element,
said pupil forming lens element having refraction characteristics which are such as to transfer the actual entrance pupil to the object surface of the image forming lens element, and
each of said pupil forming lens elements defining a field of view having the side adjacent to the adjacent field in coincidence.

3,356,003
UNIVERSAL VIEW FINDER FOR CAMERA ADAPTED TO RECEIVE INTERCHANGEABLE LENSES
Robert Eckhardt, Leun, Kreis Wetzlar, Germany, assignor to Ernst Leitz G.m.b.H., Wetzlar, Germany
Filed Oct. 18, 1965, Ser. No. 497,345
Claims priority, application Germany, Feb. 15, 1965, L 49,963
3 Claims. (Cl. 95—44)

1. A universal view finder device for use with a camera adapted for interchangeable lenses, said view finder comprising, in combination:
view finder field of view diaphragm means including at least four separate diaphragm sheets having effective

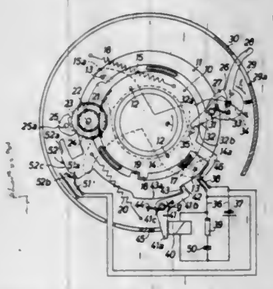
edges which define right angles and a field of view between them, said diaphragm sheets each having an effective edge which aids in defining the field of view and which is movable individually but only at a right angle to its effective edge for adapting the field of view to lenses of different focal lengths as well as for parallax correction and image field shrinking;

two rotatable axle means respectively arranged directly next to and parallel to two opposite effective edges, the sheets providing said two opposite edges being windable onto the adjacent rotatable means;



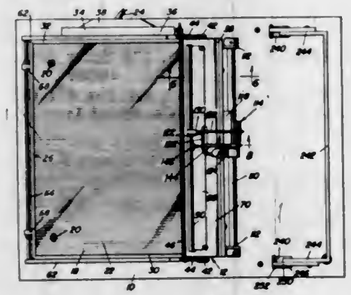
means for mounting the sheets providing the other edges which extend at right angles to said axle means for movement at right angles to the direction in which their edges extend in dependence upon rotation of said axle means, each of said sheets which provide the effective edges disposed at right angles to said axle means being subdivided into at least two sheets mounted for telescopically overlapping movements, and driving means connected between each of said subdivided sheets and said axle means for moving said subdivided sheets.

3,356,004
PHOTOGRAPHIC CAMERA
Gerd Kiper, Unterhaching, near Munich, Germany, assignor to Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany
Filed July 7, 1965, Ser. No. 470,171
Claims priority, application, Germany, July 9, 1964, A 46,541
14 Claims. (Cl. 95—63)



1. In a camera, a self-cocking shutter mechanism comprising a pair of setting members movable with and relative to each other between starting and cocked positions; means for biasing said members to starting positions; means for cocking said members; blades movably coupled with said members and defining an opening when one of said members moves to starting position ahead of the other member; and an electric circuit for delaying movement of said other member to starting position, including an assembly composed of a variable resistor and a capacitor connected in series with said resistor, a relay connected in parallel with said assembly and having a movable armature arranged to block said other member in cocked position in response to energization of said relay, normally open first and second switches connected in series with said assembly and in parallel with each other so that said relay is energized and said capacitor is charged when at least one of said switches is closed, means for closing said first switch in cocked position of said one member, and means for temporarily closing said second switch during cocking of said members so that said capacitor is charged during such cocking and discharges across said resistor on opening of said first switch to energize said relay for an interval whose length is determined by the resistance of said resistor.

3,356,005
APPARATUS FOR JUSTIFYING
James Q. Horne, Jr., P.O. Box 3, North Brunswick, N.J. 08902
Original application Jan. 28, 1963, Ser. No. 254,102, now Patent No. 3,256,797. Divided and this application Apr. 19, 1966. Ser. No. 543,686
10 Claims. (Cl. 95—85)



1. Apparatus for justifying printed matter upon the top face of a stretchable sheet divided into a plurality of parallel strips each extending longitudinally from left to right and bearing a line of printing thereon, said apparatus comprising:

support means including a top surface upon which may be supported said sheet, said support means having a left portion to which the left marginal portion of the sheet may be stationarily secured and a right portion; and

securing means carried by the support means adjacent the right portion thereof for removably securing said strips adjacent the right ends thereof such that the strips are maintained in parallel alignment by such securement;

said securing means being mounted for pivotal movement with respect to said top surface of the support means between a first position wherein the sheet held between the left portion of the support means and the securing means is raised from the top surface to permit a retaining sheet to be placed upon the support means between the top surface thereof and the stretchable sheet and a second position wherein the stretchable sheet is juxtaposed with the retaining sheet for securement thereto.

3,356,006
CLEAN ROOM STRUCTURE
Robert D. Scott, 1324 S. Glen Alan, West Covina, Calif. 91790
Filed Oct. 18, 1965, Ser. No. 497,290
18 Claims. (Cl. 98—33)

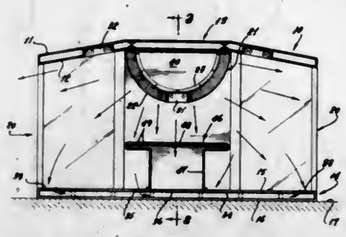
1. A clean room structure adapted to accommodate working personnel comprising,

(A) walls including a ceiling and an underlying floor structure,

(B) a hollow elongated air passing sub-micron filter depending from the ceiling centrally within the room and having a filter supporting shell the sides of which extend downwardly and convergently from the ceiling,

(C) distributed apertures in said floor structure including apertures directly below the filter,

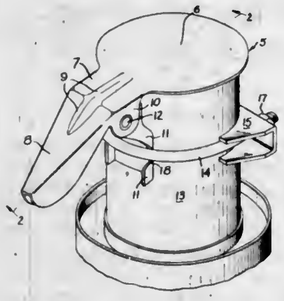
(D) a blower communicating with the filter and operating to displace air into and through the filter so that the air is discharged therefrom outwardly to



the room sides from near the ceiling and downwardly to said floor apertures in a fan-shaped pattern extending radially from said filter within and transversely of the room thereby to positively displace and sweep the room atmosphere both outwardly and downwardly in said pattern, and

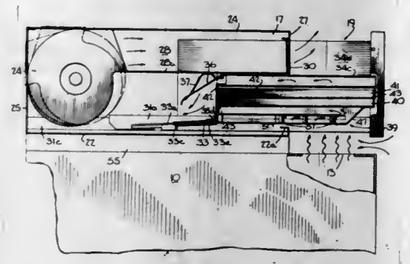
(E) an air return duct system whereby the blower suction drawings air downwardly through the floor apertures.

3,356,007
EXHAUST PROTECTIVE COVER
Warren A. Clemons and Donald A. Schwenn, Columbia City, Ind., assignors to Viking, Inc., a corporation of Indiana
Filed Mar. 23, 1966, Ser. No. 536,771
1 Claim. (Cl. 98—59)



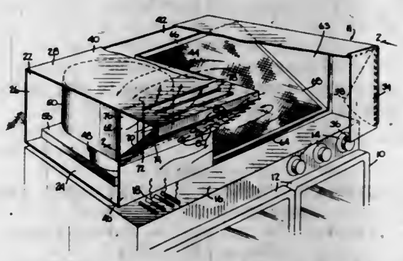
In an exhaust pipe protective cover assembly for internal combustion engines which are provided with a vertical exhaust, the combination of a vertical exhaust pipe, a cover assembly normally closing the open end of the exhaust pipe, first support means, a flange integral with said cover assembly and pivotally mounted on said first support means, said first support means having notched portions formed therein and second support means fitted within said notched portions, said second support means secured about said exhaust pipe by clamp means, a segment of said cover assembly having a ribbed portion integral with said flange and also integral with a cap at one end and a counterweight at a second end, said counterweight having relatively short length and being declined from horizontal, said cap having a convex-concave configuration and being yieldable to pressure upon its inner concave surface by combustion products produced during engine operation and to bias by said counterweight to an open or lifted or alternately open and closed position and, during engine shut down, said cap automatically closing to cover discharge end of said exhaust pipe.

3,356,008
RETRACTABLE STOVE HOOD
Donald C. Simpson, Drums, and Paul Ballots, Hazleton, Pa., assignors to Nautilus Industries, Inc., Freeland, Pa., a corporation of Pennsylvania
Filed Nov. 27, 1964, Ser. No. 414,061
8 Claims. (Cl. 98—115)



1. A stove hood of the class described comprising, a housing, an outlet in said housing, a slide member movable telescopically relatively to said housing and having an inlet, said slide having an inlet duct communicating with said inlet, a discharge duct in said housing, communicating with said outlet, a wall of each of said ducts being contoured for nesting relation, blower means in said housing drawing air into said inlet and inlet duct and discharging same through said outlet duct and outlet, said wall of said inlet duct being recessed at its inner end to receive said blower means when said slide member is fully telescoped relatively to said housing, a gate pivoted to said inlet duct wall, means biasing said gate to position effectively to extend said wall into said recess, and means pivoting said gate in a direction out of said recess upon movement of said slide member to telescoping position relatively to said housing.

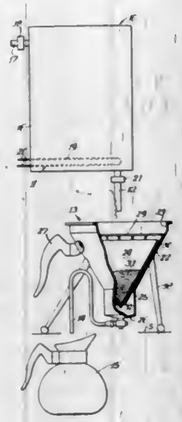
3,356,009
OVEN EXHAUST UNIT
Donald C. Simpson, Drums, and Paul Ballots, Hazleton, Pa., assignors to Nautilus Industries, Inc., Freeland, Pa., a corporation of Pennsylvania
Filed Aug. 13, 1965, Ser. No. 479,459
15 Claims. (Cl. 98—115)



1. An oven exhaust unit comprising a housing formed with an intake opening and a separate exhaust opening, expansive filter means located within said housing, means for moving vented oven gases through said housing between said intake and exhaust openings and through said filter means, means arranged laterally of said filter means

to blow a stream of air transversely across in front of said filter means to diffuse the incident vented oven gases over the expanse of said filter means said means arranged laterally of said filter means including an air stream outlet located alongside said filter means and a blower located upstream of said outlet.

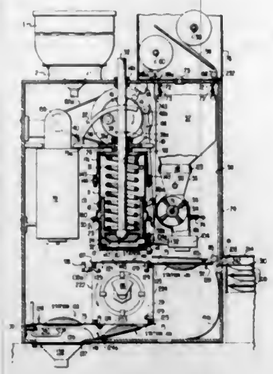
3,356,010
BEVERAGE BREWER
David C. Eisendrath, Chicago, Ill., assignor to Cory Corporation, a corporation of Delaware
Filed Oct. 21, 1965, Ser. No. 499,305
10 Claims. (Cl. 99—283)



1. In a brewing apparatus having means for providing a preselected quantity of hot water, structure comprising:
means defining a brewing chamber having an upper inlet for receiving a hot water from said providing means, and a lower outlet for delivering brewed beverage from the chamber;
means for carrying a brewing charge in the chamber to be acted upon by the hot water therein to produce a beverage; and
means for delivering brewed beverage from said chamber through said outlet, including means for retaining the hot water in the brewing chamber until the level thereof rises to a preselected level intermediate said upper inlet and said lower outlet whereby at least a portion of the charge is submerged and then causes delivery of substantially all of the brewed beverage from said chamber through said outlet as a result of the water rising to said preselected level, thereby permitting the initial portion of the hot water provided to the chamber to effect a submersion type brewing of the beverage and the subsequent portion of said preselected quantity of hot water to effect a drip type brewing of the beverage.

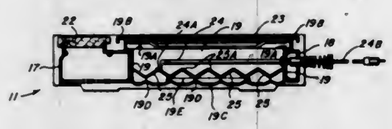
3,356,011
AUTOMATIC BEVERAGE BREWING AND DISPENSING MACHINE
Alfredo J. Parraga, 3107 N. Haussen Court, Chicago, Ill. 60618
Filed Aug. 25, 1965, Ser. No. 482,394
21 Claims. (Cl. 99—289)

1. In an automatic beverage brewing and dispensing machine, the combination of a hopper for beverage grounds, means for dispensing a measured amount of said grounds from the hopper, a grounds receiving station, an infusing station, a grounds emptying station, and an advancing member arranged to receive grounds at said receiving station, move the grounds to said infusing station, empty the grounds at said emptying station and return to said receiving station, said advancing member being an intermittently rotating body having a plurality of sides, each side having a cavity and a swingable cover



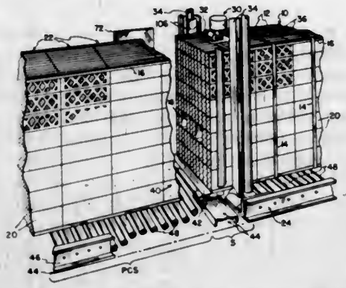
movable to close said cavity and including a strainer portion for receiving grounds from said dispensing means, said covers being hinged to said advancing member, means biasing each of said covers away from its associated side, and a releasable catch for holding each cover in side closing condition when in said infusing station.

3,356,012
GRILL
Frank Rosen, Mansfield, Ohio, assignor to Dominion Electric Corporation, a corporation of Ohio
Filed Mar. 29, 1965, Ser. No. 443,504
7 Claims. (Cl. 99—446)



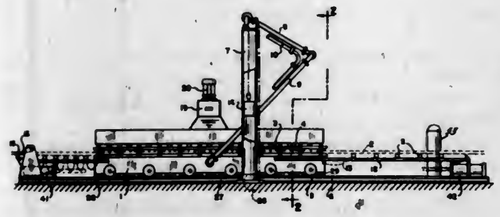
1. A grill construction for the cooking of grease-producing food comprising in combination an open-topped structure having a generally horizontal bottom wall and marginal walls extending upwardly from said bottom wall to define an open space above the bottom wall and within the marginal walls, an electric heating element carried by said structure, and a support carried by the structure above the plane of said heating element to support said food to be cooked by the heat from said heating element, said bottom wall carrying a grease-collecting surface, said grease-collecting surface having a plurality of alternating peaks and valleys extending laterally of the surface, a baffle plate carried by the said structure below said support and heating element and positioned above and generally parallel to said surface in the path of grease dripping downwardly from the food on said support, said baffle plate having a plurality of alternating peaks and valleys extending laterally of the baffle plate, the valleys of said baffle plate being positioned above the peaks of said surface and the peaks of said baffle plate being positioned above the valleys of said surface, said baffle plate having openings therethrough at the locations of the valleys in the baffle plate for permitting grease falling down on the baffle and flowing into the valleys thereof to escape downwardly through the openings onto the peaks of said surface, said surface causing grease falling through the openings onto said peaks of the surface to flow downwardly and settle in the valleys of the surface under the said baffle plate, the said baffle plate above the valleys of said surface protecting the grease settled in the same from direct radiation of heat from the heating element above said baffle plate.

3,356,013
METHOD OF AND APPARATUS FOR PACKAGING BRICKS
Alfred P. Konger, McHenry, Ill., assignor to Signode Corporation, Chicago, Ill., a corporation of Delaware
Filed June 13, 1966, Ser. No. 556,958
5 Claims. (Cl. 100—3)



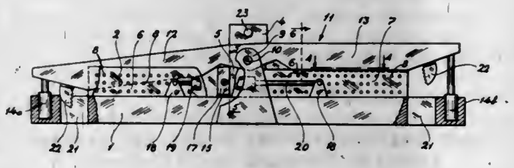
1. The method of producing a substantially sand-free compact rectangular unit pack of kiln-produced bricks consisting of superimposed tiers of individual bricks disposed in face-to-face contiguous relationship and arranged in transverse rows, and a tensioned metal band encircling the pack and extending around the four longitudinal corners thereof and serving to hold adjacent bricks in contiguity, said method comprising: arranging the bricks to produce a stack in which the bricks assume a pre-positioned relationship conforming to their final positions in the pack, placing the stack under transverse compression to force adjacent bricks hard against each other while simultaneously vibrating the stack bodily as a unit to produce interfacial abrasive rubbing of such adjacent bricks against each other and consequent removal by gravity of adhering kiln sand together with the products of abrasion, and finally tensioning the band about the thus treated stack to produce the unit pack.

3,356,014
METHOD FOR CONTINUOUS PRESSING
Nils Robert Alenius, Jungfrugatan 60, Stockholm, Sweden
Original application Oct. 1, 1962, Ser. No. 227,470. Divided and this application July 30, 1965, Ser. No. 476,044
2 Claims. (Cl. 100—35)



1. A method for the continuous pressing of materials, especially those in the form of a continuously progressing, unbroken mat, such as different types of wooden and fibrous sheet materials, which comprises the steps of: conveying the material to be pressed through the press plates of a mobile press, accelerating said press in a forward horizontal direction which corresponds to the direction of progress of the material, synchronizing the speed of the movement of the press with the speed of movement of the material by blocking said acceleration by means of the driving equipment progressing the material, closing the press to compress the material during the synchronized movement, opening the press, breaking said blocking, retarding the press, and driving the press in a backward direction to the starting point of its forward movement in order to enable the operation cycle to be repeated on the succeeding section of the material to be pressed.

3,356,015
PRESS, PARTICULARLY INTENDED FOR COMPRESSION OF BARK
Kaarlo K. Halmekyto, Vanha Kapyla, Helsinki, Finland, assignor to Oy Tampella Ab, Tampere, Finland, a corporation of Finland
Filed July 7, 1965, Ser. No. 470,071
Claims priority, application Finland, July 10, 1964, 1,480/64
8 Claims. (Cl. 100—95)

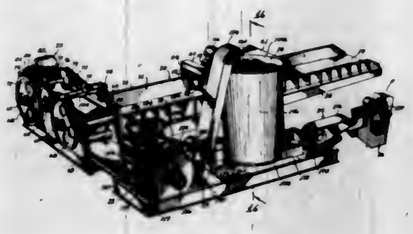


1. A press adapted for the compression of bark and the like and for the removal of water from such material, comprising means providing a pair of generally aligned upwardly open compression chambers having confronting ends spaced from each other, said chambers having spaced opposite side walls, means providing a bark feeding chamber between the confronting ends of the compression chambers for supplying bark to the confronting, bark entering ends of the compression chambers, a bark feeding piston reciprocable from a position within the bark entering end of one compression chamber, through the bark feeding chamber, and into the bark entering end of the other compression chamber, means for reciprocating the piston, a two-armed press lever, means pivotally mounting the press lever intermediate its length so that the arms of the press lever alternately travel downwardly into their respective compression chambers through the open upper sides thereof as the press lever is oscillated about said pivotal mounting means therefor, the compression chambers and the respective arms of the press lever forming elongated chutes into which the piston thrusts a charge of bark, and means for oscillating the press lever.

3,356,016
AUTOMOBILE BODY DISPOSAL APPARATUS
Roy M. Eidal, Albuquerque, N. Mex., assignor to Southwest Factories, Inc., Oklahoma City, Okla., a corporation of Oklahoma
Filed Apr. 6, 1966, Ser. No. 540,694
9 Claims. (Cl. 100—97)

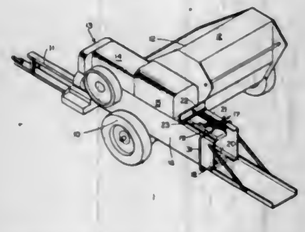
1. A scrap disposal apparatus comprising in combination:
(A) an initial flattening unit arranged to reduce scrap to flattened slabs,
(B) a slab shearing unit arranged to laterally shear bars from the ends of said flattened slabs as said slabs are fed through said initial flattening unit,
(C) a rotary chopper unit arranged to chop slugs from the ends of said sheared bars as said bars are fed longitudinally into said chopper unit,

(D) a hammermill cleaning and compacting unit,
(E) a chopped steel slinger unit connected between said rotary chopper unit and said hammermill cleaning and compacting unit arranged to receive the chopped slugs from said rotary chopper unit and initially disintegrate said slugs and deliver the resulting material to said hammermill cleaning and compacting unit,



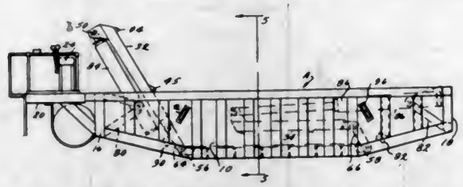
(F) and a magnetic separator unit arranged to receive the discharged finally disintegrated, cleaned and compacted material from said hammermill cleaning and compacting unit and separate the ferrous from the non-ferrous materials therefrom.

3,356,017
HAY BALER PRESSURE PLATE EQUALIZER
Donald M. Westerman, 10122 Broadway, Spokane, Wash. 99206
Filed July 19, 1965, Ser. No. 473,009
1 Claim. (Cl. 100—192)



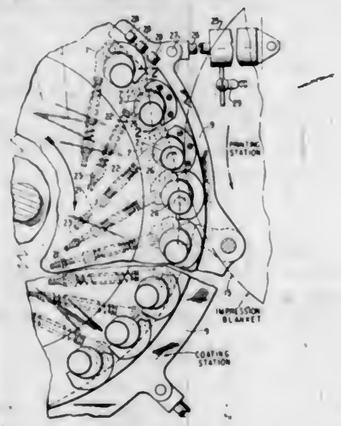
In a commercial hay baler of the type having a forward structure and a baling chamber with rearwardly extending baling channel having upper and lower pressure plates carried therein to regulate the density of bales passing therethrough, a spring tensioning means comprising, in combination:
an adjustable bell crank having a spring arm and pressure bar arm pivotally joined and angularly adjustable in relation to each other, each of said arms having a plurality of axially spaced holes at varying radial distances from said pivotal joint, said bell crank positioned so that said pivotally joined part is the forwardmost point thereof;
a housing structurally communicating with the rearward part of the upper pressure plate of said baler pivotally communicating with the said pivotally joined parts of said bell crank;
an elongate tension spring communicating from the forward structure of said baler pivotably to one of the plurality of holes in said spring arm;
a pressure bar pivotally communicating from one of said holes in said pressure bar arm to a housing structurally carried by said lower pressure plate so as to bias said upper and lower pressure plates toward each other in response to tension in said tension spring.

3,356,018
PRESS FOR COMPACTING BULKY MASSES
Albert George Swint, West St. Paul, Minn., and Mark R. Tyson, Cordele, Ga., assignors to Harris Press and Shear Corp., Cordele, Ga., a corporation of Minnesota
Filed Oct. 23, 1965, Ser. No. 503,883
10 Claims. (Cl. 100—208)



1. A press for flattening bulky masses comprising a frame defining a chamber for receiving a mass to be compacted, a pair of press lids pivotally connected to said frame at opposite ends of the frame for arcuate movement from an open position to a closed position overlaying a portion of said chamber, ram means associated with each press lid for individually advancing each lid from an open position to a stall position and for retracting said lid from a stall position to an open position, one of said press lids being adapted to overlap the second of said lids when both lids are sequentially advanced to the stall position so that the force of first-said lid is applied to assist the advance of the second press lid.

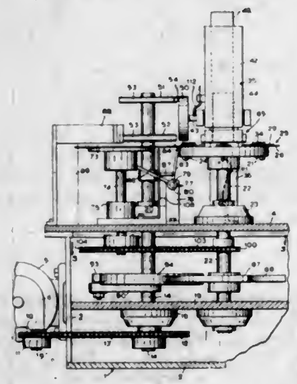
3,356,019
APPARATUS FOR CONTINUOUS CAN PRINTING
Albert T. Zurick, Aldan, Pa., assignor to Fred'k H. Levey Company, Inc., New York, N.Y., a corporation of New York
Filed Feb. 9, 1966, Ser. No. 526,267
15 Claims. (Cl. 101—39)



1. Apparatus for printing on the exterior of can bodies in which said bodies move into a printing position during a printing period and out of said position during a non-printing period, and comprising:
(a) an impression member, the impression-imparting surface of which is rotatable continuously in one direction;
(b) a support hub rotatable in timed relation with the movement of the impression-imparting surface of said impression member, said hub having a plurality of openings positioned around its periphery;
(c) a shaft rotatably mounted in each opening in said support hub for rotation about an axis parallel with the axis of rotation of said support hub, said shaft having an eccentric portion attached thereon;

(d) a mandrel sleeve rotatably mounted on the eccentric portion of said shaft, said mandrel sleeve being adapted to receive a can body, the exterior surface of which is to be printed;
(e) a link rigidly connected to the eccentric portion of said shaft mounted on said support hub and extending radially therefrom;
(f) a cam follower carried by the free end of said link;
(g) cam means positioned in operative relation with said cam follower and adapted to constrain the axis of said cam follower to follow a path parallel with the impression-imparting surface during the printing period wherein engagement is made between said surface and the can body carried by said can-receiving mandrel sleeve,
whereby, the motion of the cam follower is transmitted to said link causing rotation of the portion of said shaft mounted on said support hub thereby causing the eccentric portion of the shaft to move in an arc about the pivotal center of said shaft causing printing pressure between the impression member and a can body mounted on the mandrel sleeve during engagement between the impression-imparting surface and the can body.

3,356,020
ELECTROSTATIC PRINTER AND POSITIONING MEANS FOR SPECIAL ARTICLES
Dickey S. Londahl, Walnut Creek, and Marlin A. Schueler, Danville, Calif., assignors to Unimark Corporation, San Ramon, Calif., a corporation of California
Filed Apr. 4, 1966, Ser. No. 539,871
6 Claims. (Cl. 101—44)



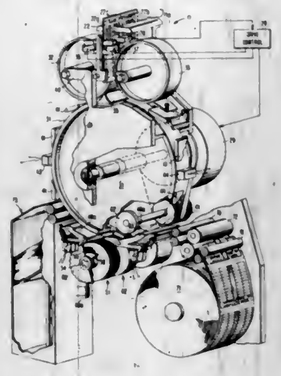
5. Apparatus for electrostatically depositing printing powder in a predetermined pattern onto articles, which apparatus includes a horizontally disposed printing screen having a plurality of openings formed therein defining said pattern for passage of said printing powder through said openings for deposit onto said articles;
(a) conveyor means for supporting a row of said articles for movement in one direction along an annular path of travel extending below and past said screen, said conveyor means including article supports thereon in a row, each article support being adapted to support one of such articles thereon for movement therewith along said path and to a position in spaced opposed relation to said screen upon actuation of said conveyor for moving the latter, and conveyor actuating means connected with said conveyor means for actuating the latter for said movement thereof;
(b) a screen support for supporting said screen stationary over said path at a point along the latter;
(c) means for establishing an electrostatic field between each article and said screen when each article is supported on one of said article supports in spaced opposed relation to said screen;
(d) powder supply means for supplying powder to said screen for passage through said openings and into said electrostatic field for deposit onto each of said articles;
(e) powder moving means above said screen for moving powder from said powder supply means through the openings in said screen and into said electrostatic field when the latter is established;
(f) said conveyor means comprising a turret including a horizontally disposed first disc supported for rotation about a vertical axis, and said article supports being on said disc equally spaced from said axis in a row coaxial with the latter;
(g) said article supports being around the outer edges of said first disc and each including article positioning means for supporting one of said articles of the same shape and size, each having a main body with a projection on one side and a print receiving surface on the opposite side;
(h) a horizontally disposed second disc substantially coplanar with said first disc and adjacent to the latter;
(i) means supporting said second disc for rotation about a vertical axis;
(j) article supporting means around the outer edges of said second disc in spaced relation in an annular row coaxial with said axis of rotation of said second disc;
(k) said article positioning means on said first disc and said article supporting means on said second disc including radially outwardly opening slots respectively provided on said first and second disc around the outer peripheries thereof for receiving the projection on each article through the open end of each slot with the main body of each article supported on the portions of the slots along the opposite edges of each slot upon such projections being inserted into said slots;
(l) means connecting said conveyor actuating means with said second disc for rotating said first disc and said second disc in synchronism for successively positioning each slot in said first disc in alignment with each slot in said second disc for lateral movement of articles on said first disc onto said second disc with the projection on each article movable from a slot in said first disc into a slot in said second disc in such alignment therewith;
(m) means for so moving each article from said first disc to said second disc; and
(n) fixing means over the outer marginal edge of said second disc for fixing the powder on the upper surface of each article onto the latter.

3,356,021
SELECTIVE PRINTER AND SYSTEM FOR PROCESSING TICKETS HAVING MAGNETIC INFORMATION THEREON
Gordon H. May and Thomas A. Hickox, San Jose, Calif., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Jan. 14, 1966, Ser. No. 520,769
8 Claims. (Cl. 101—93)

1. Apparatus for handling tickets having a magnetic stripe on one side thereof comprising:
a housing having an opening into which said ticket may be inserted with said stripe extending longitudinally;
sensing means for determining the direction said stripe is facing;

drive means for carrying said ticket in a circular path in either direction;

control means responsive to said sensing means for initiating rotation of said drive means in a direction



to carry said ticket with said stripe facing outwardly of said drive means, and

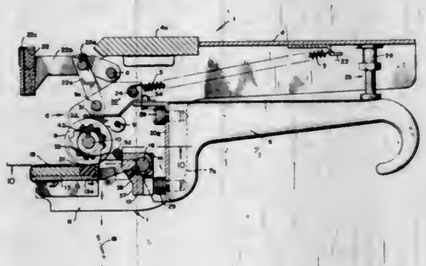
processing means for processing said ticket while carried by said drive means.

3,356,022

TICKET RE-MARKER WITH ADJUSTABLE LENGTH RIGHT ANGLE CUTTING MEANS

Gerard G. Gruettner, North Arlington, and Hans J. Bonheim, Fairlawn, N.J., assignors to Atlas Recording Machines Corporation, New York, N.Y., a corporation of New York

Filed Dec. 27, 1965, Ser. No. 517,192
3 Claims. (Cl. 101—97)



1. A ticket re-marking device for progressively and individually removing the end portions of a row of interconnected price marking tickets and simultaneously imprinting a new price on said tickets adjacent said newly severed end portions, comprising a pair of pivotally connected handle means movable toward and away from each other, said handle means normally being spaced to define an open front portion, price marking means on one of said handle means, said marking means being shifted towards the other of said handle means in response to movement of said handle means towards each other, ticket support plate means on said other handle means in the path of said marking means, end stop means positioned adjacent said support plate means and forming an inner boundary of said front portion for depthwise aligning a marking ticket inserted into said front portion, a cut-out in said plate, said cut-out being defined by a first wall parallel to said end stop means, and a second wall disposed at an angle with respect to said first wall and extending outwardly therefrom, knife means mounted on said handle means for movement across said open front portion and through said cut-out in response to movement of said handle means towards each other, said knife means including portions disposed in close adjacency to said first and second walls when said knife means is shifted through said cut-out, and side stop means adjacent said support plate means at one side thereof, said stop means extending outwardly beyond said end stop and defining a lateral boundary of said open portion in spaced relation to said second wall for sidewise alignment of said tickets with respect to said marking means and said cut-out, said side stop means, after severence of the end portion of the first ticket of an interconnected series, cooperating with the side edge formed by said first cut to laterally align the next ticket of said series with said marking means and cut-out.

3,356,023

METHOD OF MAKING STENCIL MARKING APPARATUS

Elmer H. Schuttenberg, 2170 Arthur Ave., Lakewood, Ohio 44107

Filed June 22, 1965, Ser. No. 466,040
5 Claims. (Cl. 101—128.3)

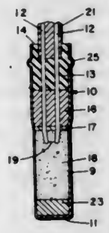
1. A method of making a stencil which includes preparing on paper or the like a master copy of the design to be reproduced and representations of a plurality of spaced indexing holes, photographically transferring said design and representations of indexing holes in the desired size to a stencil blank of pervious backing material having a photo sensitive impervious coating thereon, developing said blank whereby said impervious coating is removed from said pervious backing sheet at said design and said representations of indexing holes, and applying a solvent for the pervious backing material but not for said impervious coating thereon to the portion of said blank in which said representations of indexing holes are located without permitting said solvent to contact the design carrying portion of said blank whereby the pervious backing at said representations of indexing holes is dissolved away to form open indexing holes through said blank and located in the same relation to the design as are said representations of said holes on said master copy.

3,356,024

SELF-DISARMING ELECTRIC BLASTING CAPS AND ASSEMBLY CONTAINING SAME

Hiram E. Driscoll, Woodstock, and Pressley B. Miller, Kingston, N.Y., assignors to Hercules Incorporated, Wilmington, Del., a corporation of Delaware

Filed Nov. 9, 1966, Ser. No. 593,012
14 Claims. (Cl. 102—28)



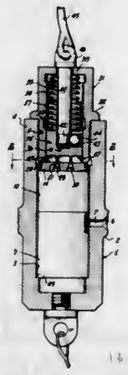
1. An electric blasting cap assembly capable of self-disarming after misfiring in a water environment, which comprises a closed elongated shell; a base explosive charge in one end of said shell disposed therein as described hereinafter; a dielectric ignition plug within said shell in closing relationship therewith and spaced from said base charge; a pair of leg wires longitudinally extending into said shell through the end thereof opposite said base charge in direct sealed contact with said dielectric plug, and terminating within said shell intermediate said base charge and said ignition plug; a bridge wire connecting the terminal ends of said leg wires to thereby form an electrical circuit therewith; an ignition composition within said shell in direct contact with said bridge wire; said ignition composition being ignitable in response to heat from said bridge wire developed by passage of electric current through said circuit, and said base explosive charge being disposed in operative communication with said ignition composition to detonate in response to ignition of said ignition composition; a corrosion agent-forming material within said cap assembly chemically inert to all components of said assembly but, upon contact with water, forming an agent corrosive to any of said wires in said circuit, and present in amount to form said agent in quantity to corrode any of said wires sufficiently to break said circuit; said corrosion agent-forming material being disposed within said assembly so as to permit direct contact of said corrosion agent, when formed, with said circuit for corroding same as described; ingress means in said cap assembly for admitting water from outside said shell into contact at a rate, and in an amount, with said corrosion agent-forming material to form said agent for said corrosion so as to break said circuit after a preset period of water ingress time, whereby said blasting cap assembly becomes disarmed.

3,356,025

PYROTECHNIC INITIATORS

James W. Duncan, Arden, N.C., assignor to Stencel Aero Engineering Corporation, Arden, N.C., a corporation of North Carolina

Filed Nov. 17, 1965, Ser. No. 508,346
4 Claims. (Cl. 102—39)



1. In a pyrotechnic initiator, the combination of

a primer housing provided with at least two primer-accommodating cavities, said primer housing including

means defining an annular recess opening outwardly relative to the primer housing, said cavities being spaced axially from said recess and arranged in an annular series axially aligned with said recess, there being a plurality of bores each communicating between said recess and a different one of said cavities;

a plurality of primer actuating elements movably retained each in a different one of said bores,

said primer actuating elements projecting from said bores into said annular recess when said primers are respectively situated in said cavities;

a striker having an annular tip dimensioned for insertion into said annular recess;

housing means for said striker, said housing means positioning said striker for rectilinear movement along an axis coincident with the central axis of said recess;

means releasably retaining said striker in a retracted position in which said tip is spaced a substantial distance axially from said primer actuating elements when the latter project from said bores into said recesses; and

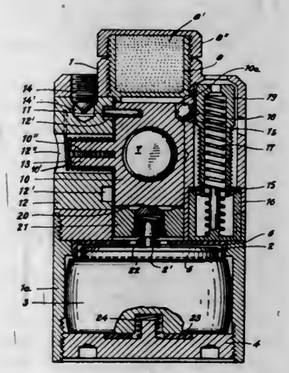
means for forcibly driving said striker in a direction to cause said tip to move within said recess and into simultaneous engagement with said primer actuating elements with such engagement being independent of the relative angular dispositions, about the common axis of said tip and said recess, of said tip and said primer actuating elements.

3,356,026

PIEZOELECTRIC IGNITER FOR PROJECTILES

Josef Lubig, Bad Godesberg, Germany, assignor to Dynamit Nobel A.G., Bezirk Cologne, Germany

Filed Nov. 10, 1964, Ser. No. 410,081
8 Claims. (Cl. 102—70.2)

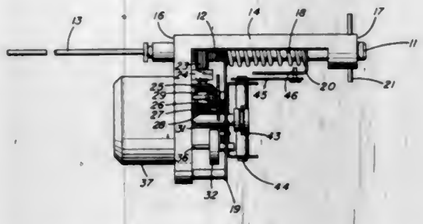


5. Electrical fuse assembly for missiles comprising, in combination, a fuse body having a cavity and an axis; detonator means mounted on said fuse body; electric fuse means mounted in said body adjacent said detonator means; a transverse wall of insulating material extending transversely through said cavity; a piezoelectric element; a first electrically conductive component to one side of said element; a second electrically conductive component in form of an inertia body at the other side of said element, said piezoelectric element and said two components being arranged in said cavity slidable in axial direction with one of said components adjacent said transverse wall; electrically conductive spring means extending through an opening of said transverse wall between said fuse means and one of said components and being biased so as to resiliently keep said one component spaced from said transverse wall, whereby when one of said bodies is accelerated relative to the other in direction of said axis, said one component will be pressed against said transverse wall and said piezoelectric element will be subjected to pressure between said two components so as to energize said fuse means.

3,356,027
RETARDATION-SENSING SAFING DEVICE FOR BOMB FUZE

Arnold S. Munach, Rockville, Md., assignor to the United States of America as represented by the Secretary of the Navy

Filed Aug. 27, 1965, Ser. No. 483,376
4 Claims. (Cl. 102—76)



1. A safety device for a fuze in a velocity-retarded gravity bomb comprising:

a pin engaging said fuze and movable from a first position wherein it prevents fuze arming to a second position wherein the fuze is cleared for arming,

stored energy spring means for moving said pin from said first position to said second position,

means for governing the rate of movement of said pin by said spring means whereby a predetermined minimum period of time is required for said spring means to move said pin from said first position to said second position,

said pin including a gear rack incorporated thereon and said governing means comprises a reduction gearing network engaging said gear rack,

a verge-type escapement engaging said network and having a star-type escape wheel,

a pallet member having mounted thereon a pair of pins, whereby said pallet member pins may engage said star-wheel to control the rate of movement of said fuze-engaging pin, and

means responsive only to deceleration occurring during a specified incremental portion of said predetermined minimum period of time for inactivating said governing means and permitting instantaneous movement of said pin to said second position by said stored energy spring means, said pallet member being movable relative to said star-type escape wheel, and

each of said pallet pins having a reduced diameter portion at one end thereof,

whereby the large ends of the pallet pins may engage the star wheel to control the rate of movement of the fuze-engaging pin, but when the pallet is moved the star wheel is not engaged by the reduced diameter portions of the pallet pins and the reduction gearing network is permitted to free-wheel.

3,356,028
SAFETY DEVICE FOR AN EXPLOSIVE FUZE

Robert W. Heinemann, Dover, N.J., assignor to the United States of America as represented by the Secretary of the Army

Filed June 28, 1966, Ser. No. 562,437
4 Claims. (Cl. 102—79)

1. A centrifugally activated safety device for use in a fuze having a spring loaded revolvable arming rotor comprising:

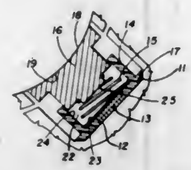
a base having an aperture,

a porous diaphragm for the controlled bleeding of air mounted in said aperture,

a hollow cylinder of open end construction secured to said base in axial alignment with said aperture,

a helical spring in place in said hollow cylinder against said base, and

a solid cylinder one end of which is insertably mounted in said hollow cylinder and the other end of which is

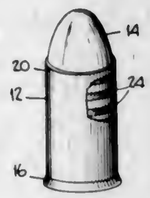


adapted for separable engagement with said rotor, said solid cylinder activated into movement into said hollow cylinder by centrifugal force, and said movement incrementally controlled by the passage of air from said hollow cylinder through said porous diaphragm to the atmosphere.

3,356,029
BALLISTIC LUBRICATING COMPOSITION

Jack V. Seidel, Climax, Colo., assignor to American Metal Climax, Inc., New York, N.Y., a corporation of New York

Filed Mar. 3, 1966, Ser. No. 531,510
8 Claims. (Cl. 102—92)



1. A ballistic lubricating composition containing, on a weight basis, a wax which is solid at temperatures up to 100° F. and which has a viscosity of 30 to 50 S.U. at 200° F., a grease which is stable at temperatures up to 300° F. and flexible at temperatures down to −20° F., said wax and grease being present in a ratio of between 0.8:1 and 1.2:1, and the balance of said composition consisting essentially of MoS_2 in amounts of at least 2% but not more than 20%.

3,356,030
PLANOGRAPHIC PRINTING METHOD

Paul W. Greubel, Short Hills, N.J., assignor to Interchemical Corporation, New York, N.Y., a corporation of Ohio

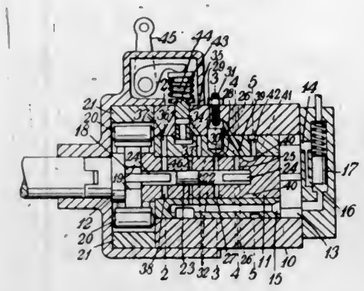
Filed Apr. 30, 1964, Ser. No. 363,756
The portion of the term of the patent subsequent to Jan. 25, 1982, has been disclaimed
9 Claims. (Cl. 101—452)

1. A method of planographic printing comprising applying a volatile aliphatic hydrocarbon fountain solution to a lithographic printing plate, the non-image areas of which are covered with a cured coating comprising a thermosetting silicone resin, printing successive copies of the image with an ink having a solvent of which the predominant portion is water, said ink being immiscible with said volatile aliphatic hydrocarbon fountain solution and reapplying said fountain solution between successive printings.

3,356,031
LIQUID FUEL PUMPING APPARATUS

Paul Edgar Glikin, London, England, assignor to C.A.V. Limited, London, England

Filed Jan. 5, 1966, Ser. No. 518,930
Claims priority, application Great Britain, Jan. 7, 1965, 27,905/65
7 Claims. (Cl. 103—2)



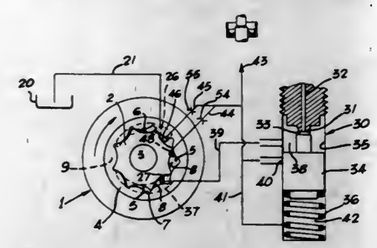
1. A liquid fuel pumping apparatus for supplying fuel to an internal combustion engine and comprising in combination, a body part, a rotary distributor mounted in the body part and adapted to be driven in timed relationship with an engine, a pressure pump rotor rotatable with the distributor, a bore formed in said rotor, a reciprocable plunger in said bore, cam means for imparting inward movement to the plunger as the rotor rotates, a passage in said distributor in communication with said bore, a shuttle movable in said passage, the end of said shuttle remote from the bore serving in part to define the working chamber of an injection pump, a delivery passage extending from said working chamber to the periphery of the distributor, a plurality of angularly spaced delivery ports formed in the body part and with which the delivery passage registers in turn as the distributor rotates, a cylinder formed in the body part, one end of said cylinder being exposed to the periphery of the distributor, a plurality of angularly spaced inlet passages extending from said working chamber for communication with said one end of the cylinder in turn during the time when the delivery passage is out of register with the delivery ports, a metering shuttle slidable in said cylinder, means for moving said metering shuttle towards said one end of the cylinder whilst an inlet passage is in register therewith, thereby to displace fuel from said one end of the cylinder to said working chamber, an adjustable throttle valve mounted within the body part for controlling the flow of fuel from a source to said one end of the cylinder whilst the inlet passages are out of register therewith and for controlling the flow of fuel to said bore during the time when the delivery passage is out of register with the delivery ports.

3,356,032
HYDRAULIC CIRCUIT

Eugene A. Roeske, St. Louis County, Mo., assignor to Emerson Electric Co., St. Louis County, Mo., a corporation of Missouri

Filed Jan. 13, 1966, Ser. No. 520,323
3 Claims. (Cl. 103—42)

1. A hydraulic system comprising a rotary pump having an intake manifold, a discharge manifold, a land between said intake and discharge manifolds, a land between said discharge and intake manifolds and rotating means contiguous the said manifolds and lands for defining undulating cavities in a fixed pattern, a conduit opening at one end into the path of said cavities through the face contiguous the rotating means of the land between the intake and discharge manifolds and communicating at its other end mediately with the discharge manifold, and an orifice communicating at one end with said conduit and at its other end with said intake manifold, said orifice com-

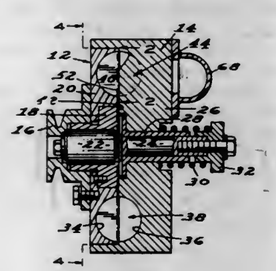


prising a groove in the face of the land, communicating at one end directly with the conduit opening in the face of the land and at the other end directly with the intake manifold, said conduit opening through said land at such a position with respect to the discharge manifold that no cavity communicates simultaneously with the conduit and the discharge manifold.

3,356,033
CENTRIFUGAL FLUID PUMP

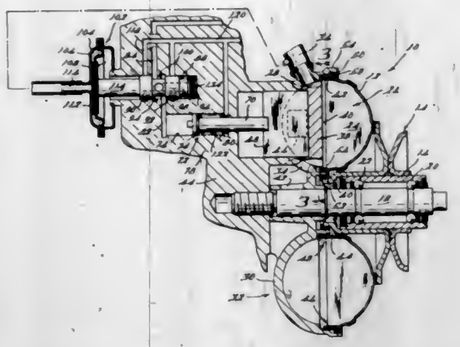
Fred E. Ullery, Detroit, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed Oct. 22, 1965, Ser. No. 500,534
6 Claims. (Cl. 103—96)



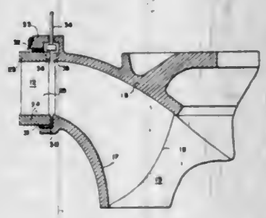
1. A fluid pump of the centrifugal type comprising axially aligned annular stationary and rotatable members in substantially contiguous relationship each having a semitoroidal-shaped fluid cavity defined therein, said cavities facing each other to together define a toroidal-shaped cavity for the flow of fluid therearound, said rotatable member cavity having circumferentially space blades mounted therein and extending across the axial width thereof, said stationary member having a fluid inlet and an outlet circumferentially separated by a fluid flow abutment blocking communication in the normal flow direction between said inlet and outlet through said stationary member cavity, said abutment having a radial seal surface in fluid sealing relationship with said rotor blades, the radially inner circumferential portion of said abutment surface being longer than the circumferential space between a pair of rotor blades to trap fluid in said space as said pair of blades rotates past said surface, the radially outer portion of said abutment surface being circumferentially shorter than said inner portion and the spaces between pairs of blades whereby a portion of the fluid trapped in each of said rotor blade spaces as it passes said abutment is forced towards said inlet prior to the communication of all of the space with said inlet.

3,356,034
FLUID PUMP FLOW BYPASS CONTROL
James Knowles, Bloomfield Hills, and Richard D. Moan, Dearborn Heights, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Dec. 28, 1965, Ser. No. 516,998
10 Claims. (Cl. 103—97)



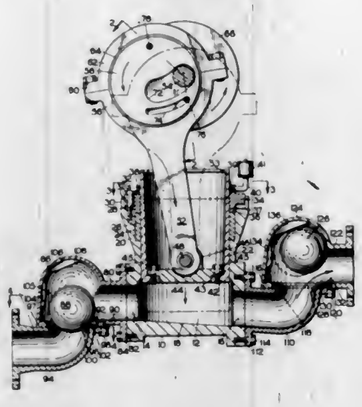
1. A centrifugal pump having a bladed rotor member, a stator member cooperating therewith to define an annular fluid flow chamber therebetween, said stator member having a fluid inlet and outlet to said chamber, a source of fluid connected to said inlet, first conduit means connecting said inlet and outlet, fluid bypass control means movable into said conduit means to block flow from said inlet to said outlet while permitting flow from said inlet to said outlet and movable out of said conduit means to a bypass position permitting flow from said inlet to said outlet and back to said inlet, and means for controlling the movement of said bypass control means, said latter means including means biasing said control means to a fluid bypass permitting position essentially out of said conduit means, a second source of fluid under pressure, second conduit means operatively connecting said second source to said control means to act thereon to move said control means to a bypass blocking position into said first named conduit means, and means for controlling flow through said second conduit means.

3,356,035
RUNNER-IMPELLER FOR TURBINE PUMP
Robert S. Sproule, Montreal, Quebec, Canada, assignor to Dominion Engineering Works Ltd., Montreal, Quebec, Canada
Filed Aug. 31, 1965, Ser. No. 483,925
4 Claims. (Cl. 103—98)



1. In a fluid machine, a shaft, a pair of inner spaced shrouds having blades between them connected to said shaft for rotation therewith, a free-wheel unit outwardly of said inner shrouds and blades and comprising a pair of outer spaced shrouds respectively and generally in line with the free edges of said inner shrouds, said free-wheel unit further comprising blades between said outer shrouds, bearing means journaling said free-wheel unit, a said inner shroud having splines at its outer edge, a said outer shroud having splines at its inner edge in juxtaposition with said first-mentioned splines, and movable key means selectively engageable with said splines.

3,356,036
PLUNGER-TYPE PUMP
Fred J. Repp, 4320 SE. 136th, Portland, Oreg. 97236
Filed Mar. 1, 1966, Ser. No. 530,808
2 Claims. (Cl. 103—153)

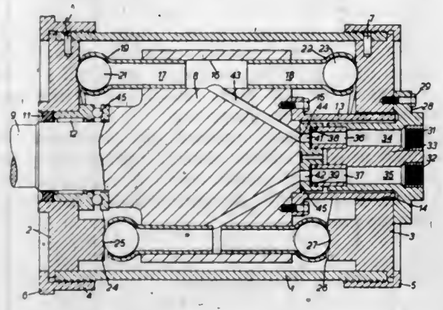


1. A pump comprising a housing, means defining a longitudinally extending pump chamber therein having a bottom wall and inlet and outlet openings, a cylinder leading angularly from said housing and communicating therewith, said cylinder having a guiding surface adjacent to the pump chamber, a plunger operative in said cylinder along said guiding surface, said plunger being operative toward and away from said bottom wall of the pump chamber for moving liquid through said chamber, an end wall on said plunger, valve means at opposite ends of said pump chamber arranged to permit liquid being pumped to move in one direction through said pump chamber, the bottom wall of said pump chamber and said end wall of the plunger having an acute angled disposition with relation to each other with the widening area therebetween leading toward the outlet opening, means in said cylinder disposed outwardly from said inner guiding surface defining a socket, a guide ring removably mounted in said socket and having an inner guiding surface coextensive with the guiding surface of said cylinder, and a flange on said guide ring extending away from said pump chamber, said flange having an inner defining surface disposed outwardly from the plane of the inner defining surface of said guide ring whereby to form a lubricant containing reservoir between said flange and said plunger.

3,356,037
RECIPROCATING PISTONS FOR PUMPS AND MOTORS
John D. North, Eversley, Bridgnorth, England, assignor to Boulton Paul Aircraft Limited, Codsall, England, a British company
Filed Oct. 11, 1965, Ser. No. 494,812
Claims priority, application Great Britain, Oct. 12, 1964, 41,629/64
4 Claims. (Cl. 103—162)

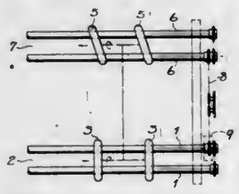
1. A hydraulic pump or motor including at least one piston reciprocable to displace liquid, a cup formed on one end of the piston, a sphere larger in diameter than

the displacement diameter of the piston, engaged within the cup over an equatorial plane for rotation in the cup, a cam track with which the sphere is adapted to engage, said piston being hollow and there being an opening within the cup connected to receive liquid at pressure from the displacement area of the piston, the total effective area of said opening, when projected into a plane at right angles to the axis of the piston, being greater than the displacement area of the piston, and bearing



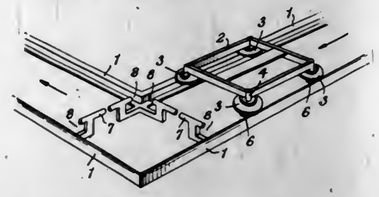
means locating the piston and the cam track for relative movement during which the sphere rolls on the cam track and transmits reciprocating driving forces to the piston, said cup engaging the sphere with very small clearance and the rim of the cup-having a slightly smaller diameter than the displacement area of the piston whereby the piston is hydraulically balanced relative to the sphere in the direction of piston reciprocation.

3,356,038
APPARATUS FOR THE SIDEWISE DISPLACEMENT OF WHEELED VEHICLES
Eiji Furukawa, Chiba-shi, Japan, assignor to Daido Yusoki Kabushiki, Kaisha, Toyko, and Hitachi Zosen Kabushiki Kaisha, Osaka, Japan, both corporations of Japan
Filed Dec. 13, 1965, Ser. No. 513,293
Claims priority, application Japan, Dec. 17, 1964, 39/71,521
2 Claims. (Cl. 104—35)



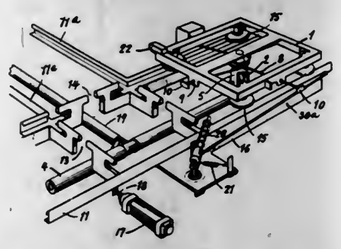
1. Apparatus for moving a vehicle laterally to the longitudinal axis of the vehicle comprising a vehicle having at least a steering wheel at one end and a driving wheel at its other end, supporting means, a plurality of sets of rollers rotatably mounted on said supporting means for rotating about fixed axes with respect to said supporting means, said roller axis of rotation being parallel to one another, and said sets of rollers spaced apart a distance corresponding to the wheel base of the vehicle and having said steering wheel directly mounted on at least one set of said rollers with the plane of said wheel disposed angularly to said roller axes and said car driving wheel being directly mounted on at least a second set of said rollers with the longitudinal axis of the vehicle extending laterally of the axes of rotation of said rollers and means operatively connecting said rollers for being driven together by said car driving wheel whereby said car will be laterally displaced by and in the direction of rolling of said steering wheel.

3,356,039
DEVICE FOR SWITCH IN TRACK SYSTEM
Per Börje Fondén, Linkoping, and Sture Bertil Mattsson, Norrkoping, Sweden, assignors to Borgs Fabriks AB, Norrkoping, Sweden
Filed June 1, 1965, Ser. No. 460,362
6 Claims. (Cl. 104—130)



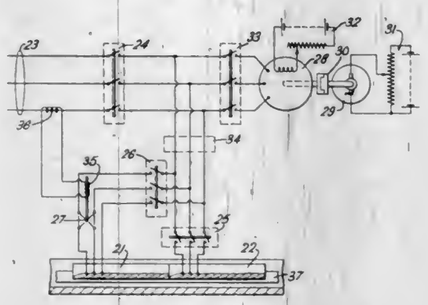
1. A device for use at a switching location for trucks borne on wheels having shafts disposed at right angles to the plane of the tracks on which the trucks move, the tracks including a branch section to which the truck is to be switched, the tracks being interrupted, to permit the wheels to transfer from one main track section to a branch section, the branch being disposed at right angles to the main track section, steering means in the form of adjustable barriers which when positioned for action at the track interruptions, deter the wheels from derailment at the interruptions and when not positioned for action leave a free passage for the wheels through the interruptions.

3,356,040
DEVICE FOR CONVEYOR SYSTEMS
Per Börje Fondén, Linkoping, Sweden, assignor to Borgs Fabriks AB, Norrkoping, Sweden
Filed June 1, 1965, Ser. No. 460,375
3 Claims. (Cl. 104—130)



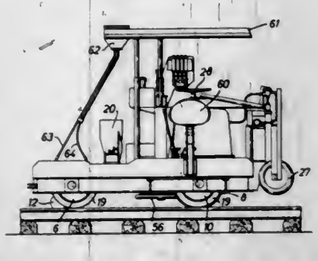
1. A device for a conveyor system used to transport trucks along definite pathways such as tracks and on which the trucks are propelled by frictional contact between a rotating shaft arranged parallel to the pathway and with one or more drive wheels carried by the truck and which drive wheels are positioned obliquely to the drive shaft, the improvements consisting in the drive wheel being mounted on an axle and adapted to swivel about a shaft, the shaft being disposed directly over the axle and above the longitudinal axis of the drive shaft, a spring holding the drive wheel at an angle of approximately 45 degrees against the drive shaft and correcting deviations from that angle by moving the drive whel back to its position at said angle, and push rods by which the drive wheel is swivelled in relation to the drive shaft when the truck, as it moves along the tracks, comes into contact with an object.

3,356,041
TRACTION SYSTEMS
Denys Stanley Bliss, Ashurst, Southampton, England, assignor to Hovercraft Development Limited, London, England, a British company
Filed Sept. 26, 1966, Ser. No. 582,067
Claims priority, application Great Britain, May 18, 1962, 19,344/62
9 Claims. (Cl. 104—148)



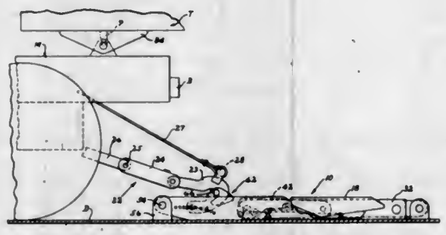
1. A traction system comprising a track, a vehicle on said track, linear motor driving means on said vehicle, conductor means rigid with said track, said linear motor driving means being adapted to react with said track conductor means to drive the vehicle along the track, means for enabling said driving motor means to function regeneratively for braking of the vehicle, additional linear motor means adapted to co-operate with said track conductor means for braking the vehicle, and switching means for applying output from said driving motor means to energise the additional motor means when the driving motor means is regenerating.

3,356,042
CONVERTIBLE RAIL-HIGHWAY VEHICLE
William H. Herscovitch, 12 Bredenbek Strasse, 2 Hamburg-Ohlstedt, Germany
Filed Mar. 30, 1965, Ser. No. 443,952
Claims priority, application Great Britain, Apr. 2, 1964, 13,716/64
9 Claims. (Cl. 105—215)



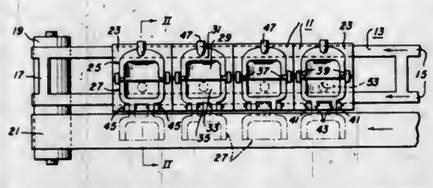
1. A combination ground and rail vehicle, comprising:
(a) a frame;
(b) a first pair of wheels rotatably mounted on said frame, said wheels being adapted to rollingly engage either the ground or a pair of parallel rails;
(c) first guide means associated with said first pair of wheels and engageable with said rails for maintaining said wheels in rolling engagement with said rails;
(d) motor means adapted to rotate said first pair of wheels;
(e) a second pair of wheels rotatably mounted on said frame, said wheels being adapted to rollingly engage a pair of parallel rails;
(f) second guide means associated with said second pair of wheels and engageable with said rails for maintaining said second wheels in rolling engagement with said rails;
(g) a third pair of steerable and rotatable wheels;
(h) means mounting said third pair of wheels on said frame for vertical movement with respect thereto between an upper position above a plane defined by the lowermost points on said first and second pairs of wheels, and lower position wherein said third pair of wheels extends below said plane, said second wheels being located between said first and third wheels;
(i) lift means mounted on said frame and having a pivotable support member vertically movable between a first position above said plane and a second position below said plane for supporting the entire vehicle spaced from the ground;
(j) said vehicle being supported only on said first and second pairs of wheels when in rolling engagement with said rails and being supported only on said first and third pairs of wheels when in rolling engagement with the ground.

3,356,043
COLLAPSIBLE HITCH
Dallas W. Rollins, St. Charles, Mo., assignor to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Filed Jan. 27, 1966, Ser. No. 523,364
6 Claims. (Cl. 105—368)



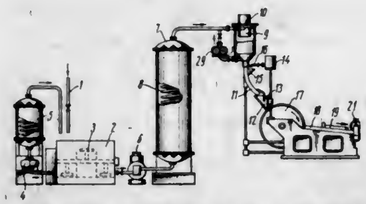
1. A hitch adapted to be mounted on the deck of a railway flat car, said hitch comprising an elongated leg, means adjacent one end of said leg for mounting said leg on said deck for pivotal movement about a generally horizontal axis between a collapsed position on the deck of the railway car and a generally vertical position in the erect position of the hitch, means carried adjacent the other end of said leg adapted to engage and secure the kingpin of a trailer or the like, means connected to said leg to support said leg in the erect position of the hitch, the upper surface of said leg when in collapsed position on the deck projecting a minimum height above the deck to permit a tractor or the like to easily straddle and clear the hitch, a pull-up member carried by said leg adapted to be engaged by means on a tractor for moving the hitch to an erect position, means mounting the pull-up member on said leg for movement from an extended position in which said pull-up member extends above said upper surface of said leg in the collapsed position of the hitch and a retracted position in which said member is substantially flush with the upper surface of the leg, and means yieldingly urging said pull-up member to said extended position when said leg is in said collapsed position whereby the pull-up member may be easily engaged by said means on said tractor, said pull-up member being depressible downwardly to said retracted position against the bias of said urging means when engaged by a tractor or the like moving over the hitch.

3,356,044
FOLD-OVER PIE FORMING UNIT
Maurice F. Keathley, 1150 Audubon Drive 38117, and Artez F. Mainers, 1135 Cooper, Apt. 1 38104, both of Memphis, Tenn.
Filed Mar. 30, 1966, Ser. No. 538,814
8 Claims. (Cl. 107—1)



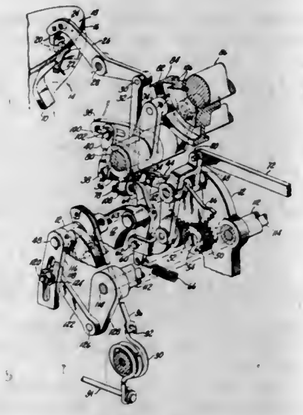
1. In pie making apparatus, pie forming means comprising a plurality of pie forming units; conveyor means including means for conveying said plurality of pie forming units in tandem arrangement; each unit of said plurality of units including a horizontal base, a generally flat primary mold half arranged on one side of said base, a generally flat secondary mold half disposed horizontally contiguous said primary mold half and arranged on the opposite side of said base, said primary and secondary mold halves being substantially co-planar arranged in a normal open disposition and in such disposition being adapted to receive a horizontal sheet of pie dough and a gob of pie filling material, means pivotally supporting said primary mold half for substantially 180° pivotal movement of said primary hold half over said secondary mold half, said primary mold half being adapted to be pivotally moved over said secondary mold half thereby folding said dough sheet over said filler material and forming substantially a completed pie resting in said secondary mold half, means pivotally supporting said secondary mold half for substantially 180° pivotal movement of said secondary mold half in a general direction away from said primary mold half, said secondary mold half being adapted to be pivotally moved substantially 180° for overturning a pie resting in said secondary mold half and for gravitatingly ejecting the pie from said secondary mold half and away from the

3,356,045
METHOD AND APPARATUS FOR MAKING MILK CARAMEL MASS FOR MANUFACTURING "IRIS"
Alexei Kirillovich Karpenko, Valerija Dmitrievna Bondareva, Mikhail Dmitrievich Malinin, Moisei Khaimovich Smoljanitsky, Valentina Grigorjevna Koroleva, Illarion Fedorovich Poljakov, and Vladimir Ivanovich Saveljev, Moscow, U.S.S.R., assignors to Moscowskaja Konditerskaja Fabrika "Krasny Oktjabr"
Filed Oct. 17, 1963, Ser. No. 316,826
2 Claims. (Cl. 107—4)



2. An apparatus for making a milk caramel mass in manufacturing "Iris" toffee-type candy, comprising a collector provided with a stirrer and to which a preheated mixture of caramel mass components is fed, a unit having a coil for heating said mixture, said unit being connected through a pump with said collector into a closed recirculating system, a coil-type heat exchanger for heating said mixture and evaporating said mixture which is connected through a pump with said collector, a centrifugal cyclone steam separator provided with a pipe for vapor evacuation, a hopper into which said mixture is fed from the cyclone steam separator, said hopper having a lateral slot in the bottom thereof, a device provided with a nozzle for spraying a flavoring material onto said mixture as it is fed from said separator before said mixture enters said hopper, a cooling device consisting of a cooling cylinder and a cooled inclined plate, said plate being provided with swingable vanes for shaping said mass into a multilayer stick, rolls between which the stick passes for forming said stick to the desired shape, a conveyor receiving the shaped stick from said rolls, a carriage disposed over said conveyor, a swingable knife carried by said carriage for cutting said stick and flange means operably related to said conveyor for directing the cut stick pieces to wrapping machines.

3,356,046
LOCKSTITCH SEWING MACHINES
Joseph R. Ioannilli, Beverly, Mass., assignor to United Shoe Machinery Corporation, Flemington, N.J., a corporation of New Jersey
Filed May 10, 1965, Ser. No. 454,529
6 Claims. (Cl. 112—61)



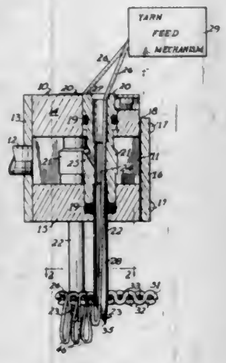
1. A lockstitch shoe outsole sewing machine comprising a presser foot, means for actuating the presser foot during each sewing cycle including a floating lever, a gear sector connected to the floating lever and mounted about an axis for angular movement in accordance with the position of the floating lever, a pair of gear pinions in toothed engagement with the sector and releasable means for urging the pinions into interlocking relationship with one another, thereby preventing relative rotation of the pinions to lock the sector against angular displacement about its axis.

3,356,047
TUFTING NEEDLE AND METHOD OF MAKING SAME
Joe T. Short, West Point, Ga., assignor to Callaway Mills Company, La Grange, Ga., a corporation of Georgia
Filed Aug. 2, 1965, Ser. No. 476,407
6 Claims. (Cl. 112—79)

1. A tufting needle comprising a cylindrical shank provided with a cylindrical axial yarn passageway, and
means to admit air to said passageway to blow yarn therethrough,

said shank being beveled at its lower end, said passageway having a yarn inlet opening at one end and an inclined elliptical yarn discharge opening at its other end defined by the beveled lower end of said shank, said elliptical yarn discharge opening being in axial alignment with said passageway,

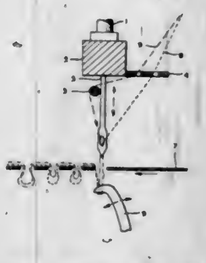
said beveled lower end of said shank being arcuate in cross section and having a taper extending convexly inwardly substantially around its entire circumference, said taper merging smoothly with the remainder of said shank at a circumferential line



around said shank near the upper periphery of said elliptical opening so that the length of the taper is greatest on the side of the shank which defines the lower periphery of said elliptical opening and progressively decreases around the shank in both directions from said side,

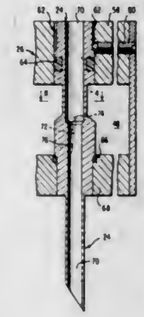
whereby the lower end of said needle provides a camming surface substantially surrounding an elliptical outlet through which the yarn may be air blown in an axial direction without binding the yarn.

3,356,048
APPARATUS FOR THE PRODUCTION OF TUFTED CARPETS
Heinz Haas, Spessart, Germany, assignor to Vereinigte Glanzstoff-Fabriken A.G., Wuppertal-Elberfeld, Germany
Filed Sept. 1, 1965, Ser. No. 484,236
Claims priority, application Germany, Sept. 5, 1964, V 26,722
6 Claims. (Cl. 112—79)



6. Apparatus for production of tufted carpets comprising a needle having one eye, driving means to reciprocate said needle in its longitudinal direction, to pierce and retract from a carpet base movable substantially at right angles thereto means for supplying a first yarn at constant feed length to said eye and for supplying a second yarn at alternating variable feed lengths to said eye per reciprocal cycle of said needle, guide means for guiding said second yarn to said eye of said needle, in a direction having a lateral vector opposite to the direction of movement of said carpet base additional guide means for guiding said first yarn to said eye of said needle in a lateral vector which is the same as the direction in which said carpet base moves relative to said needle, and a moving gripping device having a tip with a free end which moves into position to grip the two loops formed by said yarns after puncture of said needle and passage of said eye through said carpet base with said loops lying side-by-side on said tip and with said second yarn closest to the free end of said tip, which tip moves back as said needle begins its next puncture cycle and releases first said second yarn, which lies closest said tip, whereby said second yarn may be drawn back from the previous loop thereby forming a shorter loop than the loop of said first yarn when said variable feed length is less than said constant feed length.

3,356,049
FLUID FLOW METHOD AND APPARATUS FOR APPLYING TWIST TO STRAND MATERIAL
Joe T. Short, West Point, Ga., assignor to Callaway Mills Company, La Grange, Ga., a corporation of Georgia
Filed Oct. 4, 1965, Ser. No. 492,786
15 Claims. (Cl. 112—79)

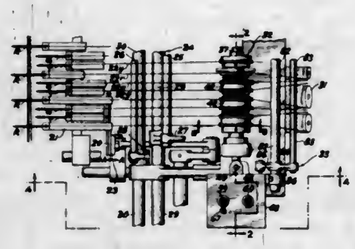


5. A tufting needle which comprises a needle shaft defining therein a passage for transmitting a strand of material to be tufted, said passage having an open outlet, means for flowing fluid in said passage circumferentially around the axis thereof and axially toward said outlet to simultaneously impart a twist to the strand and feed it toward said outlet.

3,356,050
TENSION DEVICES FOR EMBROIDERY MACHINES
Jack Anton Urscheler, 5 Ellington Place, Englewood Cliffs, N.J. 07632
Filed Dec. 30, 1964, Ser. No. 442,563
5 Claims. (Cl. 112—97)

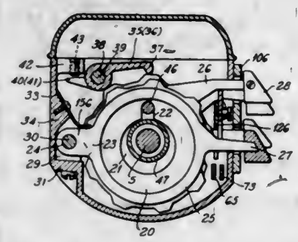
1. In an embroidering apparatus of the class in which there are a plurality of embroidery needles operatively movable between operative and inoperative positions and provided with means for drawing threads along predetermined thread paths from spool means, thread tension control means interposed between said needles and said spool means, said control means comprising a plurality of pairs of discs arranged in a row extending longitudinally of the apparatus, the two discs of each pair having coacting gripping portions positioned and proportioned to engage therebetween a thread operatively extending from said spool means to one of said needles along one of said

paths, said discs of each pair being movable relative to each other between predetermined thread-releasing and thread-pressing limiting position, said discs having apertured portions in longitudinal alignment, a rod disposed longitudinally within said apertured portions and movable between predetermined limiting positions, a push member carried by said rod and operatively adjacent to one of said discs, a stop member in spaced relation to said push member and in operative engagement with another of said discs; spring means between said push and stop members and in engagement with at least one of said discs, and actuating means connected to said rod for moving it, against the action of said spring means, in



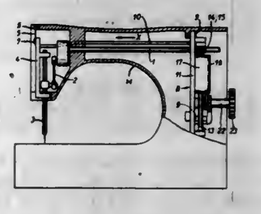
the direction where its said push member is caused to move towards said stop member and consequently cause a compression of the discs between said push and stop members, whereby the respective coacting discs of all said pairs are simultaneously caused to move towards their respective thread-pressing limiting positions, said actuating means being operatively movable in timed relation to the operative movements of said needles, said actuating means having a movable roller carrier member connected to said rod, cam rollers operatively supported by said carrier, and cam means coactive with said rollers and positioned and proportioned for operatively engaging said rollers and thereby operatively actuating said carrier to move said rod between its said limiting positions.

3,356,051
CAM SELECTING ARRANGEMENT
Yasukata Eguchi, Tokyo, Japan, assignor to Janome Sewing Machine Co., Ltd., Tokyo, Japan
Filed Oct. 28, 1964, Ser. No. 407,287
Claims priority, application Japan, Oct. 28, 1963, 38/57,272
21 Claims. (Cl. 112—158)



21. In an ornamental sewing machine, in combination, a needle bar assembly mounted for oscillating movement; a main shaft operatively connected to said needle bar assembly for reciprocating the needle bar thereof; an elongated cam follower means mounted for oscillating movement about an axis substantially parallel to said main shaft and operatively connected to said assembly for oscillating the same; a set of cams located with clearance about said main shaft, said cams having different cam track patterns; means connected said cams to said main shaft for rotation therewith; and means for selectively and individually moving each of said cams in its entirety in direction transverse to the axis of said main shaft between an inoperative position, and an operative position cooperating with said cam follower means whereby said assembly is adapted to control ornamental stitches in accordance with the cam track pattern of a cam moved into said operative position.

3,356,052
PATTERN SEWING DEVICE FOR SEWING MACHINES
Luigi Bono, Pavia, Italy, assignor to Necchi Società per Azioni, Pavia, Italy
Filed Mar. 15, 1965, Ser. No. 439,869
Claims priority, application Italy, Mar. 20, 1964, 5,893/64, Patent 717,653
5 Claims. (Cl. 112—158)

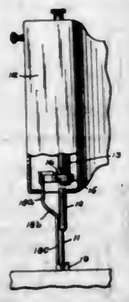


1. A sewing machine for sewing an ornamental pattern and the like, comprising: a needle bar means including an axially reciprocable needle bar, said needle bar means being transversely displaceable relative to a straight sewing line to cause said needle to sew on opposite sides of a straight sewing line, a pattern sewing device for transversely displacing said needle bar means, said device comprising a plurality of separate cams, said cams being coaxially mounted adjacent to each other on a rotatable cam shaft and each one having an outer circumferential profiled surface, each said surface comprising portions of varying radial dimension relative to said surface on an adjacent cam, said cams being rotatably fixed on said cam shaft but being axially displaceable along said cam shaft to alternately place each of said cams in a driving position, a shift means to axially displace said cams along said cam shaft, a cam follower lever pivotally mounted and including a cam follower portion having a sliding surface, said cam follower portion being resiliently biased with said sliding surface bearing against the outer profiled surface of whichever cam is in said cam driving position, said shift means comprising radially acting means which act against said cam follower lever in response to axial movement of said cams to automatically and uniformly pivot said lever cam follower portion radially with respect to the profiled surface of the cam which is in said driving position and onto the surface of a next adjacent cam profiled surface upon said cams being axially displaced in either direction along said cam shaft, and means to drive said cam shaft.

3,356,053
SEWING MACHINE PRESSER FOOT
Richard J. Potvin, Brockton, Mass., assignor to R. J. Potvin Shoe Company, Inc., a corporation of Massachusetts
Filed Mar. 30, 1964, Ser. No. 355,535
3 Claims. (Cl. 112—235)

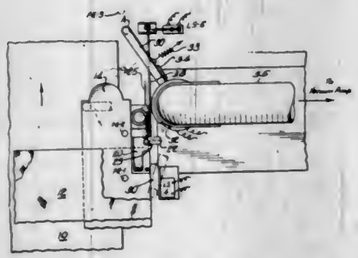
1. A presser foot assembly for a sewing machine having a needle bar and a forward and rear sewing direction,

comprising a presser bar mounted behind said needle bar and having an extension projecting sideward and forward with an end portion extending downward and disposed to



one side of and closely paralleling said needle bar, and a complete presser foot disposed under said needle bar and attached at one side to said end portion.

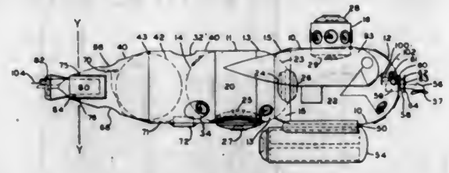
3,356,054
APPARATUS FOR BACK TACKING LOOSE ENDS OF SEWING MACHINE STITCHING, AND THE LIKE
Wyndham F. Southwell, Wilkesboro, and Nicholas Wehrmann, North Wilkesboro, N.C., assignors of L & L Manufacturing, Inc., a corporation of Delaware
Filed Apr. 20, 1965, Ser. No. 449,418
8 Claims. (Cl. 112—252)



1. Apparatus for back-tacking a loose end formed prior to a sewing operation of a sewing device; comprising a sewing device, yieldable loose-end-pulling means movable along a course from a position in proximity to a loose end in advance of said sewing device, back past said sewing device, and across an intended path of sewing on material being sewn; means to move said pulling means along said course after a loose end of sewing has been formed and so as to cross said path after a few stitches have been sewn in the material and while the loose end is yieldably pulled by the pulling means; means to cause further sewing past a portion of such loose end while the loose end is yieldably pulled by the pulling means whereby the loose end is caught by such further sewing; and means to return said pulling means to its advance position.

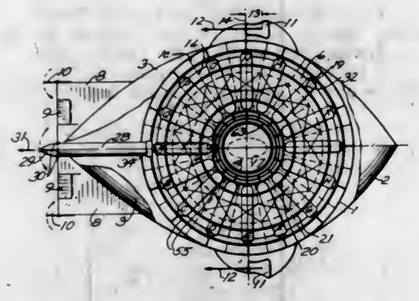
3,356,055
SELF-PROPELLED DIVING CHAMBER
Edwin A. Link, Binghamton, N.Y., assignor to Ocean Systems, Inc., a corporation of New York
Filed Apr. 15, 1966, Ser. No. 542,812
1 Claim. (Cl. 114—16)

A submarine comprising a hull having a bow and a stern, a main propulsion motor and propeller mounted as a unit and carried at the stern of said hull on bearings permitting swiveling 180 degrees about a vertical axis in said hull, a pair of foot pedals, control means interconnecting said foot pedals with said unit for controlling the swiveling thereof, a bow thruster comprising a motor and an auxiliary propeller mounted at said bow and rotatable about the longitudinal axis of said hull, said motor being coupled to said propeller to tune it on an axis perpendicular to said longitudinal axis whereby the thrust of said auxiliary propeller may be directed to any direction perpendicular to said longitudinal axis, a steering wheel connected to said bow thruster for rotating same



about said longitudinal axis, and a hovering unit comprising a hovering propeller carried at said stern constrained to rotate on a vertical axis, a reversible motor and transmission means for driving said hovering propeller, and control means interconnecting said reversible motor with said steering wheel whereby movement of said steering wheel in a forward direction causes said reversible motor to drive said hovering propeller in one direction while movement of said steering wheel in a backward direction causes said reversible motor to drive said hovering propeller in the opposite direction.

3,356,056
SUBMARINE
Guenther Wolfgang Lehmann, Sunnyvale, Calif. (140 W. Kalmia St., San Diego, Calif. 92101)
Filed Aug. 19, 1964, Ser. No. 391,079
9 Claims. (Cl. 114—17)



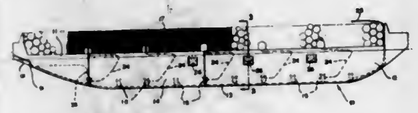
1. A submarine, comprising an ellipsoidal hull with its vertical axis being the smaller and revolving axis, fairing bodies fore and aft of said ellipsoidal hull, an independent first center cylinder, a second structural center cylinder accommodating said first cylinder, an annular chamber within said hull and in the horizontal symmetry plane of said hull, a revolving platform in said annular chamber, missile capsules mounted in radial arrangement on said revolving platform, propulsion means at the periphery of said hull and slightly set forward of the midship plane of said hull, stabilizing, rudder and breaking planes at the stern of said hull, and fairing planes fore and aft of said propulsion means.

3,356,057
VESSEL FOR TRANSPORTING LOGS
Thomas T. Lunde, San Francisco, Calif., assignor to Lunde Carriers, a limited partnership
Filed Dec. 3, 1965, Ser. No. 526,639
4 Claims. (Cl. 114—27)



1. A vessel for transporting logs comprising: a float extending between sides and longitudinally of said vessel, a pair of ballast tanks extending longitudinally of said vessel and disposed laterally on opposite sides of said float, each ballast tank being laterally spaced from said float and defining open bottom enclosures therebetween, a releasable log support for each enclosure that will span its open bottom, and means for selectively filling and discharging said ballast tanks with water to produce a side list of said vessel and a release of logs through the open bottom of an enclosure.

3,356,058
LOG TRANSPORTING VESSEL
Thomas T. Lunde, San Francisco, Calif., assignor to Lunde Carriers, a limited partnership
Filed Feb. 2, 1966, Ser. No. 526,640
6 Claims. (Cl. 114—27)

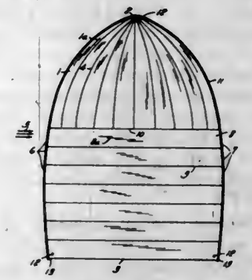


1. A vessel for transporting logs comprising: buoyant means defining a flooded enclosure having a rigid submarine supporting surface and including a gate, the lower portion of said gate being below the low water line and the upper edge of said gate being above the high water line, said gate being pivotally supported on a horizontal axis below the low water line, and further comprising means for releasably latching said gate in an inclined position to support logs thereon and retain logs in the enclosure means, the upper edge of said gate taking a position below said low water line when said latching means is released.

3,356,059
AERODYNAMIC SAIL CONSTRUCTION
Wallace C. Ross, 13 Academy Lane, Bellport, N.Y. 11713
Filed Nov. 18, 1966, Ser. No. 595,397
3 Claims. (Cl. 114—103)

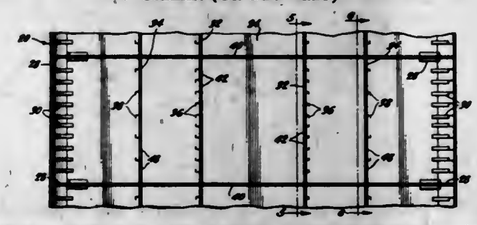
1. An improved aerodynamically shaped spinnaker comprising:

an upper portion of substantially compound curvature consisting of a plurality of vertically disposed gores of sailcloth tapered with increasing width from a minimum at the head to a maximum toward the foot, said gores being shaped with a arcuate vertical edges to produce in combination substantially spherical compound curvature and connected along substantially vertical seams whereby stresses are transmitted along the warp or weft of the sailcloth; a lower portion of substantially simple horizontal curvature consisting of a plurality of horizontal panels of sailcloth connected along substantially horizontal seams; and a seam joining the two portions so that continuity of



the thread line of the warp and weft of the sailcloth between the two portions is preserved.

3,356,060
SHIP STABILIZER
Sheldon B. Field, Floral Park, and Thomas F. Bridges, Port Washington, N.Y., assignors to John J. McMullen Associates, Inc., New York, N.Y., a corporation of New York
Continuation of application Ser. No. 443,951, Mar. 30, 1965. This application May 12, 1967, Ser. No. 638,154
9 Claims. (Cl. 114—125)



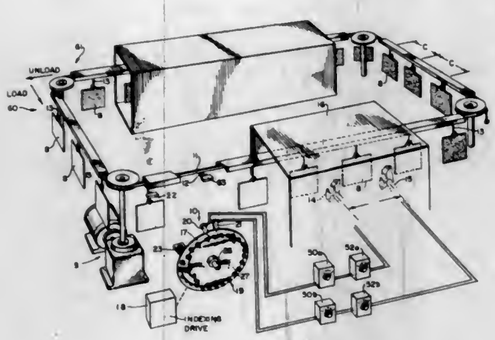
1. A vessel comprising a hull, a deep framing system including a plurality of web frames spaced longitudinally from each other and arranged in vertical planes transverse to the hull, said web frames running down the sides and across the bottom of the hull, a passive tank stabilizer comprising two spaced liquid-tight plates arranged vertically between two decks and extending from one side of the vessel to the other, and defining with the sides of the vessel an elongated enclosed tank having its long dimension mounted transversely to the roll axis of the vessel one of said decks being arranged between the main deck and the inside hull bottom, at least one upstanding, longitudinal structural bulkhead connected between said two transverse plates, a plurality of elongated openings defined in said longitudinal bulkhead having their greater dimension positioned vertically, and a body of liquid partially filling said tank to a level tuning the tank liquid oscillation with the ship roll and so as to generate a transfer wave rather than a standing wave, each of said openings extending above and below the static level of the liquid body and dissipating kinetic energy from the portion of liquid transferring therethrough in response to the roll of the vessel.

3,356,061
PAINT SPRAY CONTROL SYSTEM
Richard F. Wiggins, Fairfield, Conn., assignor to The Gyromat Corporation, Stratford, Conn., a corporation of Connecticut
Filed Mar. 11, 1965, Ser. No. 439,017
1 Claim. (Cl. 118—2)

An automatic control for a conveyorized spray treatment apparatus comprising

(a) a closed conveyor system including spaced suspension means for engaging articles to be sprayed;

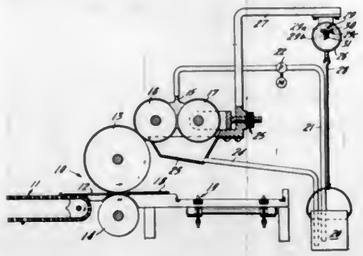
(b) means to drive the conveyor system at a predetermined rate;
(c) a mechanical memory unit analogically representative of at least a portion of the conveyor system and including a plurality of individual control elements;
(d) means to drive the memory unit in accordance with movements of the conveyor system;
(e) spray means associated with the conveyor system and located remotely of said memory unit, said spray means having a predetermined spray range;
(f) means for detecting suspended articles located adjacent the conveyor system and remotely of the spray means;
(g) said individual control elements on the control unit being analogically representative of a different points on the conveyor system and being individually actuable between active and inactive positions;



(h) means for selectively positioning said control elements in active positions in response to the sensing of suspended articles by said detection means;
(i) starting means associated with said control unit and actuatable by control elements in active positions;
(j) a first controllable timer means actuatable by said starting means and operable to actuate said spray means after a first predetermined elapse of time sufficient to accommodate the conveyance of an article to be sprayed into said spray range; and
(k) a second controllable timer means actuatable by said first timer and operable to deactuate said spray means after a second predetermined elapse of time sufficient to accommodate the traverse of said spray range by said article to be sprayed.

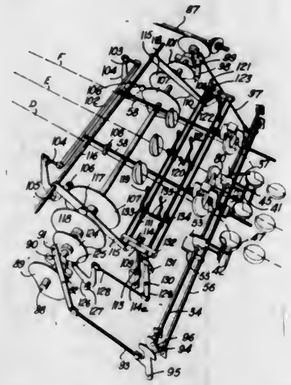
3,356,062
GRAVIMETRIC COATING CONTROL SYSTEM
Joseph Sullivan Crowe, Wood Ridge, N.J., assignor to American Can Company, New York, N.Y., a corporation of New Jersey
Filed June 2, 1965, Ser. No. 460,793
5 Claims. (Cl. 118—7)

1. Apparatus for applying coating material to a plurality of metal sheets comprising an applicator roller, a backup roller, a conveyor for feeding said metal sheets between said rollers, a pair of metering rollers disposed horizontally with respect to one another and one of which engages against said applicator roller, a reservoir to hold a quantity of said coating material, a conduit extending between said reservoir and said metering rollers, a pump to force coating material from said reservoir through said conduit to the nip of said metering rollers, a sump positioned below said metering rolls, a return conduit for directing material falling off of said metering rollers and into said sump to said reservoir, a scale supporting said reservoir and indicating the weight of said reservoir and coating material therein, whereby the weight of coating



material consumed during an interval in which a given number of sheets are coated can be determined to ascertain the amount of coating applied to each of said sheets.

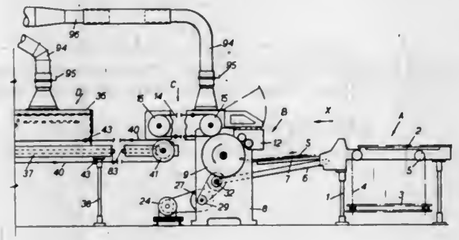
3,356,063
AUTOMATIC MACHINE FOR COVERING CHEESE WITH A COATING HAVING AN EMBEDDED STRIP THEREIN FOR REMOVING THE SAME
Robert Henri Jules Fievet, Paris, Seine, France, assignor to Fromageries Bel-La Vache Qui Rit, Paris, France
Filed Mar. 29, 1966, Ser. No. 538,282
Claims priority, application France, Mar. 30, 1965, 11,155, Patent 1,441,553
18 Claims. (Cl. 118—35)



1. An automatic machine for encircling cheeses having two flat parallel upflow and downflow faces, by means of a thin nonelastic strip lying in a symmetry plane perpendicular to said flat faces, and for covering said cheeses with an impermeable flexible coating substance from which the ends of said strip freely protrude impregnated with said substance, said machine including a conveyor having a plurality of endless chains which have their runs arranged horizontally in parallel vertical planes and are driven in uniform motion and equipped with dual upflow and downflow gripping clamps comprising upflow and downflow gripping arms and grouped by successive sets parallel to conveyor motion and, beneath said conveyor, in succession, means for conveying and restraining, beneath each transverse line of clamps, a line of cheeses; means for continuously encircling the cheeses with continuous strip loops fixed to said clamps; a tank which contains the coating substance in the liquid state and is movable vertically whereby to coat with said substance, by immersion, the cheeses hanging by said strip loops from clamps belonging to the same sets thereof associated

to said chains; pairs of shears carried by a longitudinally movable carriage for simultaneously cutting the two strands protruding from the loops surrounding the coated cheeses hanging from a transverse line of clamps, said cheeses dropping into a coating solidifying tank; and means for ridding said clamps of their waste strip after the cutting operation, a control unit comprising a main motor and an independent motor having a supply circuit and actuating said movable tank being provided to drive sequentially said chains with their associated clamps, together with said conveying and restraining means, continuous-encircling means, coating tank and pairs of shears.

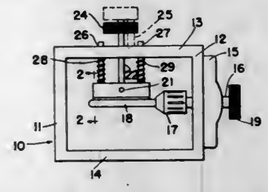
3,356,064
INSTALLATION FOR COATING PAPER AND LIKE SHEETS WITH VARNISH AND THE LIKE
Thomas Burrow Bush, 79 Alma Road, and Henry Norman Bush, 1 St. Chads Ave., both of Leeds, England
Filed Feb. 7, 1966, Ser. No. 525,555
Claims priority, application Great Britain, Feb. 11, 1965, 5,894/65; May 1, 1965, 18,412/65; May 27, 1965, 22,502/65
5 Claims. (Cl. 118—66)



1. An installation for applying liquid varnish and like rapid-drying coating materials to the surface of a sequence of separate and unconnected paper and like sheets, which includes the combination of a coating machine having a cylinder with grippers thereon, means adjacent said cylinder for applying coating material, means for feeding separate sheets to said cylinder grippers, an endless take-off gripper conveyor for taking the successive coated sheets from said cylinder and conveying them by its lower stretch, a tunnel oven dryer having heated drying provision, an endless oven gripper conveyor for taking said successive sheets from said takeoff conveyor and conveying them on its upper stretch through said oven, a cooling tunnel having an endless cooling gripper conveyor for taking the successive sheets from said oven conveyor and conveying them by its lower stretch through said cooling tunnel, means for delivering said sheets from said cooling conveyor, and means for driving and controlling said feeding means, said coating machine and all said gripper conveyors.

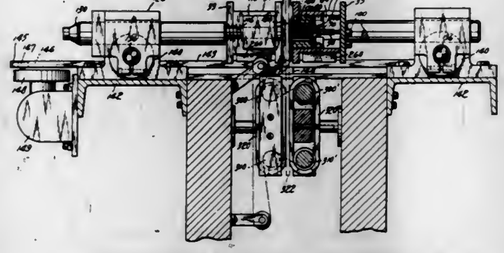
3,356,065
GREASE COATING FIXTURE
Abraham Mertwoy, Dresher, Pa., assignor to the United States of America as represented by the Secretary of the Army
Filed June 29, 1966, Ser. No. 562,448
3 Claims. (Cl. 118—107)

1. A grease coating fixture for lubricant test rods comprising,
a frame having an opposed pair of horizontally spaced sidewalls and an opposed pair of horizontally extending members interconnecting respective end portions of said sidewalls,
a shaft journalled in one of said sidewalls and extending horizontally within said frame,
a chuck carried by said shaft,
a test rod mounted in said chuck and having its outer surface indiscriminately and lightly coated with a predetermined amount of grease,



means on said shaft for rotating said shaft, chuck and rod,
a grease spreading blade having an edge overlying said rod along a substantial portion of its longitudinal axis, and
minute protuberances on end portions of said edge in engagement with said rod outer surface.

3,356,066
APPARATUS FOR COATING METAL ON A SUBSTRATE
Ivar F. Larsson, 198 Long Hill Road, Oakland, N.J. 07436, and Dzidris Pilsetnieks, 88 Pemberton Ave., Plainfield, N.J. 07060
Filed Nov. 8, 1965, Ser. No. 506,694
16 Claims. (Cl. 118—109)

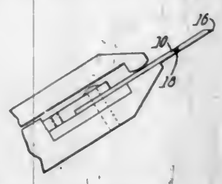


1. Apparatus for coating metal on a substrate comprising
a reservoir of liquid coating material, said reservoir having a feed opening through which said coating material is discharged,
a metal mesh screen covering said opening in said reservoir in contact with said liquid coating material and adapted to have a substrate brushed across it to effect the coating operation,
said mesh screen having a first portion adapted to transmit said liquid coating material onto said substrate as said substrate passes in contact with it,
said mesh screen having a second portion which cannot transmit coating material to said substrate as the substrate passes in contact with it but serves to remove excess coating material from said substrate.

3,356,067
DOCTOR BLADES HAVING RELIEVED ENDS
Leonard L. Krasnow, Worcester, Marshall S. Green, Westboro, and Edward Costello, Warren, Mass., assignors to Lodding Engineering Corporation, Auburn, Mass., a corporation of Massachusetts
Filed Sept. 14, 1966, Ser. No. 579,310
10 Claims. (Cl. 118—123)

1. An elongated doctor blade of generally uniform thickness having a length many times its thickness and a

width several times its thickness, one of the elongated edges of the blade being a working edge adapted to engage a coating material to smooth it over a surface, the opposite edge portion of the blade being adapted to be held in a doctor blade holder, thus providing a generally free working portion of the blade which extends beyond



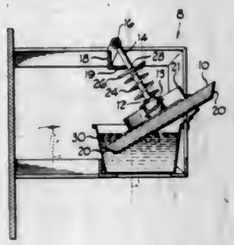
the holder, the latter being generally parallel with respect to said blade,

said doctor blade having areas of reduced material adjacent the opposite end portions and in the free working portion thereof increasing the flexibility of the blade in generally restricted areas adjacent the free working edge portion, at said end portions.

3,356,068
GLUE APPLICATOR

Leroy W. Fritch, Jr., and Ned E. Lee, Vienna, W.Va., assignors to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois

Filed Oct. 31, 1966, Ser. No. 590,861
3 Claims. (Cl. 118—244)



1. A glue applicator for applying a glue line to a package or container, said applicator comprised of:

a support member;

a rotatable applicator member adapted to cooperate with a glue-containing receptacle;

a connecting rod pivotally attached at one end to said support member and pivotally attached at its opposing end to the central portion of the upper surface of said rotatable applicator member;

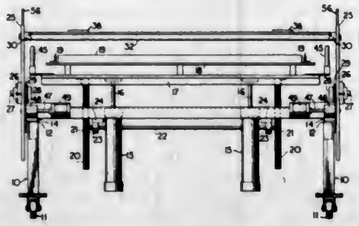
said applicator member adapted to turn on its axis to immerse itself in said glue receptacle and transfer glue from said receptacle to its outer periphery and apply said glue to a package or container that comes in contact with the edge of said applicator member.

3,356,069
SPRAY PAINTING APPARATUS INCLUDING A WORKHOLDER, MASK AND ALIGNING MEANS THEREFOR

Clyde G. Martin, Toledo, Ohio, assignor to Conforming Matrix Corporation, Toledo, Ohio, a corporation of Ohio

Filed May 16, 1966, Ser. No. 550,458
9 Claims. (Cl. 118—301)

1. A multiple spray painting fixture comprising a base, an assembly which is pivotally mounted on the base and which carries a plurality of mountings for supporting a plurality of spray masks in positions that are angularly displaced from one another, a work holder which is slidably mounted on the base and which carries an aligning pin extending in the direction of the sliding movement of the work holder for engaging an aligning aperture in a spray mask carried by the pivotally mounted assembly, in order to align the mask with work which is to be spray painted through the mask and which is held on the work

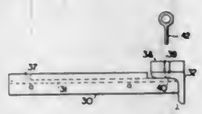


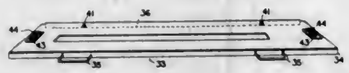
holder, and a pilot pin which is slidably mounted on the base for longitudinal movement, the pivotally mounted assembly having a plurality of apertures each of which is located to receive the pilot pin when the assembly is in an angular position in which an aperture in a spray mask carried by the assembly is substantially aligned with the corresponding aligning pin carried by the work holder.

3,356,070
SPRAY PAINTING FIXTURE

Clyde G. Martin, Toledo, Ohio, assignor to Conforming Matrix Corporation, Toledo, Ohio, a corporation of Ohio

Filed May 16, 1966, Ser. No. 550,460
2 Claims. (Cl. 118—301)





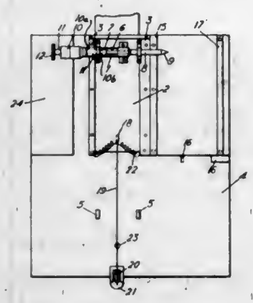
1. A spray painting fixture comprising a frame having a pair of inwardly directed parallel grooves for slidably receiving the side edges of a spray mask, and having an abutment for limiting the rearward sliding movement of the mask in the grooves, in order to locate the mask in its rearmost position, said frame having a member which overlies a portion of the mask when the mask is in its rearmost position, a spray mask having parallel side edges which fit in the grooves, and a depending flange on the mask which extends along substantially the entire rear edge of the mask but terminates short of both side edges to permit both side edges to enter the grooves, said member and said mask being provided with apertures which are vertically aligned when the mask is in the rearmost position, and a pin positioned in said apertures for retaining the mask in such position.

3,356,071
CHROMATOGRAPHIC STREAKING MACHINE

Eric R. Brown, Newcastle-upon-Tyne, England, assignor to Sterling Drug Inc., New York, N.Y., a corporation of Delaware

Filed June 15, 1965, Ser. No. 464.024
Claims priority, application Great Britain, June 17, 1964, 25,153/64
3 Claims. (Cl. 118—410)

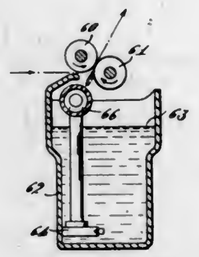
1. A chromatographic streaking device for applying to a surface a continuous line of liquid, said device comprising a carriage, guide means in which said carriage is guided for movement, a hollow needle through which liquid can be ejected, a syringe on one end of which the hollow needle is mounted and comprising a tubular portion having a uniform bore and opening into said hollow needle for holding the liquid for feeding to the hollow needle, a piston head mounted in said uniform bore, and a connecting rod having one end in contact with said piston head, a drive wheel, micrometer measuring means mounted on said carriage and being coupled to said connecting rod and said drive wheel for moving said connecting rod when said drive wheel rotates, said drive wheel, connecting rod and micrometer measuring means being in coaxial alignment, a fixed surface against which said drive wheel is engaged and along which said drive wheel rolls for rotating the drive wheel, and sheet holding means adjacent said hollow needle for holding a sheet along which said hollow needle moves and deposits liquid when said carriage moves.



3,356,072
APPARATUS FOR DEVELOPING ELECTROSTATIC IMAGES

Donald D. Sloan, Weston, Mass., assignor to Dennison Manufacturing Company, Framingham, Mass., a corporation of Nevada

Filed Oct. 12, 1966, Ser. No. 586,146
3 Claims. (Cl. 118—637)



1. For developing electrostatic images on sheet material, apparatus comprising means for feeding the material along a predetermined path, opposed squeegee members on opposite sides of the path for squeegeeing the material as it passes through the nip therebetween, the member on the image side of the material being a roller, and a nozzle for directing a stream of developer against said roller in said nip, so that the stream strikes the roller obliquely and is deflected against the material, thereby to produce vigorous turbulence at the image side of the material.

3,356,073
METHOD OF OPERATING HIGH PRESSURE STEAM GENERATORS

Mortimer C. Bloom, Washington, D.C., assignor to the United States of America as represented by the Secretary of the Navy

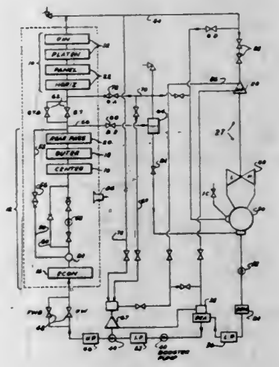
No Drawing. Filed June 30, 1966, Ser. No. 562,950
3 Claims. (Cl. 122—379)

1. In the operation of a steam generator at high pressures of at least 350 p.s.i. in which the steam is generated by contacting the water with a heated steel surface, the improvement which comprises operating said generator at said high pressures with boiler feed water which is alkalized with lithium hydroxide to a pH in the range of 9 to 12 and contains in solution an amount of the neutral lithium salt of ethylenediamine tetraacetic acid which is in small excess of that required for chelation of all the polyvalent metal ions in the feed and boiler water.

3,356,074
VAPOR GENERATING ORGANIZATION AND METHOD

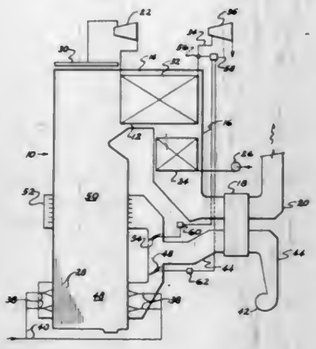
Frederick J. Hanzalek, Suffield, Conn., assignor to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware

Filed July 12, 1965, Ser. No. 471,029
7 Claims. (Cl. 122—406)



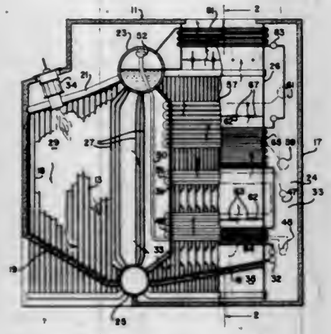
2. In a once through flow vapor generator providing the motive fluid for a turbine generator unit the improved method comprising burning fuel and producing high temperature high pressure vapor, utilizing this vapor in said unit to generate electricity, utilizing a portion of the energy evolved by the burning of the fuel to continuously maintain a source of vapor at a pressure substantially reduced with relation to said high temperature pressure vapor and in sufficient quantity to effect a hot re-start of the vapor generator, incident to a hot trip of the vapor generator effecting a hot re-start thereof by recirculating fluid through the portion of the through flow circuit that has the highest rate of heat absorption during startup, conveying vapor from said low pressure source to a turbine drive to drive the main feed pump to establish a through flow through the through flow circuit of the vapor generator, simultaneously therewith introducing fuel into and burning the same within the vapor generator and raising the temperature of the fluid therein to the desired value for operation of the turbo generator unit.

3,356,075
METHOD OF PULVERIZED COAL FIRING A STEAM GENERATOR AND CONTROLLING STEAM TEMPERATURE
William L. Livingston, Burnsville, Minn., assignor to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware
Filed Oct. 12, 1965, Ser. No. 495,286
8 Claims. (Cl. 122—479)



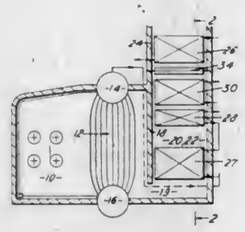
1. The process comprising introducing pulverized coal and air into a first zone at a ratio such that the quantity of air is above 40% and below 80% of the stoichiometric amount necessary for burning of the fuel, maintaining at said first zone a temperature of at least 1800° F., reacting said air with said coal in said zone to produce CO gas, conveying this gas from said first zone to a second zone, introducing sufficient air into said second zone to convert said CO to CO_2, reacting said CO with said air to produce said CO_2, conveying said CO_2 from said second zone, imparting heat to a fluid from said first and said second zones and from the gases leaving said second zone.

3,356,076
VAPOR GENERATOR
Warren Ivar Signell, Livingston, N.J., assignor to Foster Wheeler Corporation, New York, N.Y., a corporation of New York
Filed Feb. 2, 1966, Ser. No. 524,561
7 Claims. (Cl. 122—480)



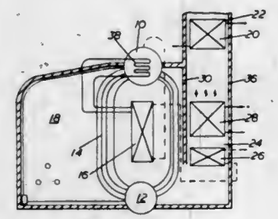
1. A vapor generator comprising:
a setting having a furnace chamber therein;
means for firing said furnace chamber thereby producing combustion gases;
an upper liquid-vapor drum and a lower liquid drum disposed in said setting;
vapor generating tubes communicating at one end with the liquid-vapor drum and at the other end with the lower liquid drum;
a division wall extending between the upper liquid-vapor drum and the lower liquid drum and defining an opening along its lower end to permit the flow of combustion gases therethrough, said division wall separating said furnace chamber into an inner radiant chamber wherein said means for firing and said vapor generating tubes are located and an outer convection chamber;
a by-pass wall vertically oriented within said outer convection chamber to separate said outer convection chamber into a by-pass compartment having a by-pass discharge opening at its upper end for discharging combustion gases and a heater compartment having a heater discharge opening in its upper end for discharging combustion gases;
a superheater located in the lower portion of said heater compartment, said by-pass wall having an opening therein above at least a substantial portion of said superheater;
a reheater located above said superheater and above said opening in said by-pass wall within said heater compartment;
a superheater control means for controlling the flow of gases through the portion of the by-pass compartment below the opening in the by-pass wall and through the superheater bank below the opening in the by-pass wall; and
a reheater control means for controlling the flow of gases through the portion of the by-pass compartment above the opening in the by-pass wall and through the reheater bank.

3,356,077
STEAM GENERATORS
Leonard James Culver, London, England, assignor to Foster Wheeler Corporation, New York, N.Y., a corporation of New York
Filed Apr. 4, 1966, Ser. No. 539,693
Claims priority, application Great Britain, Apr. 2, 1965, 14,132/65
4 Claims. (Cl. 122—480)



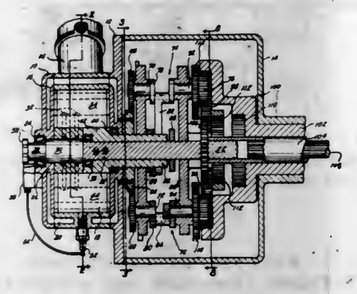
1. A vapor generator comprising:
a setting having a furnace chamber therein, said furnace chamber having a floor;
means for firing said furnace chamber thereby producing combustion gases;
a division wall vertically located and having a lower end above the floor of said furnace chamber to form an opening to permit the flow of combustion gases under the division wall, said division wall separating said furnace chamber into an inner radiant chamber with said means for firing and an outer convection chamber;
a primary superheater located in said convection chamber directly above the lower end of said division wall;
a bypass wall within said convection chamber and located at substantially right angles with said partition wall and also extending vertically upwardly from said primary superheater, said bypass wall separating a portion of said convection chamber into a heat absorbing compartment and reheat compartment;
a secondary superheater located in said reheater compartment;
a reheater located in said reheater compartment above said secondary superheater;
heat absorbing means located in said heat absorbing compartment; and
means for controlling the relative flow of gases between said reheater compartment and said heat absorbing compartment.

3,356,078
STEAM GENERATORS
Kenneth Thomas Disley, Addington, England, assignor to Foster Wheeler Corporation, Livingston, N.J., a corporation of New York
Filed Apr. 4, 1966, Ser. No. 552,357
5 Claims. (Cl. 122—480)



1. A vapor generator comprising:
a setting having a furnace chamber therein, said furnace chamber having a floor;
means for firing said furnace chamber thereby producing combustion gases;
a division wall vertically located and having a lower end above the floor of said furnace chamber to form an opening to permit the flow of combustion gases under the division wall, said division wall separating said furnace chamber into an inner radiant chamber with said means for firing and an outer convection chamber;
a primary superheater located in said inner radiant chamber;
a bypass wall within said convection chamber and located at substantially right angles with said partition wall and also extending vertically upwardly, said bypass wall separating a portion of said convection chamber into a heat absorbing compartment and a reheat compartment;
a secondary superheater located in said reheater compartment;
a reheater located in said reheater compartment above said secondary superheater;
heat absorbing means located in said heat absorbing compartment; and
means for controlling the relative flow of gases between said reheater compartment and said heat absorbing compartment.

3,356,079
ROTARY INTERNAL COMBUSTION ENGINE
Melvin T. Rolfsmeyer, Lincoln, Nebr., assignor to Virmel Corporation, Lincoln, Nebr., a corporation of Nebraska
Continuation of application Ser. No. 343,540, Feb. 10, 1964. This application Nov. 29, 1966, Ser. No. 597,797
3 Claims. (Cl. 123—11)

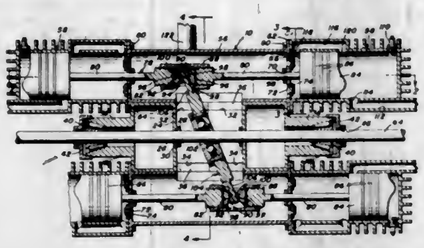


1. In a rotary internal combustion engine having an electrical ignition system and means for supplying a fuel-air mixture, a cylindrical-shaped combustion chamber and a drive and transmission housing, a main drive shaft extending axially through the combustion chamber and partially through the drive and transmission housing, a second and shorter drive shaft telescoped over a portion of the main drive shaft also extending into the drive chamber, a pair of segmental pistons located in the cylindrical combustion chamber at diametrically opposed positions and secured to the main drive shaft, another set of pistons secured to the second shaft for reciprocatory motion with respect to the first piston and rotary motion of the pistons as a whole, means for securing reciprocatory and rotary motion of the piston including a gear secured to the inner wall of the transmission housing adjacent the combustion chamber and concentric with the drive shafts, and a fly wheel of two parts, with one part mounted on the second shaft adjacent the gear and the other part mounted on the main shaft, a pair of crank shafts mounted for rotation transversely in opposite relation through the fly wheel parts, pinion gears on the end of the crank shaft adjacent to and meshing with the first named gear, cranks one on the main drive shaft and another on the second drive shaft and connecting rods from one crank to the crank of the first crank shaft and the other to the crank of the second crank shaft, a driven shaft for furnishing power, and means for furnishing direct drive power from the fly wheel to the driven shaft including an internal gear engaged to the fly wheel and a pinion gear slidably mounted on the driven shaft for engaging and disengaging the fly wheel connected internal gear.

3,356,080
INTERNAL COMBUSTION ENGINE WITH WOBBLE PLATE SHAFT DRIVE
William C. Howard, Olden, Tex., assignor of thirty-three percent to Thomas W. Wooton and thirty-three percent to William A. Morgan, Midland, Tex.
Filed Dec. 29, 1965, Ser. No. 517,244
6 Claims. (Cl. 123—48)

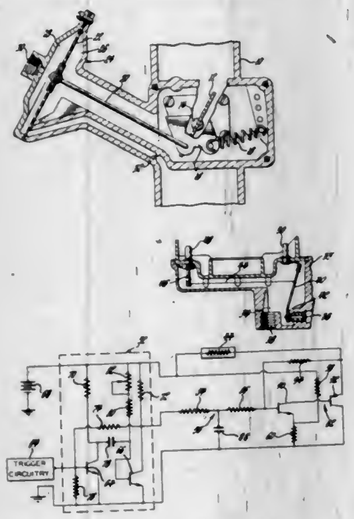
1. A movement transmitting assembly comprising a journaled shaft, a drive member, first means mounting said drive member for reciprocation along a path generally paralleling the axis of rotation of said shaft, said first means including means operative to vary the spacing between said path and said axis, and second means drivingly connecting said reciprocal member and said shaft for

rotation of said shaft in response to reciprocatioh of said drive member and operable to vary the length of the stroke



of reciprocation of said drive member as the distance between said path and said axis is varied.

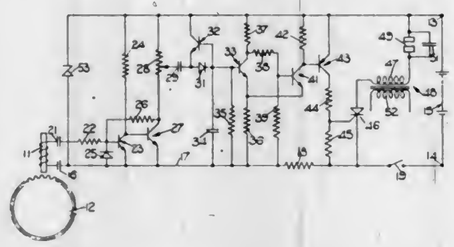
3,356,081
ELECTRONIC GOVERNOR
David S. Dennis, Chesterfield, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 21, 1964, Ser. No. 419,997
4 Claims. (Cl. 123—102)



3. An electronic governor for an internal combustion engine of a motor vehicle, said engine having throttle means biased toward an open position, said governor comprising control means responsive to heat generated by electrical current flow for moving said fuel control means toward a closed position, means operatively associated with said vehicle for developing an input signal having a frequency proportional to the actual speed of said vehicle, a monostable multivibrator responsive to said input signal and having an unstable operating time proportional to a desired governing speed for developing a pulsating output signal, means responsive to said output signal for developing an average output signal, switching amplifier means for connecting said heat sensitive control means to a source of current in response to said average output signal exceeding a predetermined value.

4. A governor for an engine having fuel control means movable between an open and closed position and normally biased toward one of said positions, pressure responsive actuator means for moving said fuel control means toward said other position, valve means for controlling the pressure in said actuator means, said valve means including a valve port, a valve member to open and close said port, spring means normally biased in said valve member in a first direction, thermally responsive valve control means comprising a heat expansible element operative upon said spring means and normally exerting a force on said spring means in a direction opposite to said first direction, circuit means comprising means operatively associated with said engine for developing an input signal having a frequency proportional to the actual speed of said engine, multivibrator means responsive to said input signals for developing an output signal having a pulse width related to a desired governing speed and a pulse rate related to the frequency of the input signal, means responsive to said output signal for developing an average output signal and amplifier means connected with said heat expansible element and responsive to said average output signal exceeding a predetermined value.

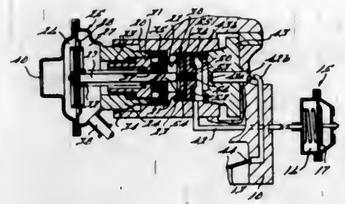
3,356,082
SPARK IGNITION CIRCUIT
Norman Alfred Jukes, Walsall, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England
Filed Nov. 4, 1965, Ser. No. 506,357
Claims priority, application Great Britain, Dec. 2, 1964, 48,947/64
1 Claim. (Cl. 123—102)



A spark ignition circuit for use with an internal combustion engine having spark plugs and a toothed starter gear ring, comprising in combination an ignition transformer having a primary winding and a secondary winding, said ignition transformer producing sparks at said plugs in turn, a magnetic pick-up winding associated with said starter gear ring, said starter gear ring producing pulses in said magnetic pick-up winding when the engine is operating at a frequency proportional to engine speed, a capacitor, an integrating circuit coupling said capacitor to said magnetic pick-up winding whereby a voltage proportional to engine speed is developed across said capacitor, and a control circuit coupling said capacitor to said primary winding, said control circuit being sensitive to the voltage across said capacitor and stopping current flow in said primary winding when said voltage reaches a predetermined value.

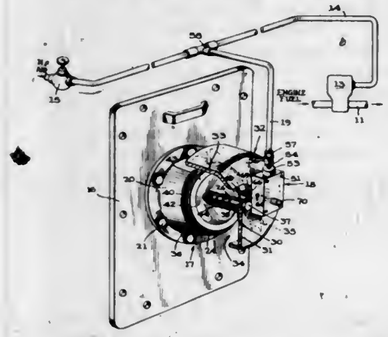
3,356,083
DISTRIBUTOR VACUUM ADVANCE VALVE
Robert E. Clark and Jorma O. Sarto, Orchard Lake, Mich., assignors to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware
Filed Feb. 1, 1966, Ser. No. 524,230
9 Claims. (Cl. 123—117)

1. In combination, a pair of axially spaced valve seats defining a corresponding pair of ports, an axially reciprocable valve plunger extending axially through one of said ports into the space between said valve seats, valve means in said space adapted to seat selectively at either of said valve seats to close the corresponding port, and means for mounting said valve means on said plunger for limited universal pivoting thereon to accommodate cocking of said plunger relative to said valve means when the latter is seated at either of said valve seats including an axial hole in said valve means oversize with respect to said



plunger and having the latter extending loosely therein and also including interengaging means carried by said plunger and valve means for selectively shifting the latter to seat at one or tbe other oi said valve seats upon axial shifting of said plunger in one direction of the opposite.

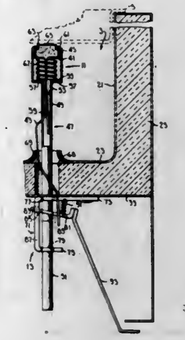
3,356,084
APPARATUS FOR SHUTTING DOWN AN INTERNAL COMBUSTION ENGINE UPON THE OCCURRENCE OF A CRANKCASE EXPLOSION THEREIN
Charles L. Parsons, R.D. 2, Corning, N.Y. 14830
Filed Aug. 31, 1966, Ser. No. 576,373
10 Claims. (Cl. 123—198)



1. Apparatus for shutting down an internal combustion engine having a crankcase upon the occurrence of a crankcase explosion therein, comprising a relief valve assembly adapted to be mounted on the crankcase having a valve seat and a valve member normally maintained in closed position but movable outwardly from said seat in response to an increase in the pressure of the explosive mixture in the crankcase in excess of a predetermined value, and means actuated by outward movement of said valve member for shutting down the engine.

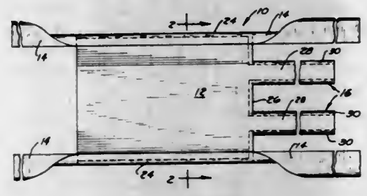
3,356,085
FOOD WARMER
James M. Johnson, Ladue, Mo., assignor to Duke Manufacturing Co., St. Louis, Mo., a corporation of Missouri
Filed Oct. 23, 1965, Ser. No. 503,851
11 Claims. (Cl. 126—37)

1. A food warmer comprising
a body formed with at least one compartment open at the top for reception of one of pans of different depth with the pan inset in the compartment,
means below said compartment for heating the compartment,
and thermostatic means for controlling said heating means comprising
a heat-sensing element adapted to contact the bottom of a pan,
a holder for said element
and means mounting said holder for up and down movement in said compartment for adjustment of said



holder throughout a range sufficient for placing said element in contact with the bottom of any pan received in the compartment, and means independent of the pan for maintaining said holder in adjusted position with said element in contact with the bottom of the pan.

3,356,086
ULTRASONIC ENERGY COUPLING
Charles A. Behney, Cochise Lane, Bisbee, Ariz. 85603
Filed Aug. 24, 1965, Ser. No. 482,171
4 Claims. (Cl. 128—24)

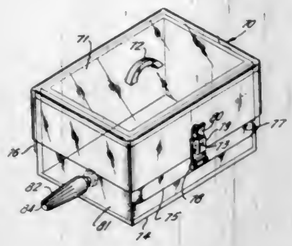


1. An applicator for an ultrasonic treatment head comprising a flat generally rectangular expansible bag formed of plastic sheet material capable of being heat-softened, and defining an internal chamber adapted to contain a quantity of ultrasonic energy transmitting liquid, said bag being heat-sealed along at least three adjacent marginal edges thereof, an integral filler tube projecting outwardly of the bag, in communication with said internal chamber and of sufficient length that a sealing knot may be tied therein, and fastening tapes connected to the end portions of the bag.

3,356,087
EUTHANASIA APPARATUS
Yolan R. Guttman, 1815 Davidson Ave., New York, N.Y. 10453
Filed Feb. 10, 1966, Ser. No. 526,556
6 Claims. (Cl. 128—172)

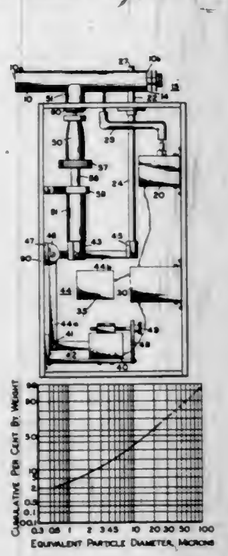
1. Animal euthanasia apparatus for use in administering lethal concentrations of carbon dioxide gas, comprising a chamber consisting of separable upper and lower telescoping portions establishing a predetermined internal volume when closed, each of said portions having at least four walls and a base, the edges of the inner portion

when said portions are telescoped together, being seated against the base of the other portion, and said portions being relatively dimensioned to effect a snug substantially airtight fit therebetween when telescoped together, a



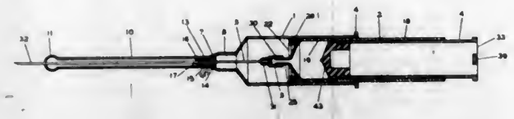
source of gas, and a valve providing a unidirectional input port in one of said portions, said source being connected to said port for admitting gas from said source to said chamber.

3,356,088
BREATH-CONTROLLED ANESTHETIC APPLICATOR AND METHOD OF OPERATION
Sidney W. Nelson, Columbus, Ohio, assignor to The Board of Trustees of the Ohio State University, Columbus, Ohio, an institution of Ohio
Filed Sept. 25, 1963, Ser. No. 311,461
14 Claims. (Cl. 128—188)



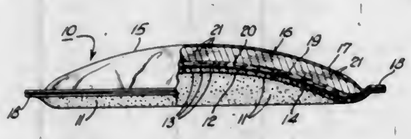
1. A closed loop system for incrementally administering a predetermined amount of medications to a patient comprising; a patient's breathing means having a first opening adapted to be received by the patient, an oppositely positioned second opening including a two-position element cyclically closing said opening upon inhalation and providing an air outlet upon exhalation, means containing an aerosolized medicated agent having a dispensing means also opening into said breathing means, and means connected to said breathing means and operative with said two-position element for cyclically activating said dispensing means upon inhalation and for deactivating said dispensing means upon exhalation of the patient.

3,356,089
INJECTION NEEDLE GUIDE
Howard R. Francis, Provo, Utah 84601
Filed Mar. 1, 1965, Ser. No. 436,004
5 Claims. (Cl. 128—221)



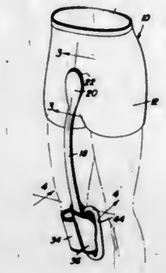
1. A hypodermic syringe comprising a hollow light-transmitting smooth bore outer barrel open at one end, a cylinder adapted to receive a plunger and having a smooth exterior surface slideably mounted in the barrel through and extending beyond the open end of the barrel and visible through the wall of the barrel, means interposed between the bore of the barrel and the exterior surface of the cylinder to frictionally restrain the cylinder in any selected one of a number of incrementally distinct positions relative to the barrel, a long hypodermic needle sheath having inside and outside diameters each several times smaller than the inside and outside diameters of the barrel, respectively, and being mounted at one end thereof on a second generally closed end of the barrel, a long needle mounted on the forward end of the cylinder and always extending through and well beyond the small opening and loosely extending through at least almost the entire length of the enclosing needle sheath, said barrel carrying graduations so that the cylinder may be selectively positioned within the barrel relative to the barrel graduations (a) for locating the needle tip slightly within the sheath at the leading end of the sheath to accommodate precise location and removal of the leading end of the sheath adjacent the body of a patient prior to and following penetration, respectively, and (b) for advancing the needle tip from the selectively positioned leading end of the sheath a distance corresponding to the barrel graduations caused to be traversed by the cylinder to inject only the needle tip to a desired depth into the patient at said precise location.

3,356,090
ABSORBENT BREAST PAD
Oliver S. Plantinga, Princeton, and Marta Deker, New Brunswick, N.J., assignors to Johnson & Johnson, a corporation of New Jersey
Filed Apr. 30, 1965, Ser. No. 452,111
5 Claims. (Cl. 128—280)



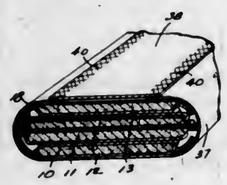
1. An absorbent cupped breast pad having a concave inner surface and a convex outer surface said concave inner surface being formed of a resilient water-repellent cellular sheet, a first absorbent zone containing an absorbent fiber web formed of water wetable fibers adjacent said cellular sheet, fibers from said web extending through said cellular sheet as fiber bundles to form fluid conducting channels extending through said cellular sheet said fiber bundles acting to conduct fluids from the outer surface of said cellular sheet to said first absorbent zone, a second absorbent zone formed of a plurality of sheets of absorbent cellulose wadding, and a water impervious sheet adjacent said second absorbent zone on the convex side of said breast pad said second absorbent zone being between said first absorbent zone and said water impervious sheet, and a rim extending around said breast pad formed from the compression of said materials.

3,356,091
GARMENT WITH WASTE DISPOSAL FACILITIES
Vivian N. Patterson, 455 W. Ardenwood Drive, Baton Rouge, La. 70806
Filed Dec. 23, 1964, Ser. No. 420,715
4 Claims. (Cl. 128—286)



3. A garment having waste disposal facilities therein comprising a body member having an opening for alignment with a waste discharge area of a wearer, an elongated flexible tube attached to said body member in communication with the opening and adapted to extend alongside of the leg of the wearer, the free end of said tube being open, and leg engaging means supporting the free end of said tube, said leg engaging supporting means including means engaging and closing the open end of said tube.

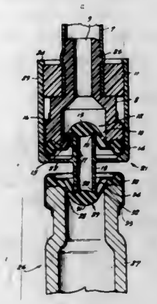
3,356,092
MULTI-PLY PADS OR PAD FILLERS
Curt G. Joa, Ocean Ridge, Fla.
(Box 1121, Boynton Beach, Fla. 33435)
Filed Nov. 20, 1964, Ser. No. 412,671
9 Claims. (Cl. 128—287)



1. A pad or pad filler comprising superposed mat plies, inner wrappers sealed individaully about the ends of each mat ply and an outer wrapper about the superposed assembled plies said mat plys being interlinked at the ends by intermediate portions of said inner wrappers.

5. A method of fabricating a pad or pad filler having superposed mat plies comprising the steps of feeding a plurality of ribbon strips of mat material in laterally spaced side-by-side relation, feeding top and bottom wrapper sheet material over the entire width of the said plurality of ribbon strips at the top and bottom faces thereof, sealing said top and bottom wrapper sheet material together across the lateral spacing between mat ribbon strips to form bendable links laterally therebetween, and folding said strips laterally into superposed relation.

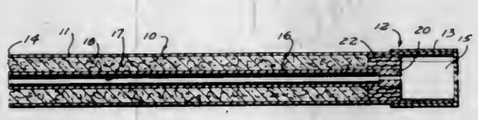
3,356,093
VALVED CATHETER
Richard M. Monahon, Basking Ridge, N.J., assignor to Oel, Incorporated, Elizabeth, N.J., a corporation of New Jersey
Filed Mar. 25, 1965, Ser. No. 442,716
6 Claims. (Cl. 128—349)



1. A cathether comprising an elongated drainage tube, an expandable chamber surrounding said drainage tube, a second elongated tube communicating with said chamber for introducing fluid into said chamber and removing fluid therefrom, substantially rigid tubular means having opposed open ends one of which is fixed to and communicates with a free end of said second tube and the other of which is located beyond said free end of said second tube, substantially rigid valve-seat means fixed to said substantially rigid tubular means at said other end thereof and extending across said other end thereof to provide a valve seat at said other end of said substantially rigid tubular means, a flexible resilient valve member clamped between said substantially rigid tubular means and said valve-seat means and having a central valve portion engaging said valve-seat means to close said second tube, said valve member being formed beyond said central portion thereof with at least one opening passing therethrough so that when said valve member is displaced from said valve-seat the interior of said second tube and thus of said expandable chamber can communicate through said opening of said valve member and through said valve-seat with the space beyond said valve-seat means, an elongated tubular fluid guide substantially coaxial with said valve-seat, and having opposite open ends one of which is adjacent said central portion of said valve member, the outer diameter of said tubular fluid guide being small enough to permit the latter to pass through said valve-seat so that displacement of said fluid guide against said central portion of said valve member will displace said central portion of said valve member away from said valve-seat to permit fluid to escape from or enter into said second tube, and at least partly flexible means connecting said tubular fluid guide to said valve-seat means for axial movement so that axial movement of said tubular fluid guide will displace said valve member toward or away from said valve-seat for opening or closing said second tube, said tubular guide being formed at its end which engages said valve member with a notch through which fluid can flow at said valve-seat into said tubular guide when the latter displaces said valve member away from said valve seat, said flexible means which connects said tubular fluid guide to said valve-seat means being in the form of a flexible diaphragm carrying said tubular guide and fixed with said valve-seat means, said diaphragm being fixed to said tubular guide intermediate the ends of the latter and said tubular guide having an outer elongated exposed portion extending beyond said

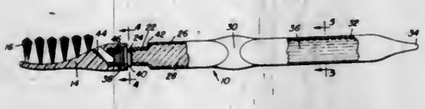
flexible diaphragm, and exposed beyond said second tube so as to be freely accessible, said flexible means for connecting said tubular fluid guide to said valve-seat means being situated in its entirety at a side of said diaphragm which extends from the latter in a direction opposite to the direction in which said outer exposed portion of said tubular guide extends from said diaphragm, whereby in order to release fluid from said expandable chamber it is only necessary to displace said tubular guide at said outer elongated exposed portion thereof inwardly toward said valve-seat means to displace said valve member away from said valve seat.

3,356,094
SMOKING DEVICES
Charles Drummond Ellis, Seawards, Cookham Dean, and Ivor Wallace Hughes, Hillhead, Fareham, England, assignors to Battelle Memorial Institute, Columbus, Ohio, a corporation of Ohio
Filed Sept. 22, 1965, Ser. No. 489,137
14 Claims. (Cl. 131—266)



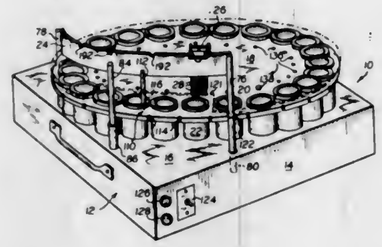
1. An improved smoking device assembly having a mouthpiece end and an ignition end through which air may be drawn comprising: a cylindrical wrapper formed around the device and extending longitudinally thereof; a central tube arranged concentrically therein so as to provide a space inside the tube and an annular space between the wrapper and tube, said tube being made of a material selected from the group consisting of materials which are destructively affected by heat from the burning tobacco, frangible materials and materials which are rendered frangible at the burning temperature of the tobacco material so that any portion of the tube projecting beyond the burning end of the tobacco material can be readily eliminated; a source of additive material releasable into the air when subjected to an elevated temperature disposed in one of said spaces; tobacco material disposed in the other of said spaces so as to heat said source of additive material when it is ignited and means controlling the relative proportion of air passing through the respective spaces.

3,356,095
COMBINATION DISPOSABLE FOUNTAIN TOOTHBRUSH DENTIFRICE DISPENSER AND ORAL RINSE CONTAINER
John A. Tylle, Box 119, E. 8th St., Columbus, Nebr. 68601
Filed July 11, 1966, Ser. No. 564,103
8 Claims. (Cl. 132—84)



1. A combination fountain brush, brushing material dispenser, and liquid container comprising a brush head, bristle means mounted thereon, a conduit extending from said bristle means toward but short of one end of said brush head, said conduit terminating in a puncturing means, said one end having a nesting aperture therein extending into said brush head about said puncturing means on the end of said conduit, and a two compartment elongated fountain tube handle having one sealed male end of one compartment complementary to said nesting aperture in said brush head end, means for holding said sealed male end in said nesting aperture in non-puncturing position as well as in punctured position, a breakable tip at the opposite end of said elongate handle connected to the second compartment therein, a brushing material in said first mentioned compartment, and a liquid complementary in use to said brushing material in said second compartment.

3,356,096
AUTOMATIC IMMERSION APPARATUS
Hugh J. Davis, Baltimore, Md., and Irwin S. Lerner, Greenwich, Conn., assignors to Lerner Laboratories, Inc., Greenwich, Conn., a corporation of Connecticut
Filed Dec. 22, 1965, Ser. No. 515,663
19 Claims. (Cl. 134—58)

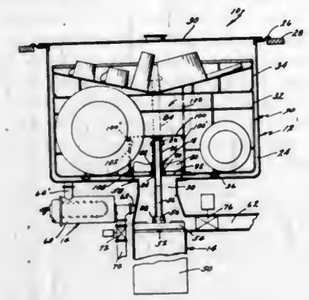


1. Automatic immersion apparatus for sequentially moving material into and out of a plurality of receptacles in a horizontal row, comprising means for supporting the plurality of receptacles in a horizontal row, means for supporting the material, means for raising and lowering said material support for moving material supported thereby out of and into a receptacle, means for moving said receptacle support horizontally for moving one of the receptacles in a row out of register with said material support and for moving another of the receptacles into register with said material support, and means for timing said last two mentioned means for operating said receptacle support moving means when said material support is in its raised position, said material support moving means, said receptacle support moving means and said timing means comprising a rotatable member having a pair of related mutually perpendicular cam surfaces thereon, one of said surfaces being included in each of said moving means.

3,356,097
COMBINATION DISPOSAL AND WASHER
Theodore Schaap, 2521 Brookside Drive SE., Grand Rapids, Mich. 49507
Filed May 21, 1965, Ser. No. 457,760
12 Claims. (Cl. 134—112)

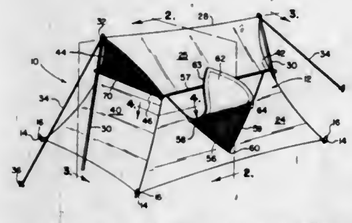
9. An insert, dish receiving basket for insertion into a sink having a bottom outlet conduit and a motor driven garbage disposal unit on said conduit with a rotational end portion in said conduit, comprising: an open-mesh basket element having a bottom to rest on the sink bottom over the conduit; rotational bearing means mounted on said basket and thereby being integral therewith with a vertical axis in the center of said open-mesh basket bottom; fluid propulsion impeller means rotationally suspended on a vertical rotation axis in said bearing means to be rotatable with respect thereto and being movable with said basket as it is inserted into and removed from

a sink; and said impeller means including a depending drive-element-engaging socket adapted for engagement



with the rotational disposal end portion forming a releasable driving relation therewith.

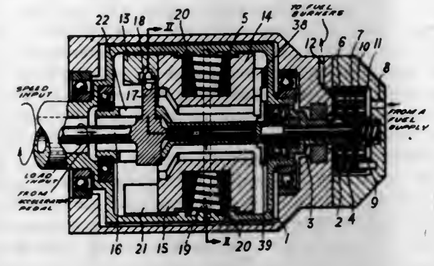
3,356,098
TENT
Klaus E. B. Krutzikowsky, 4331 Lowell Ave., Chicago, Ill. 60641
Filed Oct. 22, 1965, Ser. No. 501,480
7 Claims. (Cl. 135—1)



1. A tent formed of a flexible, water-repellent material, comprising interconnected front, rear and end wall elements secured at their lower edges to a supporting surface therebeneath to define a tent enclosure therewithin, the front and rear wall elements being interconnected at the top of the tent along a straight ridge line, poles connected at corresponding upper ends to the wall elements at the ridge line and extending to the supporting surface in outward adjacent relationship to the end wall elements, guide lines connected to the wall elements at the ridge line and extending therefrom for maintaining said poles erect, the end wall elements extending upwardly from the supporting surface to a medial eave line and thereafter having generally planar upper portions diverging from the medial eave line to said ridge line, a rigid cross member disposed outwardly adjacent each end wall element at the medial line between the front and rear wall elements operable to hold said front and rear wall elements taut and to cause upper portions thereof to diverge at a first included angle from the ridge line to the medial eave line and to cause lower portions thereof to diverge at a second more acute included angle from the medial eave line to the supporting surface, and an access opening for the tent in the lower portion of the front wall element.

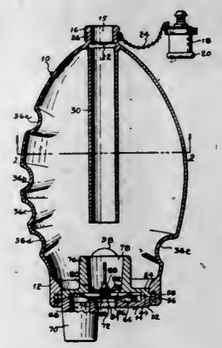
3,356,099
CAM CONTROLLED REGULATING DEVICE FOR AN INJECTION SYSTEM OPERATING ON THE DISTRIBUTOR PRINCIPLE
Friedrich Anton Franz Schmidt, 10 Dr.-Seitz-Strasse, Murnau, Germany
Filed Sept. 13, 1965, Ser. No. 486,743
18 Claims. (Cl. 137—26)

1. A fuel regulating device comprising a distributor injection means having fuel passage means therethrough, a centrifugal governor associated with an input shaft, a cam member movable radially of said input shaft by said centrifugal governor, a cam tracer carried by an intermediate shaft, and first and second means for varying the cross section of said passage means in speed dependent and speed independent relation respectively, relative to said input shaft, said first means comprising at least one



spring having a pre-selected deflection characteristic and cooperating with said governor for relative movement of said cam member and cam tracer; said second means including means responsive to an external load being associated with said intermediate shaft for movement of said cam tracer relative to said cam member.

3,356,100
BREATHING CONTROL VALVE AND OPERATOR THEREFOR
Henry W. Seeler, 3142 Atherton Road, Dayton, Ohio 45409; Gerda A. Seeler, executrix of said Henry W. Seeler, deceased
Filed Nov. 7, 1962, Ser. No. 236,029
19 Claims. (Cl. 137—102)



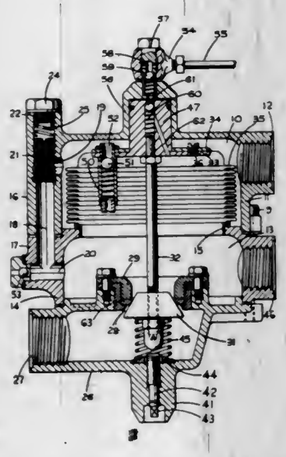
1. A valve assembly including a housing defining a fluid receiving chamber, said housing having spaced opposed first and second walls facing opposite sides of said chamber, said first and second walls having first and second apertures respectively, each said aperture establishing communication between said fluid receiving chamber and the exterior of said housing, said apertures being approximately aligned on opposite sides of said chamber, said first wall having a ridge surrounding the aperture therein and projecting inwardly of said fluid receiving chamber to form a valve seat, said second wall having a valve seating surface surrounding the aperture therein and facing said fluid receiving chamber, an imperforate pliable valve plate interposed between said first and second walls and between the apertures therein, said valve

plate having a rest position in which one side thereof substantially contacts said valve seat and in said rest position having on the opposite side thereof an annular surface portion substantially engaging the valve seating surface of said second wall in surrounding relation to the aperture therein, said annular surface portion surrounding an area of said valve plate which is greater than and includes the area of said valve plate which contacts said valve seat, and valve mounting means comprising one part attached to said housing and another part attached centrally to said valve plate and received in said one part to retain said valve plate between said apertures, said valve plate having an unsupported periphery, said housing having a third aperture spaced from the valve plate therein so as to provide unobstructed communication between said fluid receiving chamber and the exterior of said housing, the construction and arrangement being such that a fluid pressure transmitted to said second aperture exceeding the fluid pressures in said first and third apertures will cause said valve plate to seat firmly on the valve seat surrounding said first aperture while simultaneously causing said valve plate to separate from the valve seating surface surrounding said second aperture thereby establishing communication between said second and third apertures through said fluid receiving chamber and the presence of fluid pressures in said first and third apertures exceeding the fluid pressure in said second aperture will cause said valve plate to separate from said valve seat while simultaneously firmly engaging the valve seating surface surrounding said second aperture thereby closing said second aperture while establishing communication through said fluid receiving chamber between said first and third apertures.

3,356,101
APPARATUS FOR MIXING FLUIDS AT DIFFERENT TEMPERATURES

Percy George Tacchi, Bridgnorth, England, assignor to Slip International Limited, London, England, a British company

Filed Jan. 13, 1965, Ser. No. 425,144
Claims priority, application Great Britain, Jan. 22, 1964, 2,808/64
7 Claims. (Cl. 137—114)

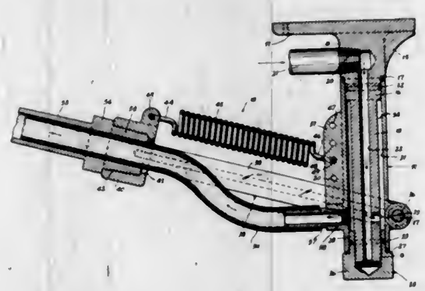


1. Apparatus for mixing steam and cold water to provide a hot water mixture comprising a substantially cylindrical, hollow body, a high pressure chamber having an inlet for cold water at one end of said body, a low pressure chamber, in which the two fluids mix, having an outlet for the hot water mixture and an inlet for steam at the other end of said body, valve means controlling said steam inlet, the high and low pressure chambers being in communication through a passage of restricted cross-section, a pressure responsive device disposed co-axially within said hollow body (between said chambers and operatively movable axially of said hollow body), the opposite sides of the pressure responsive device being exposed to the pressures within said chambers, means connecting said valve means to said pressure responsive device, a pumping device connected with said pressure responsive device, said pumping device having a cylinder and piston, relative reciprocation of which is caused by operative movement of the pressure responsive device, inlet means for a supply of secondary fluid and discharge means for said fluid communicating with the interior of the hollow body.

3,356,102
OVERHEAD BOOM

Russell L. Johnson, Dallas, Tex., assignor to The John E. Mitchell Company, Dallas, Tex., a corporation of Missouri

Filed Nov. 26, 1965, Ser. No. 509,848
3 Claims. (Cl. 137—357)



1. An overhead boom comprising a spindle, means connected to the spindle to mount the spindle in vertical suspension from an overhead ceiling, means mounting a sleeve for rotation about the spindle, means sealing the upper and lower ends of the sleeve against the passage of liquid between the ends of the sleeve and the spindle, means defining a central liquid passage through the center of the spindle, means defining a liquid passage around the outside of the spindle, but confined within the sleeve, means connecting the central passage with the surrounding passage, a boom arm, means supporting the boom arm on the sleeve for unrestricted vertical swinging movement, a tension spring between the boom arm and the sleeve for holding the boom arm in a generally horizontal position and for yielding to permit pivotal movement of the boom arm downwardly from the said horizontal position, means supporting a flexible hose at the outer end of the boom arm, and means connecting the hose to the sleeve in communication with the surrounding passage.

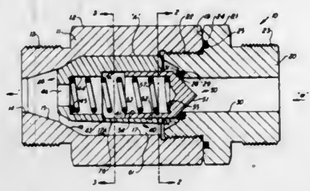
3,356,103
CHECK VALVE

Stephen Joseph Biello, Somerset, Mass., and Charles Russell Marshall, Warwick, R.I., assignors to Sealol, Inc., Warwick, R.I., a corporation of Delaware

Filed Oct. 5, 1964, Ser. No. 401,624
1 Claim. (Cl. 137—515.5)

A check valve consisting of a main body provided axially with a stepped bore providing a flow passageway and having an outlet, a tapered area, a beveled cage seat, a chamber wall and a threaded area, an auxiliary body provided with an external shoulder and axially with an

inlet passageway, a shoulder, and a tapered face, a circular valve seat at the juncture of said inlet passageway and said shoulder, an auxiliary valve seat, means fastening said auxiliary valve seat in said shoulder means fastening said auxiliary body with said main body, a fluid seal between said external shoulder and said main body, a cage provided with three projecting bearing surfaces, three reduced areas between said three projecting bearing surfaces, one end of said cage having a tapered end, said three projecting bearing surfaces providing means to fasten said cage to said chamber wall whereby said three reduced areas convert said flow passageway into three flow passageways in communication with said inlet passageway, and said tapered end engages said beveled cage seat, said cage

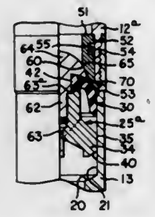


having axially a poppet valve sleeve, a shoulder providing a stop for said poppet valve, a circular area, a spring seat and a port, a poppet valve having externally a conically pointed poppet valve face and a bearing surface, an axially, a bore defined by a circular wall and an end wall, said bearing surface slidingly engaging said poppet valve sleeve, a coil spring located in said spring retainer chamber and in said bore with one end of said coil spring engaging said spring seat and the other end engaging said end wall, said coil spring resiliently urging said conically pointed poppet valve against, said circular valve seat and said auxiliary valve seat to removably block the communication between said three flow passageways and said inlet passageway with said pointed poppet valve axially aligned with said inlet passageway.

3,356,104
VALVES

Carlos R. Canalizo, Dallas, Tex., assignor to Otis Engineering Corporation, Dallas, Tex., a corporation of Delaware

Filed Mar. 1, 1965, Ser. No. 436,196
2 Claims. (Cl. 137—516.29)

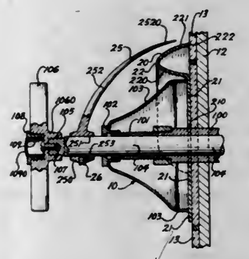


1. A check valve for allowing fluid flow in a first direction and prohibiting fluid flow in a second direction including: a housing comprising a pin section threaded to a box section, said sections having connecting bores therethrough forming a flow passage throughout the length of said housing, said pin section having an internal annular valve seat facing said box section and said box section having an internal annular shoulder spaced apart from and facing valve seat; a valve assembly slidably disposed within said housing for longitudinal movement between a fully closed position when said valve assembly engages said valve seat and a fully open position when said valve assembly engages said annular shoulder; said valve assembly comprising a central valve body, a head member formed on one end of said body and provided with an external annular substantially spherical face engageable with said valve seat when said valve assembly is in closed position, said valve body having an external annular inwardly divergent dovetail shaped recess adjacent to said head member, a plurality of leg members formed on the other end of said valve body extending longitudinally beyond the end of said body away from and radially outwardly from said body for supporting said valve assembly from said internal annular shoulder in its fully open position, said body being sharply longitudinally tapered away from the head between said leg members, said leg members being circumferentially spaced apart from each other to provide flow space between said members and each having a lower shoulder engageable with said internal annular shoulder limiting the longitudinal movement of said valve assembly away from said valve seat, and an annular flexible sealing skirt engaged on said valve body, said skirt having an internal annular flared inner lip confined in said dovetail recess around said body and an outer lip sloping outwardly from said body and along the longitudinal axis of said body away from said head member, said tapered portion of said body between said leg portions being disposed at a point adjacent the free end of said outer lip of said sealing skirt to provide an unrestricted flow passage between said leg members, said outer lip being yieldably engaged with the inner wall of said flow passage at all positions of said valve assembly between said valve seat and said annular shoulder and being collapsible inwardly around said valve body in response to fluid flow through said flow passage in a direction from said valve seat toward said annular shoulder, and said skirt being engageable with the inner wall of said housing defining said flow passage, said valve seat, and over the line of contact between said head member and said valve seat, the engagement of said head member and said valve seat restraining said skirt from extrusion between said head member and said valve seat when said valve assembly is in fully closed position.

3,356,105
SHOWER AND BATH TEMPERATURE SELECTOR MEANS

La Marr Ferguson, 17606 Greenview, Detroit, Mich. 48219

Filed Oct. 13, 1965, Ser. No. 495,641
2 Claims. (Cl. 137—556.3)



1. Accessory temperature selector means for establishing the temperature of water in a shower or bath supplied through a common line from hot and cold water supply lines each controlled by an existing hot and cold water volumetric type valve therein designated H and C respectively, each said volumetric valve including a fixed

valve stem sleeve extending from a wall, a turnable valve stem extending from said valve stem sleeve, and an ornamental cover element telescoped over said valve stem sleeve, means anchoring said ornamental cover against said wall, and means on each said valve stem for manually turning the same, each said accessory temperature selector means comprising

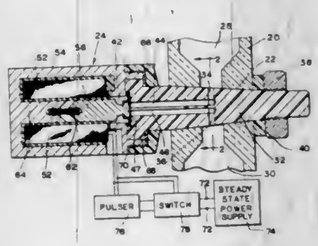
an indicia element telescoped over each said valve stem sleeve disposed between said cover elements and said wall anchored in fixed relationship to said wall by said ornamental cover elements leaving the periphery of said indicia elements exposed,

each said indicia element including an extension formed on the exposed periphery thereof including thereon arcuately spaced indicia indicating valve-open settings,

a pointer element including a hub telescopable neatly over each said valve stem having a pointer extending therefrom in spaced relationship to the indicia on said indicia means, and

means securing each said pointer element at its hub to a valve stem with the pointer thereof pointing to a valve-closed position in respect to the indicia on said indicia means.

3,356,106
VALVE SYSTEM
John H. Riseman, Cambridge, and Dimiter S. Zagoroff, Boston, Mass., assignors to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Aug. 16, 1965, Ser. No. 479,906
5 Claims. (Cl. 137—624.12)



1. In a conduit having a tapered stop-cock valve seat intermediate its ends, a valve comprising, in combination:

manually operable means for coarse controlling of discharge of fluid from said conduit; and

electrically controllable means for fine controlling of discharge of fluid from said conduit;

said manually operable means comprising a tapered conical valve plug adapted to fit rotatably within said valve seat; said plug having an inlet port communicable with the interior of said burette on one side of said valve seat and an outlet port communicable with the interior of said burette on the other side of said valve seat;

said electrically controllable means including a valve chamber within said valve and conduit means joining said inlet port and outlet port with said valve chamber;

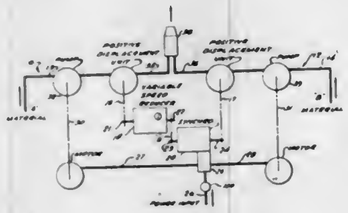
a diaphragm mounted for movement between a first position wherein said diaphragm prevents communication between said chamber and at least one of said ports, and a second position wherein said diaphragm permits communication between said ports through said conduit means and said chamber;

electrically actuated means for moving said diaphragm from one of said positions to the other; and

terminal means adapted for coupling to a source of steady-state electrical power;

switch means for connecting said electrically actuated means to means for providing pulsed electrical power or to said terminal means, or for disconnecting said electrically actuated means from any power.

3,356,107
TWO COMPONENT PUMPING AND PROPORTIONING SYSTEM
Henry T. Dinkelkamp, Mount Prospect, Ill., assignor to Stewart-Warner Corporation, Chicago, Ill., a corporation of Virginia
Originial application Apr. 9, 1962, Ser. No. 186,188, now Patent No. 3,223,040, dated Dec. 14, 1965. Divided and this application Apr. 14, 1965, Ser. No. 448,004
1 Claim. (Cl. 137—625.46)

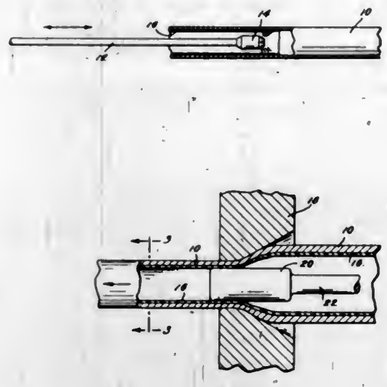


In a two component proportioning system, a synchronizer for maintaining operation of two positive displacement units at a predetermined operating speed ratio, comprising in combination, a differential unit having two mechanical inputs and a carrier member interconnecting the mechanical inputs, said carrier member being stationary at only one given speed ratio and relative direction of operation of the mechanical inputs and being actuated to move in either of two opposite directions at all other speed ratios of the mechanical inputs corresponding, respectively, to an increase or decrease from the given speed ratio, a power distributor including an airtight chamber to receive a common power input of compressed air and having spaced ports to separate the common power input of compressed air between two channels, a rotatable valve member associated with said ports for rotation between two extreme positions, respectively, completely covering and completely opening one of the ports to said power distributor chamber, and a slip drive connection between said valve member and said carrier member for enabling said carrier member to actuate said valve member for varying the ratio of port openings to each other and thereby vary the ratio of power distribution to the two channels, wherein the mechanical inputs are adapted to be connected separately to the units to be driven by the units in the proper relative direction of operation, and wherein the two channels are adapted to be separately directed to the positive displacement units in such a manner that a change from a desired operating speed ratio of the units causes a change in the opposite sense in the power distribution ratio to the units.

3,356,108
COMPOSITE TUBULAR ARTICLES AND METHOD OF MAKING SAME
James H. Johnston, Rehoboth, Mass., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Feb. 26, 1963, Ser. No. 261,135
6 Claims. (Cl. 138—143)

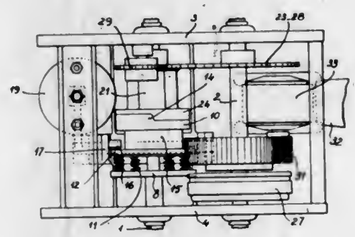
1. A composite tubular article comprising a first layer

of metal bonded to a second layer of corrosion resistant plastic, said second layer having a thickness ranging from



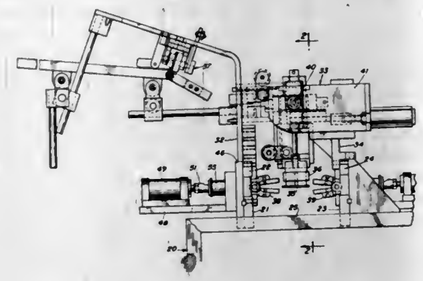
approximately 0.0001 to less than 0.010 inch and being substantially free of porosity.

3,356,109
DRIVING MECHANISMS FOR LOOM JACQUARDS
René Neyraud, Lyon, France, assignor to Societe des Mecaniques VERDOL, Lyon, Rhone, France, a French limited-liability company
Filed Oct. 7, 1965, Ser. No. 493,666
Claims priority, application France, Dec. 18, 1964, 45,412/64
3 Claims. (Cl. 139—1)



1. A Jacquard driving mechanism for a loom, comprising an inlet shaft adapted to be connected with the loom to be driven by same; an outlet shaft adapted to be connected with the Jacquard to drive the latter; first clutch means interposed between said inlet shaft and said outlet shaft, said first clutch means being effective to cause said inlet shaft to positively rotate said outlet shaft, and said first clutch means being so arranged as to then maintain a pre-determined angular relation between said inlet shaft and said outlet shaft; driving means to rotate said outlet shaft at a slow speed in one and the other direction, independently of said inlet shaft, said driving means including an irreversible speed reducing gearing; second clutch means interposed between said driving means and said outlet shaft, said second clutch means, when ineffective, permitting said outlet shaft to rotate freely independently of said driving means; and means to only render said second clutch means ineffective when said first clutch means are fully effective, and to render said second clutch means effective shortly before said first clutch means are ineffective.

3,356,110
ADAPTABLE WIRE-BENDING MACHINE
John Tuit, 3536 Lake Michigan Drive NW., Grand Rapids, Mich. 49504
Filed May 10, 1965, Ser. No. 454,274
2 Claims. (Cl. 140—71)



1. A machine for performing a series of bending operations in sequence on a wire workpiece, said machine having a main frame with a mounting rail, and including a plurality of forming units with extendable and retractable jaws mounted on said rail, wherein the improvement comprises:

bearing sleeve means mounted on said rail;

a tubular carrier mounted in said bearing sleeve means for at least axial movement, said carrier having a slotted end portion receiving portions of said jaw members;

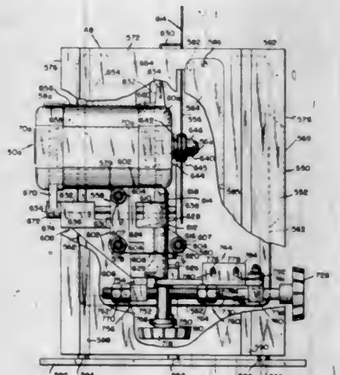
fulcrum pin means traversing said slotted end portion, and also traversing said jaw members at an intermediate point thereon to provide a fulcrum for the opening and closing movement of said jaw members;

an axial actuator for said jaw members, said actuator having a member slidably mounted in said tubular carrier, and having a lost-motion axial connection with said carrier, said actuator member including a wedge portion engageable and disengageable between portions of said jaw members within the movement provided by said lost-motion connection to induce rotation of said jaw members about said fulcrum pin means to generate clamping action, said jaw members being rotatable in the opposite direction by cam engagement of said jaw member portions with the end of said bearing sleeve means to urge said jaw member portions radially inward as said carrier is retracted by said actuator.

3,356,111
POWER TOOL IMPROVEMENTS
Walter G. Mitchell, Pitcairn, Pa., assignor to Rockwell Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania
Original application Oct. 31, 1961, Ser. No. 149,002. Divided and this application Apr. 6, 1965, Ser. No. 451,089
17 Claims. (Cl. 143—36)

1. A power driven circular saw of minimal overall dimensions adapted for handling workpieces commonly encountered in conventional home or cabinet workshops and conserving floor and storage space comprising a housing including a ribbed work support table of non-rusting, high heat-conducting, die cast aluminum, said housing forming a motor mount and a radiating surface of large area and high thermal conductivity exposed to a heat absorption medium, said table having a longitudinally extending blade opening and a depending walled enclosure providing support walls along each edge of the table, a tilt bracket assembly including a pivot bracket fixed to said mount and a tilt bracket directly pivotally connected

to said pivot bracket, motor means comprising an electric motor having a stator of small diameter, a rotor and rotor shaft coaxially disposed within said stator with the shaft ends extending beyond the end faces of said stator, and a pair of end bells of high heat conductive material fixed in butted relation to said stator, said end bells having heat conductive mounting means pivotally connected to said pivot bracket and having thermal connection therewith, said end bells cooperating with said tilt bracket and said pivot bracket to support said electric motor directly beneath said table at one side of said blade opening with its rotor shaft normal to and extending beyond a plane containing the longitudinal axis of said blade opening with an exposed peripheral area of said stator normally abutting the underface of said table throughout the axial length of the stator to establish a direct heat conduction path from said stator to said table and heat conducting paths through said end bells to said table; air propulsion fans on said rotor and being disposed within each end bell, said end bells each having (a)



bearing means supporting said rotor, (b) axially and radially directed sets of air circulation passages, and (c) baffle means in said end bells to channel the entering air into the center of its related fan through said axial air circulation passages, across the related stator end face and radially outwardly through said radial air circulation passages; and a circular saw blade fixed on said rotor shaft for rotation therewith in the plane containing the axis of said blade opening and having a portion protruding through said blade opening to engage a workpiece fed along said table to said blade portion, said air propulsion fans being effective to circulate air into and through said end bells at both ends of said motor, across the respective related ends of said stator and radially outwardly through said end bells and against said table to extract heat from said motor parts and table and augment the conduction dissipation of heat from said stator, said high heat conductive motor mount cooperating with said end bells and said circulated air to extract heat generated in operation of said electric motor from said motor and to effect a rapid dissipation of said heat.

3,356,112
SCREW STRIP DRIVING GUN
Paul P. Ruminsky, Amherst, and Herbert C. Brauchla, Fremont, Ohio, assignors, by direct and mesne assignments, of one-half to said Brauchla and one-half to J. D. Guernsey, Fostoria, Ohio
Filed May 25, 1965, Ser. No. 458,789
6 Claims. (Cl. 144—32)

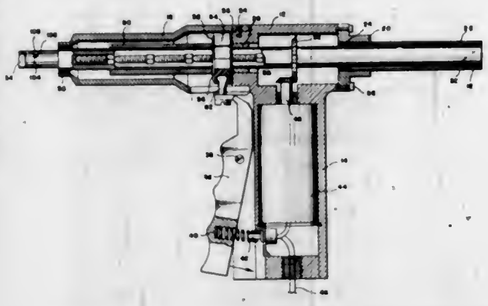
1. A screw strip driving gun of the type having a housing and handle attached thereto, comprising:

(A) a rotatable barrel extending through said housing, and having a screwdriving end and a screw strip receiving muzzle,

(B) a driving means supported in said housing and engaging said rotatable barrel;

(C) screw guide means mounted at the driving end of said barrel and axially supporting a screw strip of threaded screws having heads in end to end relationship within said barrel;

(D) an axially reciprocable locking sleeve supported about a median portion of said rotatable barrel and



including at its forward end a pair of pivoted thread-engaging cams radially extensible through the top and bottom of said rotatable barrel so as to engage rearwardly and from both sides of the heads of said screws upon axial advancement of said locking sleeve; and

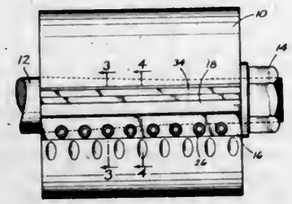
(E) trigger means pivoted in said housing and engaging said locking sleeve which is axially advanceable upon pivoting of said trigger.

3,356,113
METHOD, APPARATUS AND MACHINE FOR DELIMBING AND SECTIONING A STANDING TREE
André del Perugia, Sonora, Calif. (3020 Washington St., San Francisco, Calif. 94115)
Filed Feb. 9, 1965, Ser. No. 431,351
47 Claims. (Cl. 144—34)



1. A machine for delimbing and sectioning a standing tree, comprising: means for climbing and descending a tree; a cutting means; first support means for pivotally mounting said cutting means upon an axis perpendicular to its cutting plane; a second support means for pivotally mounting said first support means and cutting means upon a second pivot axis perpendicular to the first, said second support means being mounted to said tree climbing and descending means; means for selectively pivoting said cutting means upon said first pivot axis; and means for selectively pivoting said cutting means and first support means upon said second pivot axis.

3,356,114
CHIPPER HEAD AND BLADE
Robert M. Noel, Sherwood, Oreg., assignor to Key Machinery Designers, Inc., Portland, Oreg., a corporation of Oregon
Filed Oct. 13, 1965, Ser. No. 495,465
4 Claims. (Cl. 144—172)



1. A rotary chipper head assembly, comprising

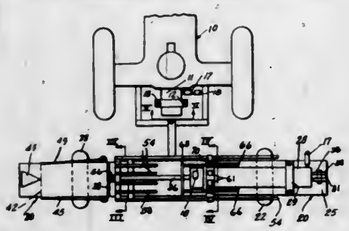
(a) a body member adapted to be mounted for rotation on its longitudinal axis,

(b) the body member having a longitudinal recess extending substantially parallel to its rotational axis, the trailing side of the recess having an arcuate blade-supporting surface extending inward from the outer periphery of the body member,

(c) a keeper member mounted removably in the recess of the body member and a gib member mounted removably on the keeper member and having an arcuate surface spaced from and facing the arcuate blade-supporting surface of the recess, forming an arcuate blade-receiving space therebetween, and

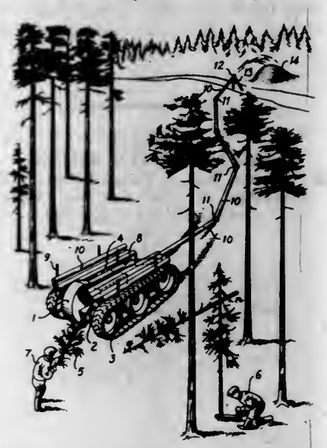
(d) a chipper blade having an arcuate cross sectional shape dimensioned for reception in said blade-receiving space.

3,356,115
DEVICE FOR SPLITTING LOGS
Harry J. Cole, Mars, Pa., assignor of one-half to Bessie McCready, Mars, Pa.
Filed June 23, 1965, Ser. No. 466,145
5 Claims. (Cl. 144—193)



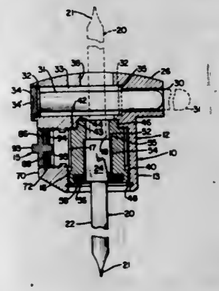
1. In combination with a tractor having a hydraulic system therewith including a pump, a device for splitting logs comprising a supporting member having a frame mounted thereon, a hydraulic cylinder including a piston and piston rod mounted on the frame adjacent one end thereof, a pusher plate slidably mounted on the frame, the plate secured to an end of the piston rod, a wedge member mounted on the frame opposite the end of the frame supporting the cylinder, the wedge shaped member spaced from the pusher plate to allow an area of the frame for holding a log to be cut, a rack member positioned above the frame, the rack secured to the pusher plate adjacent the top of the plate, the rack formed to move with the travel of the pusher plate, said rack supporting a second log to be split and means operatively connected to the hydraulic pump of the tractor and the hydraulic cylinder for actuating the pusher plate forward to split the log together with means for a return of the pusher plate.

3,356,116
METHOD AND MEANS FOR FOREST HARVESTING
Per Gunnar Brundell and Karl Erik Arnold Jonsson, Gavle, Sweden, assignors to Brundell & Jonsson Aktiebolag, Gavle, Sweden
Filed Mar. 8, 1965, Ser. No. 437,829
Claims priority, application Sweden, Mar. 6, 1964, 2,819/64
3 Claims. (Cl. 144—326)



1. In a method for felling and comminuting trees into wood chips and conveying said wood chips from a relatively inaccessible area of a stand of trees to an area accessible to transport for said chips substantially without roads for large trucks in said area, the steps which comprise automatically severing whole trees from their stumps in said relatively inaccessible area with mobile apparatus dimensioned for passing through said area, automatically comminuting said trees and desirable parts thereof with said apparatus into wood chips, and pneumatically conveying substantially continuously said wood chips as they are produced by a flexible conduit from said relatively inaccessible area through said stand of trees to said transport area.

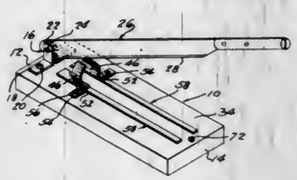
3,356,117
TORQUE-APPLYING TOOL DEVICE
Theodore R. Wagner, 433 Lima St., Aurora, Colo. 80010
Filed Oct. 19, 1964, Ser. No. 404,577
14 Claims. (Cl. 145—71)



4. A torque-applying tool device comprising an outer casing provided with a transverse aperture extending therethrough, an inner concentric ring gear having external tooth elements being disposed for independent rotation within said casing and being provided with a tool-receiving drive opening therein, releasable pawl elements

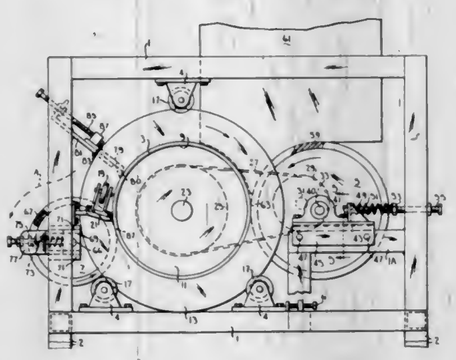
disposed in the transverse opening in said outer casing, and a pawl control member disposed outwardly of said releasable pawl elements including resilient means to yieldingly engage said pawl elements and an eccentric control element being responsive to rotation of said pawl control member to urge said resilient means into engagement with said pawl elements, and said pawl control member being movable to urge said resilient means into engagement with each of said pawl elements whereby to displace said pawl elements alternatively into locking relation with one of said tooth elements on said ring gear to lock said ring gear for rotation with said outer casing in a selected direction.

3,356,118
FRANKFURTER SLICER
Francis C. Priset, R.D. 1, Painted Post, N.Y. 14870
Filed Apr. 23, 1965, Ser. No. 450,282
7 Claims. (Cl. 146—72)



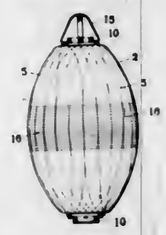
1. A slicer for a frankfurter having a convex end, said slicer comprising a base plate having an upper surface, a frankfurter clamping and centering assembly mounted upon said upper surface and extending therealong, and a knife blade pivoted at one end on the base plate adjacent one end of said assembly, said assembly including means to restrain upward movement of the frankfurter when the knife is withdrawn.

3,356,119
FISHBONE SEPARATOR
Edwin C. Kirkpatrick, San Pedro, Calif., Clyde W. Neely, deceased, late of Lakewood, Calif., by Doris Francis Neely, executrix, Hazelbrook, Lakewood, Calif., assignors to Ralston Purina Company, St. Louis, Mo., a corporation of Missouri
Filed Aug. 13, 1965, Ser. No. 479,672
5 Claims. (Cl. 146—174)



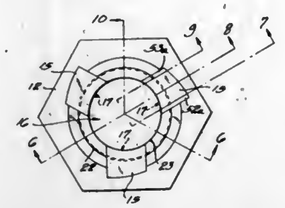
1. Apparatus for removing bones from and upgrading blood meat or the like of fish, comprising a rotatable perforated first surface, a curved resilient imperforate rotatable second surface directly engaging said perforated first surface in substantial downward rolling contact at a first compression region, means for gravitationally feeding to said first region blood meat of fish including bones, whereby a substantial amount of said meat is squeezed through the perforations of the perforated surface without the bones to upgrade the meat in appearance while some of the meat and the bones remain in adhered relation on the perforated surface as it moves beyond the first compression region, an imperforate rotatable third surface directly engaging said perforated surface in upwardly moving substantially rolling contact at a second compression region, whereby substantially all the additional meat adhering to the perforated surface is squeezed through its perforations and substantially all the bones adhere to said perforated surface as it moves beyond the second compression region, and a doctor blade engaging the perforated surface above and beyond said second compression region to remove therefrom any remaining materials from the perforated surface.

3,356,120
FLEXIBLE CONTAINER
Ryotaro Nohmura, Taisho-ku, Osaka, Japan, assignor, by mesne assignments, to The Research Development Corporation of Japan, Tokyo, Japan, a corporation of Japan
Filed Apr. 2, 1965, Ser. No. 445,215
Claims priority, application Japan, Mar. 20, 1964, 39/28,476
1 Claim. (Cl. 150—.5)



A flexible container comprising two axially aligned mouthpieces having removable closure members, a body portion comprised of windings of flexible material and a matrix of flexible material in which said windings are embedded to form a flexible casing, said windings being of a material taken from the group consisting of yarn, cord and thread, and the matrix flexible material being taken from the group consisting of synthetic resins and rubbers, said windings extending helically from one end of the container to the other and being spaced farther apart in the central region between the mouthpieces than in the regions adjacent the mouthpieces so that the central portion of the container bulges outwardly, and additional lengths of said windings being positioned in the central region of the container and extending in a plane perpendicular to the axis between the mouthpieces and substantially perpendicularly to the helical windings, said container having a ring of holes around the openings therein left by pins on the mold core around which the windings are guided during the helical winding of the windings, and said mouthpieces each including an axially extending hollow cylindrical portion and a laterally extending flange on the inner end thereof, said flange being against one surface of the container, a circular retaining ring against the other surface of the container in alignment with said flange, and bolts extending through the holes in said container and holding said flange and said retaining ring against said container, the respective mouthpieces serving, when the container is in the vertical position, as an inlet and an outlet for material in the container.

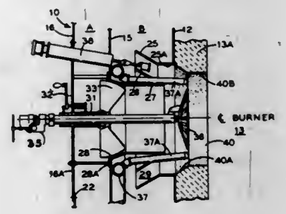
3,356,121
PREVAILING-TORQUE LOCKNUTS
Joseph A. Tabor, Port Chester, N.Y., assignor to Russell, Burdsall & Ward Bolt and Nut Company, Port Chester, N.Y., a corporation of New York
Filed May 5, 1966, Ser. No. 547,894
4 Claims. (Cl. 151—21)



1. A prevailing-torque locknut comprising a hexagonal nut body portion having six smooth flats of equal shape, size and dimensions; a substantially flat bottom surface; an upper end portion opposite said nut bottom of truncated cone shape; and a central axially extending threaded bore through said truncated cone and body portions, said truncated cone portion having an annular top surface of substantial radial width surrounding said bore at its uppermost end and the inclined conical surface of said truncated cone extending from said annular surface and terminating at its lower end within the perimeter of the hexagon formed by said six flats at their upper ends so that there is a wall of substantial radial thickness around said bore which is progressively greater in radial thickness from said annular top surface to said body portion; a plurality of circumferentially, equally spaced depressions of like shape and dimensions around said bore in the upper surface of said truncated cone portion, each of said depressions extending outwardly from said bore through the outside inclined surface of said truncated cone portion, the center lines through the bottoms of said depressions lying radially and each of said bottoms lying at the same depth from the top surface of said truncated cone as the others and each bottom of said depressions lying in a plane at an angle with the said bottom of the nut equal to the helix angle of the thread of the bore and lying parallel with the helix of said thread and the sides of each of said depressions lying in substantially parallel planes substantially perpendicular to said bottom surface of the nut and equidistant from the said center line of the bottom of each depression; a cluster of axially depressed offset arcuate thread segments in the upper turns of the thread of said nut below each of the bottoms of said depressions, each of said clusters comprising a plurality of vertically aligned offset arcuate thread segments free from blunted crests, each cluster having an arcuate length at least 20% of and less than 80% of the diameter of said bore, the thread of said nut being conventional and undistorted except for said arcuate offset segments and said arcuate offset segments lying at the same helix angle as the helix angle of said thread and the offset thread segments in the upper turn of said thread being vertically offset from the undistorted parts of said thread a substantial amount but less than half the pitch of said thread.

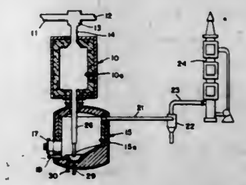
3,356,122
FUEL BURNING APPARATUS
John Martin Rackley, Alliance, and George Musat, Canton, Ohio, assignors to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey
Filed Dec. 3, 1964, Ser. No. 415,708
5 Claims. (Cl. 158—1.5)

1. In combination with a boundary wall of a furnace having a circular port formed therein, fuel burning apparatus comprising walls forming a windbox outside of said furnace and enclosing said port, a blower attached with said windbox for supplying superatmospheric combustion air thereto, first damper means associated with said blower for regulating the total quantity of said air, means forming a central flow path of circular cross-section coaxially arranged with and having its discharge end opening to said port, means for imparting a rotational velocity component to the air flowing through said central flow path, means defining an annular symmetrical converging flow path coaxially arranged with respect to said port for discharging into said port a non-rotating converging stream of air enveloping the air discharged from said central flow path, second damper means disposed within said windbox for apportioning the flow of air from said blower between the central and annular



flow paths, means for introducing fluid fuel into said port in a pattern substantially symmetrical with the axis of said port, and control means for positioning said first and second damper means over the load range of the burner, said control means including a controller from which a signal representing load change demands on said furnace is transmitted, damper actuating mechanism connected to said controller and responsive to said signal, linkages connecting said damper actuating mechanism to said first and second damper means, said linkages being arranged for the simultaneous opening and closing of said first and second damper means in response respectively to the load increase demands and load decrease demands, and means for causing said first damper means to open prior to and to close after said second damper means.

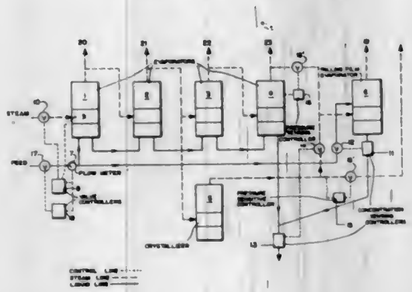
3,356,123
APPARATUS AND METHOD FOR CONCENTRATING PHOSPHORIC ACID
Clinton Constant, Atlanta, Ga., assignor, by mesne assignments, to Armour Agricultural Chemical Company, a corporation of Delaware
Filed June 15, 1965, Ser. No. 464,033
5 Claims. (Cl. 159—16)



4. In apparatus for concentrating phosphoric acid, a dehydration vessel provided with an acid inlet and outlet and, in the upper portion of the vessel, with a vapor and gas outlet, said vessel having in the lower portion thereof a well having upwardly- and outwardly-inclined side walls,

an upwardly- and laterally-declined run back shelf, of lesser pitch than that of said well walls, communicating with said well and spreading heated acid thereon for the separation of water vapors, a dip pipe extending into said well, and means for supplying combustion gases to the upper portion of said dip pipe.

3,356,124
CONTROL ARRANGEMENT FOR A MULTIPLE EFFECT EVAPORATOR
Francis Dambrine, Lille, Nord, France, assignor to Societe Fives Lille-Cail, Paris, France
Filed Oct. 12, 1965, Ser. No. 495,124
Claims priority, application France, Oct. 13, 1964, 991,198
7 Claims. (Cl. 159—17)



1. In a multiple effect evaporator arrangement, in combination:

(a) a plurality of evaporator effects arranged in series and constituting principal evaporating means for partly evaporating a solution fed to the first effect in said series, at least one of said effects being indirectly steam heated, whereby a first concentrate is formed from said solution, and a hot condensate is formed from the heating steam by the partial evaporation of said solution in said one effect;

(b) auxiliary evaporating means for partly evaporating a solution fed to said auxiliary evaporating means and for thereby forming a second concentrate;

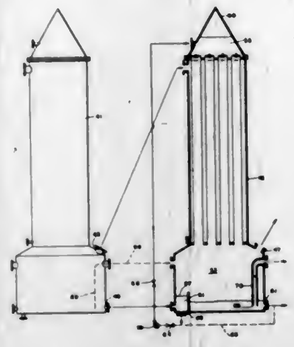
(c) heat accumulator means connected to said one effect for receiving said condensate at a predetermined pressure;

(d) condensate evaporator means interposed between said accumulator and said auxiliary evaporating means for evaporating said condensate at a pressure lower than said predetermined pressure, and for transferring the evaporated condensate to said auxiliary evaporating means for heating the solution fed thereto; and

(e) control means responsive to the concentration of one of said concentrates for controlling the rate of said evaporation of said condensate.

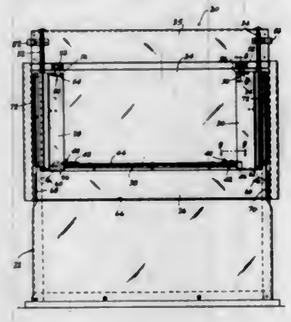
3,356,125
FEEDING AND LIQUID BY-PASSING METHOD FOR FALLING FILM, MULTIPLE EFFECT EVAPORATORS
Ferris C. Standiford, Jr., Ann Arbor, Mich., assignor to W. L. Badger Associates, Inc., Ann Arbor, Mich., a corporation of Michigan
Filed Dec. 2, 1964, Ser. No. 415,343
6 Claims. (Cl. 159—49)

1. The method of operating a multiple effect forward feed evaporator system containing a number of falling film effects comprising passing the liquid solution effluent from one effect operating at a higher boiling pressure to a compartment in the vapor-liquid disengaging space of the next effect operating at a lower boiling pressure, said liquid solution being superheated with respect to said next effect, said next effect having a pool of liquid above the falling film heat transfer surface thereof, said compartment being in vapor communication with the vapor issuing from said next effect, transferring liquid from said compartment to said pool of liquid above the falling



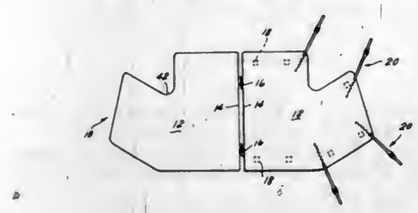
film heat transfer surfaces of said next effect, said compartment being arranged to overflow its contents in the event of failure of said step of transferring said liquid contents, and diverting the vapor from said effect operating at a higher boiling pressure to the next further effect in said event of failure of said step of transferring said liquid contents.

3,356,126
BIASED CANOPY FOR VENDING TRAILERS
Socrates J. Schantz, Box 134, Marine, Ill. 62061
Filed Oct. 23, 1965, Ser. No. 503,338
8 Claims. (Cl. 160—62)



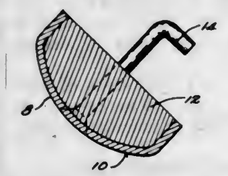
1. A collapsible canopy adapted to be assembled from a collapsed position against a vertical frame to an assembled and raised horizontal position, said canopy comprising a roof member having hinge means connecting it to the frame, front and side wing members hingedly connected to the front and sides of the roof member, and spring biasing means connecting the canopy to the frame to assist in assembly, the spring biasing means comprising a spring connected at one end to the frame above the roof hinge means and at the other end to one of the side wing members to provide a biasing means on the side wing members to urge the canopy to a raised position and the side wing members to the assembled position.

3,356,127
WINDOW COVERS, PARTICULARLY FOR AIRCRAFT
Crisogono Herrera, Apartado Postal 1254, Monterrey, Nuevo Leon, Mexico
Filed July 7, 1965, Ser. No. 470,092
11 Claims. (Cl. 160—181)



1. A cover assembly for covering the windshield or other window of an aircraft, comprising a pair of cover sheets arranged in side-by-side relation and together having a configuration corresponding substantially to that of the window which is to be covered, said pair of sheets respectively having a pair of substantially coextensive edges located adjacent each other and said sheets respectively having inner surfaces directed toward the window covered by said sheets and outer surfaces directed away from said window, connecting means carried by said sheets adjacent said coextensive edges thereof for releasably connecting said sheets to each other in said side-by-side relation, spacer means carried by said sheets at said inner surfaces thereof and extending from said inner surfaces toward and into engagement with the window which is to be covered so as to maintain said sheets spaced from the window to provide between the latter and said sheets a gap through which air may circulate, and releasable mounting means operatively connected to said sheets for releasably mounting them on the aircraft in a position covering a window thereof, said spacer means including, respectively, non-metallic portions directly engaging the window covered by said sheets, and each of said plurality of spacer means including an angle bracket fixed to an inner surface of one of said sheets and a non-metallic disc fixed to said bracket and extending beyond the latter into engagement with the window.

3,356,128
CASTING METHOD USING LATENT HEAT OF CHILL MATERIAL
Robert H. Ahrens, Milwaukee, Wis., assignor to Milwaukee Chaplet & Mfg. Company, Inc., Milwaukee, Wis., a corporation of Wisconsin
Filed Oct. 20, 1965, Ser. No. 498,725
4 Claims. (Cl. 164—127)

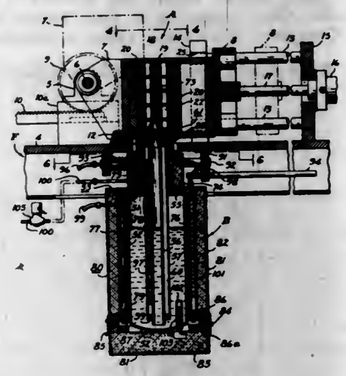


1. A method of casting molten metal, which method comprises transfer of heat from the molten metal to effect change of state of a body of secondary material which is subject to change of state at a temperature lower than the congealing temperature of the molten metal but sufficiently close to such temperature so that change of state occurs coincidentally with the congealing of the metal being cast, and thereby using latent heat of the secondary material to absorb a part of the heat of the molten metal and to maintain approximately constant temperature differential between the secondary material and the metal being cast throughout a substantial part of the period required for the congealing of the latter, whereby such congealing proceeds more rapidly than elsewhere.

3,356,129
PROCESS OF CASTING METALS BY USE OF WATER-SOLUBLE SALT CORES
Kurt Anderko and Paul Wittstock, Heilbronn am Neckar, Germany, assignors to Karl Schmidt, G.m.b.H., Neckarsulm (Wttbg), Germany, a corporation of Germany
No Drawing. Filed June 28, 1965, Ser. No. 467,688
Claims priority, application Germany, June 30, 1964, Sch 35,402
15 Claims. (Cl. 164—138)

1. Process for the production of metal castings containing cavities therein, which comprises carrying out the casting of a metal object which is to contain a cavity therein, while using as cavity-former a solid unitary pressed and sintered core containing granular water-soluble salt having a change of state critical temperature above the temperature of the molten metal used for the casting, said core having a predetermined shape and volume corresponding to the shape and volume of the cavity in the metal object being cast therearound, and removing said core after the formed casting has been cooled.

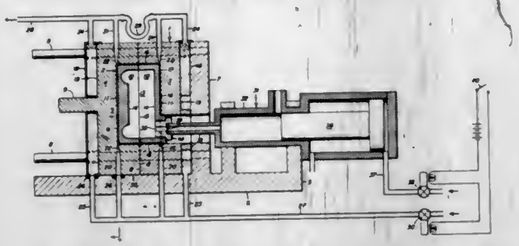
3,356,130
INJECTION MOLDING APPARATUS FOR MAKING CERAMIC CORES OR THE LIKE
Edward J. Mellen, Jr., 2123 Lee Road, East Cleveland, Ohio 44118, John M. Webb, Chagrin Falls, Robert J. de Fasselle, Gates Mills, and John A. Dudek, Euclid, Ohio; said Webb, De Fasselle, and Dudek assignors to said Mellen
Original application Apr. 30, 1963, Ser. No. 276,753, now Patent No. 3,222,435, dated Dec. 7, 1965. Divided and this application Aug. 11, 1965, Ser. No. 478,836
17 Claims. (Cl. 164—233)



1. Apparatus for molding a ceramic core in a split die having two halves which fit together to form a mold cavity with an inlet opening formed by said halves comprising mold closing means for holding the die halves in closed operating position, a closed slurry-receiving vessel having insulating means surrounding the vessel to minimize heat transfer, a supply tube in said vessel extending from a point below the level of the slurry to the inlet opening of the die and communicating with the mold cavity, means for supplying a high pressure to said vessel to force the slurry through said tube into the mold cavity,

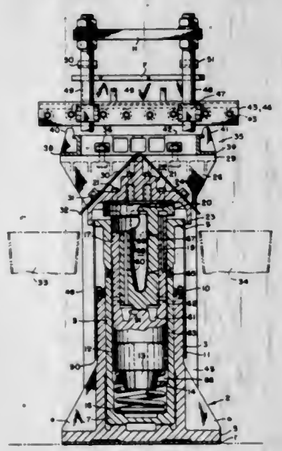
sealing means for preventing gas from escaping from said vessel and for preventing leakage of ceramic material from the mold adjacent the discharge end of said tube, and refrigerating means for cooling the end of said tube adjacent the die and for simultaneously maintaining the temperature in said vessel below 0° C.

3,356,131
DIE CASTING APPARATUS
Loren W. Smith, Eggertsville, N.Y., assignor to Symington Wayne Corporation, Salisbury, Md., a corporation of Maryland
Filed May 2, 1966, Ser. No. 546,993
11 Claims. (Cl. 164—314)



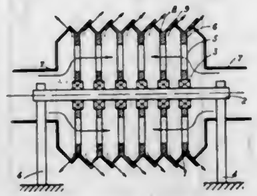
1. Apparatus for die casting metals in expendable metal molds comprising a separable metal heat sink, an expendable metal mold removably mounted in said heat sink in spaced relation thereto, a liquid heat transfer medium having a higher heat conductivity than air filling all voids in the space between said heat sink and mold during a casting operation, means for circulating said liquid medium under pressure through said space during said operation at a rate to prevent vaporizing of said medium and means for preventing said medium from circulating through said space except when the pressure thereon is above a predetermined level.

3,356,132
SHOCKLESS JOLT FOUNDRY SHAKE-OUT
Leon F. Miller, Rocky River, and Warren A. Blower, Brecksville, Ohio, assignors to The Osborn Manufacturing Company, Cleveland, Ohio, a corporation of Ohio
Filed Mar. 1, 1965, Ser. No. 436,048
11 Claims. (Cl. 164—401)



7. A foundry shake-out comprising a flask support, jolt means including a ram piston supporting said flask support, a clamping head above said support, a flask engaging clamp mounted on said clamping head, spring means urging said clamp downwardly, means operative relatively to move said jolt means and thus said support with respect to said clamping head resiliently to hold a flask on said support, means operative to position a flask on said support to be held thereon by said clamp, and means operative to jolt such flask thus clamped by reciprocating said flask support and said ram piston into engagement with each other.

3,356,133
COOLED SHEAVE ASSEMBLY, PARTICULARLY FOR WIRE ENAMELLING APPARATUS
Pierre Touzé, Reims, France, assignor to Compagnie Francaise Thomson-Houston-Hotchkiss Brandt, a corporation of France
Filed Aug. 2, 1965, Ser. No. 476,352
7 Claims. (Cl. 165—47)



1. Sheave assembly arranged for cooling by a cooling fluid comprising a mounting axle, a plurality of sheaves mounted adjacent to each other on said axle, said sheaves having rims and being mounted to have said rims closely adjacent to each other leaving a space between the rims of adjacent sheaves small in comparison with the widths of the rims; and air duct means introducing cooling air axially of said sheaves at a differential pressure with respect to ambient air, said air passing interiorally of said assembly, past said rims, and radially passing said small spaces between adjacent rims.

3,356,134
DUAL DUCT AIR CONDITIONING SYSTEMS
Andrew H. Sawyer, Pittsburgh, Pa., assignor to H. H. Robertson Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 5, 1965, Ser. No. 506,470
3 Claims. (Cl. 165—49)

1. In a multi-story building distribution system for conditioned air having parallel structural cells which serve as air distributing conduits and also serve as structural members for the floor of the building, the combination comprising:

at least two sources of conditioned ventilation air, one of which during the building heating season is hotter than the others and is identified as the first source;

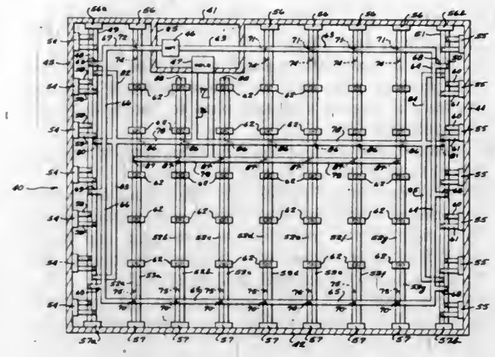
baffle members in certain ones of said cells to divide those certain cells into an exterior portion outboard of the baffle and an interior portion inboard of the baffle;

first conduit means extending from the said first source transversely of the said parallel cells adjacent to the perimeter of the building and outboard of the said baffle members;

flow connections between the said first conduit means and the said exterior portions of the said cells;

additional conduit means extending from the other of said sources transversely of the said parallel cells along the central portion of said cells inboard of the said baffle members;

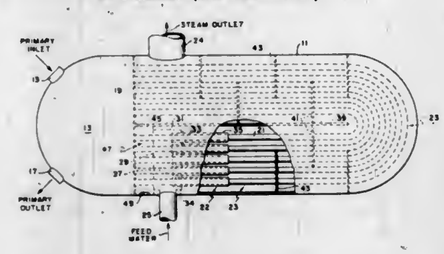
additional flow connections between said additional conduit means and (a) those cells which are free of the said baffle members and (b) the interior portions of said certain cells having baffle members, whereby the said cells having baffle members receive air from said first source in the exterior portion



thereof and receive air from a different source in the interior portions thereof;

a plurality of air mixing outlets throughout the building each being associated with at least two of said cells including one cell having said baffle members and another cell which is free of said baffle members.

3,356,135
ONCE-THROUGH STEAM GENERATOR WITH MEANS TO PROVIDE SATURATED FEED WATER
Robert K. Sayre, Pittsburgh, Pa., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Dec. 24, 1964, Ser. No. 421,135
8 Claims. (Cl. 165—159)



1. A once-through heat exchanger comprising:

means for providing feed heating fluid for the exchanger;

enclosed chamber means, having walls, for receiving feed to be converted into fluid of a higher energy state;

means defining a plurality of discrete spaced confined paths passing through and beyond said chamber;

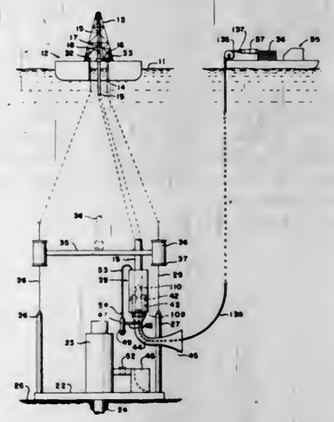
said last named means having one end connected to receive the heating fluid and its other end connected to discharge the heating fluid;

means surrounding each of said confined path means for defining at least one space therebetween of high area-to-volume ratio, each of said last named means passing through one wall of said chamber;

channel defining means arranged for providing a mechanical mixing path for feed fluid in proximity to said confined path means for an extended distance in heat transferring contact with said confined path means;

outlet means for said unit, whereby when feed is introduced to said chamber under pressure, said feed enters the high area-to-volume space and is pre-heated therein, said feed being heated to approximately its saturation, said feed thereby obtaining high velocity and high inertia, said feed when saturated passing near the outlet of said space into a single mechanical mixing channel in close proximity to said confined path defining means whereby said saturated feed is brought to considerably lower inertia and velocity, said saturated feed thereafter being brought into its desired state of dryness by flowing in contact in said path with said path defining means and out of the system via said outlet.

3,356,136
UNDERWATER WELLHEAD APPARATUS
John A. Haeber, Ventura, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Sept. 30, 1965, Ser. No. 491,572
10 Claims. (Cl. 166—.5)



1. Apparatus to facilitate the remote joining of a flowline to an installation submerged in a body of water from a station located on the surface thereof, said apparatus comprising:

(a) guide means fixed to the installation and extending to the said station;

(b) alignment means adapted to cooperate with the installation to receive a flowline;

(c) means operatively associated with said alignment means for cooperating with said guide means to engage the alignment means with said installation; and,

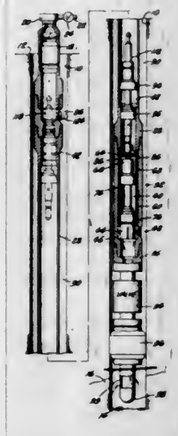
(d) tension-transmitting means connectable to an end of a flowline, which end is to be connected to said installation and adapted to operatively associate with both said alignment means and said flowline for securing the flowline is an aligned position at the installation.

3,356.137
METHOD AND APPARATUS FOR OBTAINING A FLUID SAMPLE FROM AN EARTH FORMATION
Theodore A. Raugust, Edmonton, Alberta, Canada, assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed July 30, 1965, Ser. No. 475,977
7 Claims. (Cl. 166—3)

1. A method for obtaining a sample of fluid from an earth formation traversed by a borehole extending from

the surface of the earth to the formation which comprises:

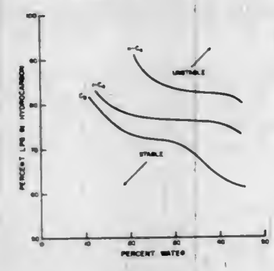
(a) establishing communication with said earth formation from the surface of the earth through a zone in said borehole spaced from and isolated from the wall of said borehole, thus forming an annular space between said zone and said wall;
(b) establishing a barrier in said zone above said earth formation beyond which said sample may not pass;
(c) isolating said formation from the remainder of said borehole;
(d) establishing communication between said formation and said zone, thereby allowing flow of a sample of fluid from said formation into said zone, limited by said barrier;
(e) isolating said sample during said flow from fluid in said zone above said sample;
(f) barring said formation from said zone;
(g) establishing communication between said annular space and said formation;
(h) translating said zone containing said sample to where said barrier is exposed at said surface of the earth;
(i) establishing communication between said annular space and a location in said zone between said sample and the point in said zone at which said sample is isolated from said formation;
(j) isolating said sample from fluid in said annular space;
(k) establishing communication from said zone containing said sample through said barrier;
(l) applying pressure to said fluid in said annular space, communicating with said isolated sample in said zone, to force said sample through said zone and said barrier; and
(m) collecting said sample.



4. Apparatus for obtaining a fluid sample from an earth formation traversed by a borehole extending from the surface of the earth to the formation comprising:

(a) a pipe extending into said borehole from said surface of the earth to a point adjacent to said formation;
(b) packer means for packing off between said pipe and said borehole above said formation;
(c) said pipe having an opening below said packer means for communication with said formation;
(d) first valve means for controlling flow of fluid into said pipe through said opening;
(e) a bottom plug in said pipe above said first valve means and movable upwardly through said pipe in response to fluid force exerted on said bottom plug from below;
(f) a top plug in said pipe above said bottom plug and movable upwardly through said pipe in response to fluid force exerted on said top plug from below;
(g) said plugs each having seal means for sealing the plug against the inner wall of said pipe as the plug moves therethrough;
(h) said seal means of said plugs being spaced longitudinally in said pipe;
(i) means for conducting fluid in said pipe from below said bottom plug into the space between said seal means for urging said top plug to move upwardly through said pipe;
(j) means for arresting upward movement of said top plug at a selected position in said pipe;
(k) valve controlled means for conducting fluid from outside of said pipe and above said packer means into said pipe below said bottom plug and above said first valve means for urging said bottom plug to move upwardly through said pipe; and
(l) valve controlled fluid outlet means for withdrawing fluid from between said plugs when said top plug is in said arresting means.

3,356,138
OIL RECOVERY PROCESS UTILIZING LIQUEFIED PETROLEUM GASES AND HEAVIER HYDROCARBONS
John A. Davis, Jr., Littleton, and Russell W. Olson, Denver, Colo., assignors to Marathon Oil Company, Findlay, Ohio, a corporation of Ohio
Filed Nov. 22, 1965, Ser. No. 509,013
8 Claims. (Cl. 166—9)



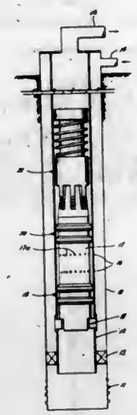
1. The process for the recovery of oil from subterranean oil-bearing formations comprising injecting into said formation through at least one injection means a microemulsion comprising liquefied petroleum gas, a high molecular weight hydrocarbon, at least one surfactant and water; thereafter injecting into said formation a drive fluid; driving said microemulsion toward at least one production means in said formation; and recovering displaced hydrocarbon.

5. Microemulsions comprising from about 0 to about 45% water, from about 20 to about 80% liquefied petroleum gas, from about 5 to about 40% higher molecular weight hydrocarbons, and up to about 20% surfactant.

3,356,139
PACK-OFF TOOL
Charles P. Lamb, Dallas, and William A. Dudley, Garland, Tex., assignors to Merla Tool Corporation, Garland, Tex., a corporation of Texas
Filed July 13, 1965, Ser. No. 471,618
10 Claims. (Cl. 166—119)

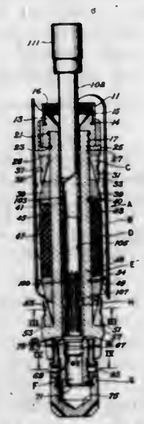
3. A hold-down tool comprising,
a tubular mandrel,
means including slips for anchoring the tool in a well pipe,

means positively holding said slips in completely unset position during running of the tool and releasing said slips upon a downward jarring force being applied to the tool,



and setting means permitting unsetting of said slips upon succeeding jarring forces being applied to the tool and immediately resetting said slips after each jarring force.

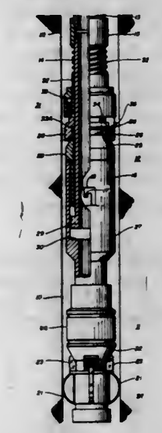
3,356,140
SUBSURFACE WELL BORE FLUID FLOW CONTROL APPARATUS
James Douglas Young, Fort Forth, Tex., assignor to Gearhart-Owen, Inc., Fort Worth, Tex.
Filed July 13, 1965, Ser. No. 471,539
2 Claims. (Cl. 166—128)



1. In a well apparatus of the type to be disposed in a well casing on a running in string and wherein a body with an axial fluid passage is anchored to the well casing by gripping means, there being on the body packing means adapted to be expanded against the well casing, the combination therewith of:

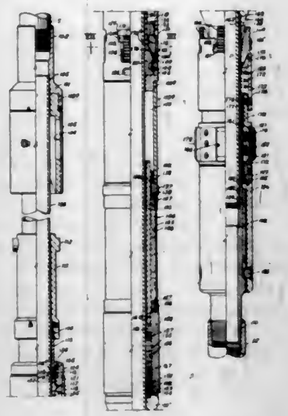
(a) a tubular, open-ended, floating valve member coaxially aligned and communicating with the axial fluid passage of said body and having upper closed and lower opened positions for closing or opening a fluid passage that extends from the axial fluid passage of said body to the exterior of said apparatus below said gripping and said sealing means, with said valve member having downwardly facing surfaces that are exposed to fluid being larger in area than than the area of its upwardly facing surfaces that are exposed to fluid so that the pressure of the fluid urges said valve member toward its upper closed position, said valve member having an annular groove formed internally therein;
(b) valve member retainer means secured to said apparatus below said gripping and said sealing means to limit the axial movement of said valve member, said retainer means having at least one fluid port extending therethrough to permit fluid flow through said retainer means to the exterior of said apparatus when said valve member is in an opened position;
(c) seal means between said valve member and said retainer means to prevent fluid flow therebetween when said valve member is in its closed position; and
(d) valve member actuator means having an end portion engageable with the interior of said valve member, said actuator means end portion having resiliently expansible and retractable protrusions for mating and unmating selectively with the internally formed annular groove of said valve member.

3,356,141
OIL WELL HOLD-DOWN TOOL
Albert K. Kline, 5741 South 70th East Ave., Tulsa, Okla. 74145
Filed Mar. 12, 1965, Ser. No. 439,344
4 Claims. (Cl. 166—134)



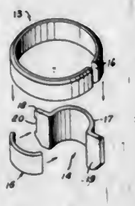
1. An actuating mechanism for a well tool, including,
a mandrel in the form of a cylinder mounted on the lower end of a run-in string of tubing,
a well tool with an elongated structure movable along the outside of the mandrel,
a structure mounted on the outside of the mandrel to support slips,
and a cone structure mounted on the elongated structure to engage the slips supported by the structure which is mounted on the mandrel,
said slips supported by the structure mounted on the outside of the mandrel having relative dimensions between the slips and their supporting structure so that the movement of the mandrel and supporting structure away from the cone will sequentially apply the force of the mandrel movement to the slips in disengaging the slips from the well wall.

3,356,142
MECHANICAL HOLDDOWN FOR WELL PACKER
Morgan L. Crow and Marion D. Kilgore, Dallas, Tex., assignors to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
Filed Feb. 17, 1966, Ser. No. 538,514
17 Claims. (Cl. 166—134)



15. In a well packer including, a packer assembly; upper and lower slip and slip expander members on the packer assembly; means holding said lower slips out of engagement with said lower expander members while the packer is being lowered into a well; a mandrel extending through the packer assembly; slideably related seal means between the mandrel and the packer assembly; releasable attachment means between the mandrel and the packer assembly above the upper slip and expander members; and, releasable attachment means between the mandrel and the packer assembly below the lower slip and expander members; whereby the mandrel can be disengaged from the packer assembly and moved vertically with relationship thereto after the packer is set.

3,356,143
PARAFFIN SCRAPER
Paul Polson, P.O. Box 1761, Pampa, Tex. 79065
Filed June 24, 1965, Ser. No. 466,563
1 Claim. (Cl. 166—176)



In a paraffin scraper and rod guide for a flow tube in an oil well having a pump rod operating therein, in combination with the said pump rod, an annular scraper element having a relatively narrow break in one side, and a pair of companion spacer elements for connecting said scraper element to said rod in concentric relation therewith, one of said spacer elements having a semi-circular central portion having a radius corresponding to the radius of the rod, and having a pair of planar end portions extending laterally outwardly in opposite directions from said central portion and having their extremities welded to the scraper element, one of said planar end portions extending into said break, and the other of the spacer elements being substantially semi-circular and having a radius corresponding to the radius of the rod and coacting with the semi-circular central portion of said first mentioned spacer element to embrace the rod and being welded at its ends to said first mentioned spacer element.

3,356,144
CASING INTERLINER WITH ANCHORING MEANS
William B. Berry, P.O. Box 1951, Clarksburg, W. Va. 25327
Filed Apr. 20, 1965, Ser. No. 449,544
6 Claims. (Cl. 166—208)

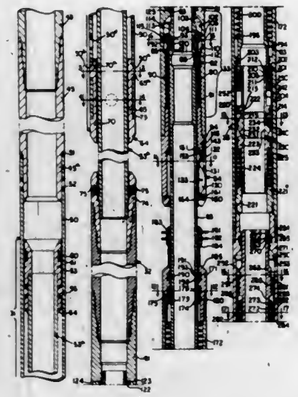


2. A well casing sealant member comprising a resilient tubular interliner, a member mounted on the outer face of said interliner, a recess formed in said interliner beneath said member, a slot formed in said member and overlying said recess, an elongated element pivotally mounted on said member and positioned within said recess, and a spring connected to said element for urging same outwardly from said recess and through said slot.

3,356,145
WELL TOOLS
John V. Fredd, Dallas, Tex., assignor to Otis Engineering Corporation, Dallas, Tex., a corporation of Delaware
Filed Apr. 19, 1965, Ser. No. 449,108
28 Claims. (Cl. 166—224)

1. A flow control device for wells comprising: a flow conduit in a well bore extending to and supported at the well surface; housing means having a flow passage extending therethrough and removably anchored in said flow conduit; valve means disposed in said flow passage to move between open and closed positions; said valve means being provided with a full opening bore therethrough; a tubing string supported in the flow conduit above said valve means; means for biasing said valve means toward closed position including a weight mass adapted to be slidably connected to the lower end of said tubing string supported above said housing means; and pressure responsive means operatively connected with said weight mass and said tubing string, said weight mass being supportable to hold said valve means in open position by the force of a differential in fluid pressure acting across said pressure responsive means at the slidable connection with said tubing string.

22. A running tool for handling a fluid flow control device having a housing and an operator tube movable longitudinally relative to said housing, said tool comprising: a tubular housing; an annular collet slidably disposed within said housing to move longitudinally between a first upper position for engaging said collet over said operator tube, a second intermediate position for interlocking said housing with said operator tube, and a third lower position for releasing said housing from said operator tube; said housing having an upper internal annular locking recess to receive the heads of said collet at said first position of said collet, a lower internal annular locking recess to receive said heads of said collet at said third position of said collet, and a locking flange between said locking recesses for holding said collet head in locked relationship between said housing and said operator tube at said second position of said collet; an internal annular retainer ring within said housing below said collet, said



retainer ring being detachably securable by shearable means to said housing at a first position for holding said collet at said second position and being movable to a second position for allowing said collet to move to said third position; and an annular spacer skirt engaged with the lower end of said housing and extending into said housing to support said retainer ring at said second position of said retainer ring and the lower end of said spacer skirt being spaced from said collet heads a sufficient distance to hold said operator tube in an upper position for retaining a valve in said flow control device in open position while lowering said flow control device through a well bore.

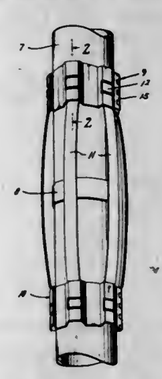
3,356,146
WELL LOGGING TOOL
Ronald A. Anderson, Houston, Tex., assignor, by mesne assignments, to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas
Filed June 23, 1965, Ser. No. 466,305
19 Claims. (Cl. 166—241)

1. Apparatus for use in a well bore comprising: a first housing adapted for passage through a well bore; a depending, second housing adapted for engagement with a well bore wall; a piston cylinder pivotally interconnecting said first and second housings and comprising the sole connection therebetween to permit said second housing to move laterally relative to said first housing; an arm member pivotally connected to said second housing for movement between retracted and extended positions relative to said second housing; and piston means slidably received by said piston cylinder and adapted for moving said arm member to its said extended position to place said arm member into engagement with a well bore wall to provide a reaction force to urge said second housing into engagement with the opposite wall of a well bore



and for returning said arm member to its said retracted position.

3,356,147
CENTRALIZER DEVICE FOR CASINGS IN BOREHOLES
Wilfred Dreyfuss, 70B Bahnhofstrasse, 3011 Egestorf, Diester, Germany
Filed Apr. 5, 1966, Ser. No. 540,270
Claims priority, application Germany, Apr. 7, 1965, W 38,919
8 Claims. (Cl. 166—241)

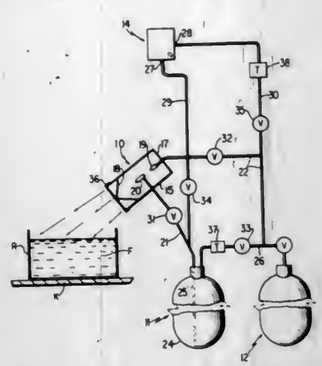


1. In a centralizer of the type having spaced, aligned collars and connecting bowed elements, collar and bowed element attaching means comprising a radial recess in a lateral face of the collar forming axially-spaced, opposing shoulders, a generally U-shaped offset in the end portion of said bowed element nested in said recess, and a tongue projecting from at least one side edge of said recess across said offset and confining said element in said recess.

3,356,148
FIRE EXTINGUISHING
Will B. Jamison, Wyckoff, N.J., assignor to Specialties Development Corporation, Belleville, N.J., a corporation of New Jersey
Filed Aug. 19, 1965, Ser. No. 480,911
7 Claims. (Cl. 169—15)

6. A system for extinguishing an oil fire in an open receptacle which apparatus comprises a tubular member having an open end and a closed end, a foam forming

net adjacent said open end, a nozzle in said member adjacent said closed end and upstream of said net for directing carbon dioxide through said net at a rate to rapidly extinguish a fat fire, spray means in said member between said net and said nozzle for directing an aqueous solution containing a foaming agent onto the

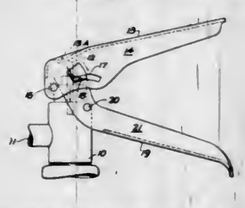


net which is caused to produce foam when carbon dioxide forces the same through said net, and control means for said nozzle and said spray means for first rendering said nozzle effective and to render said spray means effective after the fire has been extinguished while said nozzle remains effective.

3,356,149
INTERLOCKING HANDLES FOR A FIRE EXTINGUISHER

Ira J. Billings, Woodland Hills, Calif., assignor to Automatic Sprinkler Corporation of America, Youngstown, Ohio, a corporation of Ohio

Filed Dec. 23, 1965, Ser. No. 515,886
5 Claims. (Cl. 169—30)



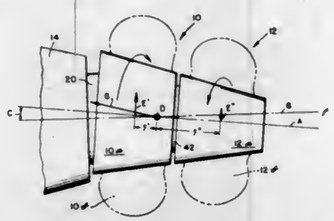
2. In a portable fire extinguisher having a valve and a valve operating mechanism; a first handle pivotally affixed to said extinguisher and arranged to operate said valve operating mechanism when moved, a second handle pivotally affixed to said extinguisher and means on said second handle engaging shaped openings in said first handle, said shaped openings having areas in which said means is movable in one direction only, and other areas in which said means is movable only in a direction at right angles to said first direction.

3,356,150
MECHANISM FOR DEFLECTION OF A CONTRA-ROTATING PROPELLER SYSTEM

Mark A. Ruszczycky, Newport Beach, Calif., and William A. Middleton, Corvallis, Oreg., assignors to the United States of America as represented by the Secretary of the Navy

Filed Apr. 27, 1967, Ser. No. 635,331
3 Claims. (Cl. 170—135.26)

1. In a torpedo, the combination, comprising;
(a) inner and outer contra-rotating propeller drive shafts,
(b) front and rear propellers and means for maintaining their respective hubs coaxially aligned about a common axis which allows contra-rotation therebetween, said propellers having a characteristic predetermined center of lift point along their common axis of rotation,
(c) the hub of the front propeller being hollow,
(d) the hub of the rear propeller having an axial drive shaft extension projecting forwardly into the hollow hub of the front propeller,

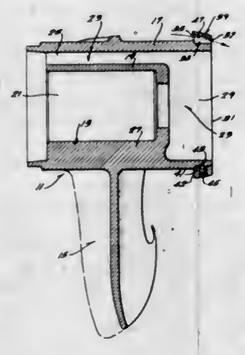


(e) co-axial inner and outer universal joints disposed in the hollow hub of the front propeller at said predetermined axial position for coupling the inner drive shaft to the drive shaft extension of the rear propeller and for coupling the outer drive shaft to the hub of the front propeller, respectively,
(f) universal deflection means for selectively bodily deflecting the front and rear propellers about said predetermined axial position in transverse steering planes.

3,356,151
MARINE PROPELLER

Charles D. Strang, Waukegan, Ill., assignor to Outboard Marine Corporation, Waukegan, Ill., a corporation of Delaware

Filed Mar. 8, 1967, Ser. No. 621,693
5 Claims. (Cl. 170—135.71)

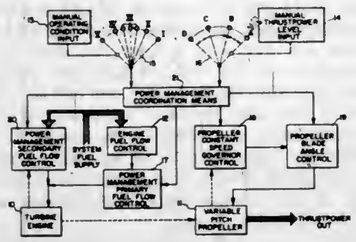


1. In a marine propeller including a hub having at the rearward end thereof an exhaust gas discharge opening and a plurality of blades extending from said hub forwardly of said opening, the improvement comprising a member mounted on said hub in outwardly spaced relation to said hub and adjacent to the rearward end thereof, said member cooperating with said hub to provide a scoop directing water radially inwardly toward the exhaust gases which flow rearwardly from said discharge opening.

3,356,152
AIRCRAFT PROPULSION SYSTEM

Frank J. Accorsi, Columbus, Ohio, assignor to North American Aviation, Inc.

Filed June 14, 1966, Ser. No. 557,396
2 Claims. (Cl. 170—135.74)



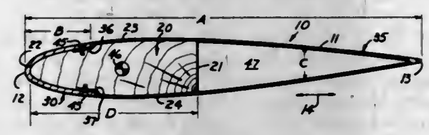
1. An aircraft propulsion system having engine power governing mode of power stabilization with different operating characteristics during normal flight and during critical maneuvering flight, and comprising:
(a) Turbine engine means having an output shaft and a fuel flow control establishing a maximum allowed engine fuel flow rate,
(b) Variable-pitch propeller means rotationally driven by said turbine engine means output shaft and having a rotational speed control establishing and maintaining a propulsion system rotational speed,
(c) Power management fuel flow metering means cooperatively connected to said turbine engine means fuel flow control in fuel-receiving relation and responsive to inputs that variably restrict said turbine engine means fuel flow control maximum allowed engine fuel flow rate,
(d) Power management rotational speed set means cooperatively connected to said variable-pitch propeller means rotational speed control and responsive to inputs that variably establish a value for said propulsion system maintained rotational speed,
(e) Output thrustpower level selection means manually movable throughout a range of engine power governing movement positions from a set minimum propulsion system output thrustpower level position to a set maximum propulsion system output thrustpower level position,
(f) Operating condition selection means manually movable to different positions including a position associated with normal flight and a position associated with critical maneuvering flight to establish different propulsion system operating characteristics, and
(g) Power management coordination means responsive to movement of said output thrustpower level selection means to provide variable inputs to said power management fuel flow metering means and to said power management rotational speed set means as a function of manual movement of said output thrustpower level selection means in said range of movement positions,

said power management coordination means providing inputs that variably restrict said turbine engine means fuel flow control maximum allowed engine fuel flow rate and variably establish said propulsion system rotation speed according to a coordinated schedule of optimum fuel economy as a function of movement of said output thrustpower level selection means when said operating condition selection means is in a position associated with normal flight, and said operating condition selection means providing an input to said power management rotational speed set means when in a position associated with critical maneuvering flight that has a value substantially cooresponding to the maximum propulsion system rotational speed value of said power management coordination means input and that overrides the input provided to said power management rotational speed set means by said power management coordination means.

3,356,153
ROTOR BLADE

Buford J. Schramm, 115 N. Primrose, Alhambra, Calif. 91801, and Robert G. Everts, Inglewood, Calif.; said Everts assignor to said Schramm

Filed Aug. 19, 1966, Ser. No. 573,690
6 Claims. (Cl. 170—159)



1. A rotor blade having a leading edge, a trailing edge, a forward axis joining the edges, a lateral axis extending generally parallel to the edges, and an airfoil contour, said rotor blade consisting of: a wooden, homogenous and continuous spar member extending laterally for substantially the full length of the blade, said spar member having a curved first portion, at its leading edge and a second and third portion on each side of said first portion, a laterally extending groove between the first and second portions and between the first and third portions, a metallic, unitary and continuous rear foil member comprising a channel extending laterally for substantially the full length of the blade, and overlaying the second and third portions, a joggle on each laterally-extending free edge of the rear foil member seated in a respective one of the grooves, the rear edge of the rear foil member being spaced axially rearwardly of the spar member, a metallic, unitary and continuous leading cladding member in full service abutment with the first portion of the spar member and overlaying both of said joggles, the leading cladding member having a substantially uniform thickness and a greater specific gravity than the material of which the spar member is made, the outer surfaces of the cladding and rear foil members forming a substantially continuous joint without a ridge, and fastening means at said grooves joining the members together, the leading cladding member having an outer airfoil surface, the first portion of the spar member having a geometrically similar surface reduced in dimension by the thickness of the leading cladding member, the full area of the first portion of the spar member being in full and continuous surface contact with the leading cladding member.

3,356,154
FLEXIBLE BLADE ENGINE COOLING FAN

Robert L. Cassidy, Westland, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed Nov. 16, 1966, Ser. No. 594,840
3 Claims. (Cl. 170—160.5)



1. An engine cooling fan having a central planar hub and a plurality of rigid arms extending outwardly of said hub,

a plurality of flexible blades each having a flat leading portion overlying an arm with the plane of the flat portion intersecting the plane of the hub at an angle thereto,

each blade having a curved trailing portion extending laterally of its flat portion and curved away from the plane of said hub,

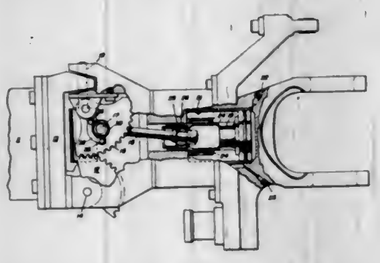
a spacer plate interposed between each arm and blade flat leading portion and an outermost cap plate overlying said blade flat leading portion,

securing means securing each arm, spacer plate, blade flat portion and cap plate in laminated relationship,

and each cap plate having a curved trailing edge closely adjacent to said securing means extending longitudinally of said cap plate and away from the plane of the blade therebeneath,

said cap plate curved trailing edge providing stress relief for said blade curved portion adjacent said securing means as the latter is flexed about said curved trailing edge toward the plane of said planar hub upon rotation of said fan.

3,356,155
BLADE FOLD ADJUSTMENT AND LOCK
Donald L. Ferris, Newtown, Conn., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed July 29, 1965, Ser. No. 475,902
4 Claims. (Cl. 170—160.12)



1. In a mechanism for folding helicopter blades from an extended to a precise folded position, said mechanism having meshed gear segments attached to the helicopter blade and to an operating piston, a mechanism for changing the effective length of a piston rod connecting the piston with the gear segments comprising

a pivot pin eccentrically mounted in the gear segments and pivotally supporting the piston rod;

means for rotating the eccentrically mounting means of the pin to change the effective length of the piston rod; and

means for locking the eccentrically mounting means in adjusted position.

3,356,156
HYDRAULICALLY CONTROLLED VARIABLE PITCH BLADE
Theodore C. Reid, 3887 12th St., Sacramento, Calif. 95822
Filed Oct. 12, 1965, Ser. No. 495,063
2 Claims. (Cl. 170—160.31)

1. An apparatus for changing propeller blade pitch comprising:

support means;

a hub journalled for rotation about a first axis on said support means, said hub carrying at least two opposed propeller blades;

means journalling said propeller blades for rotation on said hub about a second axis extending substantially perpendicular to said first axis, said stub shafts being coaxially aligned with one another and having adjacent ends, said propeller blades being fixedly connected to the other ends, respectively, of each stub shaft for rotation therewith, said propeller blades extending outwardly from opposed sides of said hub and comprising extensions of said stub shafts;

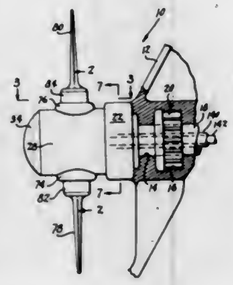
means for varying the position of said propeller blades relative to their respective second axis comprising:

forming said hub with at least two internally located compartments for each of said stub shafts;

each of said stub shafts having one end of a stub blade fixedly connected thereto, the number of stub blades corresponding in number to the number of compartments provided for each of said stub shafts;

each stub blade having an opposed end disposed within one of said compartments, respectively, and being freely swingable therein;

said hub having first hydraulic fluid carrying passages formed therein and extending axially thereof, said passages at one of their respective ends being in open



communiction with one end of said hub, the other ends of said first passages each being ported to open, respectively, in said compartments on opposite first sides of said stub blades whereby admission of hydraulic fluid to said compartments through said ports exerts a force on each of said stub blades to cause its associated stub shaft to rotate in contra directions relative to one another;

said hub having a second hydraulic fluid carrying passage formed therein and extending axially thereof, said second passage having an end opening in said one end of said hub and an opposed end ported to open in said compartments on the reverse second side of said stub blades, whereby admission of said hydraulic fluid to said compartments through said last named ports exerts a force on said stub blades in the opposite direction to cause each of said stub shafts to rotate in reverse contra directions;

and means for connecting said one end of said first passages and of said second passage with selective control means for controlling the direction of fluid flow through said passages.

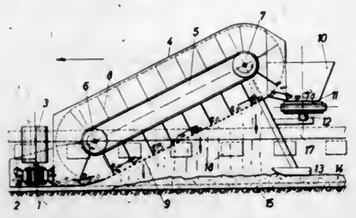
3,356,157
BALLAST CLEANING MACHINE
Franz Plasser and Josef Theurer, both of Johannesgasse 3, Vienna, Austria, and Johann Pichler, Unionstrasse 151, Linz, Austria
Filed Mar. 11, 1965, Ser. No. 438,908
5 Claims. (Cl. 171—16)

1. In a machine for cleaning ballast of a railroad track bed, comprising

(a) an implement extending horizontally in the ballast under and transversely of the track, said implement being capable of continuously carrying ballast to a point laterally adjacent the ballast bed;

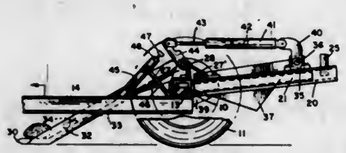
(b) an upwardly inclined endless conveyor arranged for movement in an upright plane laterally adjacent the bed and passing through said point, said conveyor having a lower end adjacent said point, an upper end and an upwardly inclined lower course extending from the lower to the upper end,

(1) a plurality of ballast engaging elements carried by said endless conveyor for transporting ballast from the lower conveyor end to the upper conveyor end; and



(c) a ballast holding trough below the lower conveyor course, said trough having a bottom constituted by an upwardly inclined ballast screening member parallel to and extending below the lower conveyor course and supporting the ballast transported by the conveyor.

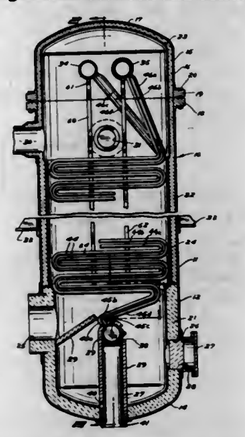
3,356,158
STONE PICKERS
Lloyd C. Deaver and Charles G. Deaver, both of Kenaston, Saskatchewan, Canada
Filed June 1, 1965, Ser. No. 460,338
3 Claims. (Cl. 171—63)



1. A stone picking machine, comprising: a wheel supported frame; a shaft pivotally mounted across said frame; a crank secured to said shaft; a forward sloping series of grid rods having their upper ends secured to the shaft in spaced relation therealong and their lower ends normally riding the ground to pick up stones therefrom; a stop member carried by the frame and contactable by said crank to limit the down swinging movement of the grid rods; a container supported on the frame, behind the grid rods, for receiving stones therefrom when said grid rods are elevated by the pivoting movement of said shaft; the rear of said container pivotally mounted on the frame with the front thereof normally supported on a frame bracket; said container provided with crank means for rotation on its pivotal mount and for deposit of said received stones on the ground; and a double acting hydraulic cylinder pivotally suspended between said crank and said crank means for operation of the crank to elevate said grid rods in the power operation of said cylinder in one direction and while the container is resting on said bracket, and for operation of said crank means to pivot and empty said container in the power operation of said cylinder in the opposite direction and while said crank is in contact with said stop member.

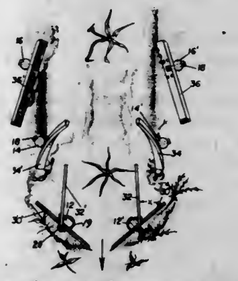
3,356,159
HIGH PRESSURE VAPOR GENERATOR
Denis G. Csathy and David O. Watts, Minneapolis, Minn., assignors to Bros Incorporated, Minneapolis, Minn., a corporation of Minnesota
Filed Feb. 16, 1966, Ser. No. 527,662
5 Claims. (Cl. 122—7)

1. In a heat recovery boiler, an upright cylindrical vessel forming a chamber for conducting high pressure gases therethrough and having inlet and outlet ports for admitting and discharging such gases, said vessel having vertically and axially aligned cylindrical upper and lower sections detachably connected together, the lower section having a substantially greater vertical dimension than the upper section, an outlet header mounted crosswise in the upper section and extending through the wall of the upper section, an inlet header disposed crosswise in the lower section of the vessel, a plurality of water tubes extending in serpentine configuration between and connecting the in-



let and outlet headers and providing a plurality of independent conduits therebetween, said water tubes and inlet header being suspended from the outlet header, a water inlet line extending axially through the bottom wall of the lower section and connected to the inlet header and being slidably removable from said bottom wall whereby when the sections are detached and the upper section raised from the lower section said tubes, inlet header and inlet line will be withdrawn from the lower section.

3,356,160
CULTIVATOR
Walter W. Puckette, Robin Branch Farm, Gladys, Va. 24554
Filed Aug. 20, 1965, Ser. No. 481,380
4 Claims. (Cl. 172—145)



1. A cultivator for attachment to a tractor for crops planted in rows, which comprises:

(A) two support bars mounted in symmetrical relationship with respect to a longitudinal axis;

(B) three sets of shafts mounted on said support bars, said three sets comprising two shafts each, mounted opposite one another on said support bars;

(C) ground engaging blades mounted on each of said shafts, said blades mounted on each set of shafts being identical and including:

(i) a first set of blades being set at an angle to the soil to break the soil crust, and to deliver grass and weeds to the middle of the row whereby it may be pulverized by the tractor wheels and by the trailing plow feet;

(ii) a second set of blades being curved so as to deliver the soil back to the plant without force when cultivating at a fast speed;

(iii) a third set of blades being longer than said first two sets of blades, and being substantially rectangular in shape, to enable the blades to deliver soil back to the row; and

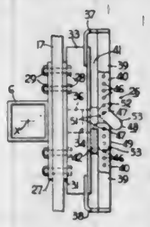
(D) a vertically and laterally adjustable baffle connected to each shaft in said first set directly above said first set of blades, so as to regulate the amount of earth which flows to the mound between said first and second set of blades, said baffle being laterally and vertically adjustable.

3,356,161

TAIL WHEEL REVERSING MECHANISM FOR SPINNER PLOWS (GRAVITY ACTUATED LATCHED)

Ferdinand Mirus, Ojai, Calif., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.

Filed Jan. 21, 1965, Ser. No. 427,006
4 Claims. (Cl. 172—212)



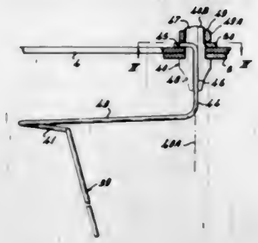
1. For use with a two-way plow of the type including a support having right and left hand plow units mounted thereon and rotatable about a longitudinal axis to place the plows alternately in operation: a common gauge wheel for both units and means for mounting said wheel on the support for rotation therewith, comprising a longitudinally extending member secured to said support, a wheel carrying arm pivotally mounted on said member, said arm and wheel unit being rotatable bodily with the support from a gauging position relative to the operating plow unit to a raised position when the alternate plow unit is moved to operating position, said arm and wheel being swingable by gravity downwardly over said member to an operating position with respect to the alternate plow unit, guide means secured to said support for guiding said arm and comprising a slotted element secured to said support at right angles to said longitudinal axis and said arm is movable in the slot of said element when said plows are alternated to operating position, a pair of spaced apart latch members pivotally attached to said guide means and being alternately operable to restrain said gauge wheel from moving upwardly, said latch member being inverted L-shaped in configuration and pivotally attached to said guide means at a point adjacent to the joinder of the legs of said inverted L-shape so the shorter leg of one of said latches extends into said slot to prevent retrograde movement of said arm assisted by a side pressure against said arm provided by the longer leg of said one latch.

3,356,162

HARROWS

Cornelis van der Lely, Zug, Switzerland, assignor to C. van der Lely N. V., Maasland, Netherlands, a Dutch limited-liability company

Continuation of application Ser. No. 460,412, June 1, 1965. This application Oct. 17, 1966, Ser. No. 587,339
5 Claims. (Cl. 172—643)



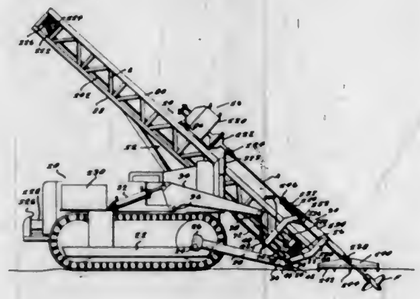
1. A harrow comprising a frame and a plurality of tines, at least one tine having a ground working portion, said ground working portion being connected to a resilient element by means of a connecting portion, at least part of said connecting portion extending substantially horizontally and generally in the intended direction of travel of the harrow, said resilient element extending substantially vertically and being connected to the frame of said harrow, said connecting portion and said ground working portion being both generally straight throughout the greater part of their lengths and being disposed substantially perpendicular to each other, said ground working portion, said connecting portion and said resilient element being formed from one piece of spring-steel, said ground working portion during operation being located to the rear of the junction between said connecting portion and said resilient element with respect to the intended direction of travel of the harrow, at least one resilient loop being provided between said connecting portion and said ground working portion, said resilient loop lying in a substantially horizontal plane.

3,356,163

SCREW ANCHOR INSTALLING METHOD AND APPARATUS

Oliver R. Rowe and William J. Dixon, Charlotte, N.C., assignors to R. H. Bouligny Inc., Charlotte, N.C., a corporation of North Carolina

Filed Nov. 16, 1965, Ser. No. 508,124
10 Claims. (Cl. 173—43)



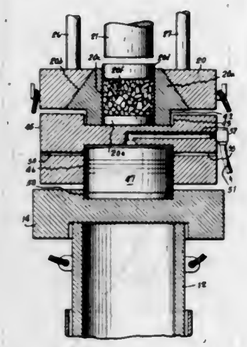
1. An apparatus for installing screw anchors in the ground comprising means for supporting a screw anchor in position for installation, means for applying an axial force to said supported screw anchor sufficient to maintain helical advance of the screw anchor flange along the helix thereof upon rotation of the screw anchor during ground installation, and means for applying torque to the screw anchor sufficient to cause rotation thereof upon application of said axial force during ground installation, all of said means acting to allow the rotated screw anchor to advance axially in accordance with the pitch of the screw flange thereof.

3,356,164

PILE DRIVING MECHANISMS

Wadsworth W. Mount, Warren Township, Somerset County, N.J. (Mountain Ave., Plainfield, N.J. 07060)

Filed June 7, 1965, Ser. No. 462,027
12 Claims. (Cl. 173—102)



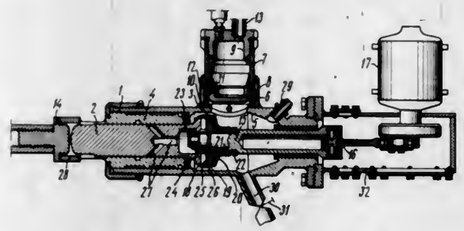
1. A pile driving mechanism which comprises a low-frequency hammer in combination with a high-frequency hammer, said low-frequency hammer arranged to strike an operating member of the high-frequency hammer so as to act in the same direction as and drive through the high-frequency hammer.

3,356,165

MECHANISM OF PERCUSSIVE ACTION

Leonid Pavlovich Kozlov, Poselok 2, No. 10, Apt. 19, Moscovskaya Oblast, Solnechnogorsky Raion, Povarovo, U.S.S.R.

Filed Apr. 30, 1965, Ser. No. 452,130
13 Claims. (Cl. 173—124)



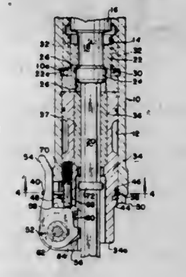
1. A mechanism of percussive action, preferably for use in drills, incorporating a body, a pair of the interior of said body serving as a working chamber filled with liquid; a hammer block housed in said body and performing reciprocating motion, part of said hammer block (head) being located in said working chamber; a drive serving to actuate said hammer block on a backward stroke; means for clutching said hammer block and connecting the latter with said drive on a backward stroke, said means moving in said working chamber; an additional chamber connected to said working chamber and housing a resilient element, preferably gas, said resilient element serving to maintain constant pressure on the liquid in said working chamber; and a partition separating the liquid from the resilient element and transmitting constant pressure from the resilient element to the liquid in said working chamber, the liquid transmitting kinetic energy to said hammer block and actuating said clutch.

3,356,166

PERCUSSIVE TOOL

Sergej A. Diachenko, Denver, Colo., assignor to Gardner-Denver Company, a corporation of Delaware

Filed Apr. 15, 1965, Ser. No. 448,455
5 Claims. (Cl. 173—139)



4. Chuck retaining means for a pressure fluid actuated percussive tool, comprising:

tubular casing means having a bore defining an internal wall;

chuck means coaxially disposed in said bore and axially movable therein;

releasable retaining means for said chuck means engaging said wall and said chuck means to retain the latter axially in said casing means;

said chuck means provided with surface means engageable with said retaining means for wedging the latter between said wall and said surface means when said chuck means is in response to movement in a direction tending to displace the said chuck means from the bore of said casing means;

axially movable means in said casing means;

pressure fluid conducting means defined by said casing means;

pressure fluid conducted by said pressure fluid conducting means operating on said axially movable means to press said surface means wedgingly against said retaining means.

3,356,167

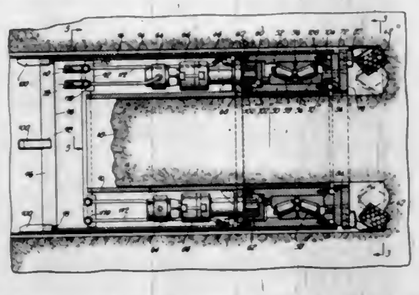
CORE FORMING TYPE HORIZONTAL BORING MACHINE WITH EXPANSIBLE ROLLING CUTTERS

Thomas Robert Trent, Manhasset, N.Y., assignor to Boring Research, Inc., Maspeth, N.Y., a corporation of New York

Filed June 10, 1965, Ser. No. 462,872
12 Claims. (Cl. 175—95)

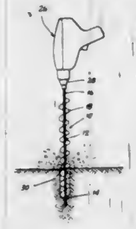
1. Boring apparatus comprising a pair of elongated tubular elements, one disposed inside the other, bearing means disposed about the space between said elements and maintaining them in coaxial alignment, said bearing means being configured to permit relative rotation between said elements and to transmit longitudinal forces from a first of said elements to the second of said elements, a plurality of cutter elements distributed out beyond one end

of said tubular elements and mounted to rotate with said second element, said cutter elements being dimensioned to describe an angularly shaped passageway upon the rotation and forward longitudinal movement of said second tubular element such as to accommodate both said tubular elements, at least one drive motor attached to said first tubular element and connected to rotate said second tubular element, said motor also being located entirely within said annularly shaped passageway and longitudinal



force transmitting means extending along within said annular passageway and arranged to effect longitudinal movement of said first tubular element during rotation of said second tubular element, said longitudial force transmitting means being resistive to rotational forces whereby said cutter elements are maintained in a fixed longitudinal relationship with respect to said bearing means so as to avoid increasing cantilevering effects upon said cutter elements during their cutting action.

3,356,168
GARDEN AND LAWN AUGER
William H. Johnson, 1941 Karlin Drive, St. Louis, Mo. 63131
Filed Apr. 1, 1965, Ser. No. 444,565
2 Claims. (Cl. 175—394)



1. In combination, a portable lawn and garden earth drilling tool adapted for actuation by a small diameter hand drill and the like comprising a shaft, and flighting extending along said shaft continuously along a major extent thereof constructed for boring and conveying dirt to the surface said flighting being secured to said shaft by spot welding spaced along and balanced around said shaft to minimize rotational imbalance.

3,356,169
BATCH WEIGHER WITH RESPECTIVE DIALS FOR SUCCESSIVE LOADS AND TOTAL WEIGHT
Malcolm C. Tate, Stamford, and Chester D. Bradley, Darien, Conn., assignors to A. H. Emery Company, New Canaan, Conn.
Filed Apr. 1, 1966, Ser. No. 539,525
14 Claims. (Cl. 177—17)

1. In a weighing apparatus having a load receiving surface, a mechanism movable through a distance proportional to the loading on said surface, and a first movable pointer operably connected to said mechanism to indicate the magnitude of said loading on a first dial means, the improvement comprising:

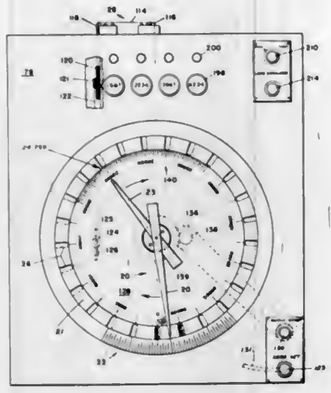
(A) a second movable pointer;

(B) means for proportionately moving said second pointer in response to movement of said mechanism;

(C) a second dial,

(1) positioned with respect to said second pointer to indicate a magnitude of loading;

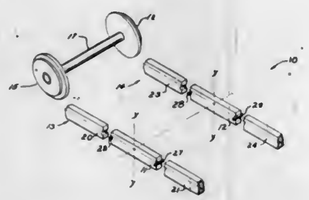
(D) means for returning said mechanism from its loading position to its position when said surface is free from loading,



(1) to return said first pointer and said second pointer to their respective zero load positions; and

(E) means for moving said second dial in correlation with the return movement of said second pointer so that the two move together to maintain their relative positions and the last load indication on said second dial by said second pointer, whereby said first pointer indicates the individual magnitude of each successive loading on said surface while said second pointer simultaneously indicates the sum of the magnitudes of said successive loadings.

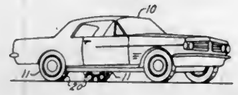
3,356,170
RAILROAD TRACK WEIGHT DETECTOR
William E. Cory and Jack B. Johnson, San Antonio, Tex., assignors to Sands Measurement Corporation, Dallas, Tex., a corporation of Texas
Filed Oct. 22, 1964, Ser. No. 405,737
15 Claims. (Cl. 177—163)



1. An apparatus for sensing the position of a moving body including: a beam; means supporting said beam at longitudinally spaced locations whereby said beam is free to deflect downwardly as the body moves longitudinally over said beam; means for sensing the deflection of said beam at points spaced longitudinally equidistantly from

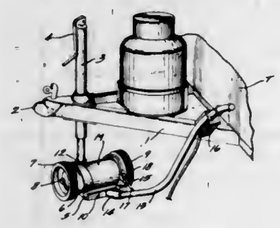
and on opposite sides of the midpoint of the span of said beam between said spaced locations; and means operatively associated with said sensing means for producing an alternating voltage whose phase shifts 180 degrees at the instant said body moves past the midpoint of the span of said beam during its longitudinal movement over said beam.

3,356,171
TRACTION ASSISTANCE DEVICE
Thomas H. Cichetti, 15 E. Tacoma Ave., Latrobe, Pa. 15650
Continuation of application Ser. No. 380,752, July 7, 1964. This application June 10, 1966, Ser. No. 562,048
13 Claims. (Cl. 180—15)



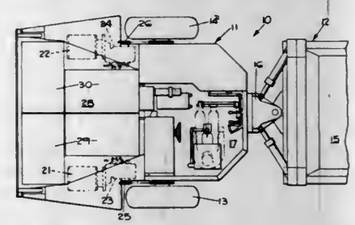
1. In an auxiliary traction device for use with a traction wheel that is operatively mounted on an axle of a wheeled vehicle, a support body, means independent of the wheel for rotatably mounting said support body on the axle adjacent the wheel, means for operatively connecting said support body to the wheel, a plurality of traction shoes, means mounting said traction shoes radially-movably on said support body in an annular array that is symmetrical with respect to the axle, resilent means urging said traction shoes towards radial inward positions on said support body wherein said traction shoes lay entirely within the outer periphery of the wheel in horizontal projection, selectively operable actuating means for sequentially moving each of said traction shoes radially-outwardly to operative positions wherein said shoes extend outwardly beyond the periphery of the wheel, said actuating means having expanding member means which in its first operative position defines a circular guiding path that is concentric with the axle and which in a second position defines a relatively smooth asymmetrical guiding path, asid asymmetrical path having a major axis that is oriented in a direction other than substantially downward, means for locking each of said traction shoes in its radial-outward position, and selectively operable means for releasing said locking means to permit said resilient means to retract said traction shoes to their inward positions.

3,356,172
MOTOR DRIVEN DOLLY FOR TRAILERS
Phillip D. Peckham, 6599 Sunny Point Lane, Glendale, Wis. 53217, and Wallace D. Stroh, 17710 W. Wisconsin Ave., Brookfield, Wis. 53005
Filed Oct. 21, 1965, Ser. No. 499,844
2 Claims. (Cl. 180—19)



1. A portable dolly comprising, a reversible electric motor having a gear unit secured directly thereto and enclosed by a common housing, a drive shaft extending from the gear unit and from said housing and generally parallel to the longitudinal axis of said motor, a power drive wheel secured directly to said shaft, a generally rectangular and horizontally disposed frame rigidly secured directly to the underside of said motor, an upwardly extending socket secured to said frame at one side of said motor and adapted to removeably receive a jack of a trailer, said drive wheel located at one side of said frame, an idler wheel secured to said frame and at a side of the frame opposite from that of said drive wheel, an elongated operator's handle extending upwardly from said frame at the side of said motor opposite to said socket, and an electrical control means mounted on said handle connected with said motor and adapted to be connected to a source of electrical power, said control means adapted to operate said motor in either direction.

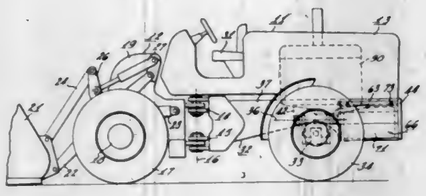
3,356,173
POWER DRIVEN VEHICLE
Robert C. Galion Holcombe, Dublin, Ohio, assignor to Jeffrey Manufacturing Company, a corporation of Ohio
Filed July 23, 1965, Ser. No. 474,370
6 Claims. (Cl. 180—65)



1. A power driven vehicle having a first traction means and a second traction means by which the vehicle is propelled, a first electric motor for driving said first traction means, a second electric motor for driving said second traction means; an electric battery in the vehicle for supplying power to said first electric motor and to said second electric motor, said battery comprising a first battery section and a second battery section, a series connection of said first battery section to said second battery section; a first operating and control circuit for said first electric motor, a second operating and control circuit for said second electric motor; motor starting and stopping means for respectively connecting and disconnecting said first operating and control circuit and said first electric motor to said battery and for respectively connecting and disconnecting said second operating and control circuit and said second electric motor to said battery; connections of said first electric motor across said first battery section including a first normally open switch contact and said series connection of the first battery section to the second battery section, and the first switch contact being connected to said series connection, connections of said second electric motor across said second battery section including a second normally open switch contact and said series connection of the first battery section to the second battery section and the second switch contact being connected to said series connection, a connection of said first electric motor across said second battery section including a third normally open switch contact, said first electric motor being connected across said first battery section by closing said first switch contact and by maintaining said third switch contact open, and alternatively said first electric motor being connected across said first and second battery sections by closing said third switch contact and by maintaining said first switch contact open, and a connection of said second electric motor across said first battery section including a fourth normally open switch contact, said second electric motor being connected across

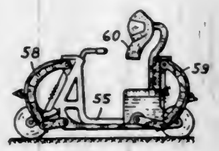
said second battery section by closing said second switch contact and by maintaining said fourth switch contact open, and alternatively said second electric motor being connected across said first and second battery sections by closing said fourth switch contact and by maintaining said second switch contact open.

3,356,174
VEHICLE CONSTRUCTION
Norman G. Olsen, Highland Park, Ill., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed May 11, 1965, Ser. No. 454,904
14 Claims. (Cl. 180—68.5)



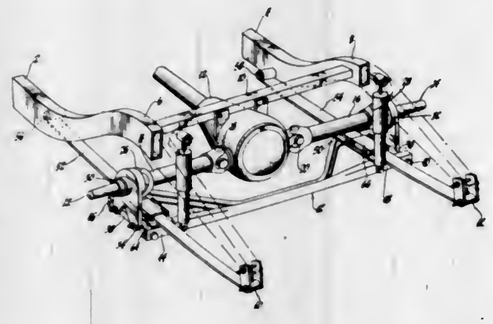
1. A vehicle chassis comprising,
a first pair of longitudinally extending and laterally spaced frame members,
a pair of longitudinally extending and laterally spaced counterweight members adjacent the laterally inner sides of said first pair of frame members, respectively, and secured to the latter, respectively, and
a second pair of longitudinally extending and laterally spaced frame members having
vertically and longitudinally extending walls rigidly secured to the laterally inner sides of said counterweight members, respectively, and extending downwardly therefrom, and
horizontally and longitudinally extending battery supports extending laterally outwardly from said walls, respectively, in underlying relation to said counterweight members.

3,356,175
SAFE VEHICLE BODY
Phillip Graham, 2825 Glenmore Ave., Pittsburgh, Pa. 15216
Original application Sept. 27, 1962, Ser. No. 226,623, now Patent No. 3,219,384, dated Nov. 23, 1965. Divided and this application May 21, 1965, Ser. No. 457,627
11 Claims. (Cl. 180—93)



1. In combination with a vehicle having a framework, at least one end of said vehicle having a single wheel structure, a bumper positioned at said end, said bumper comprising a stiff, yieldable shaft means outwardly bowed throughout in a vertical plane, fixed pivotal bearing means pivotally engaging upper end portion means of said shaft means, a bearing means yieldably mounted on said framework, said yieldable shaft means having a forked lower portion means so as to straddle said single wheel structure, said bumper having spike means projecting downwardly from its lower extremity, said yieldable bearing means engaging said forked lower portion means so as to permit said forked lower portion means to move downwardly away from said upper end portion means and strike a roadway surface as the result of impact of an object against outer surface means of said bumper which results in partial flattening of said shaft means, causing said upper end portion means to rise and tend to raise the adjacent portion of said vehicle away from said roadway surface causing lifting action, whereby a substantial portion of said impact is absorbed by said striking of said roadway surface and by said lifting action and whereby said spike means penetrates said roadway surface and restrains said vehicle from moving laterally.

3,356,176
VEHICLE SUSPENSION
Leroy E. Herr, Lock Haven, Pa., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Feb. 3, 1966, Ser. No. 524,719
4 Claims. (Cl. 180—73)

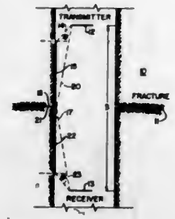


1. In a vehicle having a frame mounted differential, independent suspension comprising a pair of oppositely transversely extending live axles articulatably connected at their inner ends to said differential and at their outer ends to spindle mounted wheels, a spindle support at each side of the vehicle, a beam extending transversely between said supports yieldably connected to said frame by laterally spaced longitudinally extending leaf springs, and means pivotally connecting the opposite ends of said beam to said supports on longitudinally extending axes displaced vertically from the axis of rotation of said wheels.

3,356,177
METHOD FOR DETECTING FRACTURES IN A FORMATION PENETRATED BY A BOREHOLE
Jay D. Loren, Houston, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed June 12, 1964, Ser. No. 374,742
6 Claims. (Cl. 181—0.5)

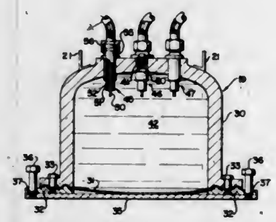
1. A process for detecting fractures in formations penetrated by a borehole said process comprising:
repetitively transmitting acoustic impulses and receiving the resulting trains of acoustic waves between transmitting and receiving transducers located within said borehole;
moving at least one of the transducers a known increment of not more than about one inch of depth between each of a series of adjacent impulses transmissions;
detecting the amplitude versus time characteristics of the acoustic impulses received during said series of adjacent impulse transmissions;

detecting the locations within each received train of acoustic waves of the portions of said received train of acoustic waves that have amplitudes that are anomalous relative to the amplitudes of similarly located portions of adjacently received trains of acoustic waves; and,



measuring the depths at which the positions of the amplitude anomalies within the received trains of acoustic waves from each of a series of adjacently transmitted acoustic impulses exhibit a sequential advance through the received trains of acoustic waves.

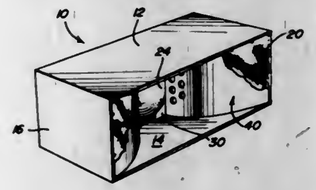
3,356,178
METHOD AND APPARATUS FOR SEISMIC EXPLORATION
David M. Nash, Jr., El Paso, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed June 29, 1965, Ser. No. 467,925
8 Claims. (Cl. 181—.5)



1. Apparatus for generating seismic waves for geophysical exploration purposes comprising:
a heavy dome-shaped housing adapted to be positioned with its open side in contact with the surface of the earth;
a flexible diaphragm closing the open end of said housing in a fluid-tight manner and thereby defining a closed chamber within said housing;
a dielectric liquid substantially filling said chamber;
a plurality of spark discharge electrodes supported by said housing and extending into the liquid in said chamber, said discharge electrodes being mounted in a common plane parallel to said flexible diaphragm;
separate voltage means for each of said electrodes for supplying a relatively high DC voltage; and
control means for selectively connecting said separate voltage means across each of said spark discharge electrodes, in a predetermined timed sequence, thereby causing each of said electrodes to generate a spark, to produce a corresponding plurality of sequential substantially downward traveling pressure pulses in said liquid, whereby the pressure pulses in said liquid will strike said diaphragm in succession to form a single prolonged pressure wave on said diaphragm.

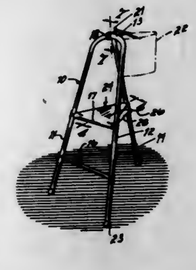
7. In a system for generating a seismic wave in the earth by means of a pressure wave created in a liquid-filled heavy dome by a spark discharge in said liquid and transmitted to the earth via a diaphragm which seals the open bottom end of said dome; the method of increasing the total quantity of energy coupled to the earth comprising:
sequentially creating a plurality of spark discharges in said dome to produce a coresponding plurality of pressure pulses therein; and
adjusting the time between consecutive discharges to between 150 and 2500 microseconds so that the individually generated pressure pulses arrive at the diaphragm in succession and before the diaphragm has recuperated from the preceding pressure pulse, whereby the individual pressure pulses created in said dome are additive at said diaphragm and produce a single prolonged pressure wave.

3,356,179
HIGH FIDELITY SPEAKER ENCLOSURE
Leo L. Tompkins, 127 Wacaster St., Jackson, Miss. 39209
Filed Feb. 17, 1967, Ser. No. 616,857
10 Claims. (Cl. 181—31)



1. In combination with a speaker having a sound radiating element, an enclosure comprising a bass reflex chamber loading one side of said element, a horn having side walls enclosing a forward sound chamber loading the other side of said element through which all sounds are radiated and passage means extending between said bass reflex and forward sound chambers including ports formed in the side walls of the horn adjacent to said other side of the sound radiating element to establish air paths of different lengths between said chambers.

3,356,180
TRIPOD STEPLADDER
Robert D. Parry, 7240 Algonquin Drive, Cincinnati, Ohio 45243
Filed July 13, 1966, Ser. No. 564,986
1 Claim. (Cl. 182—124)



A stepladder of the tripod type comprising
two side posts,
at least two steps disposed between said side posts,
a rest bar integral with said side posts, said rest bar and said side posts having a substantially inverted U-shaped configuration,
a tripod leg pivotally connected at one end to said rest bar and,

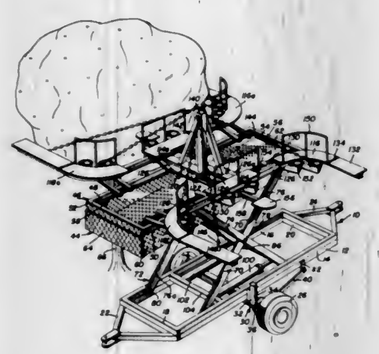
a standing platform disposed susbtantially below said rest bar and pivotally connected to the uppermost step at one end,

said platform including rigid structure means defining an aperture at the other end of said platform, said aperture positioned so that said tripod leg passes therethrough,

and a stop associated with said third leg for maintaining said platform substantially horizontal when said ladder is in a tripod position,

whereby said platform pivots upwardly about said uppermost step as said tripod leg is pivoted to a storage position subsantially parallel to said side posts, and said platform pivots downwardly about said uppermost step to a working position as said tripod leg is pivoted to the tripod position.

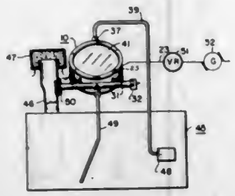
3,356,181
FRUIT PICKING APPARATUS
Charles C. Granger, 1203 Chestnut St., Henderson, N.C. 27536
Filed June 15, 1966, Ser. No. 557,664
12 Claims. (Cl. 182—129)



1. A fruit picking apparatus comprising a mobile supporting frame, a receptacle unit for fruit, means mounting the receptacle unit on the supporting frame for vertical movement, actuating means for raising and lowering the receptacle unit relative to the supporting frame, a catwalk assembly positioned in adjacency to the receptacle unit, and means for moving said assembly laterally and longitudinally relative to the frame and receptacle unit so that said assembly can be positioned to encompass a tree at selected variable heights in relationship with the receptacle unit whereby workmen can move along the catwalk assembly and pick fruit from a tree and deposit the picked fruit in the receptacle unit.

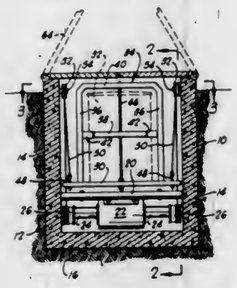
3,356,182
ENGINE OIL CONDITIONER AND METHOD OF CONTINUOUSLY RECONDITIONING LUBRICATING OIL
Luther Robinson, 509 Bellaire Ave., Pittsburgh, Pa. 15226, and Edgar G. Roland, Box 383, Grand Ave., Mars, Pa. 16046
Filed July 7, 1964, Ser. No. 380,871
24 Claims. (Cl. 184—6)

6. An oil reconditioning device for an internal combustion engine which comprises, a housing defining an enclosed oil treating chamber, a housing defining an enclosed heating chamber, a heat-transfer partition member between said chambers, means for mounting said chambers in a vertically-sloped position with respect to the horizontal, electric heating element means positioned in said heating chamber in an effective heat-transfer relationship with respect to a back side of said partition member, means in said treating chamber for introducing contaminated oil from the engine to an upper end portion thereof, a baffle adjacent the upper end portion of said treating chamber defining a vacuum chamber above said treating chamber, at least one flow passageway from said treating to said vacuum chamber, means in said treating chamber for flowing the oil introduced thereto by said inlet means downwardly as a film along said partition



member and for neutralizing the acid content thereof, said heating means supplying sufficient heat energy to said partition member to volatilize-off contaminants from the oil film flowing downwardly thereon, a vacuum inlet connection to said vacuum chamber for drawing-off volatilized contaminants introduced through said flow passageway from said treatment chamber, and a collecting means open to a bottom end portion of said treating chamber for receiving reconditioned oil therefrom and having a gravity flow outlet for returning the reconditioned oil from said collecting chamber back to the engine.

3,356,183
RETRACTABLE REFUSE RECEPTACLE ASSEMBLY
Noah B. Shell, Rte. 5, Ponca City, Okla. 74601
Filed Aug. 4, 1966, Ser. No. 570,344
1 Claim. (Cl. 187—3)



A refuse receptacle assembly comprising:

a housing having side walls and a bottom, said side walls and bottom being interconnected to form an integrated housing which may be positioned in the earth;

a substantially horizontally extending motor support plate extending across said housing between the side walls thereof and terminating within said side walls, said motor support plate having apertures in two opposed side edges thereof;

a motor secured to the lower side of said motor support plate;

elongated, horizontally extending support rods secured to the walls of said housing and detachably supporting said support plate whereby said support plate and said motor may be easily removed from said housing for repair of said motor;

a supporting platform movably mounted in said housing above said motor support plate and extending substantially parallel to said motor support plate, said receptacle supporting platform having apertures in two opposed side edges thereof vertically aligned with the apertures in the two opposed side edges of the motor support plate;

a pair of vertically extending guide rails secured to two opposed facing sides of said housing;

guiding elements mounted on opposed facing edges of said receptacle supporting platform other than those two edges which are apertured, said guiding elements cooperating with said guide rails for guiding said receptacle supporting platform as said receptacle supporting platform is elevated;

shafts extending horizontally from each side of said motor and drivingly connected thereto;

winch drum on each of said shafts;

a pair of cable guiding elements each secured to opposing side walls of said housing and spaced horizontally around said housing from said vertically extending guide rails;

a pair of cables each reeved around one of said winch drums, and each extended through one pair of said aligned apertures in said motor support plate and receptacle supporting platform, extended over said one of said cable guiding elements, and secured at one end to said receptacle supporting platform for elevating said receptacle supporting platform in said housing when said motor is energized, said guiding elements, rails and cables cooperating to prevent horizontal movement and canting of said receptacle supporting platform during its vertical movement in said housing;

a pair of cooperating lids each pivotally secured to opposed side walls of said housing at the upper edge thereof and pivotal into substantially monoplanar alignment to close said housing, said cooperating lids having free edges meeting along a line extending transversely across the top of said housing when said lids are in monoplanar alignment and said housing is closed thereby;

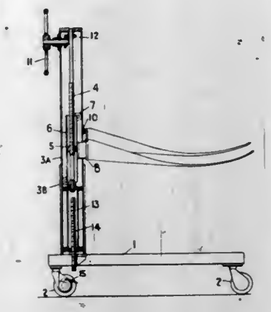
a refuse receptacle supported on said receptacle supporting platform;

a receptacle frame mounted on, and extending upwardly from, said receptacle supporting platform and including a horizontally extending bumper element at the upper end of said receptacle frame, said receptacle frame and horizontally extending bumper element extending at least the width of said refuse receptacle and positioned on said receptacle supporting platform to extend across and substantially normal to, the adjacent free edges of each of said cooperating lids when said lids are in their closing, substantially monoplanar aligned positions, whereby said refuse receptacle is shielded fram contact with said lids as said receptacle supporting platform is elevated, and whereby said lids are gradually pivoted upwardly to an open position by contact with said bumper element; and

a pair of resilient fingers extending substantially horizontally outwardly from said receptacle frame and dimensioned and positioned for resiliently gripping said receptacle.

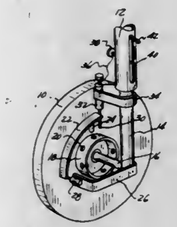
3,356,184
TROLLEY
William Henry Bidgood, 8 S. Morton St., Portobello, Edinburgh 15, Scotland
Filed Oct. 5, 1966, Ser. No. 584,579
1 Claim. (Cl. 187—9)

A trolley comprising a chassis, said chassis comprising a single longitudinal member and two spaced outriggers, at least one castor fitted to the longitudinal member and at least one castor fitted to each outrigger at its outermost end; a least one column upstanding from the chassis at one side of the chassis, said column being in two portions, the lowermost one of which is fixed to the chassis and the uppermost one of which is movable longitudinally relative to the lowermost one; an internally screw-threaded member fixed to the uppermost portion of the column, an axially restrained adjusting screw rotatable in the chassis engaged with the internally screw-threaded member for adjusting the uppermost portion of the col-



umn relative to the lowermost portion; a lifting jack device of the mechanical screw-jack type having a vertical screw-threaded rod support in the uppermost portion of the column and a nut-like element engaged with the screw-threaded rod for vertical movement upon rotation of the screw-threaded rod; a horizontal beam coupled to the nut-like element; and tines each in the form of a pointed strip, each tine having its end remote from the point formed with a notch facing downwardly and arranged to be engageable with the upper portion of the beam in such manner that the tine projects over the chassis when the tine is engaged with the beam.

3,356,185
SHOPPING CART BRAKE
Elmer H. Isaacks, 13950 Westbrook, Detroit, Mich. 48238
Filed Sept. 22, 1966, Ser. No. 581,353
4 Claims. (Cl. 188—31)



1. In a shopping cart characterized by a wheeled frame and a basket fixed to the frame, the improved means for disabling the cart from further wheeled motion in response to the traversing by the cart of a predetermined abrupt discontinuity in the elevation of the rolling surface comprising:

a hollow vertical leg fixed to the cart frame and being open at its lower end;

a vertical inner member means freely slidably mounted

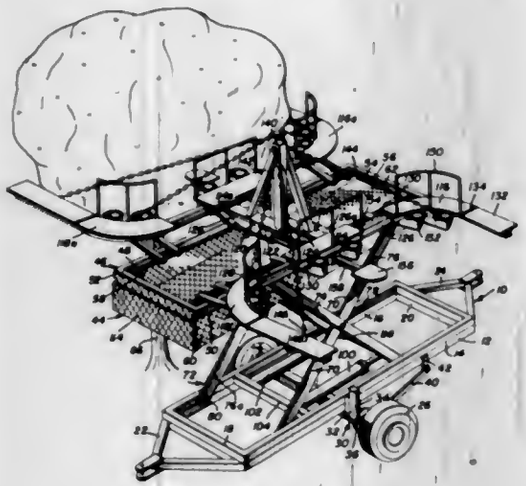
a standing platform disposed susbtantially below said rest bar and pivotally connected to the uppermost step at one end,

said platform including rigid structure means defining an aperture at the other end of said platform, said aperture positioned so that said tripod leg passes therethrough,

and a stop associated with said third leg for maintaining said platform substantially horizontal when said ladder is in a tripod position,

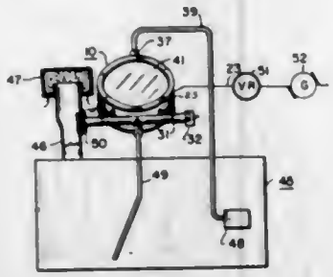
whereby said platform pivots upwardly about said uppermost step as said tripod leg is pivoted to a storage position subsantially parallel to said side posts, and said platform pivots downwardly about said uppermost step to a working position as said tripod leg is pivoted to the tripod position.

3,356,181
FRUIT PICKING APPARATUS
Charles C. Granger, 1203 Chestnut St., Henderson, N.C. 27536
Filed June 15, 1966, Ser. No. 557,664
12 Claims. (Cl. 182—129)



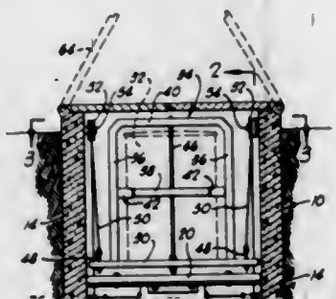
1. A fruit picking apparatus comprising a mobile supporting frame, a receptacle unit for fruit, means mounting the receptacle unit on the supporting frame for vertical movement, actuating means for raising and lowering the receptacle unit relative to the supporting frame, a catwalk assembly positioned in adjacency to the receptacle

horizontal, electric heating element means positioned in said heating chamber in an effective heat-transfer relationship with respect to a back side of said partition member, means in said treating chamber for introducing contaminated oil from the engine to an upper end portion thereof, a baffle adjacent the upper end portion of said treating chamber defining a vacuum chamber above said treating chamber, at least one flow passageway from said treating to said vacuum chamber, means in said treating chamber for flowing the oil introduced thereto by said inlet means downwardly as a film along said partition



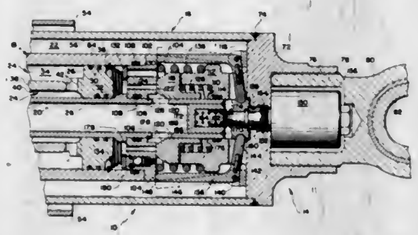
member and for neutralizing the acid content thereof, said heating means supplying sufficient heat energy to said partition member to volatilize-off contaminants from the oil film flowing downwardly thereon, a vacuum inlet connection to said vacuum chamber for drawing-off volatilized contaminants introduced through said flow passageway from said treatment chamber, and a collecting means open to a bottom end portion of said treating chamber for receiving reconditioned oil therefrom and having a gravity flow outlet for returning the reconditioned oil from said collecting chamber back to the engine.

3,356,183
RETRACTABLE REFUSE RECEPTACLE ASSEMBLY
Noah B. Shell, Rte. 5, Ponca City, Okla. 74601
Filed Aug. 4, 1966, Ser. No. 570,344
1 Claim. (Cl. 187—3)



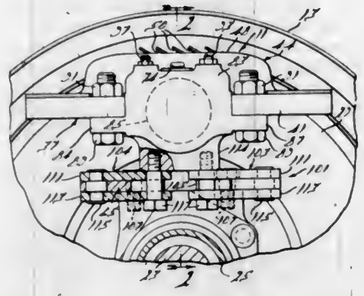
for longitudinal movement between predetermined limits within said hollow leg and having a portion extending through and below said open lower end of said hollow leg;
axle means fixed to the lower end of said inner member means for rotatably supporting a cart wheel;
and disabling means responsive to the telescoping movement of said inner member means relative to said hollow leg initiated by an attempted traversal of the rolling surface discontinuity for disabling the cart against further wheeled motion.

3,356,186
LOCKING MEANS FOR SHOCK ABSORBERS
Howard J. Lambers, Kalamazoo, Mich., assignor to Pneumo Dynamics Corporation, Cleveland, Ohio, a corporation of Delaware
Filed Sept. 15, 1965, Ser. No. 487,451
10 Claims. (Cl. 188—67)



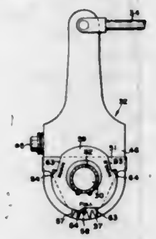
1. A shock absorber comprising, in combination:
an outer assembly,
an inner assembly disposed within said outer assembly and defining therewith a reservoir therebetween,
said inner assembly comprising
a tubular inner casing,
an annular end cap closing one end of said inner casing and having a centrally disposed bore extending generally longitudinally therethrough,
said end cap being provided with a plurality of damping ports extending generally longitudinally therethrough,
an elongate hollow porting tube having one end open,
said tube extending generally longitudinally through the bore of said end cap,
said end cap being structurally affixed to and supported by said hollow porting tube at a location therealong which is generally longitudinally spaced from the other end portion of said porting tube,
said other end portion of said porting tube projecting exteriorly of said end cap and being supported by said outer assembly,
said porting tube being provided with a plurality of generally transversly disposed ports located in the wall thereof at locations adjacent to and exteriorly of said end cap,
a piston assembly reciprocatably disposed within said inner assembly and so constituted and arranged therewith as to enable said piston assembly to displace fluid therein generally outwardly therefrom through said damping ports during compression loading of the shock absorber and through said transversely disposed ports during tensile loading thereof as said piston assembly moves therethrough, and
valving operatively associated with said porting tube to control fluid flow through said damping and through said transversely disposed ports during both directions of movement of the piston assembly to define a controlled pressure head for such fluid during the flow thereof through said damping and said transversely disposed ports.

3,356,187
LINK SUPPORTED DISK BRAKE
Harvey C. Swift, Birmingham, Mich., assignor to Kelsey-Hayes Company, Romulus, Mich., a corporation of Delaware
Filed Apr. 25, 1966, Ser. No. 545,131
7 Claims. (Cl. 188—73)



1. A disk brake comprising a reaction member having spaced portions embracing an arcuate portion of a rotor that is rotatable about a central axis, a pair of brake shoe means nonrotatably carried by said reaction member and positioned between said rotor and a respective one of said reaction member portions, fluid motor means operatively interposed between one of said reaction member portions and an adjacent brake shoe means for moving said reaction member in one direction axially of said rotor and pressing both of said brake shoe means toward said rotor, a stationary support linkage means interconnecting said reaction member and said support, said linkage means adapted to pivot in a plane generally parallel to the direction of braking forces acting on said reaction member and adapted to transmit torque from said reaction member to said stationary support, said linkage means comprising a pair of linkages each of which is pivoted at its ends to said stationary support and said reaction members, respectively, one of said linkages being constructed to elongate in one direction when said fluid motor means is energized during movement of said rotor in one rotational direction, the other of said linkages being constructed to elongate in said one direction when said fluid motor means is energized during movement of said rotor in a reverse rotational direction.

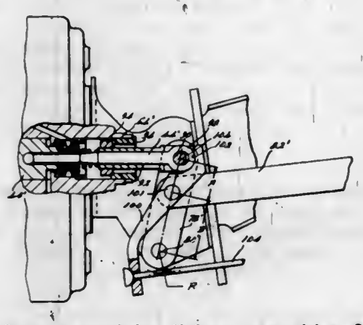
3,356,188
BRAKE LINING WEAR INDICATOR
Leo Goldman, Windsor, Ontario, Canada, and Walther F. Scheel, Detroit, Mich., assignors to Rockwell-Standard Corporation, Pittsburgh, Pa., a corporation of Delaware
Continuation of application Ser. No. 414,540, Nov. 30, 1964. This application Nov. 18, 1966, Ser. No. 596,723
6 Claims. (Cl. 188—79.5)



1. For use in a brake assembly of the type wherein a rotatably mounted cam shaft carries a cam disposed between separable brake shoes provided with drum engaging friction linings, a slack adjuster lever rotatably adjustably connected to the cam shaft and comprising

means for rockably adjusting the cam shaft about its longitudinal axis to compensatively reposition the cam for redetermining the returning positions of the brake shoes as the brake lining wears, said shaft having a longitudinally splined section projecting from said lever, and means for indicating the relative rotation of said cam shaft with respect to said lever for indicating the degree of wear of the brake lining on said shoes comprising a separate index plate non-rotatably attached to said lever and apertured to pass the splined section of said cam shaft, a cooperating dial plate non-rotatably fitted onto said splined section adjacent to and axially outwardly of said index plate, one of said plates having circumferentially spaced marks corresponding to new and worn brake lining conditions, a plurality of circumferentially spaced apart index elements on the other of said plates, said index plate being mountable in selected, angularly spaced apart positions on said splined section to provide for the alignment between at least one of said index elements and the mark corresponding to new brake lining conditions when said cam shaft is adjusted to its new brake lining position, said one of said index elements cooperating with said marks to indicate the degree of brake lining wear, and means for axially retaining said dial plate on said splined section.

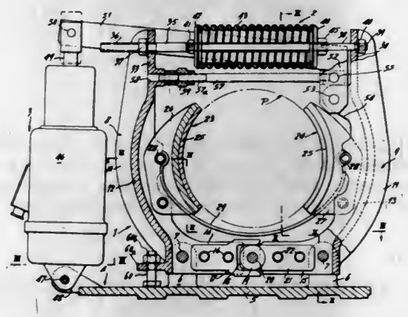
3,356,189
MINIMUM TRAVEL POWER BRAKE ACTUATOR
David M. Tenniswood, Detroit, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Dec. 21, 1965, Ser. No. 515,404
16 Claims. (Cl. 188—106)



1. A force transmitting linkage comprising first and second pivotally connected links, additional means securing one of said links for a pivotal movement about a stationary point, further means interconnecting said links for a limited relative pivotal movement therebetween, and means for moving one of said links independently or concurrently with the other of said links, said links being pivotally interconnected adjacent their ends and adjacent the end of said one link opposite its fixed pivot point.

3,356,190
COMPENSATING PLAY DEVICE FOR THE BRAKING OF ROTATING MEMBERS SUCH AS SHAFTS, PULLEYS AND THE LIKE
Jacob Prussak, Paris, France, assignor to Maurice Demont, Clichy, Seine, France
Filed Mar. 11, 1965, Ser. No. 439,029
Claims priority, application France, Mar. 25, 1964, 968,694, Patent 1,398,074
6 Claims. (Cl. 188—171)

1. In a friction brake of the type having a base provided with pivot pin means,
a pair of jaws each pivotally connected at one end to said base by means of said pivot pin means, and a brake lining carried by each jaw for engagement with a rotating member, the improvement consisting of mechanism for eliminating the effects of wear between the pivot pin means and the jaws insofar as brake actuation and release are concerned, the improvement comprising,
brake applying means acting between the free ends of said jaws for urging same in opposite directions to engage said brake linings with an associated rotating member and causing said pivot pin means to react against each jaw in a particular direction when the brake is engaged,
brake releasing means acting between the free ends of said jaws independently of said brake applying means for urging said jaws in directions opposite to those urged by said brake

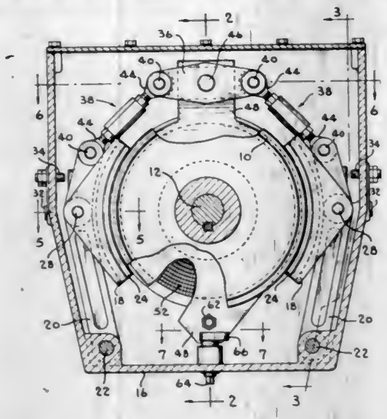


applying means so as to release the brake, said brake releasing means reacting against said jaws at points disposed on a line between a line containing the corresponding reaction points of the brake applying means against the jaws and said pivot pin means whereby the pivot pin means still react in the said particular directions against said jaws when said brake releasing means is operated to release the brake, said brake linings being provided with bearing pins and said jaws being provided with notches receiving the respective bearing pins,
a U-shaped leaf spring bearing at its opposite ends against said bearing pins to urge same into seated relations within their respective notches,
and means connecting said one ends of the jaws for constraining them to move in unison.

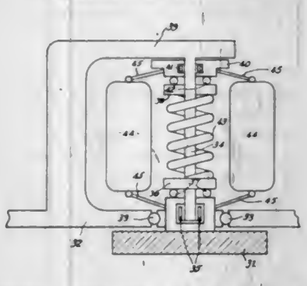
3,356,191
MAGNETIC BRAKE
Roger L. Bevard, Harry Wayne Johnson, and Don W. Erickson, Iron Mountain, Mich., assignors to Lake Shore, Inc., Iron Mountain, Mich., a corporation of Michigan
Filed Aug. 16, 1965, Ser. No. 479,887
5 Claims. (Cl. 188—171)

1. The combination with an electric motor having a housing and a shaft projecting from the housing, of an electric brake including a brake housing secured to the motor housing, a drum mounted on the shaft inside the brake housing, a pair of arms pivotally mounted in the housing on opposite sides of the drum with the pivot axis of each arm generally parallel to the motor shaft, a brake shoe mounted on each arm, an armature mounted in the housing on an axis transverse the axes of the arms, a coil positioned to attract the armature, a spring urging the

armature from the coil, linkage connecting each arm to the armature whereby movement of the armature is operative to set or release the brakes, said linkage including a projection on the armature, a pin carried by the projection generally parallel to the pivot axes of the arms, a yoke mounted on the pin, and a reach rod connecting each end of the yoke to an arm, the connection at each end of each reach rod allowing limited universal movement.



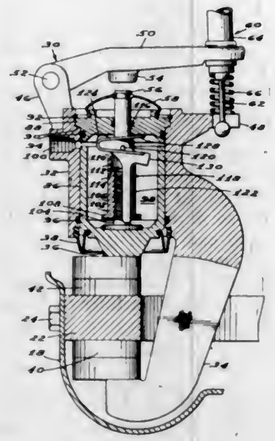
3,356,192
AUTOMATIC VARIABLE-SPEED PRESSURE GOVERNOR
Martin Cameron, Bowelling, Western Australia, Australia
Filed Mar. 1, 1965, Ser. No. 435,890
2 Claims. (Cl. 188—187)



1. A governor comprising a fixed shaft, a coil spring positioned around and bearing at one end against said shaft, a block slideably mounted on one end portion of said shaft and having one side bearing against said spring, friction surfaces on the other side of said block, a drive member rotatably mounted on the other end portion of said shaft, a plurality of flyweights pivotally connected to said drive member, a plate bearing against said friction surfaces, bearing means for guiding said plate for axial movement relative to said shaft, and a plurality of arms each connecting one of said flyweights and said plate to move said plate axially in response to movements of said flyweights.

3,356,193
FLUID BRAKE ADJUSTER
Robert J. Stowers, Southfield, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed May 24, 1966, Ser. No. 552,562
11 Claims. (Cl. 188—196)

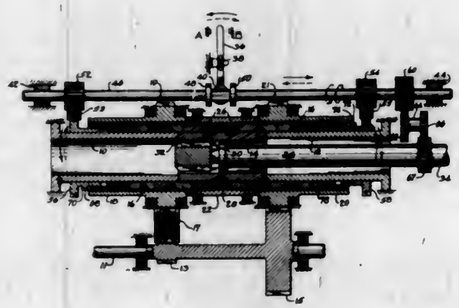
1. In a brake cylinder having fluid pressure responsive means for moving a brake shoe from a rest position into contact with a braking surface, said fluid pressure responsive means including a housing having a pressure chamber and a piston mounted in said pressure chamber for movement between said rest position and a braking position, said piston moving said brake shoe into contact with the braking surface when braking pressure is applied to the pressure chamber, an adjusting mechanism comprising:



threaded means within said chamber for establishing the rest position of said piston, said threaded means comprising a member having a surface exposed to the fluid pressure in the chamber, and

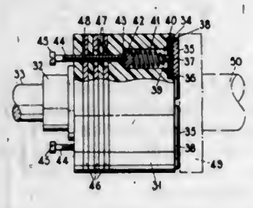
adjusting means for turning said threaded means to change said rest position, said adjusting means being actuated by a change in fluid pressure on said surface of said threaded means.

3,356,194
SPRING CLUTCH WITH HELICAL SPLINE
Ellarson R. Stout, Fayson Lakes, N.J., assignor to Curtiss-Wright Corporation, a corporation of Delaware
Filed Apr. 7, 1966, Ser. No. 540,910
7 Claims. (Cl. 192—12)



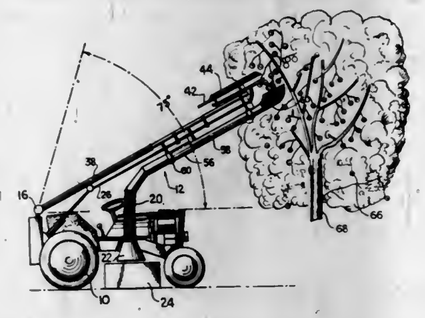
1. A clutch comprising a pair of input drums rotatable in opposite directions, fixed structure, a helical clutch spring having a slot therethrough in intermediate coils and having coils extending in opposite directions from such slot in engagement with the fixed structure, a rotatable member having an axis of rotation coincident with the axis of the spring and including a slot which registers with the slot in the spring, a helical spring key located in the slots in said clutch spring and rotatable member for drivably connecting the clutch spring and rotatable member, means for actuating the coils extending in one direction from the slot in the clutch spring into engagement with one of the input drums to cause said rotatable member to be driven by such input drum through the clutch spring and key, and means for actuating the coils extending in the other direction from the slot in the clutch spring into engagement with the other input drum to cause the rotatable member to be driven by such other input drum through the clutch spring and key.

3,356,195
ELECTROSTATIC CLUTCH ARRANGEMENTS
Kenneth Hale, Eccles, William Hawarden Fisher, Didsbury, and Howard Harold Walter Losty, Watford, England, assignors to The General Electric Company Limited, London, England, a British company
Filed Dec. 7, 1965, Ser. No. 512,065
Claims priority, application Great Britain, Dec. 8, 1964, 49,934/64
3 Claims. (Cl. 192—84)



1. An electrostatic clutch for operation from a single phase alternating current supply
(A) which clutch is of the kind
(I) operated by means of an electrostatic attraction produced between a surface of an electrically conducting member and a closely adjacent surface of a semiconductive member when a voltage is applied between the said members,
(a) which voltage is sufficiently high to produce a said electrostatic attraction of such magnitude as to cause adhesion between the said surfaces, and
(II) comprising two components each of which comprises a main body having a surface member directly engageable with a surface member of the other component, the said surface members being composed respectively of an electrically conducting material and a semiconductive material,
(a) which components are capable of relative motion when the said mutually engageable surface members are disengaged, in the absence of a said applied voltage, the said surface members being in slipping contact with one another when disengaged, and
(b) between which components there is substantially no relative motion when the said mutually engageable surface members are engaged as a result of the application of a said voltage;
(B) wherein the said engageable surface member of one of said components of the clutch consists of a plurality of separate sections electrically insulated from one another, and
(C) wherein the said clutch component having an engageable surface member consisting of said separate sections has mounted within its main body
(I) the components of a phase shifting circuit arrangement for effectively converting a single phase alternating current supply having line and neutral conductors into a polyphase system, and
(II) means connecting the said engageable surface member sections through different branches of the phase shifting circuit arrangement to at least one input terminal of said circuit arrangement,
(a) which input terminal is adapted for connection to the line conductor of the single phase alternating current supply.

3,356,196
FRUIT GATHERING MACHINE
Colin B. Sims, Sr., 1806 19th Ave., Vero Beach, Fla. 32960
Filed Feb. 25, 1966, Ser. No. 529,981
5 Claims. (Cl. 193—7)

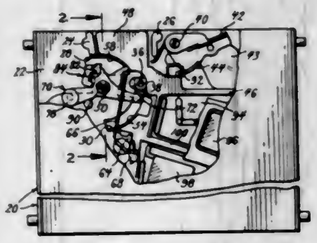


1. A fruit gathering machine adapted for connection to a tractor or other vehicle and comprising a telescoping boom, hydraulic means coupled to said boom to adjust the position of one end thereof selectively in three dimensions, up and down, side to side and in and out, operator support means secured to said boom and movable therewith, said means including a picker's rack which has a padded curved cover to support the back of an operator and which is secured to the boom and extends rearward therealong from the front end and a packer's couch spaced apart from the rack and parallel thereto, whereby when an operator is supported thereby the head and arms of the operator are always positioned adjacent said one end, and manually operable controls for said hydraulic means secured to said support means and accessible to said operator.

3,356,197
SIZE-WEIGHT TESTER FOR COINS
Philip A. Johnson, Olivette, Mo., assignor to National Rejectors, Inc., St. Louis, Mo., a corporation of Missouri
Filed July 19, 1965, Ser. No. 472,810
6 Claims. (Cl. 194—102)

1. In a coin-testing device which has spaced-apart walls to help define a coin-receiving passageway therebetween, a pivot adjacent said passageway that extends transversely of said passageway, and a cradle that is rotatably mounted on said pivot and that has spaced-apart coin-receiving surfaces thereon normally extending into said passageway to intercept authentic coins of a desired demonination, the improvement which comprises:
(a) a second pivot mounted on and rotatable with said cradle,
(b) a latch mounted on and rotatable about said second pivot and thus rotatable relative to said cradle,
(c) a stop on one of said walls adjacent said latch,

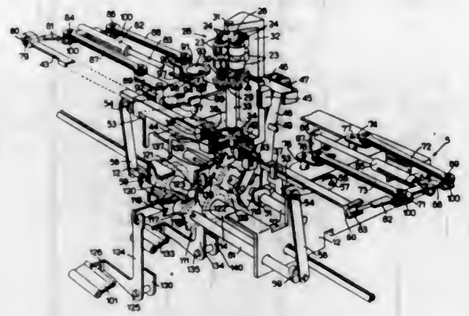
(d) a surface on said latch that normally is in register with said stop on said one wall and that normally blocks appreciable rotation of said cradle,
(e) said surface on said latch responding to rotation of said latch about said second pivot to move out of register with said stop on said one wall, and thereby permit appreciable rotation of said cradle,
(f) a second surface on said latch that is disposed within said coin-receiving passageway and that can be engaged and moved by authentic coins of said desired denomination within said coin-receiving passageway,
(g) said second surface on said latch normally being spaced from one of said coin-receiving surfaces on said cradle a distance less than the diameter of an authentic coin of said desired denomination,
(h) whereby an authentic coin of said desired denomination within said coin passageway can engage said second surface on said latch and said one coin-receiving surface on said cradle, and can rotate said latch far enough about said second pivot to move the first said surface on said latch out of register with said stop on said one wall, and thereby enable the weight of said coin to rotate said cradle,



(i) the spacing between said second surface on said latch and said one coin-receiving surface on said cradle being greater than the diameter of an undersize coin or slug,
(j) whereby an undersize coin or slug cannot simultaneously engage said second surface on said latch and said one coin-receiving surface on said cradle,
(k) said latch depending downwardly from said second pivot,
(l) the first said and said second surfaces on said latch being on an ear on said latch,
(m) said second pivot and said one coin-receiving surface on said cradle being oppositely disposed of the first said pivot,
(n) whereby the weight of an undersize coin which engages said second surface on said latch will apply forces to said second pivot that will resist rotation of said cradle,
(o) the greatest portion of said latch being disposed outwardly of said coin-receiving passageway,
(p) said second surface on said latch being disposed above the level of said one coin-receiving surface on said cradle.

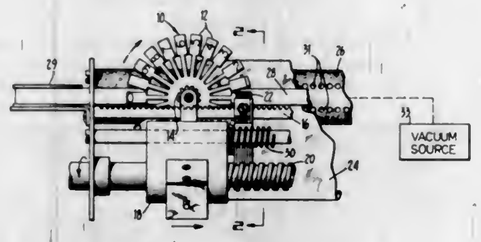
3,356,198
SERIAL PRINTING DEVICE HAVING PLURAL TYPE HEADS MOUNTED ON MOVABLE CARRIAGE
Aldo Michelotti, Torino, Italy, assignor to Ing. C. Olivetti & C., S.p.A., Ivrea, Italy, a corporation of Italy
Filed May 19, 1966, Ser. No. 551,329
Claims priority, application Italy, May 24, 1965, 11,835/65
6 Claims. (Cl. 197—48)

1. In a serial printing device for teleprinters or similar printing machines, having a machine frame, a carriage transversely movable on said frame, a type carrier provided with a plurality of selectable types and mounted on said carriage, said type carrier being variably positionable from the position corresponding to the last printed type to the position corresponding to the type to be printed, the combination comprising:
(a) a number of code bars mounted on said frame and each one adapted to be located in a pair of locations,
(b) a number of clutches equal to said number of code bars, each said clutch being selectively actuated



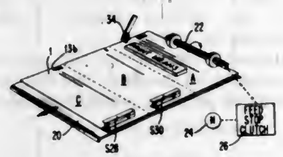
in response to the location of a specific one of said code bars, each said clutch having a driven gear,
(c) driving gears for said driven gears,
(d) means for mounting said driving gears and said driven gears on said carriage as to be transversely moved therewith, and
(e) translating means connecting each one of said driven gears with said type carrier for positioning said type carrier according to the location of said code bars.

3,356,199
PRINTER HAVING TYPE DISK ROTATABLE IN A PLANE PARALLEL TO THE PRINTING LINE
Leland P. Robinson, Oakland, Calif., assignor to Friden, Inc., a corporation of Delaware
Filed Feb. 23, 1966, Ser. No. 529,455
9 Claims. (Cl. 197—54)



1. A high-speed printer apparatus comprising:
a rotary wheel supporting a plurality of type characters on one side surface, said characters being disposed in a spiral curve receding toward the axis of said wheel;
means for rotating said wheel continuously during each cycle of line printing and in a plane parallel to the printing line;
a print hammer for striking selected characters to print a line during each of such print cycles; and
means for transporting said wheel and said hammer relative to a record medium, continuously and without interrupted travel along a predetermined line of printing.

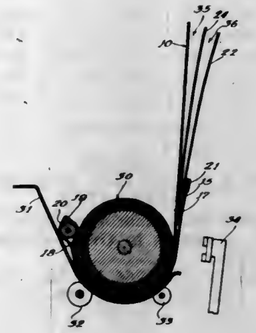
3,356,200
ZONE AND LINE FINDING
Peter J. De George, Lexington, Ky., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Continuation of application Ser. No. 369,516, May 22, 1964. This application Oct. 26, 1966, Ser. No. 589,763
9 Claims. (Cl. 197—127)



1. Zone and line finding means for a document having at least two zones to receive recorded information on one side of said document, each said zone containing a plurality of lines, said document having at least one edge and normally carrying indicia on a single track representative of lines available for recording in said zones comprising:
document recording means,
means to move said document relative to said document recording means to position said document for recording by said document recording means on different lines of different of said zones, the relative movement being in a direction in which said one edge moves in a direction intersecting said document recording means,
means to sense said indicia,
at least a first means to find the location of a said zone, said first means to find the location of a zone comprising means responsive when said one edge of said document is moved one predetermined amount in a direction intersecting said document recording means to create a response condition when a predetermined location defining one of said zones is in a predetermined spacial relationship to said recording means,
means to inhibit said means to move said document,
selectable means selectable to at least a first state and a second state in which different conditions are created,
means responsive to the concurrence of conditions comprising the results sensed by said indicia sensing means and the condition created by said selectable means when in said first state, and also responsive to the concurrence of conditions comprising the results sensed by said indicia sensing means, said response condition of said first means to find the location of a zone, and the condition created by said selectable means when in said second state, to cause said means to inhibit said means to move said document to be effective to cause the next available line for recording in one of said zones to be found when said selectable means is in said first state and to be effective to cause the next available line for recording in another of said zones to be found when said selectable means is in said second state.

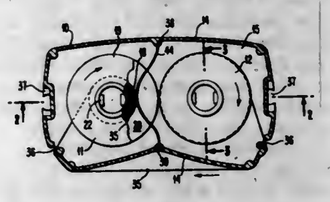
3,356,201
WRITING MATERIALS HOLDER FOR TYPEWRITER USE
Lester K. Fleischmann, 1620 Ravine Terrace, Highland Park, Ill. 60035
Filed Nov. 27, 1964, Ser. No. 414,125
7 Claims. (Cl. 197—135)

1. A writing materials holder for use in a typewriter, comprising:
an assembly including at least one carbon sheet and a flexible backing member,
the backing member having an elongated body portion in superposed relation to the carbon sheet and
a tail portion extending beyond one end of the body portion a distance sufficient for the tail portion to be threaded about a typewriter platen so that said body portion is exposed in front of the platen while the free extremity of the tail portion is exposed behind the platen,
means forming an elongated transverse pocket in the free extremity of the tail portion, said pocket having an opening to receive a pencil-size rod as a stop against passage of the tail portion extremity under the typewriter platen,



a free lip portion at the juncture of the body and tail portions,
and means at the base of said lip portion extending transverse the body portion in a straight line and securing the carbon sheet under the said lip portion so that a stationery sheet edge inserted under the lip against said securing means will be automatically aligned with the carbon sheet,
the assembly being threadable about the cylindrical platen of a usual typewriter for writing purposes.

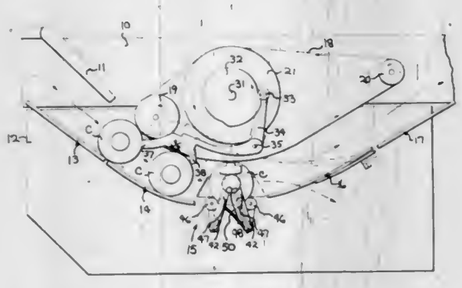
3,356,202
TYPEWRITER RIBBON CARTRIDGE
Willie Goff, Jr., Lexington, Ky., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Mar. 9, 1967, Ser. No. 621,865
7 Claims. (Cl. 197—151)



1. An inked ribbon cartridge comprising:
a casing having upper and lower supporting walls extending parallel to each other;
a side wall joined to said upper and lower walls to form a single enclosed chamber;
a pair of spools arranged in said chamber and being supported for rotation on spaced parallel axes;
ribbon slots formed in said side wall;

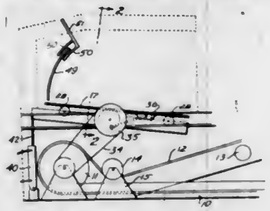
an inked ribbon wound at its ends on said spools and extending between the latter through said slots;
a resilient leaf spring positioned between said spools;
said leaf spring extending between opposite portions of said side wall;
said leaf spring having a length greater than the straight line distance between said opposite portions of said side wall to provide said leaf spring with a bowed center portion;
said bowed center portion of said leaf spring having two operating positions;
said bowed center portion of said leaf spring in one of said two operating positions extending toward and engaging the mass of ribbon being wound on the one of said spools serving as a take-up spool; and
said mass of ribbon on said one of said spools switching said bowed center portion of said leaf spring to the other of said two operating positions adjacent the other of said spools when at least half of said ribbon is wound on said one of said spools.

3,356,203
CONTAINER HANDLING AND INSPECTING APPARATUS
Burton A. Noble, San Leandro, and Albert F. Uhlig, Oakland, Calif., assignors to Owens-Illinois, Inc., a corporation of Ohio
Filed Dec. 29, 1966, Ser. No. 605,652
21 Claims. (Cl. 198—33)



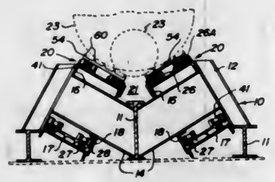
1. In an article handling and inspecting apparatus comprising a generally arcuate horizontal floor extending between inlet and exit ends of the apparatus, an inspection station between said ends, means for rotatably holding articles upright one at a time at said station, means for both advancing articles in succession along said floor to said station and rotating them while being held at said station, means operating in timed relation to actuation of the article holding means for interrupting advance of articles along the floor to said station while a preceding article is being tested, and cam control means for actuating both the article holding means and the article advance interrupting means, the improvement wherein
said article interrupting means comprises
a lever pivoted intermediate its ends,
one end of said lever being operated by said cam means and the other end of said lever having spaced article engaging portions whereby when said portions are moved into the path of said articles, one of said articles is retained between said portions out of said station and the remaining articles are interrupted in their movement while when said portions are moved out of the path of said articles, said articles are permitted to be moved by said advancing means toward said station,
said means for rotatably holding articles upright one at a time at said station comprising
a lever pivoted adjacent its lower end about a horizontal axis,
a cam follower pivoted about a horizontal axis above the upper end of said lever,
said cam follower having a first arm extending generally vertically and having a portion thereof engaging said cam means,
said cam follower including a second lever extending horizontally,
and means operated by said cam follower for engaging an article at said station and holding said article in position at said station.

3,356,204
CONVEYOR MECHANISM
Frithjof N. Kolberg, 2613 W. 29th St., Sioux Falls, S. Dak. 57105
Filed Jan. 12, 1966, Ser. No. 520,215
6 Claims. (Cl. 198—106)



1. In a device for conveying particulate material, hopper and conveyor means comprising a base, driven tail drum means mounted on said base, conveyor means mounted on said base and driven by said drum means, means mounted on said base and engaging said conveyor means to change the direction of travel of said conveyor means to a line closer to said base, a tilting frame mounted on said base at a location above said conveyor means, floor means mounted on said frame for longitudinal movement, wall means mounted on said frame surrounding three sides of said floor means leaving one end open and drive means driven from said drum means and connected to said floor means whereby said floor means is oscillated to dump said material therefrom onto said conveyor means.

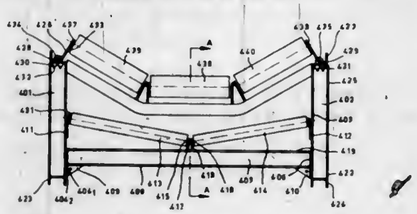
3,356,205
LOG CONVEYOR
George W. McLeod, Vancouver, British Columbia, Canada, assignor to Letson and Burpee Ltd., a corporation of Canada
Filed Oct. 3, 1966, Ser. No. 583,726
4 Claims. (Cl. 198—162)



1. A conveyor adapted to feed a substantially circular log endwise to a vertically disposed saw extending through the conveyor to cut the log longitudinally into two approximately equal parts; said conveyor being

characterized by inclined banks defining a V-shaped log-receiving trough, said banks having log advancing means projecting above their inclined top surfaces, said means having contact points with the log surface, which contact points are disposed outwardly of the centres of gravity of the log halves and which tend to roll said halves towards one another; the log advancing means including a pair of chains on each bank, said pair of chains each being cross connected by log engaging flights disposed parallel to the adjoining surface of a bank; and wherein the flights have spaced teeth projecting from their upper surfaces, said teeth having chisel-shaped points disposed parallel to both the adjoining surface of the flight and the longitudinal axis of the conveyor.

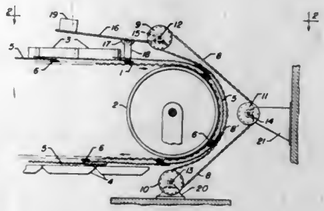
3,356,206
DEVICE FOR TRANSPORTING MATERIALS
Jean Lantz, Saverne, France, assignor to Societe Precismeca, Saverne, France, a French company
Filed Feb. 3, 1966, Ser. No. 524,714
Claims priority, application France, Feb. 4, 1965, 4,407, 4,408; Feb. 5, 1965, 4,574; Jan. 7, 1966, 45,152
2 Claims. (Cl. 198—192)



1. Device for transporting materials comprising a plurality of spaced stations, each station including, in combination, a frame consisting of two side uprights having inner faces connected by a cross-bar having an upper and a lower surface; a plurality of gussets under said cross bar to increase the rigidity thereof; a side support on the inner face of each upright at a point higher than said cross-bar; central support means integrally secured on said upper face of said cross-bar; a pair of lower rollers, one extremity of each roller being supported by one of said side supports and the other extremity by said central support means; said rollers being thus given an approximate V-shape; securing means mounted under said uprights for positioning said station on the ground, a trough-shaped cradle having extremities secured to the upper part of said uprights and spanning said uprights; a pair of intermediate supports on said cradle; mutually inclined lateral supports mounted atop said uprights, an upper train of rollers comprising end rollers and central rollers supported by said intermediate rollers and said lateral supports; means secured to said lateral supports for suspending said uprights.

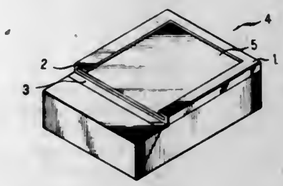
3,356,207
WOVEN CONVEYOR BELT SYSTEM HAVING A FINE MESH OVERLAY
Walter C. Hensel, Palatine, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
Filed June 23, 1966, Ser. No. 559,798
3 Claims. (Cl. 198—193)

1. Woven metal conveyor belt apparatus with a fine screen overlay arrangement, which comprises in combination, spaced idler and drive pulley means, a flexible continuous loop woven metal conveyor belt extending over said pulley means and adapted to support material for conveyance in an elongated path, a plurality of fine mesh screen overlay sections positioned over and attached shingle-fashion to said conveyor belt, and a plurality of transversely spaced hold-down belt members encompassing the discharge end portion of the conveyor belt and the overlay sections, each of said hold-down belt members being continuous loops maintained in separate spaced vertical planes normal to said conveyor belt and extending around accompanying vertically spaced idler pulley



members, with the latter being positioned and arranged to hold a portion of such belt members in an arc like manner around and against said overlay sections, whereby the free ends of the latter are held in a guided position as they descend down around the end pulley means for the conveyor belt.

3,356,208
CIGARETTE CASE HAVING A MIRROR THEREON
Hitoshi Kondo, 441-3 Oaza, Kyu-Ikeda-Shimo, Neyagawa, Osaka, Japan
Filed Apr. 13, 1965, Ser. No. 447,650
1 Claim. (Cl. 206—38)

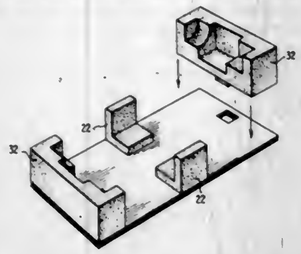


A cigarette case having a three sided open ended rectangular frame mounted on three edges of a flat rectangular outer surface of said case, said frame having inwardly facing grooves therein, and a thin rectangular mirror having three edges slidably mounted in said grooves so as to cover said outer surface and be slidable out of said frame, said outer surface having an advertisement thereon, whereby when said mirror is slid out of said frame the advertisement is exposed.

3,356,209
MODULAR PACKAGING
Joseph M. Pezely, Jr., Elmira, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Aug. 24, 1964, Ser. No. 391,513
2 Claims. (Cl. 206—46)

1. An improved packaging construction for cushionably packaging frangible articles comprising, a supporting panel, said panel having a plurality of predetermined spaced-apart hole portions formed therein, a plurality of foam plastic shock absorbing blocks removably positioned in rigid spaced-apart relation on said supporting panel, each said shock absorbing block having an integral projection positioned within one of said hole portions,

and each said projection being substantially the same size and shape as its associated hole portion to complement



such hole portion and orient said block in a desired relative positionment on said supporting panel.

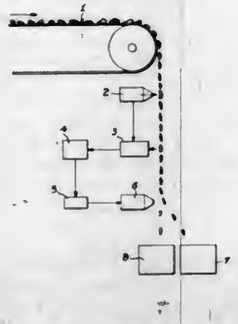
3,356,210
DISPLAY PACKAGE FOR MULTIPLE ARTICLES
Martin J. Lilly, Neptune, N.J., assignor to Sun Chemical Corporation, New York, N.Y., a corporation of Delaware
Filed Oct. 19, 1966, Ser. No. 587,785
3 Claims. (Cl. 206—78)



1. A display package for containing and displaying ornamental articles in original shape, comprising in combination, a backing member of relatively stiff material; a housing member for said articles comprising a peripheral flange adapted for attachment to said backing member; a peripheral semi-wall for lending rigidity to the housing member extending outwardly of the backing member from the peripheral flange; a plurality of individual spaced-apart similar compartments defined by substantially parallel walls for each compartment extending beyond said peripheral wall and contiguous therewith; said housing member further comprising a covering for said compartments extending from said peripheral wall across outer surfaces of said compartments and between said compartments; said covering for said compartments extending generally arcuately away from the backing member; said covering comprising a common flat wall across intermediate portions of said compartments and alined portions between said compartments; and said covering further defining a pair of spaced-apart recesses separating said compartments, comprising the opposing walls of adjacent compartments with bottom walls extending between said opposing walls.

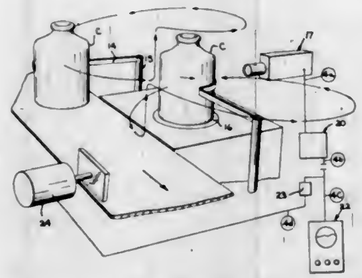
3,356,211
SEPARATION OF ORE PARTICLES PREFERENTIALLY COATED WITH LIQUID FLUORESCENT MATERIAL
Ted C. Mathews, P.O. Box 2061, Fairbanks, Alaska 99701
Filed Dec. 7, 1964, Ser. No. 416,293
7 Claims. (Cl. 209—9)

1. The method for the concentration of ore which comprises treating a quantity of crushed ore containing various types of minerals with a liquid fluorescent material capable of preferentially coating some of the particles in the ore, radiating the treated quantity of ore to



excite the liquid on the coated particles to fluoresce at a characteristic wavelength, and separating the coated particles from the uncoated particles on the basis of the difference in their emitted wavelengths.

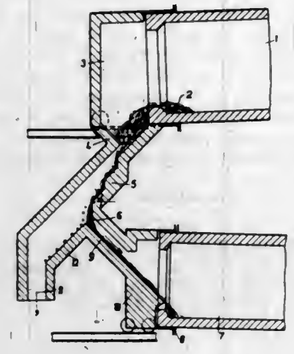
3,356,212
INSPECTING METHOD AND APPARATUS
Jack T. Landin, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio
Filed Feb. 24, 1965, Ser. No. 434,776
4 Claims. (Cl. 209—111.5)



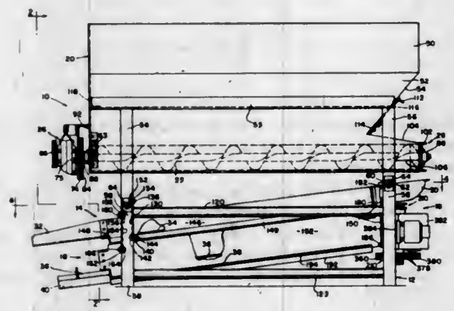
3. The method of inspecting a plurality of hot, hollow glass articles for wall thickness distribution which articles have been just produced, conveying the hot articles in succession into the field of view of an infra-red detector having a chopper, an inspection station, rotating each article about its vertical axis when in the field of the detector, deriving an output signal from the detector proportional to the instantaneous surface temperature of the article, measuring the A.C. component of the detector output as an index of the wall thickness distribution of the hot glass article, and rejecting those articles which give an output signal amplitude greater than a preset maximum.

3,356,213
APPARATUS FOR SEPARATING MIXTURES OF SOLID PARTICLES
Georg Weber, Mannheim-Feudenheim, Germany, assignor to Metallgesellschaft Aktiengesellschaft, Frankfurt am Main, Germany
Filed July 16, 1965, Ser. No. 472,638
Claims priority, application Germany, July 16, 1964, M 61,751
7 Claims. (Cl. 209—118)

1. Apparatus for separating a mixture of solid particles into large and small particles comprising an inclined separating chute having an upper inlet for receiving the mixture of particles and a lower outlet for discharging large particles, stepped bottom means in said chute for loosening the mixture of particles and initially separating the large and small particles, and gap means in said chute beneath said step means for receiving said small particles and over which the large particles jump.

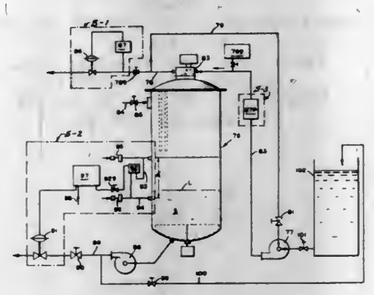


3,356,214
ROTARY SCREENING DEVICE
Louis W. Johnson, 3440 Franklin Blvd., Eugene, Oreg. 97403
Filed June 8, 1964, Ser. No. 373,160
12 Claims. (Cl. 209—309)



2. In combination,
a first screen member,
a second screen member,
means mounting the screen members in superposed relationship for individual floating movement,
a vertically extending crank member having a first portion and a second portion eccentric to the first portion,
first journaling means radially coupling the first portion of the crank member to one end portion of the first screen member,
second journaling means coupling the second portion of the crank member to the second screen member,
the journaling means constituting the sole support of the crank member in thrust,
and means for rotating the crank member to drive the screen members to impart rotary translatory motion to the two members in opposed relationship.

3,356,215
APPARATUS AND METHOD FOR THE FILTRATION-THICKENING OF SUSPENSIONS OF SOLIDS
Harry V. Miles, Jr., Westport, Conn., assignor to Dorr-Oliver Incorporated, Stamford, Conn., a corporation of Delaware
Filed Apr. 22, 1965, Ser. No. 450,119
9 Claims. (Cl. 210—82)

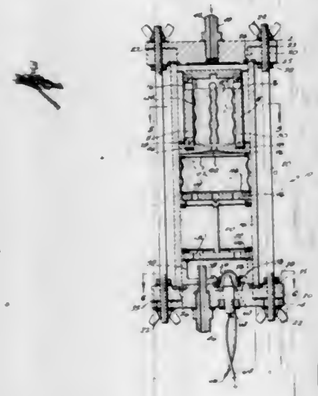


8. The method of continuously thickening a suspension of solids by filtration under pressure, to deliver filtrate liquid and a thickened sludge with periodic backwashing of the filter media, which comprises establishing a sequence of pressure filtration zones wherein elongated hollow filter elements have their upper end mounted in a plate so that filtrate liquid forced by the pressure into the interior of said filter elements will pass upwardly through the plate from each filtration zone into a separate receiving zone, continuously pressure feeding said suspension into said filtration zones, providing a supply of backwash liquid at a pressure greater than the feed pressure in said filtration zones, sequentially and in repetitive cycles establishing flow connection from said backwash supply to each of said filtrate receiving zones for backwashing the filter elements thereof, while continuing filtration of the filter elements in zones not communicating with the wash supply, whereby a layer of solids from said suspension accumulates on said filter elements under said filtration pressure, and is released by said greater backwash pressure to gravitate through surrounding liquid into a subjacent zone of sludge accumulation, withdrawing sludge from said accumulation, passing filtrate liquid from filtrate receiving zones not communicating with said backwash supply, and automatically controlling the rate of flow of backwash liquid at a substantially constant predetermined volumetric amount.

9. In a filtration thickening apparatus, a group of elongated hollow filter elements depending from a plate member dividing a pressure filtration zone from a filtrate receiving zone, and subjected to alternate periods of filtration and backwashing, each filter element comprising a rigid liquid-permeable diffuser tube having an upper open end extending through said plate member and provided with a rigid horizontal flange located adjacent the top side of said plate member, and having a free lower end, a sleeve of flexible filter media surrounding said diffuser tube and having an upper end terminating adjacent said rigid tube flange, said sleeve being closed at the lower end, a flange member consisting of resiliently flexible material having a flat flange portion and a cylindrical portion sealingly connected to said upper end portion of said sleeve, said flat flange portion being interposed between said plate member and said flange of the rigid tube with said cylindrical portion extending downwardly from the top side of said plate, a retainer plate provided with an opening registering with the upper open end of said rigid tube of said filter elements, and means for securing said retainer plate

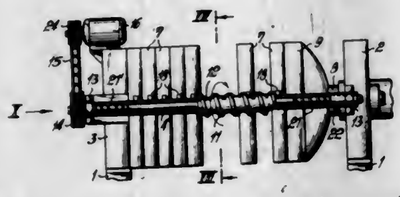
relative to said plate member and tightly against the flanged end of the rigid tubes whereby said flange portion of resiliently flexible material provides a sealing gasket effective between said plate member and said rigid flange, and whereby said rigid flange cooperates with said gasket, with said plate member, and with said retainer plate to provide the sole and stabilized connection between said filter element and said plate member.

3,356,216
OIL INDICATOR-MAGNETIC FILTER APPARATUS
Takeo Sato, 3354 Maunalua Ave., Honolulu, Hawaii 96821
Filed May 1, 1967, Ser. No. 635,166
4 Claims. (Cl. 210—94)



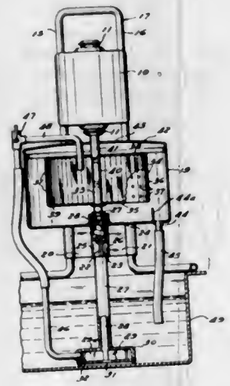
1. An oil indicator-filter comprising a glass casing having top and bottom covers, an inlet in one cover and an outlet in the other cover for completing a communicative path through the filter glass casing, magnets transversely mounted within the glass casing to impede the flow of oil and to collect magnetic-sensitive components, said path being filled also with synthetic resin filter material to collect other impurities in the oil, and a light within a glass housing mounted within the cover having said outlet.

3,356,217
ARRANGEMENT FOR AUTOMATICALLY DISPLACING PLATES AND FRAMES, ESPECIALLY IN FILTER PRESSES
Otto Emele, Kressbronn (Bodensee), Germany, assignor to Seitz-Werke G.m.b.H., Bad Kreuznach, Germany
Filed July 30, 1964, Ser. No. 386,288
Claims priority, application Germany, Aug. 9, 1963
E 25,316
13 Claims. (Cl. 210—143)



1. In combination: supporting means, longitudinal guiding means supported by said supporting means, a plurality of plate means guided by and individually displaceable along said guiding means in the longitudinal direction thereof for selective engagement with and disengagement from each other, and rotatable conveying means displaceable in the longitudinal direction of said guiding means and operable in response to a certain movement in the longitudinal direction of said guiding means to engage one and disengage another one of said plate means, said conveying means also being operable in response to a certain rotative movement thereof to move each of said plate means individually out of engagement with one and into engagement with another one of said plate means, said conveying means being so constructed and arranged that the longitudinal displacement of the conveying means is caused by each of said plate means moving out of engagement with one and into engagement with another of said plate means.

3,356,218
LIQUID FILTERING APPARATUS
Daniel P. Grudoski, R.F.D. 1, Hartstown, Pa.
Filed Oct. 21, 1965, Ser. No. 499,708
1 Claim. (Cl. 210—167



The combination with a deep fat fryer vat, of a portable continuous filtering apparatus, comprising:

a deep fryer vat;

a centrifugal filter comprising a jacket-container having therein a rotary basket drum with a perforated side wall for receiving a filter liner at the inside and having a vertically disposed drum shaft extending through the container bottom in rotationally sealed relation;

a centrifugal pump disposed below said drum and with a shaft substantially in alignment with the drum shaft at the bottom of said container, said pump having an inlet for receiving cooking oil and having an outlet;

a conduit discharging into the interior of said drum for passing cooking oil circulated from the fryer down into the drum to pass outward centrifugally through said filter liner and the perforated side wall of the drum down into the container for return to the fryer vat;

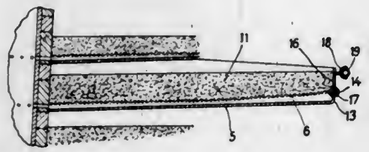
a drive motor disposed with a shaft in vertical alignment with and coupled to the shafts of the pump and to the drum for imparting rotation to both;

gravity drainage and pump discharge conduit means completing an oil circulation path between said drum and vat;

and movable portable frame means supporting the filter, pump and motor as a portable assembly in proximity to said vat;

said movable frame means comprising a stand having a base and a vertical upright portion and bracket means slideable adjustably secured on the upright portion supporting said filter and thereabove said motor; said pump dependent from said bracket means below said filter and having an open inlet; said frame supporting said pump for operation immersed in said vat; said conduit means comprising a pump discharge conduit leading from the pump upwardly and discharging into said basket, and a conduit depending from the bottom of said container into said vat gravitationally returning filtered oil from the container to the vat.

3,356,219
FILTER ELEMENT PRECOAT REMOVAL MEANS
Hans Müller, Erlenbach, Zurich, Switzerland
Filed Jan. 21, 1965, Ser. No. 427,022
Claims priority, application Germany, Jan. 22, 1964, M 47,126
4 Claims. (Cl. 210—193)



1. A filter device comprising, in combination, a rotatable shaft; and at least one filter carried by said shaft for rotation therewith, said filter comprising a base plate portion having an upper surface extending transversely of said shaft, filter means comprising a screen carrying particulate filtering material carried by said base plate portion overlying and substantially coextensive with said upper surface, and a confining portion extending circumferentially of said base plate portion upwardly beyond said filter means so as to confine an effective amount of solid fraction retained in said particulate matter, said confining portion being constituted from a plurality of discrete sections hingedly connected to said base plate portion and being movable between a first position in which said confining portion retains said fraction and said particulate matter, and a second position different from said first position, said confining portion having a composite inner surface which diverges upwardly with respect to said filter means in said first position of said discrete sections, and which diverges outwardly with respect to said filter means in said second position of said discrete sections so as to permit automatic centrifugal ejection of said particulate material in response to rotation of said shaft; and biasing means urging said sections to said first position thereof.

3,356,220
FILTERING APPARATUS
James F. Zievers, La Grange, Ill., assignor to Industrial Filter & Pump Mfg. Co., Cicero, Ill., a corporation of Illinois
Filed July 21, 1964, Ser. No. 384,060
9 Claims. (Cl. 210—234)

1. A filter, comprising

a tank defining a filter chamber,

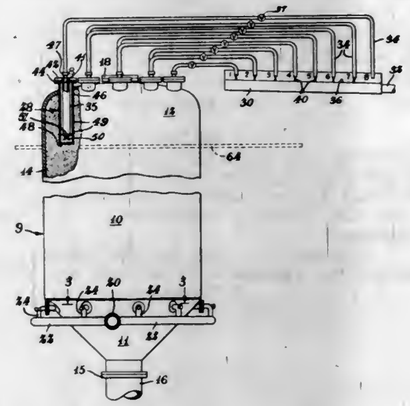
an outlet from said chamber disposed near the top of said tank,

a finely granulated filter medium substantially filling said tank, and

a plurality of liquid feed devices extending into said tank near the bottom thereof,

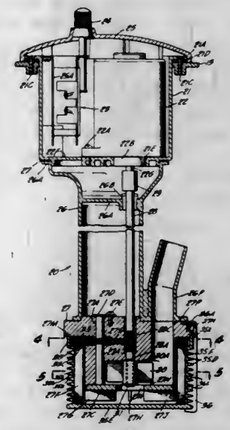
each of said feed devices comprising a tubular member sealably connected to a wall of said tank at one end and apertured at the top near the other end,

an imperforate member secured to said tubular member and defining a cavity partially positioned directly above the aperture in said tube and into which said tubular member extends thereby to provide a space at least partially surrounding said tubular member and located above said aperture where air can be trapped during a filtering operation, and



a liquid feed tube slidably positioned in said tubular member and sealably connected thereto in proximity to said tank wall and having at least one aperture therein and valve means actuated by withdrawal of said feed tubes from said tubular member for sealing the apertured portion of said tubular member from the outside of said tank when said feed tube is removed therefrom.

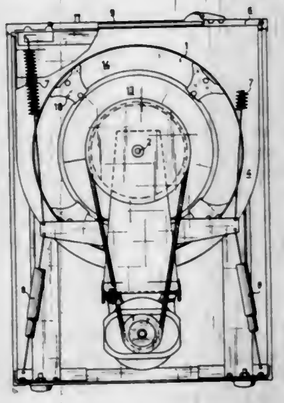
3,356,221
TOILET CONSTRUCTION
William F. Katona, Northridge, and Jon E. Allen, Inglewood, Calif., assignors to Monogram Industries, Inc., a corporation of California
Filed Oct. 31, 1966, Ser. No. 590,757
7 Claims. (Cl. 210—360)



1. In a filter-pump assembly of the character described, a pump housing structure; filter means; means mounting said filter means on said structure for rotation thereon; drive means on said filter means; said housing structure including a pump cavity; rotatable pump means in said

cavity; a shaft within said housing structure; means mounting said pump means on said shaft; said shaft having drive means thereon; intermediate drive means; means rotatably supporting said intermediate drive means on said structure; said intermediate drive means coupling said shaft drive means to said filter drive means, said filter means including a generally cup-shaped element with said drive means thereon being an annular series of gear teeth; said shaft drive means including a series of gear teeth on said shaft; and said intermediate drive means comprising a single gear meshing with each of said series of gear teeth.

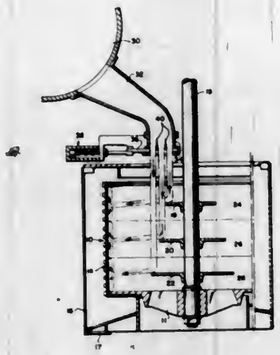
3,356,222
LOCKING AND RELEASE MECHANISM FOR A WASHING MACHINE BALANCING DEVICE
James Frank Belaieff, Bellerive, Switzerland, assignor to Frame S.A., Fribourg, Switzerland, a corporation of Switzerland
Filed Mar. 29, 1966, Ser. No. 538,304
Claims priority, application Switzerland, Apr. 20, 1965, 5,475/65
7 Claims. (Cl. 210—363)



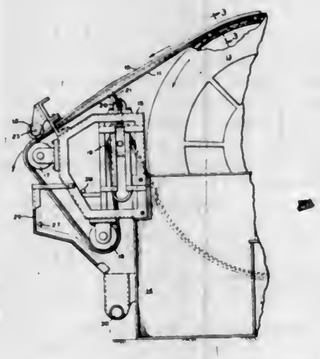
1. In a rotating drum washing and centrifuging machine having a balancing device for said rotating drum including a plurality of rotatable eccentric masses journalled on the drive shaft of said rotating drum and rotatable in an annular path therewith, the improvement comprising: locking means operative at speeds of said shaft less than a predetermined critical speed for securing said eccentric masses at predetermined positions around said drive shaft and locating the center of gravity of said masses along the axis of said drive shaft; and centrifugal force release means for disengaging said eccentric masses when said drum rotates at said critical speed.

3,356,223
APPARATUS FOR DRYING A PRODUCT SUSPENDED IN LIQUID
Andre Mercier, La Madeleine, Nord, France, assignor to Societe Fives Lille-Cail, Paris, France
Filed May 12, 1966, Ser. No. 549,605
5 Claims. (Cl. 210—377)

1. In an apparatus for drying a product which is suspended in a liquid, a rotary drier having a predetermined axis of rotation and including wall means surrounding said axis of rotation and having an inner surface directed toward said axis of rotation, said wall means being permeable to the liquid so as to provide for passage of the liquid through the wall means and said wall means retaining said product at said inner surface after the liquid passes through said wall means, a plurality of rotary deflecting means coaxially surrounding and distributed along said axis, said plurality of deflecting means respectively having outer peripheral portions of different diameters which are progressively larger in one direction along said axis, and introducing means for introducing separate streams of said liquid, with the products suspended therein, into the drier respectively into engagement with said outer peripheral portions, said plurality of rotary deflecting means when engaged at their outer peripheral portions by said streams, respectively, deflecting said streams substantially radially away from said axis into engagement with different portions, respectively, of said inner surface of said wall means.



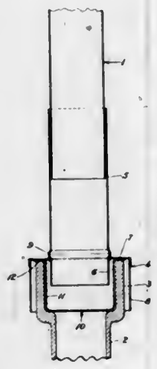
3,356,224
TRAVELLING BELT TYPE DRUM FILTER
Dundas S. Orr, Stamford, Conn., assignor to Dorr-Oliver Incorporated, Stamford, Conn., a corporation of Delaware
Filed Dec. 3, 1964, Ser. No. 415,767
8 Claims. (Cl. 210—401)



1. A rotary vacuum drum filter apparatus of the travelling filter belt type, which comprises:
a rotating horizontal filter drum;
an endless travelling filter belt in the nature of a thin flexible porous endless filter web of a width approximately equal to that of the drum, said belt surrounding and engaging a major portion of the circumference of said drum so that the belt is moved by the rotation of the drum;

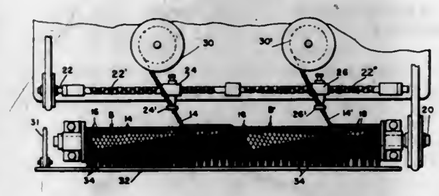
a station adjacent to the drum for guiding said filter belt away from the upper portion of the drum to effect the discharge of cake material from the belt, and then back onto the lower portion of the drum where said cake material is collected on the filter belt from a slurry bath, said guide station comprising a cake discharge roller receiving the filter belt from the top portion of the drum, a return roller having a peripheral groove centrally intermediate its ends, delivering the belt to the underside of the drum; belt tracking devices which comprise a single flexible guide rib means secured to the outer side of the belt substantially medially and along substantially the entire length thereof and leaving the portions of the belt to either side of said guide rib means free to spread laterally, and having upstanding guide faces along the length thereof around the belt, and a guide element engaging said upstanding guide faces adjacent to said discharge roller at the belt receiving side thereof, at a point where said belt is substantially supported but not directly engaged by said roller, said guide element being effective to maintain the filter belt in centered relation to the drum while permitting spreading of the belt laterally in both directions, said guide rib means engaging said groove on the return roller, and tracking said belt back onto the drum; and an outwardly bowed member extending across the width of said belt at a position intermediate said drum and said guide element, and engaging the underside of the belt along a transverse bowed curve.

3,356,225
DRAIN PIPE CONNECTION
Leonard Champagne, 1592 Bailey Ave., Buffalo, N.Y. 14212
Filed Jan. 3, 1966, Ser. No. 518,158
1 Claim. (Cl. 210—448)



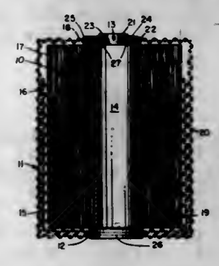
A connection for use between the enlarged upper end of a soil pipe and a coaxial drain pipe having its lower end spaced above said enlarged upper end, said connection comprising a tubular portion adapted to telescope slidably with the lower end of said drain pipe, a flange extending radially outwardly from the lower part of said tubular portion and adapted to rest upon the upper end of said soil pipe, said radial flange terminating circumferentially in a depending annular flange adapted to surround said upper end of said soil pipe, and a screen member comprising an upwardly opening cup-shaped member inserted within said enlarged upper end of said soil pipe and having a circumferential flange portion adapted to be engaged between the upper end of said soil pipe and the lower side of said radial flange, said tubular portion extending through said radial flange into said upwardly opening cup-shaped member and defining with said annular and circumferential flanges a downwardly opening recess for receiving the sides and lip of said strainer and said upper end of said soil pipe.

3,356,226
INTEGRALLY WOUND FILTER TUBE
Charles A. Miller, Jr., 4302 N. Charles St., Baltimore, Md. 21218, Joseph B. Massaschi, 112 Shetland Hills Drive, Lutherville, Md. 21093, and Robert W. Miller, Jr., 1219 Wine Spring Lane, Towson, Md. 21204
Filed Dec. 29, 1964, Ser. No. 421,952
1 Claim. (Cl. 210—457)



A single helically wound filter unit, comprising in combination:
(a) an elongated rigid perforated tubular core;
(b) at least two filter tubular elements independently helically wound from fiber strands on said core, the helical windings of each of said strands being spaced apart to form channels extending through the filter tube element perpendicular to the core, said strands having independent fibers extending radially outwardly from the surface thereof and extending axially and circumferentially of the filter elements over the said channels with each layer of winding and outwardly beyond the ends of the said filter tube elements;
(c) at least one of the ends of each of the filter tube elements being in abutted relationship with an end of an adjacent filter tube element, the ends of the fibers extending beyond the ends of each of the abutting filter tube elements being engaged and secured by the windings on the adjacent filter tube element to form a filtering area between the abutted ends thereof.

3,356,227
COVERING FOR FILTER CARTRIDGE
Richard A. Rule, W. 3723 Heroy, and Julius E. Rule, N. 3912 Calispel, both of Spokane, Wash. 99205
Filed Sept. 17, 1965, Ser. No. 488,103
3 Claims. (Cl. 210—484)

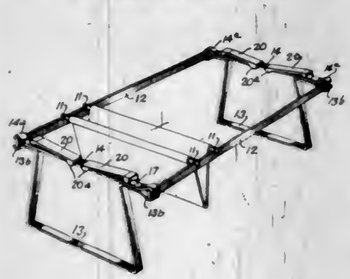


3. A covered toilet paper filter cartridge, comprising, in combination:
a cylindrical roll of toilet paper including an elongate strip of permeable paper wound upon a cylindrical arbor defining a central cylindrical void, covered by

an elongate open ended tubular fabric member requiring elastic extension to pass over said roll of toilet paper, positioned over said roll of toilet paper with the inner upper end slightly below the top of said roll, said tubing member thence extending downwardly over said roll, through an annular bottom ring, thence back thereover and upwardly over said roll of toilet paper, and

a grommet having an internal void fastening the upper edge of said tubular fabric member together to form a covering over said toilet paper roll with top and bottom holes therein substantially co-extensive with the end parts of the cylindrical void of said arbor.

3,356,228
SUSPENSION FILE SUPPORT FRAME
William T. Woodhouse, 5161 Macomb St. NW., Washington, D.C. 20016
Filed Aug. 20, 1965, Ser. No. 481,320
3 Claims. (Cl. 211—45)



1. A suspension file support frame comprising

(a) a pair of file support members,

(b) a pair of substantially U-shaped end support members having the upper free ends of the U-shape bent outwardly and terminating in a lower file support member engaging jaw,

(c) a pair of top spacer members having their free ends terminating in a top file support member engaging jaw,

(d) jaw clamping means passing through both said support and spacer members having an operative position in which it forces the jaws into tight gripping engagement with the file support members and an inoperative position in which the jaws are free of gripping engagement with the file support members, and

(e) actuating means connected to and rotatable with said jaw-clamping means for causing movement of the jaw-clamping means to and from its operative position and including means effective to lock the jaw-clamping means in its operative position.

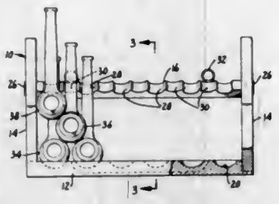
3,356,229
PIPE RACK
Cassius D. Rhymes, Jr., 173 E. Blithedale Ave., Mill Valley, Calif. 94941
Filed Aug. 3, 1966, Ser. No. 569,971
6 Claims. (Cl. 211—60)

1. A smoking pipe rack, comprising:

(a) a base having a pipe bowl receiving portion adapted to suport the bowls of a plurality of pipes thereon in side-by-side relationship to define a first row of pipes wherein the bowls of immediately adjacent pipes are so orientated as to be adapted to support the bowls of pipes thereon to define a second row of pipes stacked upon and staggered with respect to said first row; and

(b) pipe stem support means fixed relative to and extending over said base in spaced relationship relative to the bowl receiving portion thereof, said support having:

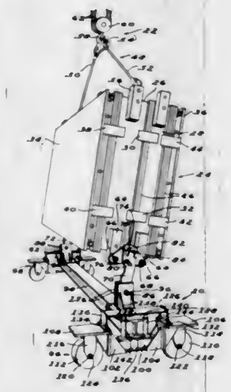
(1) first pipe stem contacting surfaces adapted, respectively, to engage and effect support of the stems of pipes having bowls supported on said



bowl receiving portion to define a first row of pipes; and,

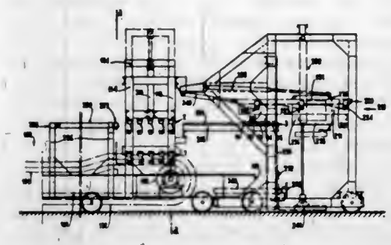
(2) second pipe stem contacting surfaces adapted, respectively, to engage and effect support of the stems of pipes defining a second row of pipes supported on the bowls of pipes defining a first row of pipes.

3,356,230
FLASK INVERTER
Jack E. Anderson, Birmingham, Mich., assignor to Mil-Fab-Co., Incorporated, Detroit, Mich., a corporation of Michigan
Filed Aug. 26, 1965, Ser. No. 482,688
17 Claims. (Cl. 214—1)



1. A flask inverter comprising a carriage having floor engaging wheel members, a pair of spaced apart arms pivotally supported in axially aligned relation on the carriage, means on said arms for securely attaching the arms to a flask to be inverted and lying on a ground surface adjacent the carriage, said arms being spaced apart on said carriage a distance corresponding generally to the length of the flask so that the arms may be secured to the flask adjacent one edge thereof, and hoist means adapted to be connected with the flask adjacent the opposite edge thereof for raising and lowering said last mentioned opposite edge to thereby pivot the flask in a vertical plane on said carriage from a position at one side of the carriage to an inverted position on the other side of the carriage while the carriage rolls from one side of the hoist means to the other side thereof.

3,356,231
INGOT STACKING MACHINE
Jacques Chambran, Tarascon-sur-Ariege, France, assignor to Pechiney-Compagnie de Produits Chimiques et Electrometallurgiques, Paris, France
Filed Oct. 23, 1965, Ser. No. 503,860
Claims priority, application France, Nov. 10, 1964, 994,482
16 Claims. (Cl. 214—6)



1. An ingot stacking machine for stacking ingots in horizontal layers with the ingot in each layer arranged in side by side parallel relation and with the ingots in one layer turned to extend at an angle of 90° to the ingots in adjacent layers, comprising a horizontally disposed tray mounted for movement in the vertical direction between raised and lowered positions, means for controlling raising and lowering movements of the tray, a turntable on the top side of the tray and means for controlling rotational movement of the turntable relative to the tray, a group of movable carriages for placing ingots on the tray including in combination a first stationary rail having the upper surfaces contoured to provide a series of saw teeth having rising cam surfaces extending crosswise above the tray, a first carriage having rollers ridable on the saw tooth edges of the first rails for raising and lowering movements of the carriage responsive to displacement of the rollers up and off of the cam surfaces, a second pair of rails fixed on the first carriage and extending in the same direction as the first rails, a second carriage having rollers ridable on the second rails for crosswise displacement of the second carriage relative to the first carriage and the tray, means for displacement of the first carriage on the first rails to raise and lower the carriages as the first carriage is displaced up and off of the cam surface of said rails respectively, means for displacement of the second carriage on the second rails for crosswise movement relative to the first carriage and the tray, a holding means carried by said second carriage having means mounted for shifting movement into and out of engagement with the ends of the ingots, and a support for a plurality of aligned ingots arranged in side by side parallel relation and positioned to one side of the tray in crosswise alignment with the rails and at a level for engagement for the ingots by said holding means during movement of the first carriage up the cam surface and for release of said ingots by said holding means during return movement of the first carriage off the cam surface.

3,356,232
BARGE UNLOADER
William L. Price, Coraopolis, and Howard E. Dykeman, Pittsburgh, Pa., assignors to Dravo Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Feb. 11, 1966, Ser. No. 526,875
6 Claims. (Cl. 214—14)

1. A barge unloader comprising:

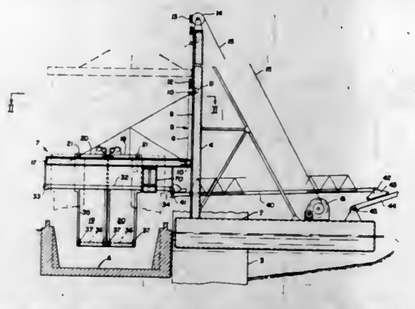
a tower structure supported for movement of a barge alongside of it,

a frame mounted on the tower for vertical movement, the frame having a horizontal structure extending outwardly therefrom to reach across a barge positioned alongside the tower,

means for effecting vertical movement of the frame,

a pair of carriages on the frame movable toward and away from each other,

means for effecting movement of the carriages in opposite directions along the said horizontal structure,

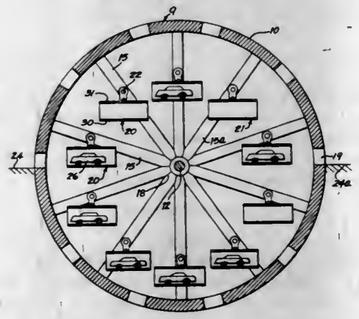


an endless digger depending from each carriage, and driving means on each carriage for their respective diggers,

means on the horizontal structure for recivjng material from both of said diggers in any position to which their respective carriages are moved, and

means for receiving material from said first receiving means.

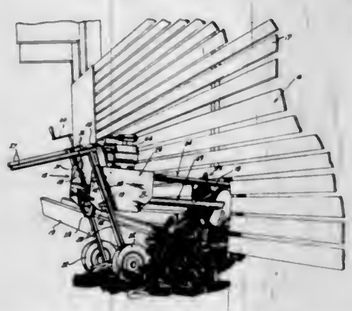
3,356,233
ROTATABLE PARKING APPARATUS FOR MOTOR VEHICLES
Raymond de Filippis, 97—28 57th Ave., Corona, N.Y. 11368
Filed Nov. 6, 1963, Ser. No. 321,940
5 Claims. (Cl. 214—16.1)



1. A parking mechanism for motor vehicles, comprising a rotary substantially tubular wheel housing, a drive shaft mounted at the axial center of said tubular housing, a plurality of radially positioned side members located between the central shaft and the inner diameter of the wheel housing, means attaching the ends of the side members to the tubular housing and the drive shaft respectively, means rotatably driving the drive shaft, a plurality of carrier supports located between the side members, each carrier support being located between and fixedly attached to a pair of side members, pivoted hanger means supported on each of said carrier support and a carrier suspended from each support by said hanger means, each of

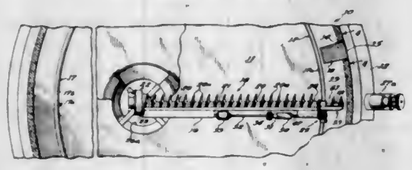
said carriers being operative to receive and support a motor vehicle, each carrier being disposed within the periphery of said wheel housing, an opening in said tubular housing adjacent each carrier to permit movement of a vehicle along a path corresponding substantially to a radial line of the wheel housing into a respective carrier and out of said carrier in said wheel to and from a loading-unloading level, and said level and the axis of rotation of said wheel housing being disposed substantially in a common plane.

3,356,234
CORN AUGER
Vernon O. Seekamp, R.R. 1, and Thomas W. Van Der Hart, 1001 E. 1st St., both of Pella, Iowa 50219
Filed Feb. 28, 1966, Ser. No. 530,660
5 Claims. (Cl. 214—17)



1. Apparatus for removing a bulk material from a container through an opening in the side wall of the container comprising:
(a) a portable frame,
(b) an auger rotatably supported on and projected outwardly from one end of said frame,
(c) a power unit on said frame for driving said auger,
(d) an elongated control arm structure projected outwardly from said one end of the frame in a substantially parallel relation with the axis of said auger, and
(e) a laterally extended stop means adjustably supported on said control arm structure for movement longitudinally thereof to an adjusted position,
(f) said auger and control arm structure being extendible within the container through said opening a distance limited by the engagement of said stop means with said container side wall.

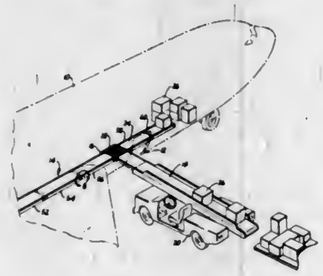
3,356,235
SILO UNLOADER AND METHOD
Jonathan J. Laidig, Mishawaka, Ind., assignor to Laidig Silo Unloaders, Inc., a corporation of Delaware
Filed June 30, 1966, Ser. No. 561,832
22 Claims. (Cl. 214—17)



1. In a bottom unloader for a silo having a floor with a central opening and a cylindrical wall, in combination: radial sweep arm means including a frame having an axial end supported for rotation on the vertical axis of the silo and a free end spaced from the silo wall; carriage means supporting the free end of the arm means on the floor, said carriage means including toothed drive means; drive track means on the floor on which the drive means rides, said track means having teeth engaged by the toothed drive means and being generally concentric with the wall; means for driving said drive means to rotate the sweep arm about the silo; primary conveyor means on the sweep arm means to move material from adjacent the track means into the central opening in the door; means on the carriage means for displacing material from the drive track means into the primary conveyor means; auxiliary conveyor means positioned radially outward with respect to the primary conveyor means to move material from the space between the wall and the track means into the area traversed by the primary conveyor means; and means for driving said primary and said auxiliary conveyor means.

21. A method of handling silage in a silo having a floor, a wall provided with an access opening extending upwardly from floor level, a closure for said opening, and a rotating silo unloader accessible through said opening, said method comprising the steps of:
coring a portion of the silo which extends a short distance inwardly from said opening and which extends upwardly from floor level approximately to the top of the unloader;
filling the silo with silage while leaving said portion of the silo cored so there is a void in the silage in the portion so cored;
cutting and removing the silage from the central area of the silo immediately above the floor while leaving a relatively shallow wall of material adjacent the silo wall which is broken only by said core;
removing the closure and uncoring said portion of the silo through the access opening and replacing the closure; and
cutting and removing the material from said wall of material starting from said void and progressing circumferentially around the interior of the silo.

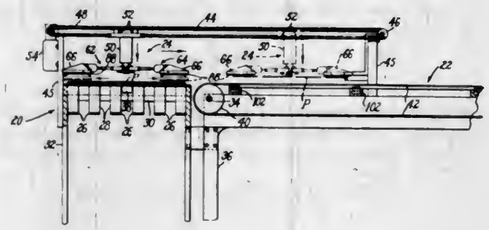
3,356,236
BI-DIRECTIONAL CARGO TRANSFER UNIT
Hugh H. Shaw and Martin I. Sanderson, Salinas, Calif., assignors, by mesne assignments, to Domino Sugar Company, a corporation of Delaware
Filed Aug. 5. 1965. Ser. No. 477,503
16 Claims. (Cl. 214—38)



13. Apparatus for handling air-freight which comprises:
(a) an aircraft having a fuselage with an elongated cargo compartment therein and laterally extending cargo hatch extending into said compartment,
(b) a first elongated conveyor in said fuselage extending along the length of said compartment and having a conveyor end adjacent to said hatch,

(c) a second conveyor extending through said cargo hatch in a direction generally perpendicular to said first conveyor from a position outside said fuselage and having a conveyor end adjacent to said conveyor end of said first conveyor,
(d) a turning conveyor in said fuselage at said ends of said first and second conveyors with said turning conveyor having
(1) a frame with means thereon defining a conveying area over said frame communicating between said first and second conveyors,
(2) a pair of elongated support members mounted on said frame adjacent to and underneath said conveying area for rotation about axes which are generally parallel to a predetermined one of said first and second conveyors, and
(3) a plurality of wheels mounted on each of said support members at positions distributed axially of and circumferentially around the axis of said support member with each of said wheels mounted for rotation in a plane which is inclined at an angle of about 10 to 80 degrees to a plane perpendicular to said axis, and
(e) drive means connected to said first and second conveyors and to said turning conveyor for operating the said predetermined one and the other of said first and second conveyors toward and away from said turning conveyor respectively and for rotating said support members about said axes in a direction to cause the upper surfaces of said support members to move toward said other of said first and second conveyors.

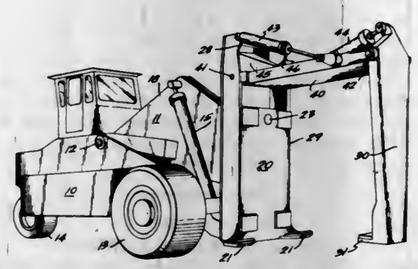
3,356,237
FABRIC POSITIONING MECHANISM
Richard R. Walton, Boston, Mass., assignor to United Shoe Machinery Corporation, a corporation of New Jersey
Filed June 10, 1966, Ser. No. 556,606
12 Claims. (Cl. 214—89)



1. Apparatus for predeterminedly positioning successive work pieces on a conveyor comprising a rotatable transfer head movable in translation between a pick-up position and a deposit over the conveyor, means for controlling heightwise positioning of the head into and out of work seizing relation at said positions, respectively, and a pair of adjustably spaced abutments having engagement faces located in the same vertical plane and mounted on the conveyor in the vicinity of said deposit position for cooperative engagement with one of the transfer head and the leading edge of each piece, at spaced localities, in order to rotate the head and predeterminedly orient the piece for deposit on the conveyor according to selected positioning of said abutments.

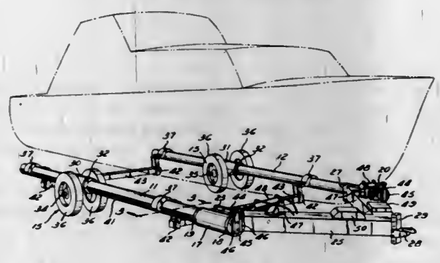
10. In fabric positioning mechanism, a rotary transfer head comprising a plurality of radially extensible arms respectively supporting a fabric seizing pad in a common plane, mechanism for adjustably securing the arms in selected angular relation to one another, mechanism for simultaneously moving the pads radially to seize or release a fabric piece, and power means for moving the head to shift the piece in its own plane and heightwise thereof to a predetermined position.

3,356,238
BOX LOADER
John L. Aldred, Portland, Oreg., assignor to FWD Wagner, Inc., Portland, Oreg., a corporation of Oregon
Filed Nov. 9, 1965, Ser. No. 506,976
7 Claims. (Cl. 214—147)



1. A box loading device comprising an inner carrying arm having horizontally projecting lifting means, an outer carrying arm having horizontally projecting lifting means, a bridge pivotally linked to said inner arm and to said outer arm, motor means adapted to swing said outer arm outwardly with respect to said bridge, motor means adapted to swing said bridge upwardly with respect to said inner arm, a tractor, and means mounting said inner arm on said tractor for longitudinal, lateral, vertical and tilting movement with respect to said tractor.

3,356,239
CARRIER VEHICLE
Carl Robert Klein, 403 Northwest St., Bellevue, Ohio 44811
Filed Dec. 29, 1965, Ser. No. 517,301
9 Claims. (Cl. 214—390)



1. A carrier vehicle comprising
a generally U-shaped framework having a pair of longitudinally extending side members connected together and held in a generally laterally opposite and spaced apart relationship with their axes in substantially the same plane by a rigid cross member extending transversely between them and joined to each of them by one of a pair of bearing means, each of said pair of bearing means being fixedly attached to said cross member and engaging and journalling one of said side members for giving and maintaining position and direction to its axis relative to said cross member and the other of said

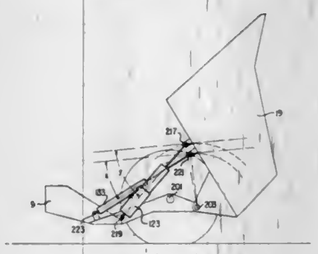
side members while permitting and providing for rotation of the engaged side member about its axis so positioned,

operating means for rotating said members about their axes,

vehicular assemblies engaging and supporting said side members for providing moving support to said U-shaped framework, said vehicular assemblies including bearing means for journalling said engaged side members for rotation about their axes and relative to said assemblies,

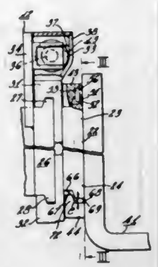
load engaging and supporting means extending from and acting between said side members for engagement of loads therebetween and removably attached to and operatively supported by said side members at selected points on and along their lengths, whereby said side members operatively raise and lower said load engaging and supporting means and any load engaged thereby through rotation oppositely in one and the other directions, respectively, and all the while support said load engaging and supporting means and any load thereon.

3,356,240
SELF-LOADING VEHICLE
Edward F. Zink, Knoxville, Tenn., assignor, by mesne assignments, to Joy Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania
Application Nov. 5, 1964, Ser. No. 410,824, which is a continuation of application Ser. No. 134,950, Aug. 30, 1961. Divided and this application May 31, 1966, Ser. No. 554,112
9 Claims. (Cl. 214—501)



1. In a self-loading vehicle comprising, a support frame member having a forward end spaced along a first axis from a rearward end; ground engaging traction means for said frame member being movable about a generally horizontal second axis extending transversely of said first axis and located intermediate said ends; a material receiving body member supported by said frame member for pivotal movement from a lowermost position to a dump position about a generally horizontal third axis located forwardly of said second axis, said body member having an open forward end portion and a closed rearward end portion and a bottom portion extending progressively from said rearward end portion at a position below and rearwardly of said second axis to said forward end portion at a position above and forwardly of said axis; show . means mounted on one of said members for loading material into said body member; and actuating means supported by said frame member and operative with said body member for pivoting said body member from said lowermost position to said dump position and from said dump position to said lowermost position, said actuating means including means for snubbing said body when the movement thereof approaches said dump position.

3,356,241
FORK LOCK
Ronald D. Varilek, Greendale, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Aug. 2, 1965, Ser. No. 476,469
2 Claims. (Cl. 214—731)



1. In a lift truck the combination comprising:

a carriage having parallel upper and lower guide rail structures extending horizontally, said upper rail structure having a plurality of upwardly opening recesses spaced at intervals along the horizontal length of said structure,

a lift fork having upper and lower hook portions adapted for connection with said rails to permit a predetermined amount of relative vertical movement therebetween, without disengagement of said fork from said rails, and

a rigid locking finger fixedly secured on said fork and engageable selectively with said recesses to prevent shifting of said fork along said rail when the fork rests by gravity on said upper rail structure, said finger being moved vertically out of engagement with one of said recesses when said carriage is shifted downwardly relative to said fork said predetermined amount thereby permitting said fork to be shifted sideways along said rails to a new position wherein said finger registers with another recess.

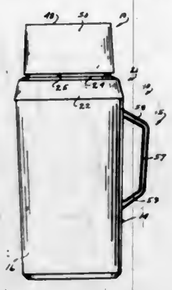
3,356,242
MULTI-LAYERED, THERMOPLASTIC ARTICLE
Kenneth J. Cleereman, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Dec. 23, 1963, Ser. No. 332,862
1 Claim. (Cl. 215—1)



A thermoplastic article having rotational symmetry and a multi-layered structure and lacking the customary fill-spot weakness, each layer of said multi-layered structure having a molecular orientation different than the orientation in an adjacent layer thereto, whereby multi-directional strength is imparted to said article, comprising an injection molded structure, its fill spot being off-center

with respect to its axis, wherein the superimposed composite orientation curve for a plurality of layers spaced equidistantly across the thickness of the structure of said article evidences, when overstressed, a grain structure which runs in different directions than the direction of flow.

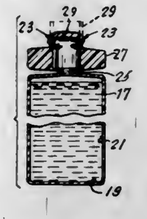
3,356,243
INSULATED CONTAINER OR BOTTLE
Herbert M. Piker, Wyoming, Ohio, assignor to The Hamilton-Skotch Corporation, Hamilton, Ohio, a corporation of Ohio
Filed Nov. 7, 1963, Ser. No. 322,128
7 Claims. (Cl. 215—13)



1. In an insulated container or bottle the combination of an inner container including a filling neck, a shoulder radially, outwardly, extending from the neck at its lower end with said shoulder having a given area with a plane top surface, an outer enclosing member for said inner container, said outer enclosing member including an upper end having an aperture centrally thereof through which the inner container filling neck projects, said outer enclosing member upper end radially outwardly of its central aperture including a flange having its bottom surface plane and of an area at least equal to the plane top surface of the inner container shoulder, said inner container shoulder top plane surface and outer member flange bottom plane surface contacting one another for positioning the inner container centrally of the outer member, means between said inner container and outer enclosing member holding said inner container shoulder top plane surface and enclosing member flange bottom plane surface in face contact with one another, and cooperating means in said inner container shoulder plane surface and outer member radial flange plane surface locking the said inner container and outer enclosing member against relative rotative movement with respect to one another.

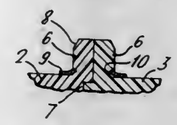
3,356,244
CONTAINER FOR CONVENIENT OPENING
John B. Witchell, Dorion, Quebec, Canada, assignor to Leco Industries Limited, St. Laurent, Quebec, Canada
Filed Mar. 28, 1966, Ser. No. 537,788
1 Claim. (Cl. 215—32)

A container comprising a hollow plastic body, said body including a continuous wall, the body including a waisted portion dividing said body into receptacle and cap portions, the wall of the waisted portion being of a uniform thickness, said waisted portion having a transverse cross section substantially less than its adjacent body portions whereby the wall of said waisted portion will shear upon application of torsional force to one of said adjacent body portions relative to the other, the hollow receptacle portion including an integral bottom and side walls, an annular shoulder sloping uniformly, sharply, inwardly from the top end of the receptacle side wall to said waisted portion, said shoulder merging integrally with one end of an axially extending short hollow neck comprising said waisted portion, the neck including a wall having a thickness at least equal to the thickness of said annular shoulder, the cap being connected to the other end of the neck and including a



sharply inwardly sloping shoulder merging with said neck, the cap being hollow and including radially extending grippable wings, the cap also including a rim defining an opening permitting the receptacle to be filled, said rim being adapted to be closed once said receptacle is filled.

3,356,245
CASE FASTENINGS
John Little, Kingsthorpe, Northampton, England, assignor to Painton & Company Limited, Kingsthorpe, Northampton, England, a British company
Filed Oct. 24, 1965, Ser. No. 504,315
Claims priority, application Great Britain, Oct. 30, 1964, 44,381/64
6 Claims. (Cl. 220—4)



1. A component casing of parallelepiped shape formed by two part-casings moulded of plastics material and fitting together along a common division line, and fixtures projecting from opposite sides of said casing in the region of said division line holding said part-casings together; each fixture comprising two part-cylindrical projections extending from respective part-casings and having their root portions formed with necks, said projections having contiguous planar surfaces clamped together by a locking element formed by a toothed metal E-clip, said E-clip being sprung over to clasp said two projections tightly together.

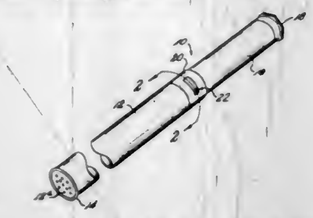
3,356,246
TELESCOPING ROD CASE WITH SLIDING CAM LOCK
Charles M. Marshall and Kenneth McCullough, Kent, Ohio, assignors to D & G Plastics Company, Kent, Ohio
Filed Apr. 27, 1965, Ser. No. 451,145
6 Claims. (Cl. 220—8)

1. In a telescoping tubular container the combination of

a first tube closed at one end, said tube having an eccentric recessed groove extending partially around the internal circumference thereof in adjacent parallel relation to the open end of the first tube, and an extended substantially rectangular hole through

the wall of said tube substantially smaller than and centrally positioned with respect to the recessed groove,

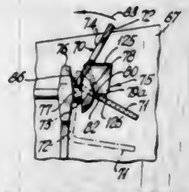
a second tube closed at one end having the other end receivable in telescoping relation into the open end of the first tube, at least one of said tube closed ends having vent openings therein,



an arcuate shaped wedge fitting in sliding complementary relation with said recessed groove, and

means extending through said hole operatively engaging said wedge to effect circumferential movement thereof relative to both tubes whereby both tubes are wedged into a locked relation to each other.

3,356,247
PIVOT MEANS FOR AN ELECTRICAL FITTING OR THE LIKE
Norman Goldsobel, Commack, N.Y., assignor to Electrical Fittings Corporation, East Farmingdale, N.Y., a corporation of New York
Filed Nov. 1, 1965, Ser. No. 505,809
4 Claims. (Cl. 220—31)



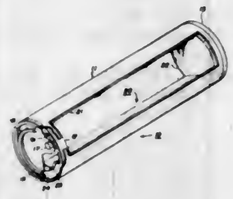
1. Pivot means for an electrical fitting or the like comprising, a fitting body, a cover pivotally connected to said body for opening and closing said electrical fitting, said cover and said body having first and second mutually engageable means coacting for rotatably captivating said cover and said body, said first means including a plurality of spacially related communicating slots, said second means including a wall having a multisectioned key extending axially from said wall, said key having tandem sections complementary in shape to respective sections of said related slots, whereby said cover being attachable to and detachable from said body upon said cover assuming a given positional status relative to said body, but otherwise said cover being rotatably captivated to said body for operatively opening and closing said cover, said key including a shank section intermediate said back wall and a relatively enlarged section at the forward end of said shank section, said enlarged section including a camming extension coacting with said cover for maintaining suitable operative alignment of said cover with respect to said body as said cover is pivotally flipped closed and as said cover is opened.

3,356,248
CONTAINER WITH A ROTATABLE CLOSURE
George D. Del Vecchio, North Rose, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Oct. 18, 1965, Ser. No. 497,104
6 Claims. (Cl. 220—41)

1. A container including

a sleeve member having at least one opening therein, said sleeve member having one end closed and the opposite end having an opening therein,

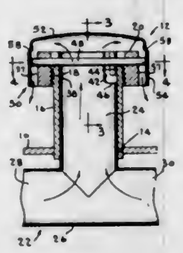
a hollow core member mounted in said sleeve member in cooperation with the end of said sleeve member having an opening therein forming a closure thereof and adapted to be rotated relative to said sleeve member,



said core member having a closure portion to cover the opening in said cylindrical member, and

a seal between the closure portion of said core member and the opening in said sleeve member.

3,356,249
TANK VENT ASSEMBLY
James G. Koester, Campbellsport, Wis., assignor to Jacob Brenner Company, Fond du Lac, Wis., a corporation of Wisconsin
Filed Dec. 3, 1964, Ser. No. 415,585
7 Claims. (Cl. 220—44)



1. A vent assembly for a tank comprising, in combination,

means defining an opening in said tank wall,

a fixed threaded ferrule attached to said tank wall at said tank wall opening and extending exteriorly of said tank,

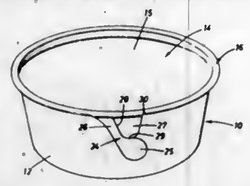
a nut having peripheral flats releasably engaged on said fixed ferrule,

a T-shaped hollow member,

means connecting said T-shaped member to said tank with the central leg portion thereof aligned with said opening and the cross portion thereof disposed interiorly of said tank and open at its opposite ends to the interior of said tank,

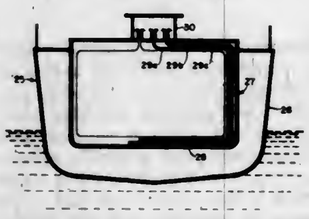
and a cap means of generally inverted U-shaped diametrical cross section disposed exteriorly of said tank, said cap means frictionally engaging said nut with the leg portion of said cap means overlapping a portion of said nut and ferrule, the base thereof in alignment with said tank wall opening and with the cap means spaced from said ferrule and the flats of said nut to cooperate therewith in defining a passage for ingress of air to and egress of air from said tank through said tank wall openings.

3,356,250
CONTAINER AND TEAR STRIP TYPE LID THEREFOR
Norman E. Russell, Toronto, Ontario, Canada, assignor to Aluminum Goods Limited, Toronto, Ontario, Canada
Filed Sept. 22, 1965, Ser. No. 489,191
18 Claims. (Cl. 220—54)



1. A lid for a container, said lid having a peripheral flange adapted to cooperate with the container to hold the lid on the container, an integral part of said flange constituting a tear strip having a free edge, a first tab fixed to said tear strip, a second tab having a first part fixed to a part of said lid other than said tear strip and adapted to be completely disconnected from said tear strip at least after said tear strip has been torn completely away from and detached completely from said lid, said tear strip being adapted to be torn away from and detached completely from said lid to release said lid from the container, said second tab remaining fixed to said lid after said tear strip has been torn completely away from and detached completely from said lid and providing a means for lifting said lid after said lid has been so released from the container, said first tab extending from said tear strip around and close to a second part of said second tab remote from said first part of said second tab with said second part of said second tab being disposed between said first tab and said first part of said second tab, whereby said second tab is shielded by said first tab.

3,356,251
MULTIPLE-USE STORAGE VESSEL
George S. Roberts, Baton Rouge, La., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia
Filed Jan. 7, 1965, Ser. No. 423,997
1 Claim. (Cl. 220—63)



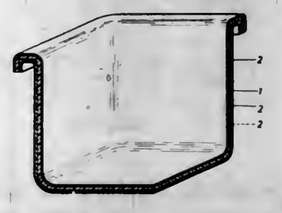
A multiple-use liquid storage vessel having a rigid tank capable of confining a liquid and a plurality of separate, flexible, thin-wall, collapsible containers within said tank, each of said containers being of a size and shape to substantially fill the interior volume of said tank when said container is filled with liquid, each of said containers having a neck portion attached to their top walls and adapted to extend through an opening provided in the top of said vessel, the improvement comprising: said neck portion terminating in an integral gasket portion received between a flange provided at the upper end of a pipe section joined to said vessel and surrounding said opening and a flange provided on the end of an inlet-outlet conduit, said pipe section having an outwardly flared lower end joining said vessel whereby abrasion of the neck portion of said container is minimized.

3,356,252
HIGH IMPERMEABILITY COATINGS AND SUPPORTED FABRICATED OBJECTS OF POLYTETRAFLUOROETHYLENE
John V. Petriello, North Babylon, N.Y., assignor to Dilectrix Corporation, Farmingdale, N.Y.
Continuation of applications Ser. No. 192,213, May 3, 1962, now Patent No. 3,274,323, dated Sept. 20, 1966, and Ser. No. 488,571, Sept. 20, 1965. This application Jan. 4, 1967, Ser. No. 617,740
1 Claim. (Cl. 220—63)



A tank comprising an outer container of fused polytetrafluoroethylene forming a rigid high density container, and a separate inner container of fused polytetrafluoroethylene forming a flexible lower density container.

3,356,253
PLUMBING FIXTURE AND METHOD OF MANUFACTURING THE SAME
Robert Wimmer, Traungasse 14, Wels, Austria
Filed Sept. 2, 1964, Ser. No. 393,926
Claims priority, application Austria, Sept. 6, 1963, A 7,179/63
13 Claims. (Cl. 220—83)



1. A plumbing fixture defining an open-topped cavity comprising:

(a) an inner layer of synthetic thermoplastic resin material substantially coextensive with and exposed in said cavity; and

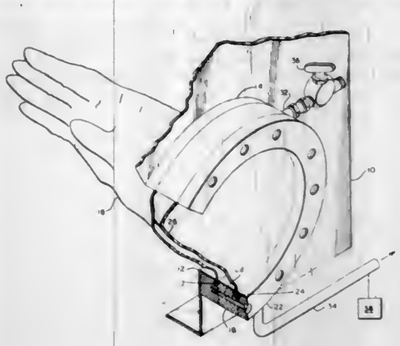
(b) a coating essentially consisting of a cured thermosetting plastic and glass fibers embedded in said plastic,

(1) said coating covering said inner layer and being bonded thereto.

3,356,254
GLOVE PORT FOR DRY BOX
Walter W. Becker, Shoreham, N.Y., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed July 30, 1965, Ser. No. 476,218
4 Claims. (Cl. 220—85)

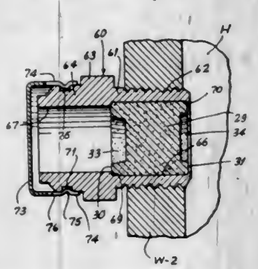
1. An improved glove port on a dry box having an opening comprising means surrounding said opening in said box supporting a pair of inner and outer gloves of gas impermeable flexible material extending into said box through said opening, gas flowing means flowing gas through the annular space formed between said gloves to

prevent direct leakage between the interior and exterior regions of said box, said gas being maintained at a pressure within said annular space above that of the interior



and exterior regions of said box, and means to monitor said box so as to detect immediately any leakage of gas from said annular space.

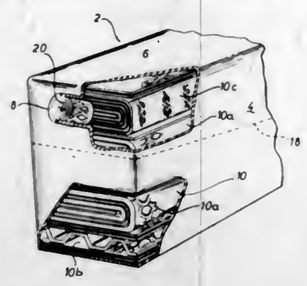
3,356,255
BREATHER AND DRAIN
Marshall G. Zavertnik, Manchester, and David A. Wayne, Rolla, Mo., assignors to Killark Electric Manufacturing Company, St. Louis, Mo., a corporation of Missouri
Filed Aug. 2, 1965, Ser. No. 476,569
4 Claims. (Cl. 220—88)



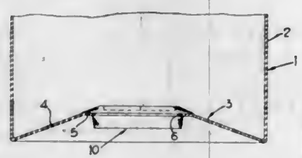
1. A breather device comprising a body having external threads for threading into a wall, a head on one end of the body, a recess in the opposite end of the body, a unitary porous slug in the recess, stop means to hold the slug within the recess and against which the slug seats under explosive pressures, the pores in the slug providing a plurality of long and narrow tortuous passageways capable of passing gases but not flame through them, the slug having an end facing the head and an end opposite the head of the body, a recess in each end of the slug to increase the surface areas by which gases can pass to and from the slug, and a plurality of passages communicating with the recess and opening through the body adjacent the head thereof.

3,356,256
SAFETY CONTAINER FOR EXPLOSIVE FLUIDS
Joseph Szego, 27 Kenwood Ave., Toronto, Ontario, Canada
Filed Oct. 23, 1965, Ser. No. 503,754
16 Claims. (Cl. 220—88)

1. A container for fluids comprising,
an outer shell enclosing a fluid chamber;
means communicating between the exterior and interior of the chamber providing it with inlet and outlet facilities;
a filler occupying substantially the whole of said chamber, and
netting arranged in layers and constituted by integrally-connected, thermo-conductive, non-inflammable ribbons forming a major part, at least, of said filler;
said ribbons being composed of thin metal which is malleable and relatively wide in relation to its thickness and said ribbons having their width misaligned with the general plane of said netting imparting stiffness to the latter;
the respective layers of netting being relatively thin permitting free flow of fluids therebetween conducing to relatively unimpeded leveling of the fluid within said chamber.



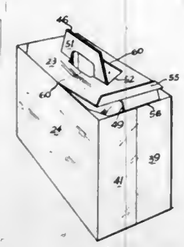
3,356,257
SAFETY PLUG FOR PRESSURE VESSELS
John J. Elmer, Manchester, Mo., assignor to Midwest Consultants, Inc., St. Louis, Mo., a corporation of Missouri
Filed Sept. 16, 1965, Ser. No. 487,670
11 Claims. (Cl. 220—89)



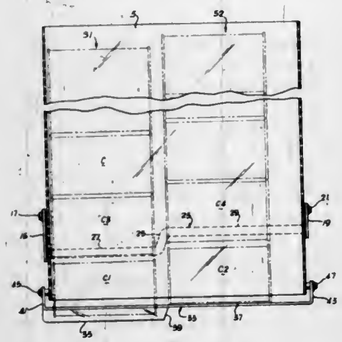
1. In a pressure vessel of the aerosol bomb type the improvement comprising a vessel wall having an aperture defined by a substantially planar boundary and a safety plug seated within said aperture, said plug being made of a thermoplastic material which is resilient, non-frangible at normal temperatures, and gradually softens with increasing temperature, said plug having a flange bearing against the inside surface of said wall and a thin continuous web closing the aperture, said web being provided with areas of predetermined weakness, whereby, in response to heat and pressure inside the vessel, the web deforms gradually, ruptures slowly at the area of weakness, and releases the contents of the vessel gently.

3,356,258
CARRYING CONTAINER
Joseph Vesak, Richmond, British Columbia, Canada, assignor to Crown Zellerbach Canada Limited, Vancouver, British Columbia, Canada, a corporation of British Columbia
Filed June 29, 1965, Ser. No. 467,970
15 Claims. (Cl. 220—115)

1. An end loading, top opening carton for a plurality of articles, the carton formed of foldable sheet material and comprising foldably connected, tubularly arranged opposed pairs of horizontal and vertical walls with foldably connected end closure flaps, a centrally located longitudinal divider foldably connected along one edge to one of the horizontal walls medially thereof, a handle member integrally, foldably connected to an opposite edge of the longitudinal divider and secured in flatwise relation to a portion of the second horizontal wall, the second horizontal wall including separable lines of weakness for separating said second horizontal wall from the handle member secured portion and respective end closure flaps for opening of the said second horizontal wall and removal of the articles from the carton, the handle member extendable to carrying position in the closed condition and in the open condition of the carton.

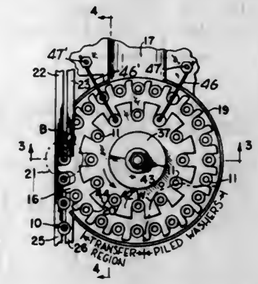


3,356,259
PLURAL STACK, SEQUENTIAL DISPENSING, ARTICLE DISPENSING APPARATUS
Wilbert O. O'Neal, Crystal City, Mo., assignor, by mesne assignments, to L. W. Menzimer, Rockford, Ill., as trustee
Filed Oct. 21, 1966, Ser. No. 588,577
7 Claims. (Cl. 221—118)



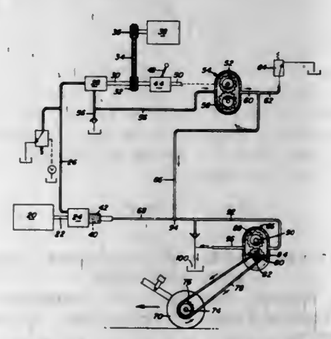
1. Article dispensing apparatus comprising a column for holding first and second stacks of articles one behind the other, a gate at the bottom of the column having first and second offset shelf portions for holding the lowermost articles of the first and second stacks in vertically offset relation in the column, means for releasably supporting the second article up from the bottom of each stack to prevent articles above said means from dropping, said gate being movable from a first position wherein it holds the lowermost articles of both stacks in the column to a second position wherein it releases the lowermost article of one stack to drop out of the column and thence to a third position wherein it releases the lowermost article of the other stack, said gate then being movable back to its first portion and said supporting means then being releasable to allow both stacks to drop down onto the gate.

3,356,260
WASHER FEED DIALS FOR AUTOMATIC ASSEMBLY MACHINES
Jacob P. Guth, Box 94, Davis Junction, Ill. 61020
Filed July 5, 1966, Ser. No. 562,845
5 Claims. (Cl. 221—167)



1. Washer feeding means comprising a hopper having an inclined bottom wall section with an annular retaining wall enclosing a rotatable circular correspondingly inclined dial receiving on its top surface a supply of washers to be fed, said dial having radially outwardly opening notches for receiving washers provided in the peripheral portion thereof, and a secondary circular inclined dial of smaller diameter superimposed upon and rotatable with the first dial in coaxial relationship thereto and having radially outwardly opening notches provided in the periphery thereof, the top surface of said secondary dial being also disposed under the same supply of washers resting on the top surface of the first dial so as to receive washers from said supply in the notches provided therein in the same way as with the first dial, said secondary dial serving to feed washers radially downwardly by gravity from notches in the lower portion of said secondary dial to unoccupied notches therebelow in the lower portion of the first dial as washers entered in notches in the secondary dial are transferred substantially radially outwardly thereof by gravity into closely adjacent notches in the first dial before these notches between which the transfer may occur come under the supply of washers.

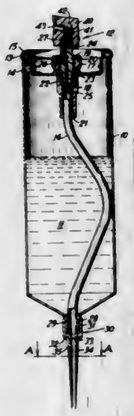
3,356,261
HYDRAULIC CONTROL FOR ASPHALT SPREADER
Gary Stein, New Berlin, Wis., assignor to Applied Power Industries, Inc., Milwaukee, Wis., a corporation of Wisconsin
Filed Apr. 22, 1965, Ser. No. 450,078
6 Claims. (Cl. 222—63)



1. A device for controlling the rate of distribution of a fluid material from a moving vehicle comprising an engine propelling said vehicle, a hydraulic pump driven by said engine, first means to vary the output of said

pump, a hydraulic motor driven by said pump, an output shaft driven by said motor, a material distributing mechanism driven by said output shaft at a rate corresponding to the speed at which said pump drives said motor, a variable fluid delivery means also driven by said output shaft, second means detecting the speed at which said vehicle is traveling and third means responsive to said second means for adjusting said first means.

3,356,262
EJECTOR DISPENSER AND FITMENT FOR PUNCTURE OF HERMETICALLY SEALED PRODUCT CONTAINER
Robert Henry Abplanalp, 10 Hewitt Ave., Bronxville, N.Y. 10708
Filed Oct. 10, 1966, Ser. No. 585,502
2 Claims. (Cl. 222—82)

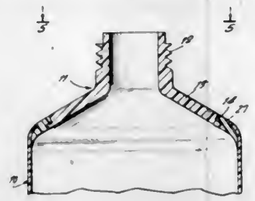


1. A dispenser, for use in discharging contents of a hermetically sealed product container, comprising a propellant container having an open top, a head structure joined to said propellant container to close its open top, said head structure comprising (a) a discharge ejector, (b) separate passages establishing flow lines to the discharge ejector from the lower end of said head structure within the area of the open top of said propellant container, one of said lines being in open communication at its lower end with said propellant container to permit propellant flow therethrough, and (c) manually operable valve means for said propellant flow line, a product flow line within the propellant container being in open communication at its upper end with the other flow line in the head structure and at its lower end extending through the wall of the propellant container and a hollow needle-like member suitable for piercing a hermetically sealed product container attached to the propellant container in a manner such that one end of the hollow needle-like member is in open communication with the product flow line at the place where it emerges from the propellant container.

3,356,263
INJECTION MOULDED PLASTIC TUBE AND METHOD
Ernest M. Monroe, Newport, Ark., assignor to Victor Metal Products Corp., Newport, Ark., a corporation of Delaware
Filed Apr. 8, 1966, Ser. No. 541,148
9 Claims. (Cl. 222—107)

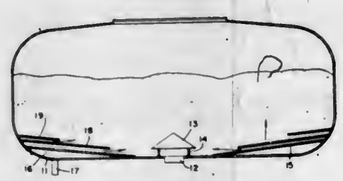
1. A plastic collapsible tube comprising a plastic tubular body, a threaded neck portion and a band of plastic material moulded between the body portion and neck portion in the shape of a shoulder to form a unitary collapsible tube structure.

6. The method of forming a plastic collapsible tube comprising supporting a tubular plastic body portion upon its



inner surfaces, placing a plastic neck portion upon the said body support in spaced relationship from said body portion and thereafter injecting a band of plastic material between the body portion and neck to form a unitary tube structure.

3,356,264
FLUIDIZING CONTAINER AND SYSTEM
Carlowen Smith, Irwin, Pa., assignor, by mesne assignments, to Industrial Pneumatic Systems, Inc., Fairmont, W. Va., a corporation of West Virginia
Filed Jan. 25, 1966, Ser. No. 522,889
8 Claims. (Cl. 222—176)

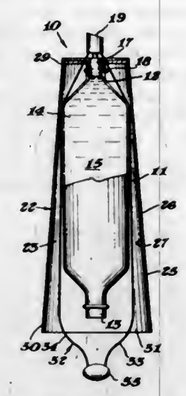


1. In a system for rockdusting in a mine, a wheeled carrier for entry into a mine, an airtight pneumatic container for pulverulent material on said carrier said container being of less height than its shortest transverse dimension and having an outlet opening through its bottom end wall, a porous wall pervious to gas above said bottom end wall extending outwardly from adjacent said outlet opening to support said pulverulent material, and forming a space with said end wall, and sheet baffle means spaced above said porous wall sloping from the sides of said container toward said outlet opening on opposite sides of said outlet opening and directing air from the space beneath said porous wall between said baffle and porous wall to said outlet with said material entrained therein, means on said carrier to supply air under pressure to said space, said container having an inlet leading to said space and connected to said means to supply air, and a conduit connected to said outlet to direct air entrained material within said mine.

3,356,265
REMOTELY ACTUATED PRESSURE DISPENSING CONTAINER HAVING A DISTENDABLE BODY
Glenn C. Wiggins, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Dec. 15, 1966, Ser. No. 601,931
7 Claims. (Cl. 222—183)

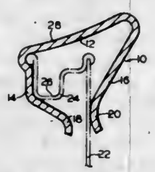
1. A pressurized dispensing container comprising a pressure distendable elastomeric body having a first end and a second end, the body defining

an internal cavity, the body being composed of a pressure distendable elastomeric material,
a dispensing valve affixed to the first end of the body and providing selective communication with the interior thereof,



a housing disposed about the distendable body,
a flexible valve actuating element operatively affixed to the valve, the valve actuating element extending within the housing from the first end of the elastomeric body to a position generally adjacent the second end of the elastomeric body.

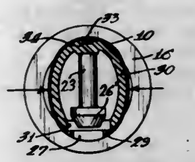
3,356,266
REMOVABLE LIP FOR A CONTAINER
Joseph Pinter, Jr., 1130 W. Walker St., Milwaukee, Wis. 53204
Filed July 12, 1965, Ser. No. 471,348
8 Claims. (Cl. 222—192)



5. In combination, a container including a bottom closure, side wall structure fixed to said bottom closure and extending upwardly therefrom, and lip structure including an annular base having smooth top and bottom surfaces, and a pair of legs spaced radially and angularly disposed relative to said base fixed at one end of each respectively to the inner annular extremity and outer annular extremity of said base and depending therefrom, said legs converging as they approach their respective extremities remote from said base for receiving and frictionally engaging the upper extremity of said side wall structure, said upper surface of said base inclining upwardly from its innermost extremity to its outermost extremity relative to said container.

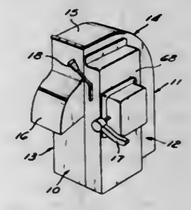
3,356,267
VALVE
William R. Scholle, Long Beach, Calif., assignor to Scholle Container Corporation, Northlake, Ill., a corporation of Illinois
Filed Oct. 7, 1966, Ser. No. 585,015
1 Claim. (Cl. 222—213)

A dispensing valve device for engagement with a receptacle adapted to contain liquid and for dispensing liquid therefrom, comprising a substantially cylindrical hollow body closed at one end and open at its opposed end and connector means at said open end for engagement with complementary means on and in communication with said receptacle, said body being composed of flexible resilient material and formed with a lateral dispensing aperture, a relatively rigid valve stem disposed and secured at one end within said resilient body and extending radially thereof, and the opposed end of said stem carrying a valve head normally projecting to the de-



fines of said lateral aperture for closing said valve and adapted to be spaced therefrom on lateral compression of said resilient body in a direction substantially normal to the axis of said valve stem for opening of said valve, further including a flexible resilient concentric reinforcing ring disposed within said body, wherein the valve stem is secured to said reinforcing ring, and wherein the reinforcing ring is formed with an aperture for receiving therethrough said valve head.

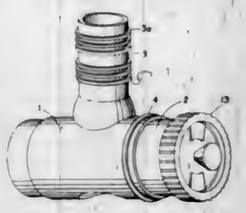
3,356,268
MEASURING AND DISPENSING CANISTER
William W. Swanson, 2515 Overlook Road, Apt. 15, Cleveland Heights, Ohio 44106
Filed Mar. 28, 1966, Ser. No. 537,789
12 Claims. (Cl. 222—288)



1. Apparatus for dispensing a preselected one of a number of measured amounts of loose dry material from a stored in-bulk quantity thereof comprising
a walled storage chamber for containing and storing an in-bulk quantity of loose dry material to be dispensed and having a dispensing opening therein,
a plurality of movable measuring and dispensing elements each having a cavity with an opening therein and each sized to hold a predetermined amount of material when filled to its opening, all of said measuring and dispensing elements being mounted in said dispensing opening in said storage chamber for closing said dispensing opening and for the rotational motion of each about a common axis and between a filling position with its cavity opening facing into and in communication with said walled storage chamber and a dispensing position with its cavity opening facing outside said walled storage chamber for delivery of its measured contents,
means for selecting one alone and in combination with all of said measuring and dispensing elements to be rotated from its filling position to its dispensing position,

operating means for rotating the selected ones of said measuring and dispensing elements from filling to dispensing positions for delivery of a preselected measured amount of dry loose material from the in-bulk quantity stored in said walled storage chamber and for rotating the selected ones of said measuring and dispensing elements from dispensing to filling positions for refilling said cavities therein in preparation for the next dispensing operation.

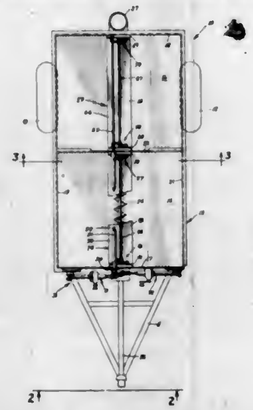
3,356,269
ADJUSTABLE ROTOR-JIGGER
Theodore Zeis and Martha Zeis, both of 856 Plymouth Ave., Apt. 331, Montreal 16, Quebec, Canada
Filed Aug. 1, 1966, Ser. No. 569,224
3 Claims. (Cl. 222—307)



1. An adjustable rotor-jigger for dispensing measured quantities of liquid from a container having a discharge opening, said jigger comprising: a hollow cylindrical body open at its opposite ends and formed with a pair of diametrically opposed openings; a mouthpiece carried by said body, communicating with one of said openings and projecting from said body in a direction normal to the axis thereof; means on said mouthpiece for establishing a fluid-tight seal with the container at said discharge opening; a female bead on said body at one of said open ends; a detent carried by said body at the other of said open ends; a cylindrical cup rotatable in said body and having a closed end, a cylindrical wall with a bore, and an open end; said cylindrical wall having a pair of diametrically opposed openings adapted to align with the openings in said body, a pair of external notches in said cylindrical wall adjacent to said closed end; a plurality of spaced apart internal beads carried by said cylindrical wall adjacent to the open end and projecting into said bore; an external bead on said cylindrical wall spaced from the open end and engaging in said female bead to position the cup in the body; a pair of spaced divider plates carried by said closed end and extending into the interior of said cup; a closure plate adjustably positioned in said bore at said open end, a divider member carried by said closure plate and received between said pair of divider plates to divide said cup into two semi-cylindrical chambers; retaining means on said closure plate cooperating with said internal beads to position said closure plate in said bore; a handle on the outer face of said closure plate; and finger gripping means on the periphery of said cup; said body, cup and closure plate being of a plastic material.

3,356,270
MATERIAL FLOW CONTROL WITH ROTARY SCREW
Paul E. Helder, Carroll, Iowa 51401
Filed May 27, 1966, Ser. No. 553,402
7 Claims. (Cl. 222—413)

1. A material flow control for a self unloading container having a bottom wall and longitudinally spaced upright end walls, a conveyor located adjacent the bottom wall operable to move material from the container through an opening in one of the end walls, comprising: elongated cover means positioned between said upright walls and over said conveyor, said cover means selectively movable to an open position allowing material in the container to flow into the conveyor and movable to a closed position to prevent the movement of material into the conveyor, said cover means comprising a pair of cover members arranged in an inverted V-relation extended between said end walls at a position above the conveyor and a hinge connection coupling adjacent sides of said cover members, shaft means rotatably mounted on said upright walls above and generally parallel to the elongated cover means, inverted V-shaped guide means mounted on the upright walls, coacting groove and slide means on said guide means and the cover members for controlling the movement



of the cover members between an open folded position and a closed unfolded position whereby the cover members have substantial equal movements so that the entrance openings on the opposite sides of the conveyor are always substantially equal, linkage means connecting the shaft means and cover means whereby on rotation of the shaft means said cover means is moved to selective open and closed positions, and expandable and contractable power means for selectively rotating the shaft means in opposite directions thereby moving the cover means to open and closed positions to control the movement of material to the conveyor, said power means having a first member connected to the shaft means, a second member connected to one of the side walls, and a third member operable to effect positive relative expansion and contraction of the first and second members.

3,356,271
GARMENT STRETCHING AND SHAPING FORM
David D. Sobel, 1747 W. 1st St., Brooklyn, N.Y. 11223
Filed June 13, 1966, Ser. No. 557,179
7 Claims. (Cl. 223—66)

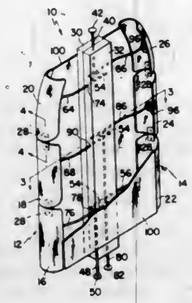
1. An apparatus for stretching and forming a garment comprising a pair of transversely spaced oppositely disposed longitudinal extending sides,

each of said sides defining a substantially continuous outer wall including a plurality of interconnected individual forming elements arranged coextensively with each other and being relatively movable,

means retaining said individual forming elements and their coextensive arrangement and connecting the same together for relative movement,

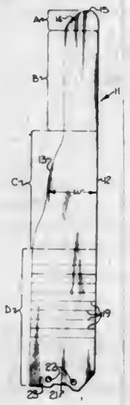
actuator means connected with and supporting a respective one of said forming elements of each of said sides and to actuate their respective forming elements for relative movement,

selectively operable means cooperable with selected ones of said actuator means to cause the same to actuate their respective forming elements, said individual forming elements each having a substantially rigid porous surface through which particles of steam may exude, each of said individual forming elements having a curved cross-section in a horizontal plane with the terminating edges of the curve of the forming elements of each of said sides facing inward toward the forming elements of the oppositely disposed side, a member closing the transverse



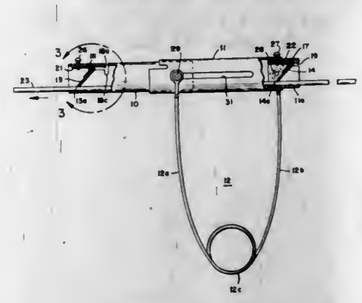
space between said sides and extending for the lengths of said sides, each of said individual forming elements on one of said pair of longitudinal extending sides being aligned horizontally with a respective one of an individual forming element of the other of said pair of sides, a plurality of said selectively operable means, each one of said selectively operable means cooperating with a plurality of said actuator means to cause said horizontally aligned forming elements on each of said sides to articulate and move relative to the other forming elements of their respective sides.

3,356,272
BOARDING FORM FOR LADIES' STOCKINGS
Clyde A. Berry, Valdese, N.C., assignor to Pilot Research Corporation, Valdese, N.C., a corporation of North Carolina
Filed Dec. 5, 1966, Ser. No. 599,281
6 Claims. (Cl. 223—75)



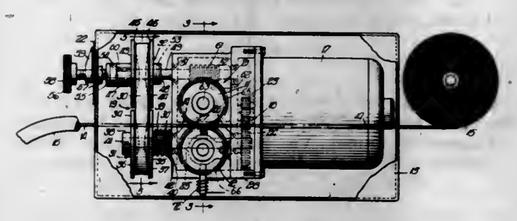
1. A boarding form for forming heelless, tubular stretch stockings which permits the boarding of the stockings without irregular distortion of the stitches in the foot and ankle portions thereof, said form comprising a thin, rigid elongate plate having a toe-forming portion, a foot and ankle-forming portion, and a leg-forming portion, one side edge of said plate being straight throughout said foot and ankle and leg forming portions of said plate, the opposite side edge of said plate extending substantially parallel to said one side edge throughout said foot and ankle-forming portion of said plate and a continuation thereof diverging from said one side edge throughout said leg-forming portion of said plate to define a leg-forming portion of substantially greater width than said foot and ankle forming portion, and a convexly-curved end edge connecting said one side edge and said opposite side edge to form said toe-forming portion of the boarding form.

3,356,273
MANUAL WELDING WIRE FEEDER
Ralph R. Wallace, 35 Alcala Court, Pacifica, Calif. 94044
Filed Dec. 20, 1965, Ser. No. 515,015
2 Claims. (Cl. 226—128)



1. In a manual welding wire feeder, handle means comprising two elongated members adapted to be moved toward each other when manual gripping force is applied together with means for yieldably urging the members apart, said elongated members being the end portions of a coiled spring which serves to yieldably urge the members apart, and two uni-directional feed devices attached to corresponding extremities of the elongated members, said devices being adapted to engage a common wire and to feed the same in one direction when the devices are reciprocated in opposite directions by manual movement of said members.

3,356,274
ELECTRODE FEED APPARATUS
Arthur A. Bernard and Richard A. Bernard, Chicago Heights, Ill., assignors to Bernard Welding Equipment Company, Beecher, Ill., a corporation of Illinois
Filed Mar. 15, 1965, Ser. No. 439,763
10 Claims. (Cl. 226—178)



4. In an arc welding electrode feeding machine in which consumable wire electrode is withdrawn from a source and pushed through a conduit to the welding arc by at least one pair of traction feeds rolls, at least one of said pair of traction feed rolls having a structurally fixed

axis of rotation, the combination with said pair of traction feed rolls comprising: a pulley drive train comprising at least one pair of pulleys operatively interconnected by a pulley belt, at least one of said pair of pulleys having an axis of rotation which is structurally fixed with reference to the fixed axis of said one feed roll; speed reduction means interposed between said one fixed axis pulley and said one fixed axis feed roll for transmitting power from said pulley drive train to said feed rolls; means for selectively varying the pitch diameter of at least one of said pair of pulleys; means for maintaining drive tension in said pulley belt; a constant speed electric motor; and means for transmitting power from said constant speed electric motor to said pulley drive train.

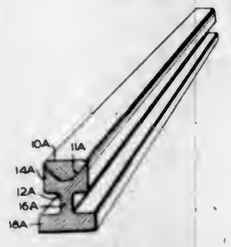
3,356,275
ENDLESS LOOP TAPE TRANSPORT
Harold T. Wright, Belmont, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California
Filed Feb. 4, 1966, Ser. No. 525,185
10 Claims. (Cl. 226—195)



1. In a transport for an endless loop of tape, the combination comprising:
- means for guiding said tape in a path defining a cross and two bends, said path including a zone in which said bends are in curved concentric contiguity;
- means for causing pressurized frictional engagement of the respective portions of tape in said zone; and
- means for moving said tape longitudinally around said path and through said zone;
- whereby the segment of tape moving downstream from the inner bend of said zone and back to the outer bend of said zone tends to be shortened.

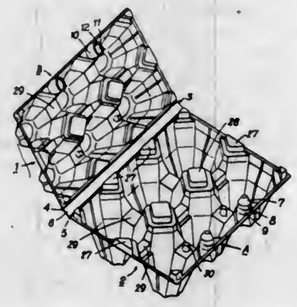
3,356,276
EXTRUDED COMPOSITE CONDUCTOR RAILS
Grover C. Robinson, Jr., Richmond, and Bush Hondalus, Chesterfield County, Va., assignors to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed Mar. 8, 1965, Ser. No. 437,687
12 Claims. (Cl. 238—150)

3. An integral, extruded conductor rail having at 20° C. an average longitudinal electrical conductivity of at least 50% IACS and comprising: a tread portion of a first aluminum alloy containing at least 11.6% silicon, and head, web, and base portions of a second aluminum alloy; said tread portion having one relatively large surface metallurgically bonded by extrusion to said head portion and an opposite surface exposed for contact with a current collector; said tread portion being substantially more abrasion-resistant than said head, web, and base portions; said head, web, and base portions having a substantially



higher electrical conductivity than said tread portion; and the cross-sectional area of said tread portion being substantially less than the combined cross-sectional areas of said head, web, and base portions.

3,356,277
DEEP-DRAWN PLASTIC FILM PACKAGING
Zeljko Hohnjec, Vienna, Austria, assignor to Etablissement Ovotherm, Vaduz, Liechtenstein, a corporation of Liechtenstein
Filed May 31, 1966, Ser. No. 554,097
Claims priority, application Austria, June 4, 1965, A 5,108/65
4 Claims. (Cl. 229—2.5)

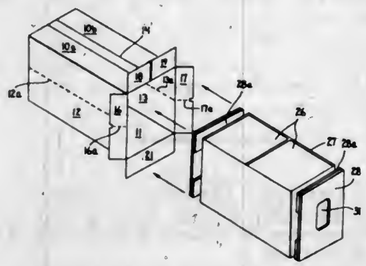


1. Arrangement for packaging in deep-drawn plastic foil comprising two half structures essentially the same and joined together by a flange with recesses adapted to accommodate eggs, fruit and other goods; the edges of the two halves of the packaging which come to lie upon each other when the packaging is closed, being provided with one piece projections which fit into each other, one of said projections having on its periphery grooved recesses running parallel to its longitudinal axis so that several parallel flanges also running parallel to said longitudinal axis are formed by the recesses which flanges fit flexibly into a common hole-like cavity of the other projection and make a friction contact.

3,356,278
CONTAINER FOR ACOUSTICAL TILE OR THE LIKE
Harold W. Layne, Sr., Beech Grove, Ind., assignor to Inland Container Corporation, Indianapolis, Ind., a corporation of Indiana
Filed June 14, 1966, Ser. No. 557,421
2 Claims. (Cl. 229—14)

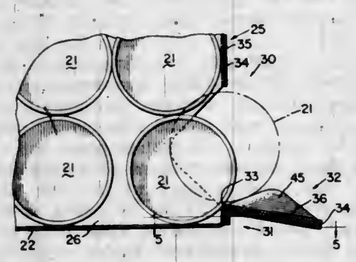
1. A container for semi-fragile articles such as acoustical tile or the like comprising: top, bottom and side panels, said top panel being formed by two edge abutting

top panel sections of equal width and each extending from the upper margin of one of the side panels and normal thereto, said top panel sections being releasably joined at their free margins when the container is closed, end flaps extending from said side panels, said bottom panel and from both of said top panel sections and folded to overlie each other to form the container ends, the free margins of corresponding end flaps opposing each other but terminating substantially short of abutting engagement thereby leaving a generally rectangular aperture in the container ends, and a reinforcing panel at each end of the container sized to closely fit within the con-



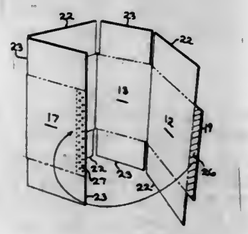
tainer ends and to underlie said end flaps, said reinforcing panel having cushioning pads extending along two of its opposed marginal areas, said cushioning pads having a width substantially equal to the length of the adjacent end flaps, said reinforcing panels having a central aperture with margins generally aligned with the inner margins of said reinforcing cushions, said panel aperture registering with said generally rectangular aperture in the container ends whereby the thickness of said reinforcing cushions, the thickness of said reinforcing panel and the thickness of the adjacent end flaps thereby forming a hand grip ledge at each end of the container.

3,356,279
SHIPPING AND DISPENSING CONTAINER MEANS AND BLANKS THEREFOR
George L. Root, Rochester, N.Y., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed Feb. 23, 1966, Ser. No. 529,433
11 Claims. (Cl. 229—17)



1. Improved container means having integral dispensing means for dispensing a plurality of generally identical article means carried therewithin comprising, bottom and top wall means, a plurality of side wall means connected to said bottom and top wall means to define said container means for said article means, bottom wall extension flap means extending from said bottom wall means, a pair of side wall extension flap means extending from cooperating side wall means arranged opposite each other, said side wall extension flap means being overlapped and fastened together adjacent their terminal outer edges and to said bottom wall extension flap means to define one of said side wall means; and opening means in said one side wall means extending across the entire lower end portion thereof leaving a terminal strip coextensive in width with said one wall means, said terminal strip being formed by portions of said extension flap means, whereby said terminal strip has a multiple thickness and is made from extension flap means extending from a plurality of wall means to provide increased strength retaining means for said article means.

3,356,280
CLOSED CONTAINER WITH VAPOR PHASE CORROSION INHIBITOR
Harry E. Dunholter, Toledo, Ohio, assignor to Owens-Illinois Inc., a corporation of Ohio
Filed July 29, 1964, Ser. No. 386,023
6 Claims. (Cl. 229—37)

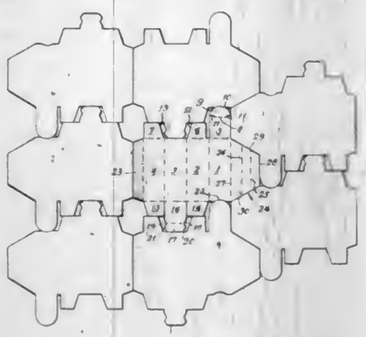


4. A container comprising, in combination: a plurality of panels foldably connected to one another in series, said plurality comprising at least four panels; a flap foldably connected to the first of the panels in the plurality, said panels and said flap being folded so that said flap overlies a portion of the last of the panels in the plurality; a vapor phase corrosion inhibitor material applied to the surface of the flap which overlies a portion of the last panel in the plurality; a plurality of small perforations through that portion of the last panel in the plurality which the flap overlies to permit vapors from said vapor phase corrosion inhibitor material to enter said tubular structure; and wall means closing the end of said tubular structure to define a closed container therewith.

3,356,281
TUBE CARTON FROM HIGHLY NESTABLE INTEGRAL BLANKS
Kenneth T. Buttery, Kalamazoo, Mich., assignor to Brown Company, a corporation of Delaware
Filed Feb. 15, 1966, Ser. No. 527,446
4 Claims. (Cl. 229—39)

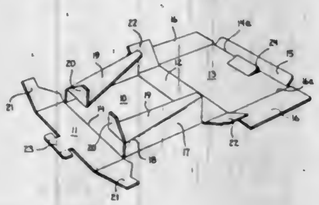
3. A plurality of integral blanks for forming cartons, said blanks being arranged in closely nested position, at least two of said blanks being in laterally adjacent nesting engagement and oriented in the same direction and at least one of said blanks being oppositely directed and terminally nesting with said first two blanks, each of said blanks comprising four side walls hingedly connected together, a partition member hingedly connected to the edge of one of said side walls and adapted to be disposed diagonally within said carton, said partition member being substantially in the form of a symmetrical trapezoid having a base at said hinged connection and sides converging to a terminal edge of smaller length than said base, a glue flap hingedly connected to an edge of another of said side walls and adapted to be adhesively affixed to said partition member, two non-adjacent side walls each having a tuck flap hingedly connected at each end thereof,

the length of the terminal edge of said partition member being substantially equal to the sum of the lengths of the two tuck flaps connected to the ends of each of said side walls, and a closure flap hingedly connected to the end of another side wall having a lock flap adapted to be inserted into the end of said carton thereby closing said carton in each of said blanks the sum of the lengths of said closure flap and its lock flap being substantially equal



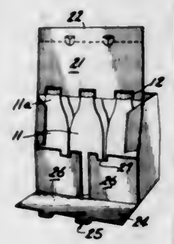
to the length of the terminal edge of said partition member, the ends of the tuck flaps of the laterally arranged blanks being in engagement, the end of said lock flap being in engagement with the end of a corresponding wall of the adjacent blank, and the third blank being oppositely nested with the converging sides of its partition member in engagement with the converging sides of the partition members of the two laterally positioned blanks.

3,356,282
BOOK WRAP
Harold W. Layne, Sr., Beech Grove, Ind., assignor to Inland Container Corporation, Indianapolis, Ind., a corporation of Indiana
Filed Sept. 16, 1966, Ser. No. 579,883
3 Claims. (Cl. 229—40)



1. A generally rectangular container for enclosing relatively dense, generally rectangular objects which have one margin thicker than the other such as looseleaf binders and the like comprising: a bottom panel having an integral side panel at each of its side margins and integral end walls at each of its end margins, said end walls being longitudinally folded on a diagonal line extending from a point on one side margin of the end wall, the point being at a distance from the base of the end wall substantially equal to the width of the thinner margin of the object enclosed, to a point on the opposite side margin of the end wall which is at a distance from the end wall base substantially equal to the width of the thicker margin of the object enclosed, each of said end walls having a tab extending sidewardly from the outer portion of one margin of the end wall, said tabs having a length substantially equal to the difference in distances measured from the ends of said diagonal line to the base of the end wall; a top panel integral with one of said side panels and extending from the side margin thereof remote from said bottom panel, said top panel having an integral end flap extending from each end margin thereof; a side flap integral with said top panel and extending from the side margin thereof remote from said bottom panel; an end flap integral with each end margin of said side panel; whereby said container may be folded around a generally rectangular object having one margin thicker than the other by placing said top panel in spaced overlying relation to said bottom panel with said top panel end flaps being folded to overlie said bottom panel end walls the portion of said bottom panel end walls outboard of said diagonal line being folded into overlying relation with the face of the rectangular object and in underlying relation to said top panel, said tabs being folded to extend upwardly toward the underface of said top panel and serving to brace the unequally margined object within the rectangular container.

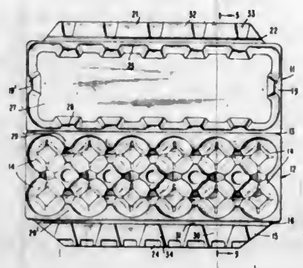
3,356,283
ARTICLE-CARRYING CARTON
Charles L. Champlin, Rittman, Ohio, assignor to Packaging Corporation of America, Evanston, Ill., a corporation of Delaware
Filed Feb. 23, 1966, Ser. No. 529,334
3 Claims. (Cl. 229—40)



1. An article carrying carton formed from a blank of foldable sheet material, comprising a top panel for substantially overlying a plurality of articles arranged in side by side relation; a bottom panel for subtending such articles; end panels interconnecting corresponding peripheral portions of said top and bottom panels and engageable with the outermost of the plurality of such articles; first side closure panels foldably connected to opposite sides of said top panel, each first side closure panel having a downwardly extending segment provided with deformable female locking component; second side closure panels foldably connected to opposite sides of said bottom panel, each second side closure panel extending upwardly from said bottom panel and engageable with the lower side portions of a predetermined number of the accommodated articles, said first and second side closure panels being in partial overlapping relation, each second side closure panel being provided with male locking components having yieldable portions adapted when said closure panels are in partial overlapping relation to be in registered relation and interlock with said female components when a predetermined amount of external force is exerted on said male and female components to cause deforming of said yieldable portions into said female components so as to retain said first and second closure panels in article-retaining wall-forming relation; and third side closure panels foldably connected to and laterally extending from opposite sides of said end panels, said third side closure panels including female components in registered

relation with said first mentioned female components and in interlocking engagement with said male components, only when said first, second, and third side closure panels assume predetermined folded positions.

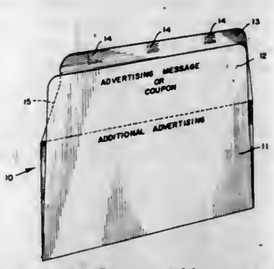
3,356,284
CARTON STRUCTURE
Connie Lake, Pittsford, N.Y., assignor to Mobil Oil Corporation, a corporation of New York
Filed Dec. 21, 1965, Ser. No. 515,339
5 Claims. (Cl. 229—45)



1. In a molded egg carton comprising a top section including a cover having a front wall, a rear wall and two side walls; and a bottom cellular section having a front side, a rear side and two ends and connectively hinged to said cover along the margin of the rear side of the bottom section to the margin of the rear side of the cover, the improvement which comprises a locking arrangement for securing said top and bottom sections in a closed relationship, said locking arrangement comprising (1) a bottom locking flange having (a) one of its longitudinal edges hinged to the longitudinal edge of the front side of said bottom cellular section, and (b) an opposite longitudinal edge; spaced-apart recesses located along the length of said bottom locking flange, said recesses being characterized by having a locking ridge located substantially adjacent to said opposite longitudinal edge; and (2) a top locking flange having (a) one of its longitudinal edges hinged to the longitudinal edge of the front wall of said top section; and (b) an opposite longitudinal edge, said top locking flange being positionable inside of the front wall of said top section and substantially in parallel relationship therewith; said top locking flange being further characterized by having spaced-apart projections located along the length of said top locking flange, which projections are adapted when the carton is closed, for mating engagement with said recesses on said bottom locking flange, said bottom locking flange being positionable inwardly toward said connecting hinge whereby, when said carton is closed, said bottom locking flange is substantially adjacent to the top locking flange and an edge of a projection in the top locking flange abuts against a locking ridge on said bottom locking flange.

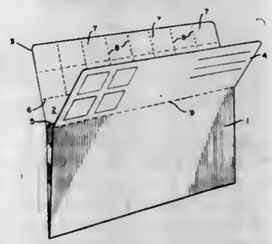
3,356,285
ENVELOPE
Craig P. Greason, Berry Hill Road, Syosset, N.Y. 11791
Filed Aug. 30, 1965, Ser. No. 483,450
1 Claim. (Cl. 229—70)

An envelope comprising
a receptacle portion having a throat;
a first flap foldably secured to the throat of said receptacle portion;
a second flap foldably secured along one of its sides to the throat of said receptacle portion, said second flap having an indentation in its free edge forming a notched portion along its periphery, said second flap completely overlying and covering said first flap except at the notched portion; and
an adhesive on the edge of said second flap opposite and remote from said one of its sides to seal said



edge of said second flap to said receptacle portion, said adhesive being provided in discrete areas along said edge to facilitate unsealing of said second flap, said second flap being of sufficient size so that said adhesive does not overlie said first flap.

3,356,286
ENVELOPE
Craig P. Greason, Berry Hill Road, Syosset, N.Y. 11791
Filed July 1, 1966, Ser. No. 562,241
5 Claims. (Cl. 229—70)

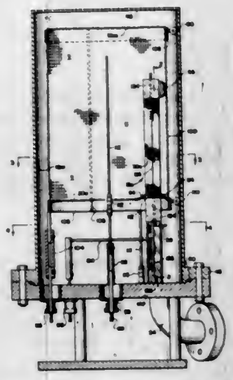


1. A return mailing envelope comprising a main envelope portion having a front face and a back face with a filling opening therebetween, a gummed envelope flap extending beyond the front face of said main envelope portion away from the opening, a coupon portion extending beyond said flap, a coupon receiving portion extending beyond the back face of said main envelope away from the opening, a fold line between said main envelope and said flap, a perforated tear line between said flap and said coupon portion, and a second tear line between the back face of said main envelope portion and said receiving portion, whereby said coupon portion and said coupon receiving portion can be removed and said flap may be turned about said fold line to adhere to the back face of the main envelope to seal it.

3,356,287
METHOD AND APPARATUS FOR ION PUMPING AND PRESSURE MEASUREMENT
Harold F. Winters, San Jose, Calif., assignor to Granville-Phillips Company, Boulder, Colo., a corporation of Washington
Filed July 28, 1965, Ser. No. 475,344
37 Claims. (Cl. 230—69)

1. An electrostatic electron orbiting device for use in a vacuum vessel having a port for the introduction of gas, said device being of the type including an elongate rod-like conductor forming a first electrode, a hollow substantially cylindrical conductor of the open grid type

encircling the first conductor in coaxial relation thereto defining a second electrode, a source of electrical energy connected to said electrodes in a manner to bias the second negatively with respect to the first and establish an electrostatic field therebetween, said field having an elongate central zone intermediate the ends thereof wherein the electrostatic forces are essentially radially-directed and end regions abutting the central zone that include substantial axially-directed electrostatic forces of a magnitude capable of moving an electron released therein toward said central zone, a source of electrons positioned and adapted to introduce electrons into the electrostatic field between the electrodes with insufficient initial energy to reach the second electrode and with sufficient angular momentum



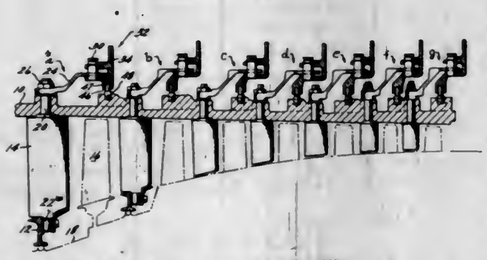
such that a majority thereof cannot initially reach the first electrode, the source of electrons being disposed relative to the electrostatic field such that a substantial proportion of the electrons emitted thereby are released in one of the end regions where the axially-directed forces present in said regions will cause said electrons to follow rosette-shaped substantially helical orbital paths along the first electrode, and a third electrode which surrounds the second electrode in radially-spaced relation thereto, said third electrode being connected to the source of electrical energy and biased negatively with respect to both the first and second electrodes to thereby establish a further electrostatic field between said second and third electrodes, said further field tending to prevent the flow of electrons therethrough to the third electrode.

3,356,288

STATOR ADJUSTING MEANS FOR AXIAL FLOW COMPRESSORS OR THE LIKE

Robert J. Corsmeier, Cincinnati, Ohio, assignor to General Electric Company, a corporation of New York

Filed Apr. 7, 1965, Ser. No. 446,316
5 Claims. (Cl. 230—114)



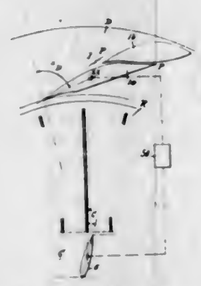
1. In an axial flow compressor or the like,
a generally cylindrical casing,
a plurality of stators disposed within said casing, each stator being pivotal about an axis radial of said casing,
said stators being arranged in a stage disposed generally in a plane normal to the axis of the casing,
each stator having a lever secured thereto, disposed exteriorly of said casing, and extending laterally from its pivotal axis,
an actuator ring mounted adjacent said stage of stators for oscillatory movement in a plane generally normal to the axis of the casing,
said actuator ring having a plurality of clevis pins mounted therein and pivotal about angularly spaced axes radial of the casing,
each of the clevis pins having a radially disposed elongated slot therein,
the levers of the stators being received in the slots of respective ones of the clevis pins such that compound relative movement can occur therebetween in the axial sense with respect to both the levers and the respective clevis pin,
whereby movement of the actuator ring will impart simultaneous pivotal movement to the stators.

3,356,289

SUPERSONIC COMPRESSORS OF THE CENTRIFUGAL OR AXIAL FLOW AND CENTRIFUGAL TYPES

Joseph Plotkowiak, Carrieres-sur-Seine, France, assignor to Societe d'Exploitation des Materiels Hispano-Suiza, Bois-Colombes, Seine, France

Filed May 10, 1965, Ser. No. 454,305
Claims priority, application France, May 14, 1964, 974,542
3 Claims. (Cl. 230—114)



1. In a gaseous fluid supersonic compressor of the combined axial and centrifugal flow type, in combination, a fixed frame, means defining a central inlet, a set of first pivots radially disposed in said frame about an axis to which said pivots are transverse, a set of guide vanes adapted to receive a stream of gaseous fluid from said inlet, each of said guide vanes being carried by one of said pivots, said guide vanes having an angular setting adjustable by rotation of said pivots in said frame, a bladed rotor disposed downstream of said set of guide vanes to receive a stream of gaseous fluid therefrom, the axis of said rotor being the axis about which said first pivots are radially disposed, a diffuser adapted to receive the stream of gaseous fluid issuing from said rotor at a supersonic absolute velocity, said diffuser comprising two annular supports coaxial with said rotor, a plurality of second pivots parallel to the rotor axis in one of said supports, a plurality of vanes located between said two supports, each of said last mentioned vanes being made of two portions, a rotatable upstream portion and a fixed downstream portion, said downstream portion being rigidly fixed to said two supports in such manner as to brace said two supports together and said upstream portion being carried by one of said last mentioned pivots, said vanes defining means for causing the relative velocity of said gaseous fluid to remain supersonic from the leading edges

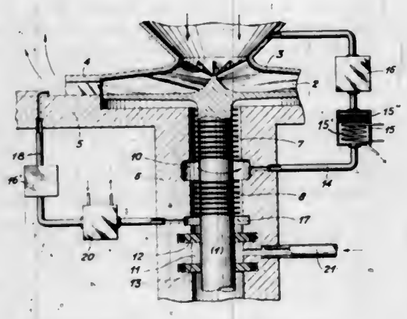
of said upstream portions to intermediate points of passages between adjacent vanes and then to become subsonic from said points to the trailing edges of said downstream portions, and control means mechanically connected to each pivot carrying one of said guide vanes and to each pivot carrying one of said upstream portions of said diffuser vanes for simultaneously adjusting the angular setting of said guide vanes and of the upstream portions of said diffuser vanes.

3,356,290

BLOWER SHAFT SEAL

Walter Lehmann, Winterthur, Switzerland, assignor to Sulzer Brothers Limited, Winterthur, Switzerland, a corporation of Switzerland

Filed May 27, 1964, Ser. No. 370,654
Claims priority, application Switzerland, May 31, 1963, 6,883/63
4 Claims. (Cl. 230—132)



1. In combination with
a pressure vessel having a sealing housing,
a blower shaft passing through said sealing housing,
an impeller mounted on an end of said blower shaft spaced from said sealing housing,
a fluid inlet for passing fluid to said impeller, and
a fluid outlet for passing fluid from said impeller;
a seal comprising:
a labyrinth packing adjacent said impeller,
a liquid seal adjacent said labyrinth packing,
said labyrinth packing having an intermediate portion connected to said fluid inlet for discharging fluid thereinto, and
fluid receiving means interposed between said intermediate portion and said liquid seal and connected to said fluid outlet for receiving fluid therefrom at a pressure higher than the pressure in said intermediate portion.

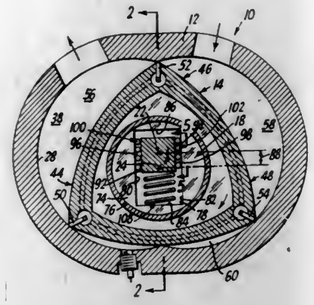
3,356,291

ROTARY PISTON MACHINE

Thomas W. Kennedy, 134 Wildwood Ave., Upper Montclair, N.J. 07043

Filed Oct. 6, 1965, Ser. No. 493,385
5 Claims. (Cl. 230—145)

1. A rotary machine for use as a combustion engine, pump or motor comprising:
an outer body with a longitudinal axis having a peripheral wall and a pair of axially-spaced end walls forming a cavity therebetween;
an inner body disposed in said cavity forming a plurality of peripherally-spaced, variable-volume chambers therebetween and having an axis arranged parallel to said outer body axis;
gear means engaging said inner body and said outer body for rotating said inner body about its axis; and
shaft means mounted on said outer body coaxially therewith a variable-offset eccentric portion on which said inner body is journaled coaxially therewith for revolving said inner body about said outer body axis and for varying the offset distance between said inner body axis and said outer body axis and in which said outer body peripheral wall has a radially



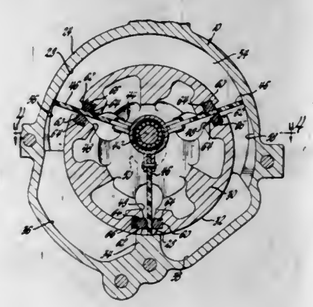
inner surface having a profile which is substantially a modified epitrochoidal curve, said curve being defined as the locus of a point in the plane of a circle which rolls without slipping on an ellipse in such a way that the planes of the circle and ellipse meet under constant angle.

3,356,292

BEARING AND SEALING MEANS

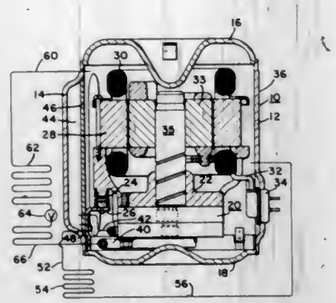
Lee M. Brewer and Robert P. Rohde, Saginaw, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Oct. 4, 1965, Ser. No. 492,821
7 Claims. (Cl. 230—157)



1. A rotary mechanism including a hollow outer body having an internal peripheral wall, an internal body positioned within said outer body and having an external peripheral wall radially spaced from at least portions of said internal peripheral wall to form a working chamber, said inner and outer bodies being relatively rotatable, one of said walls having an axially extending recess, a vane extending radially from said recess into said working chamber to create pressure variations therein upon relative rotation of said bodies, the surface material of said vane comprising a reinforced thermo-setting plastic resin, and means in said recess spacing said vane from said body, said means having a carbon surface bearing against said vane surface.

3,356,293
REFRIGERATING APPARATUS
Mervin R. Butts, West Milton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Nov. 19, 1965, Ser. No. 508,663
6 Claims. (Cl. 230—208)



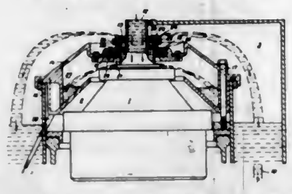
1. In a hermetically sealed motor compressor unit the combination of, an open ended shell having a cylindrical shape with a predetermined inside diameter, a plurality of convolutions integrally formed in said shell, each of said convolutions extending across said shell between the open ends thereof, each of said convolutions having an apex portion thereof located radially outwardly of the inside diameter of said shell a distance at least three times that of the wall thickness of said shell to locate the inside surface of said shell radially outwardly of said predetermined inside shell diameter thereby to increase the radiant heat transfer surface area on the inside surface of said shell, end closure members for sealing the open ends of said shell, a compressor located within said shell in spaced relationship thereto, means including an electrical motor for driving said compressor, said convolutions in said shell having the inside surfaces thereof directly aligned in radiant heat transfer relationship with said motor and said compressor to transfer heat generated by operating said motor and said compressor exteriorly of said shell.

3,356,294
WHIP
Colonel Henry, Box 1, Lawton, Iowa 51030
Filed May 12, 1966, Ser. No. 549,531
5 Claims. (Cl. 231—2)



1. A whip comprising an elongated shaft having a handle end and an outer end including a terminal end and a tubular cover in surrounding relation to said shaft, said cover being inverted into itself so as to form a double layer covering a substantial length of the outer end of said shaft and extending to a point substantially beyond the terminal end of said shaft.

3,356,295
LIQUID PURIFYING APPARATUS
Geoffrey May, Gerrards Cross, and Reginald Ralph Cox, Pinner, England, assignors to Alfa-Laval A.B.
Filed Sept. 8, 1964, Ser. No. 394,679
Claims priority, application Great Britain, Sept. 13, 1963, 36,160/63
2 Claims. (Cl. 233—11)



1. Apparatus for processing a liquid containing two liquid components one of which is heavier than the other, comprising

centrifuge means for centrifuging the liquid so as to separate the two liquid components from each other, said centrifuge means including a centrifuge rotor mounted for rotation about a vertical axis, said rotor having at its upper end a vertical inlet pipe coaxial with said axis of rotation, and an outlet pipe arranged concentrically about said inlet pipe to define an annular first outlet passage for the lighter liquid component, said rotor containing also a second outlet for discharging the heavier liquid component;

a stationary inner housing containing an annular inner chamber concentrically arranged about said rotor and in communication with said second outlet, said inner housing containing a third outlet for continuously discharging the heavier liquid component from said inner chamber;

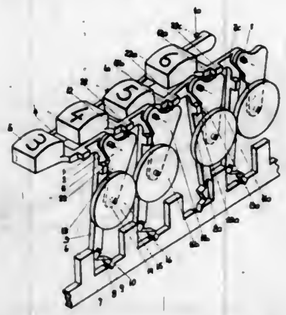
a stationary outer heated housing containing an outer vacuum chamber concentrically arranged about said inner chamber and in constant communication with said first outlet for receiving directly the centrifuged lighter component, whereby to boil off any volatile substance contained in the lighter component; and

sealing means arranged between said inner housing and said centrifuge means for isolating said inner chamber from the outer chamber to permit the continuous discharge of the heavier liquid component during centrifuging, said sealing means including an annular sealing member arranged concentrically about said outlet pipe and mounted for axial sliding movement relative to said inner housing, said outlet pipe including seat means arranged for sealing engagement by said sealing member, and resilient means biasing said sealing member toward seating engagement with said seat means.

3,356,296
KEYBOARD INTERLOCKING ARRANGEMENT
Johannes Wirth, Zurich, Switzerland, assignor to Wirth, Gallo & Co., Zurich, Switzerland
Filed Dec. 20, 1966, Ser. No. 603,309
Claims priority, application Switzerland, Jan. 31, 1966, 1,406/66
5 Claims. (Cl. 235—27)

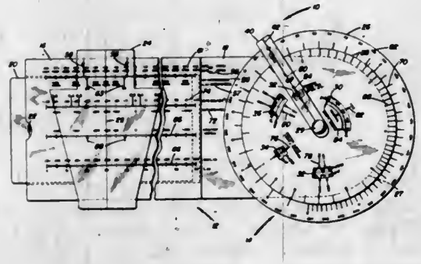
1. A keyboard interlocking arrangement comprising, a plurality of successively numbered keys mounted on L-shaped key levers pivotally mounted on pins, each of said L-shaped key levers having a long arm provided with an abutment face and a shorter horizontal arm carrying a lateral abutment, spring means for engaging an end of each of said long arms operating to retain said L-shaped key lever in one of two stable positions, a deflectably mounted locking lever means carried by each of said L-shaped key levers for restoring keys directly adjacent to a depressed key to their zero position, and rotatably

mounted transfer means supported by each of said deflectably mounted locking means for applying the action



of their respective deflectably mounted locking means to any of said successively numbered keys depressed.

3,356,297
SLIDE RULE CALCULATOR FOR MISSILE CAPSULE
Paul S. White, Jr., Rockville, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed Nov. 24, 1965, Ser. No. 510,144
2 Claims. (Cl. 235—78)



1. A calculator for obtaining go no-go limits for fire control error equations applicable to a missile fired from a launching vessel, the combination comprising,

a first disc having a circular launching vessel heading scale at its outer periphery,

a second disc of smaller diameter than said first disc and adjustable concentrically thereon and having a pointer index for registration with a prescribed value on said vessel heading scale,

a circular scale factor variable scale on said first disc,

said second disc having adjacent to said pointer index a window for viewing a scale factor variable corresponding to said prescribed value on said launching vessel heading scale,

a pivotable cursor straddling said discs and mounted pivotally at the centers of said discs,

a first logarithmic scale on the outer periphery of said second disc,

a second logarithmic scale on said first disc and cooperating with said first logarithmic scale and said pivotable cursor to obtain a multiple for use in a solution to a missile fire control error equation,

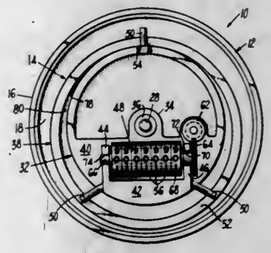
a second drift limit scale about the center of said first disc,

a first window provided on said second disc and positionable to a nominal value of said second drift limit scale,

a second window provided on said second disc through which an upper limit of said second drift limit scale may be viewed, and

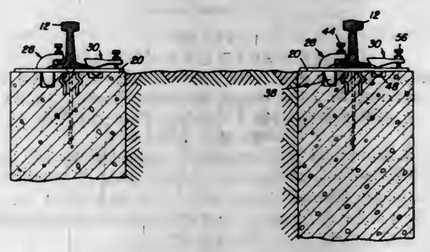
a third window provided on said second disc through which a lower limit of said second drift scale may be viewed.

3,356,298
ODOMETER
Ira B. Crilly, Simsbury, Conn., assignor to Veeder-Industries Inc., Hartford, Conn., a corporation of Connecticut
Filed Sept. 29, 1966, Ser. No. 582,979
9 Claims. (Cl. 235—95)



1. An odometer of the pendulum type having a register adapted for monitoring the operation of a rotatable unit comprising a rotatable gravity actuated primary pendulum mounting the register and having a weighted body portion adapted to urge the pendulum toward a rest position, said body portion being positioned at rest below the axis of rotation of the pendulum; and an independently rotatable secondary pendulum of different inertia characteristics than the primary pendulum, one of said pendulums having an arcuate outer peripheral surface while the other is provided with an arcuate inner surface of greater radial dimensions than said outer surface, the inner surface being mounted on the outer surface in frictional contact therewith at the top thereof whereby the frictional drag between the surfaces dampens the relative rotation of the respective pendulums thereby preventing continuous full rotation thereof during the operation of the rotatable unit.

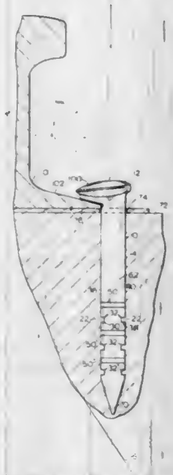
3,356,299
RAIL LOCKING TRACK STRUCTURE
Martin Boyer, Lowry, Minn. 56349
Filed Oct. 22, 1965, Ser. No. 501,578
13 Claims. (Cl. 238—265)



1. A track structure comprising rail supports, each rail support consisting of a pillar of concrete formed in situ in a suitably positioned hole in the track roadbed, the greatest dimension of the pillar being its depth, a rail

supporting plate placed on the concrete pillar before the concrete has solidified, said plate having depending means embedded in said concrete pillar, spaced apart rail stop means extending upwardly from said plate to abut against opposite sides of the rail web therebetween, and lug means inserted through aperture means in said plate in said concrete pillar on opposite sides of the rail web, said lug means being hooked under said plate and abutting the rail web, and set screw means for tightening said lug means against the rail web.

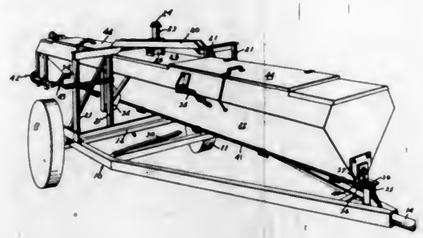
3,356,300
RAILROAD SPIKE
Samuel R. Harrel, 903 9th Ave., Shenandoah, Iowa 51601
Filed June 28, 1965, Ser. No. 467,488
2 Claims. (Cl. 238—366)



1. A railroad spike having a head and an elongated shank of rectangular cross section depending from said head, said shank having a plurality of notches therein, said notches extending transversely across said shank, said notches being arranged in pairs with one notch of a pair extending across one side of said shank and the other notch of that pair extending across the opposite side of said shank, the notches of a pair being elongated and disposed in parallellism and each notch extending at a right angle to said shank, said pairs of notches being spaced apart along the length of said shank, those notches of a pair extending into two different sides of said shank than the notches of an adjacent pair for staggering said pairs of notches along the length of the shank for preserving strength.

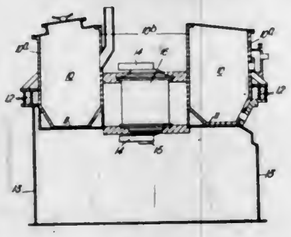
3,356,301
MOBILE FERTILIZER SPREADER
James R. Barber and Jesse Barber, both % Barber Engineering, N. 1404 Regal, Spokane, Wash. 99202
Filed Nov. 30, 1964, Ser. No. 414,550
3 Claims. (Cl. 239—664)

1. A mobile fertilizer spreader, comprising:
a longitudinal frame carried by a pair of transversely aligned ground engaging wheels located at the rear end thereof, the front end of the frame being adapted to be attached to a towing vehicle;
a spreader box;
a fixed brace extending diagonally across said frame longitudinally adjacent to said wheels, said brace forming an arch having a width and height sufficient to receive said spreader box beneath it;
pivot means connecting the brace and top center of the spreader box to pivotally support said spreader box below said brace for pivotal motion about a vertical axis and a horizontal axis transverse to the length of said spreader box;



and means on said frame selectively engageable with said spreader box to selectively fix the position of said spreader box relative to the frame.

3,356,302
GRINDING OPERATIONS
Henry Leveson Podmore, Wetley Rocks, England, assignor to Podmore and Sons Limited and William Boulton Limited, jointly, Staffordshire, England, both companies of England
Filed Mar. 22, 1965, Ser. No. 441,743
Claims priority, application Great Britain, Apr. 6, 1964, 14,135/64
3 Claims. (Cl. 241—30)

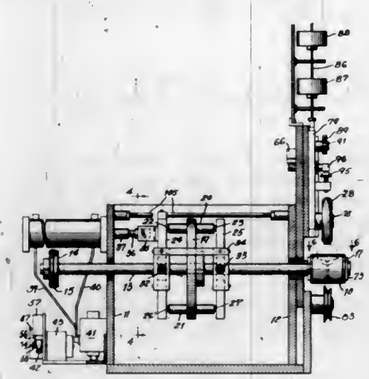


1. Method of grinding and similar operations comprising the steps of placing cylindrical pieces of grinding media into a grinding chamber, feeding the material to be treated in the chamber, subjecting the grinding chamber to controled compound vibrational movements, thereby causing the grinding media to orient into a generally parallel relationship, and thus creating rolling and rubbing action in contact between adjacent surfaces of the pieces of media.

3,356,303
WINDING MACHINE FOR GOLF BALLS
Meyer Bloom, Brooklyn, N.Y., assignor of fifty percent to Ralph J. Atti, Cliffside Park, N.J.
Filed Jan. 19, 1965, Ser. No. 426,501
3 Claims. (Cl. 242—3)

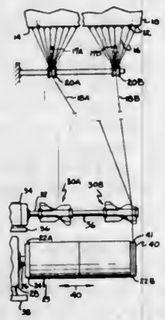
1. In a winding machine the combination of a ball in embryo, a housing, at least three rollers mounted on shafts having parallel axes journalled in said housing, at least two of said rollers at the bottom of said three rollers to support said ball, means for imparting a rotative force to the shaft of one of said lower rollers, means comprising a disc fixed to the said lower roller shaft, a first fixed pin carried by the disc and extending outwardly thereof on each side of the disc, a second pin, slidably carried by the disc, spaced from the first pin and extending outwardly of said disc on each side of the disc, a first and a second cam plate on each side

of the disc and spaced therefrom a distance equal to the outward extension of the pins whereby the pins will ride upon the inner faces of the plates when the disc is rotated with its shaft, said cam plates and disc being disposed in spaced parallel relationship when the machine is in the neutral position for great circle winding, means coupled to the lower roller shaft for imparting a longitudinal action on said latter shaft, means intermittently actuating said longitudinal actuating means by tilting the cam plates with respect to the disc to bring the machine into and out of neutral position, means predeter-



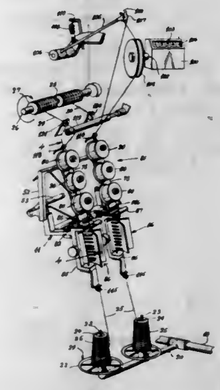
mining the actuation of said latter means into and out of neutral position, means slidably mounting the shaft of said upper roller normally to rest on the ball in embryo to cooperate with said two lower rollers to impart a great circle winding rotation to the ball when said rollers are in neutral position relative to one another and to impart a basket weave winding rotation to the ball when said one of said rollers is being reciprocated, and a reel of rubber strip having the strip extending up from it to and between said rollers to and onto the ball in embryo.

3,356,304
APPARATUS FOR PACKAGING STRAND MATERIAL
Samuel R. Genson, Bowling Green, Ohio, assignor to Johns-Manville Corporation, New York, N.Y., a corporation of New York
Filed Dec. 23, 1964, Ser. No. 420,583
5 Claims. (Cl. 242—18)



1. In a winding mechanism, including a rotatable support for receiving a continuous strand thereon, and rotatable traversing means for engaging and traversing said strand axially along said support, said traversing means including a plurality of cam surfaces defining an effective traversing area, the improvement wherein:
(a) said traversing means also defines a landing,
(b) at least one of said cams has a transverse surface which is in a plane generally radial to the axis of rotation of said traversing means and in lateral alignment with said landing but axially spaced from said effective traversing area, whereby the strand may be restrained against axial movement by said transverse surface during the starting cycle of the winding operation and automatically transferred to said effective traversing area by said landing upon rotation of said traversing means.

3,356,305
TRIPLE WAXING ATTACHMENT FOR THREAD WINDING MACHINES
Stephen De Martini, 126 Hillcrest Place, and Joseph V. Garito, 9029 Barr Place, both of North Bergen, N.J. 07047
Filed Nov. 19, 1965, Ser. No. 508,691
7 Claims. (Cl. 242—35.5)

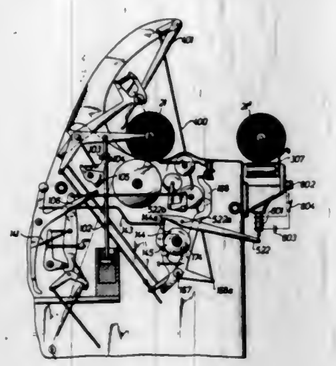


1. In a thread winding machine the combination of a frame, a plurality of stations supported upon said frame, each of said stations comprising a plurality of spool holders for supporting a plurality of spools of unwaxed threads, a rotatable spindle supported on the frame, power means for rotating said spindle, a pair of spools on said spindle for receiving a waxed thread on each of said spools, a counter on the frame for recording the length of one of said waxed threads wound upon one of said spools on said spindle, a plurality of thread guides and a thread tensioning device for said threads moving between said spools of unwaxed threads and said spools of waxed threads and a thread waxing unit comprising a plurality of waxed spools in contact engagement with each one of said threads.

3,356,306
AUTOMATIC YARN-PACKAGE WINDING MACHINE
Stefan Fürst, Monchen-Gladbach, Germany, assignor to Walter Reiners, Monchen-Gladbach, Germany
Filed Mar. 10, 1966, Ser. No. 533,289
Claims priority, application Germany, Mar. 13, 1965, R 40,107
4 Claims. (Cl. 242—35.5)

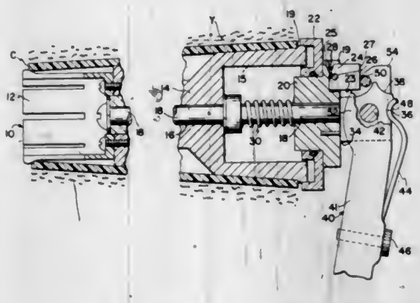
1. In an automatic yarn-package winding machine having automatic take-up spool exchange mechanism and conveyor means for removing from the machine wound take-up spools exchanged by the exchange mechanism and

delivered thereto, means for operating the conveyor means discontinuously, and blocking means for preventing the



delivery of wound take-up spools to the conveyor means when the conveyor means is in operation.

3,356,307
DOFFING MECHANISM
Ralph J. Patton, Lexington, N.C., assignor to National Engineering, Inc., Lexington, N.C., a corporation of North Carolina
Filed Oct. 14, 1966, Ser. No. 586,822
8 Claims. (Cl. 242—41)



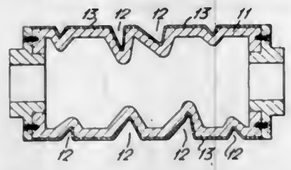
1. A doffing mechanism for releasing a yarn carrier adapted to be retained by axial pressure on a mandrel assembly having a resilient head adjacent one end and stop means adjacent the other end and adapted for pivotal movement about an axis transverse to the longitudinal axis of said mandrel assembly, said doffing mechanism comprising:

(a) a doffing member normally positioned in a retracted position beyond said stop means and mounted for axial reciprocating movement across said stop means,

(b) first actuating means responsive to pivotal movement of said mandrel assembly in a first direction for urging said doffing member from said retracted position across said stop means in one axial direction to impart axial movement to the yarn carrier away from the stop means and over the resilient head, thus releasing the yarn carrier from the mandrel assembly so that it may be manually removed; and

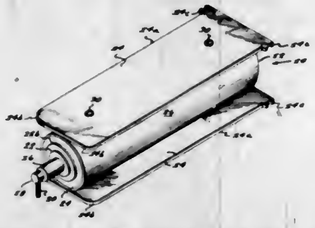
(c) second actuating means responsive to continued pivotal movement of said mandrel assembly in the same direction for returning said doffing member to its retracted position beyond said stop means.

3,356,308
YARN-GUIDING TRAVERSE DRUM
Koichiro Kubo, Sakyo-ku, Kyoto, Junji Takematu, Fushimi-ku, Kyoto, and Jiro Yamakawa, Kameoka, Kyoto, Japan, assignors to Shimadzu Seisakusho Ltd., Nakagyo-ku, Kyoto, Japan, a corporation of Japan
Filed Apr. 27, 1966, Ser. No. 545,651
Claims priority, application Japan, Apr. 28, 1965, 40/33,976
2 Claims. (Cl. 242—43.2)



1. A yarn-guiding traverse drum for use in winding machines, comprising a drum body having a peripheral surface for driving a package of yarn being wound and a yarn-guiding groove extending about and along said surface, said drum body being made of an aluminium alloy containing 1.0 to 5.0% by weight of copper and 3.0 to 6.0% by weight of silicon, and both said peripheral surface of the drum body and the inner surface of said groove being formed with a hard anodic coating.

3,356,309
MOUNTING CORE
George A. Poteat, Greensboro, N.C., assignor to Engineered Plastics, Incorporated, Gibsonville, N.C., a corporation of Delaware
Filed Apr. 22, 1966, Ser. No. 544,523
9 Claims. (Cl. 242—46.6)

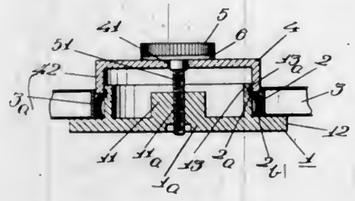


1. A mounting core for supporting hollow objects comprising a central body portion, and a plurality of flange portions secured to said central body portion and extending therefrom for oblique engagement with the interior surface of a hollow object in which said core is inserted, said flange portions having outer edges disposed for lengthwise engagement with said object, said flange portions being resilient to provide firm support of an object while permitting arcuate flexing of the flange portions obliquely with respect to the interior surface of the object for reduction of the effective core size to fit objects of different or distorted interior dimensions, each said flange portion being secured intermediately to said central body portion and extending oppositely therefrom for opposite oblique engagement of the object interior.

3,356,310
ROTARY DRUM FOR MAGNETIC TAPE REELS
Hideo Yokota, 2–27 1-chome, Nishinakanobu, Shinagawa-ku, Tokyo, Japan
Filed June 14, 1966, Ser. No. 557,517
Claims priority, application Japan, Apr. 7, 1966, 41/21,457
5 Claims. (Cl. 242—68.3)

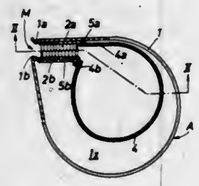
1. A rotary drum for magnetic tape reels in an electronic computer, comprising, in combination, a circular

plate; a cylindrical wall integral with said plate and extending coaxially therefrom, the outer diameter of said cylindrical wall being substantially less than the diameter of said circular plate; an outwardly opening annular groove formed in the outer peripheral surface of said cylindrical wall adjacent the outer edge of said cylindrical wall; a hub integral with said circular plate and extending centrally therefrom, said hub being formed with a threaded axial passage therethrough; a cap including a circular wall and a cylindrical flange having an inner diameter substantially equal to the outer diameter of said cylindrical wall, said circular wall having a central aperture therethrough; a knob including a knob portion and a threaded stem extending therefrom through said aperture in said circular wall, said stem being threaded into said hub; and a cylindrical elastic friction ring embracing the outer surface of said cylindrical wall and



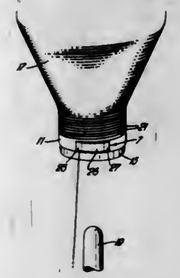
having a radial thickness substantially equal to that of said cylindrical flange, the inner edge of said cylindrical flange engaging the outer edge of said elastic ring; the outer surface of said cylindrical flange being spaced from the inner cylindrical surface of a reel placed on said drum by a distance which is only a minor fraction of the thickness of said elastic ring; the axial dimension of said elastic ring being less than the axial dimension of said cylindrical wall, and the inner edge of said elastic ring engaging said circular plate; whereby, as said knob is turned in a direction to thread its stem further into said hub, said cylindrical flange will deform said elastic ring to force the outer edge thereof into said angular groove and to impart an outwardly convex arcuate shape to said elastic ring so that the convex surface of the latter will engage the inner cylindrical wall of a reel on said drum to frictionally block the reel to said drum.

3,356,311
RECEPTACLE FOR ROLL FILM
Alfred Winkler, Munich, and Karl Bammesberger, Munich-Untermenzing, Germany, assignors to Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany
Filed Feb. 21, 1966, Ser. No. 529,137
Claims priority, application Germany, Mar. 3, 1965, A 48,538
11 Claims. (Cl. 242—71.1)



1. A receptacle for roll film, comprising a housing defining a film-receiving chamber and having a mouth through which the film may be moved lengthwise into or from said chamber; and rolling means provided in said chamber for convoluting the film as the film moves through said mouth and into said chamber, said rolling means comprising at least one substantially circular wire spring located in said chamber and secured at one end to one side of said mouth substantially adjacent thereto and on the other end to the other side of said mouth also substantially adjacent thereto, said substantially circular wire spring composed of closely adjacent wire loops adapted to expand and contract without substantially any lateral movement thereby permitting said wire spring to expand in response to increase of the diameter of convoluted film enveloped by said spring, the expanding wire spring due to the wire loops thereof being adapted to follow closely the outline of the major part of the outermost convolutions of the film so as to firmly guide the same.

3,356,312
BOBBIN WINDING
James Anthony Briggs, Cheltenham, and Charles Fernleigh Collett, Hucclecote, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
Filed Oct. 20, 1966, Ser. No. 588,055
Claims priority, application Great Britain, Oct. 29, 1965, 45,888/65
2 Claims. (Cl. 242—164)

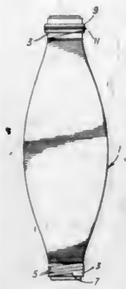


1. A bobbin carrying a main body of yarn and a transfer tail consisting of turns of yarn that are the first wound on the bobbin and are situated at a location along the bobbin axially offset from the main body of yarn, the transfer tail being secured to the bobbin surface by means of a tab of flexible material adhering directly to the bobbin surface over at least the mid-portion of the tab by means of an adhesive carried by said material in that mid-portion, and in which said tab is free of adhesive in its leading edge-portion whereby the tab overlies a part of at least one of said turns of yarn in said transfer tail which part is embedded in the adhesive between the tab and the bobbin surface.

3,356,313
YARN PACKAGE
Bryan Kingsley Johnson, Abergavenny, Thomas Henry Roberts Browning, Monmouth, and David Francis Gilbert Mansfield, Pontypool, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
Filed Oct. 5, 1966, Ser. No. 584,414
Claims priority, application Great Britain, Oct. 15, 1965, 43,828/65
4 Claims. (Cl. 242—165)

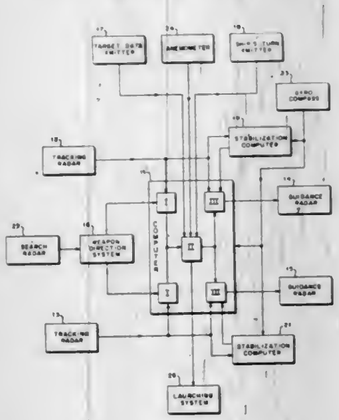
1. A yarn package comprising a body of yarn wound in a shaped build on a bobbin or tube, a transfer tail wound at one end of said bobbin or tube clear of the said body of yarn in the shaped build, and wherein the

final lengths of yarn comprised in the yarn package are wound on a waste receiving device removeably fitted at



the opposite end of said bobbin or tube to the end on which the transfer tail is wound.

3,356,314
BEAM CAPTURE MISSILE GUIDANCE SYSTEM
David J. Campbell, East Meadow, Melvin C. Lee, Westbury, and Jerold F. Mann, Port Washington, N.Y., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Oct. 24, 1963, Ser. No. 319,094
13 Claims. (Cl. 244—3.13)



1. A computer system for programming the flight of a beam riding missile subsequent to launch by positioning the guidance beam of a guidance transmitter, comprising in combination:

computer circuit means,

first means providing said computer circuit means with inputs representative of the traverse and elevation components of the vector separation between the actual direction of the guidance beam and the desired direction of the guidance beam,

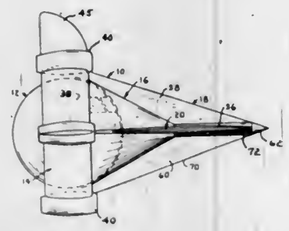
second means providing said computer circuit means with inputs representative of the traverse and elevation components of the vector separation between the programmed position of the guidance transmitter and the actual position of the guidance transmitter,

beam sensitivity computer means providing inputs representative of beam sensitivity parameters to said computer circuit for controlling the rate of closure of the angle separating actual and desired guidance beams as a function of the remaining time of flight of the missile,

cross-traverse rate circuit means connected to said computer circuit means providing said computer circuit means with an input representative of the cross-traverse rate about the beam axis,

guidance radar servo means connected to the output of said computer circuit means whereby said guidance radar servo means is provided with traverse and elevation gyro orders for positioning the guidance transmitter in accordance with the beam program.

3,356,315
AIRCRAFT
Edward Kolodziej, 5616 W. 5th Ave., Gary, Ind. 46406
Filed Oct. 23, 1965, Ser. No. 503,468
5 Claims. (Cl. 244—7)



1. An aircraft comprising:

a spherical fuselage;

an airfoiled, annular engine mount adjacently encircling said fuselage;

a plurality of propulsion engines being carried by said engine mount;

shaft means connecting said engine mount and said fuselage, said shaft means being rotatably supported in said spherical fuselage on a horizontal diametral axis thereof;

drive means in said fuselage connecting said shaft means to rotate said annular engine mount around said spherical fuselage on said diametral axis;

a coniform nose extending from the leading edge of said annular engine mount and tapering to an apex end forward of the leading edge of said annular engine mount and said spherical fuselage;

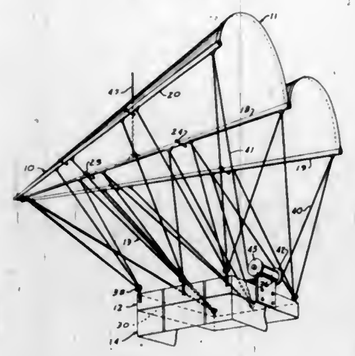
the apex end of said nose comprising an elongated shaft means; and

a plurality of planular airfoils spaced around said cone and elongated shaft means, and radially extending outwardly therefrom.

3,356,316
HINGED SPAR FLEXIBLE WING GLIDER
Joseph E. Forehand, Newport News, Va., assignor to the United States of America as represented by the Secretary of the Army
Filed Oct. 15, 1965, Ser. No. 496,726
1 Claim. (Cl. 244—43)

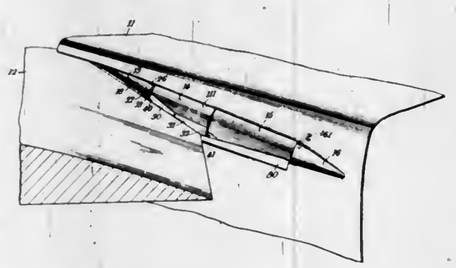
In a flexible wing glider having a frame comprising a multi-sectional keel member and two multi-sectional leading edge spar members disposed one at each side of said keel member and hingedly connected thereto at the front end of said frame whereby said spar members may diverge rearwardly to provide opposing rear wing corners, a diaphragm comprising a triangular sheet of flexible material secured to said frame, hinge means securing the sections of said keel member and of said leading edge spar members together, a platform, means securing

said diaphragm to said platform, a winch mounted on said platform, a sheet connected to one of said rear wing corners and wound on said winch, a second sheet connected to the opposite rear wing corner and wound on said winch in a direction opposite to that of said



first mentioned sheet whereby one sheet is taken in and the other sheet is let out as the winch is turned permitting one rear corner to be raised and the other rear corner to be lowered thereby causing the wing to turn in flight.

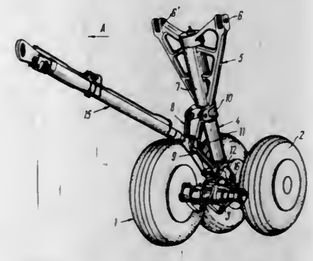
3,356,317
AEROPLANES HAVING WINGS PIVOTABLE IN SWEEP
Walter John Bird, Feltham, England, assignor to British Aircraft Corporation (Operating) Limited, London, England, a British company
Filed Jan. 17, 1966, Ser. No. 521,030
Claims priority, application Great Britain, Jan. 19, 1965, 2,397/65
9 Claims. (Cl. 244—46)



1. An aeroplane comprising wings pivotable in sweep, a fuselage having in each side a longitudinal slot of a size to accommodate the full cross-section of the respective wing along its line of intersection with the fuselage in the swept-aft position, a plurality of retractile gap-closing doors mounted on the fuselage in series along the length of each slot and each door extending between the upper edge of the slot and the subjacent upper surface of the wing or lower edge of the slot, seal members mounted on the lower edges of the doors, powered means for extending and retracting at least some of the doors, and a control device arranged to actuate the powered means to move the doors in the appropriate sense for maintaining the slots substantially closed in all positions of the wings in sweep.

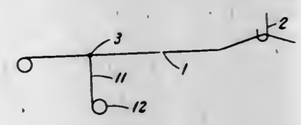
3,356,318
AIRCRAFT LANDING GEAR
Yakov Abramovich Livshits, Krasnokazarmennaya ul. 9, kv. 104, Vladimir Vasilievich Maznin, Krasnokazarmennaya ul. 9, kv. 282, and Vadim Konstantinovich Rezaikin, Kompozitorskaya ul. 19, kv. 3, all of Moscow, U.S.S.R.
Filed Aug. 3, 1965, Ser. No. 476,889
1 Claim. (Cl. 244—104)

An aircraft landing gear comprising a shock strut having telescopic outer and inner tubes, the outer tube having one end adapted to be hingedly connected to the airframe of an aircraft so that it will be directed downwardly, the inner tube having an outer end adapted to be hingedly connected to a bogie of an aircraft; a first link means pivotally connected at one end to the inner end of said outer tube; a second link means pivotally connected at one end adjacent the outer ends of said inner tube; a landing gear actuating brace strut having one end adapted to be connected to an airframe of an aircraft; hinge means; each of the other ends of said link means being connected to said hinge means so as to couple said other ends of said link means together; said link means ex-



tending in the forward direction of movement of an aircraft; said brace strut being pivotally connected to said hinge means and also extending in the forward direction of movement of an aircraft; and the length of said link means being so chosen that within the operating range of compression, said shock strut inclines rearwardly with respect to the direction of motion of the aircraft and said second link means forms together with said brace strut a straight line passing through the hinge means whereby longitudinal forces acting on said landing gear are absorbed and bending of the shock strut by longitudinal forces is prevented.

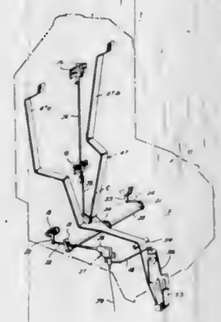
3,356,319
DEVICE FOR BRAKING A LANDING AIRCRAFT
Per Borje Fonden, Hejdegatan 3, and Karl Ove Torgny Walander, Elsa Brandstrom Gata 5, both of Linkoping, Sweden
Filed May 18, 1965, Ser. No. 456,685
Claims priority, application Sweden, June 30, 1964, 7,944/64
3 Claims. (Cl. 244—110)



1. A device for braking a landing aircraft comprising, a cable or net engaged by the airplane, the cable or net being attached at its opposite ends to brakes, a dampener

at each side of the cable or net comprising a line extended angularly to the arresting cable or net, and a rotatable element around which the line is wound, thereby giving inertial resistance to primarily the transverse movement of the cable or net, each dampener being located on the side of the arresting device from which the aircraft arrives.

3,356,320
DEVICE FOR SEPARATING OCCUPANT FROM AN EJECTION SEAT
James E. Webb, administrator of the National Aeronautics and Space Administration with respect to an invention of Earl W. Mussett, Sepulveda, Calif.
Filed Jan. 6, 1966, Ser. No. 519,161
7 Claims. (Cl. 244—122)



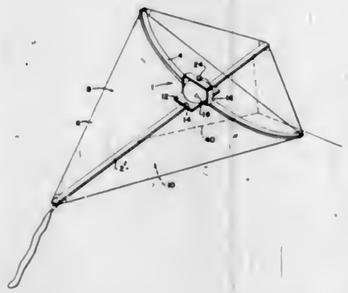
1. For use in a vehicle escape system, an occupant and seat structure separating device comprising:
an ejectable seat structure having a seat back section and a seat pan section;
restraining means for securing the occupant to the seat structure when said restraining means are connected to the seat structure;
a plurality of releasable connecting means connecting said restraining means to the seat structure;
a flexible strap extending along the seat back section and the seat pan section and disposed between the seat structure and its occupant;
actuator means for releasing said releasable connecting means and thereby said restraining means, said actuator means comprising a gas generating means in the form of a detonatable propellant charge and a triggering means for initiating operation of said gas generating means;
linkage means responsive to operation of said gas generating means for releasing said releasable connecting means, said triggering means comprising
a firing pin,
a lanyard attached at one end to said vehicle,
a releasable coupling means connecting the other end of said lanyard to said firing pin,
a sleeve member mounted on said actuator means and sleeved over said coupling means to constrain said coupling means in coupled relationship, said coupling means being releasable upon withdrawal from said sleeve member,
spring means urging said firing pin into detonating engagement with said gas generating means when said coupling means is released by a pull exerted by the lanyard upon ejection of the seat structure from the vehicle, and
thruster means responsive to operation of said actuator means to draw the ejection strap to taut condition and thereby forcibly separate the occupant from the seat structure.

3,356,321
DE-ICING APPARATUS
Barry Rogal and Patrick Rees, Bognor Regis, England, assignors to Rosemount Engineering Company Limited, a British company
Filed Oct. 21, 1965, Ser. No. 499,807
Claims priority, application Great Britain, Nov. 10, 1964, 45,814/64
15 Claims. (Cl. 244—134)



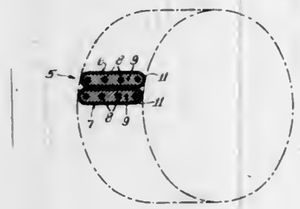
1. In an aerodynamic structure, the combination of a member having a leading surface, the profile of which leading surface is a circular arc extending over an angle greater than 90° on one side of a plane through the leading edge of the member and which, to the rear of the leading edge lies within the structure to merge into a concave surface of the member, whereby on at least that side of said plane, the distance from one external surface of the member to said plane, measured in a direction normal to said plane decreases and subsequently increases considering successive sections rearwardly of the leading surface, and electrical heating means for heating said leading surface.

3,356,322
RELEASE MEANS FOR KITE STRUCTURES
Eugene Roos, 524 Hampton Ave., Bellport, N.Y. 11713
Filed July 8, 1966, Ser. No. 563,795
5 Claims. (Cl. 244—155)



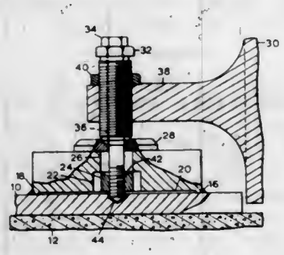
1. A kite structure capable of dropping articles carried aloft thereby, comprising longitudinal and transverse brace members arranged in cruciform and covering means, the latter means overlying said brace members and providing an upper generally concave suface and a lower generally convex surface, platform means secured to at least one of said brace members, loop means having a rigid periphery and two yieldable and inwardly biased free ends, said loop means being removably secured to said platform means whereby said inwardly biased free ends thereof are in gripping engagement with respect to said platform means, said loop means having an opening through the rigid periphery thereof, balloon means having a mouthpiece within its air-receiving and discharging opening, said mouthpiece having air-releasing valve means incorporated therewith, said mouthpiece being positioned through said opening whereby said balloon means depends from said loop means for disposition between the latter and said platform means, said platform, loop and balloon means projecting upwardly of said upper generally concave surface, at least a portion of the article to be dropped being receivable upon said platform means intermediate of the latter and the periphery of said loop means, whereby inflation of said balloon means will temporarily press and retain said article between said balloon and platform means, and whereby said article will be released and dropped away from said kite structure upon deflation of said balloon means by dint of air discharge through said mouthpiece.

3,356,323
TIRE BEADS AND METHODS OF MAKING SAME
Raymond A. Friend, Niles, Mich., assignor to National-Standard Company, Niles, Mich., a corporation of Delaware
Filed Nov. 24, 1965, Ser. No. 509,483
4 Claims. (Cl. 245—1.5)



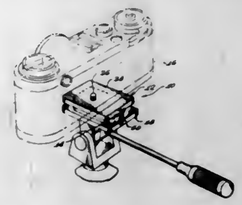
1. A tire bead comprising a plurality of circumferentially successive superposed layers, and in which each of said layers comprises a plurality of wires disposed in a plurality of successive side-by-side convolutions embedded in a mass of rigid material for holding said wires in rigid fixed relation with respect to each other.

3,356,324
MACHINERY LEVELING PAD AND ANCHOR DEVICE
Lawrence A. Attermeyer, Cincinnati, Ohio, assignor to The Cincinnati Milling Machine Co., Cincinnati, Ohio, a corporation of Ohio
Filed Feb. 16, 1966, Ser. No. 527,692
8 Claims. (Cl. 248—2)



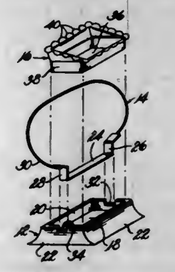
1. A device for securing a machine to a floor in cooperation with an adhesive, the device comprising:
(a) a base plate having a flat bottom side adapted for adhesive attachment to the floor,
(b) an upper plate substantially smaller in the transverse dimensions than said base plate,
(c) means for fixing said upper plate centrally to the top side of said base plate at a narrow band around the periphery of the lower side of said upper plate, the area of the lower side of said upper plate inside said narrow band being held spaced from the top side of said base plate, and
(d) means for attaching the machine to said upper plate at a middle location thereon.

3,356,325
CAMERA-TO-TRIPOD CONNECTOR
Adolph Robert Schnase, Norco, Calif., assignor to Davidson Optronics, Inc., West Covina, Calif., a corporation of California
Filed Oct. 22, 1965, Ser. No. 501,355
7 Claims. (Cl. 248—187)



1. A camera-to-tripod connector, comprising:
an attachment member for engagement with a mounting base member connected to a tripod and for connection to the bottom of a camera and including a downwardly projecting mounting button having an undercut outwardly extending front portion and a curved rear portion with a downwardly and outwardly inclined peripheral surface;
a mounting base member for connection to the top of a tripod and including a top engaged by said mounting base member and a top hole for receiving said button, a stop member extending inwardly over a front portion of said hole, and a cam member supported for turning about a generally vertical axis to the rear of said hole and including an upwardly and outwardly inclined peripheral camming edge portion of increasing radial dimension relative to said vertical axes for turning with said cam into said hole to engage said rear portion of said button and to thereby cam said button toward said stop member, and downwardly relative to said cam, to releasably lock said button within said hole against said stop member and said cam; and
spring means for continuously urging said cam member to turn said edge portion into said hole to prevent accidental disconnection of said camera from said tripod.

3,356,326
FLOWER BASKET
Henry Muren, Leroy, Ohio (253 16th St. W., Barberton, Ohio 44203)
Filed June 7, 1966, Ser. No. 555,797
7 Claims. (Cl. 248—145.6)

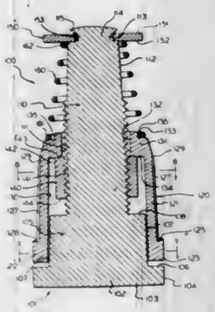


1. In combination,
a base member having a centrally located integral basket portion having end sidewalls,

ring-shaped handle means having a substantially flat spring metal strap portion therein bendable to permit it to snugly engage the basket portion with the spring action of the strap portion and handle means biasing the ends thereof against the end sidewalls of the basket portion, said strap portion having a bottom part that overlies a portion of said base member, and

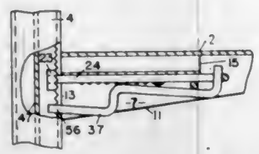
a flower basket having a base portion adapted to drop down into and snugly engage with the basket portion of said base member and overlie the bottom part of said strap portion whereby both the base member and the flower basket can be lifted by said handle means.

3,356,327
FURNITURE LEG
Kenneth D. Schreyer, Doylestown, Pa., and Edward C. Stewart, Aurora, Ill., assignors to Lyon Metal Products, Incorporated, Aurora, Ill., a corporation of Illinois
Filed Mar. 18, 1966, Ser. No. 535,421
17 Claims. (Cl. 248—188.4)



1. An adjustable foot assembly for use on the bottom of a leg for furniture and the like comprising a thimble including a hollow shell for mounting on the lower end of an associated leg and a top wall closing one end of said shell and having an opening therein, a foot including a body normally disposed within said shell and a base on one end of said body extending outwardly beyond the other end of said shell and a threaded shank on the other end of said body and extending through said opening in said shell, a nut mounted on said threaded shank for threaded movement therealong and normally disposed within said shell, and means preventing separation of said foot from said thimble, the inner periphery of said shell being non-circular and the outer periphery of said nut being shaped complementary thereto, whereby rotation of said shank about the longitudinal axis thereof moves said nut longitudinally therealong due to the interfering contact between said shell and said nut, the outer periphery of said body also being shaped complementary to the inner periphery of said shell, thereby to hold said foot and said thimble in the adjusted longitudinal position with respect to each other when said body is in the normal position thereof within said shell, said foot being longitudinally shiftable to remove said body from said shell to permit rotation of said shaft with respect to said nut while said nut is held by said shell thus to adjust the longitudinal position of said nut along said shank and consequently to adjust the longitudinal position of said foot with respect to said thimble upon the return of said body to the normal position thereof in said shell and the return of said nut against said top wall.

3,356,328
SHELF SUPPORTS
Helmuth H. Sachau, 197 30th St., New Toronto, Ontario, Canada
Filed Mar. 21, 1966, Ser. No. 535,932
4 Claims. (Cl. 248—245)



1. A shelf support for attachment in right angular relation to a vertical channel-sectioned post comprising a back wall and lateral flanges at the side edges thereof having forwardly inturned flanges terminating short of each other to provide a vertical opening to said channel lengthwise of the post, the shelf support comprising parallel perpendicular side walls adapted at one end to abut said inturned flanges of the post, and a substantially U-shaped member comprising a base and side arms positioned between said perpendicular side walls with its said base positioned intermediate the height of said perpendicular side walls and its arms paralleling same and fixed thereto, a substantially T-shaped key member comprising a head positioned outside the end of said support which is adapted to abut said flanges and a rigid stem extending inwardly between said perpendicular side walls, said stem having an inner end marginal part turned backwards to provide a bight having its entrance in a vertical plane, a fulcrum pin extending transversely of said perpendicular side walls of the shelf support and journaled for rotation therein, said pin being positioned below the base of said U-shaped member, means for moving said T-shaped member lengthwise to selectively move said head into and out of engagement with the inner faces of said lateral flanges of said channel-sectioned post, comprising a lever rigidly fixed near its one end to the under side of said fulcrum pin at right angles to the axis of said pin, said lever having an outer end part bent in the vertical plane and extending downwardly below said perpendicular side walls and provided with a handle, said lever having an inner end marginal part curved upwards in the vertical plane providing a cam part passing through and adapted to act upon the bight of the stem of said key member, and spring means yieldably urging said head in a direction away from engagement with said flanges.

3,356,329
ADJUSTABLE AWNING SUPPORT
Dominic C. Santo, 1440 NW. 64th Way, West Hollywood, Fla. 33024
Filed May 10, 1966, Ser. No. 549,017
3 Claims. (Cl. 248—273)

1. An adjustable support means for an awning pivotally secured to a wall along the inner end thereof for vertical movement about a horizontal axis comprising an awning, a straight cylindrical support member pivotally secured to said wall a predetermined distance below said axis for vertical movement adjacent one side of said awning,

a plurality of cavities in predetermined spaced relation along one side of said support member,

an elongated socket means pivotally secured at the outer end portion thereof to the said one side of said awning in planar relation with said member for movement about an axis parallel said horizontal axis,

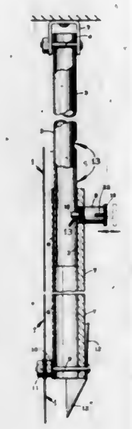
said socket means having an axial bore therein for slidably retaining said support member in telescopic relation,

a plunger housing in the opposite end portion of said socket means having a bore therein normal to and opening into the said axial bore,

a plunger slidably retained in said bore for rotation and axial reciprocation from a locked position with the inner end thereof in engagement with any selected one of said cavities to a withdrawn idle position for movement in a path above said cavities,

spring means biased between said housing and said plunger for urging the latter into said locked position,

said plunger having a knob secured on its outer end for the manual retraction and rotation thereof,



said housing having a plunger release recess therein spaced from and parallel the axis of the bore therein,

a projection on the inner side of said knob adapted to slidably engage said recess when said projection is rotated by said knob in register therewith for permitting said plunger to engage a selected cavity and locking said awning in a vertical position corresponding to each of said cavities whereby the awning may be manually re-positioned in a predetermined shading position or closed when said plunger is withdrawn by said knob and rotated to move said projection out of register with said recess and against said housing for holding said plunger in said idle position.

3,356,330
ADJUSTABLE SHORING MEMBER
Robert D. Rambelle, 102—26 86th Ave., Richmond Hill, N.Y. 11418
Filed Apr. 23, 1965, Ser. No. 450,308
6 Claims. (Cl. 248—354)

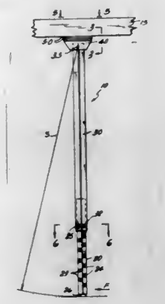
1. A rapidly-strippable shoring member, for use in providing temporary vertical support of building forms and the like, comprising

(a) a vertically-positioned columnar member,

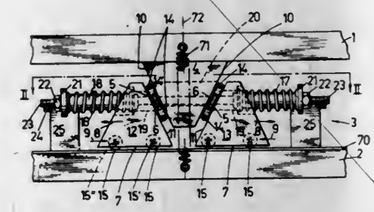
(b) a head element having a horizontal base surface for contacting the undersurface of a building form,

(c) means for pivotally connecting said head element to the upper extremity of said columnar member in a manner permitting said head element to be rotatable in a vertical plane relative to said member, and

(d) a flat, substantially rectangular base plate rigidly secured to the lower extremity of said columnar member, said base plate having its long dimension arranged parallel to the axis of rotation of said head element, and its short dimension being smaller than the thickness of said member in order to facilitate stripping of said shore by the application of an impulse force against said vertically-positioned columnar member in a horizontal direction substantially perpendicular to said axis of rotation of said head element.



3,356,331
SHOCK ABSORBER
François M. Springuel, 42 Route de Genval, Ohain, Belgium
Filed Oct. 28, 1965, Ser. No. 505,502
Claims priority, application Belgium, Nov. 4, 1964, 655,255
10 Claims. (Cl. 248—358)

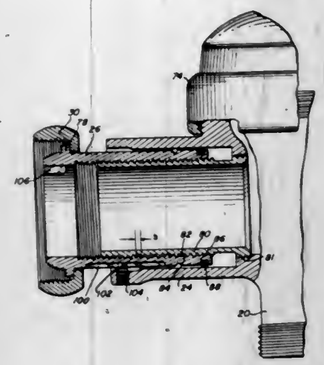


1. A shock absorber for mounting between two elements, and comprising a first member mounted on one of said elements, at least one second member slidably mounted on the second of said elements, said first and second members having opposed faces beveled and parallel one to the other, spring means associated with one of said members to urge it towards the other, roller means provided between said opposed beveled faces of said members, said roller means being mounted for rotation about axes which are parallel to said opposed beveled faces and which are located within planes parallel to the direction of movement of said second member on said second element.

3,356,332
ADJUSTABLE NIPPLE COUPLING FOR A FLUSH VALVE
Howard L. Philippe, Chicago, Ill., assignor to Watrous, Inc., a corporation of Delaware
Filed Oct. 5, 1964, Ser. No. 401,516
13 Claims. (Cl. 251—150)

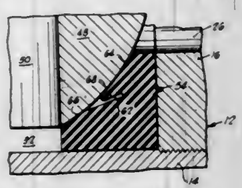
12. A flush valve casing having an inlet portion and an outlet portion, a nipple connected to and at least partially enclosed within the wall of said casing which defines said

inlet portion, an extendible nipple-coupling engaging said nipple, means for connecting said nipple-coupling to said



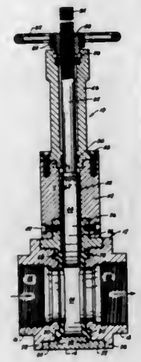
nipple, and sealing means connected between said nipple-coupling and said wall.

3,356,333
VALVE SEAT WITH LIP-LIKE SEAL
Domer Scaramucci, 3245 S. Hattie, Oklahoma City, Okla. 73129
Filed Apr. 5, 1965, Ser. No. 445,508
20 Claims. (Cl. 251—172)



1. A valve comprising:
a valve body having an inlet, an outlet, and a chamber connecting said inlet and outlet to form a passageway through said body;
a valve member movably disposed in said chamber, said valve member being movable from a position opening said passageway to a position closing said passageway; and,
an annular seal member disposed in said chamber and encircling said outlet, said seal member having
an annular groove therein adjacent said valve member,
a relatively inflexible seat portion disposed on each side of said groove to supportingly engage said valve member, and
a flexible lip portion projecting angularly from the seat portion closest to said passageway, between said valve member and groove, and into sealing engagement with said valve member when said valve member is in engagement with said seat portions;
said lip portion having a length less than the width of said groove and being responsive to the pressure of fluid entering said groove between said valve member and the seat portion remote from said passageway to be forced into tighter sealing engagement with said valve member.

3,356,334
GATE VALVE AND SEAL
Domer Scaramucci, 3245 S. Hattie, Oklahoma City, Okla. 73129
Filed May 17, 1965, Ser. No. 456,404
24 Claims. (Cl. 251—172)



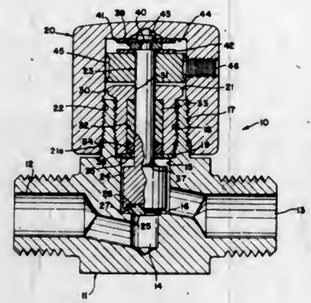
1. A gate valve comprising:
a body having an inlet and an outlet and a valve chamber communicating with the inlet and outlet and of larger diameter than the inlet and outlet;
a gate moveable across the valve chamber for opening and closing the valve; and
a resilient annular seal in the valve chamber between the gate and the inlet and encircling the inlet having:
a relatively inflexible annular seat portion extending from the valve body axially into the valve chamber and having the end thereof facing the gate shaped substantially flat to support the gate when the gate is closed, and
an annular, flexible lip portion extending radially inward from the seat portion exposed to the pressure of fluid in said inlet to be pressed against the gate when the gate is closed and form an upstream seal.

19. A resilient, annular gate valve seal comprising:
a relatively inflexible annular seal portion having a substantially flat gate-engaging face, and
a flexible annular, pressure responsive lip portion extending radially inward from the seat portion and having a gate-engaging face, at least a portion of the gate-engaging face of the lip portion protruding axially beyond the gate-engaging face of the seat portion.

3,356,335
SAMPLE CYLINDER VALVE
Ulrich H. Koch, Pinole, Kurt Buchholz, El Cerrito, and Gary A. Soderlund, Richmond, Calif., assignors to Whitey Research Tool Co., Emeryville, Calif., a corporation of California
Filed Mar. 31, 1965, Ser. No. 444,158
7 Claims. (Cl. 251—214)

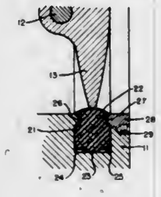
4. A valve comprising:
a body having a fluid passage therethrough including inlet and outlet ports,
a valve chamber communicating with said inlet and outlet ports in said body and including a valve seat,
a bonnet portion on said body,
a packing nut threadedly received in said bonnet portion,
an aperture in said packing nut coaxial with said valve chamber,

single piece stem means in said valve chamber extending through the aperture in said packing nut,
a handle including a central chamber therein enclosing said bonnet portion and the extending end of said stem means, said central chamber having threads which threadedly engage said bonnet,
means interconnecting said handle with said extending



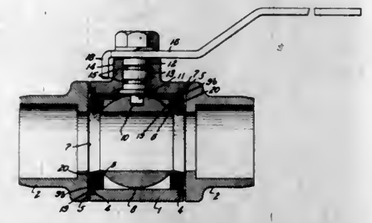
end of said stem whereby rotational movement of said handle imparts a longitudinal movement to said stem,
seal means carried by said packing nut and in engagement with said stem means, and
gasket means between said packing nut and said body and extending into said valve chamber thereby retaining said seal means with said packing nut.

3,356,336
AIR-TIGHT SEALING DEVICE FOR A VALVE SEAT OF A BUTTERFLY VALVE
Yoshio Maenaka, Yokohama, Japan, assignor to Maenaka Valve Works Co., Ltd., Tokyo, Japan
Filed Dec. 21, 1965, Ser. No. 515,366
Claims priority, application Japan, Apr. 20, 1965, 40/30,873; Oct. 12, 1965, 40/82,666
3 Claims. (Cl. 251—306)



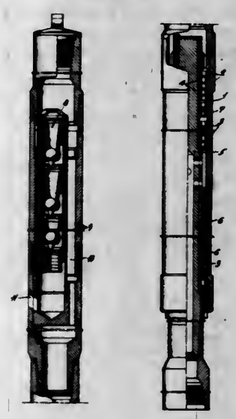
1. In a butterfly valve including a valve body, a valve seat in said body, and a valve plate adapted to move between open and closed positions, the improved air-tight sealing device for said valve seat of said butterfly valve, said valve seat including a groove in the inner wall of said valve body and an annular rubber ring whose section has a circular surface at the upper portion thereof and a central projected portion and projected edge portions at both sides of the bottom of said ring, said ring being embedded into said groove in the inner wall of said valve body at a location where the peripheral end of said valve plate is in very close contact when the butterfly valve is closed whereby the circular surface of the annular rubber ring is in contact with the peripheral surface of the valve plate when the valve plate is moved to its closed position.

3,356,337
BALL VALVE SEALING ELEMENT
Robert B. Olen, Akron, Ohio, assignor to The Ohio Injector Company, Wadsworth, Ohio, a corporation of Ohio
Filed Mar. 9, 1965, Ser. No. 438,339
4 Claims. (Cl. 251—315)



1. A sealing element for a ball valve of the type having a body containing the valve ball and end pieces assembled with said body at the ends thereof, said sealing element comprising an annular member formed of an elastomeric material and provided with a main portion for sealing engagement with the valve ball and a circumferential extension for sealing interposition between the mating surfaces of the valve body and an end piece, said main portion and circumferential extension being integral, and a relatively rigid insert embedded in said main portion and serving to withstand undue distortion of said sealing element to thereby ensure its proper sealing function relative to said valve ball and to said valve body at the connection of the body with said end pieces, said insert having its periphery provided with notch means serving to permit flow of the elastomeric material around it during molding of the sealing element.

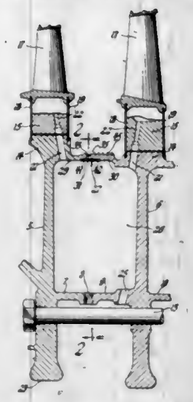
3,356,338
TURBODRILL
Jury Rolenovich Ioanesyan and Rolen Arsenievich Ioannesyan, Moscow, and Alexandr Nikolaevich Ovchinnikov, Ljubertsy, Moskovskoi Oblasti, U.S.S.R., assignors to Vsesojuzny Nauchno-Issledovatelsky Institut burovoi Tekhniki, Moscow, U.S.S.R.
Filed June 15, 1965, Ser. No. 464,129
6 Claims. (Cl. 253—3)



1. A turbodrill including: a multistage turbine; a multistage bypass valve which serves to adjust the flow of the drilling fluid through said turbine depending on the speed of its shaft; the blades of said turbine being of such a shape that the angle of discharge of the drilling fluid from the stator of said turbine equals or approaches the angle

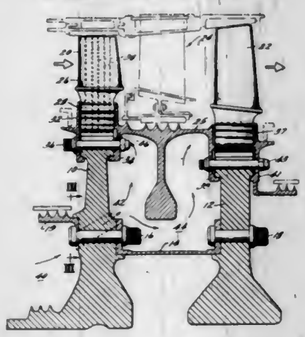
of inlet of the drilling fluid to the rotor at rest, whereas the angle of discharge of the fluid from said rotor in motion equals or approaches the angle of the fluid inlet to the stator of said turbine.

3,356,339
TURBINE ROTOR
William H. Thomas, Derby, England, and John E. Harper, Greenwood, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 12, 1966, Ser. No. 601,163
6 Claims. (Cl. 253—39)



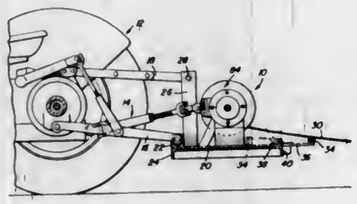
1. A turbomachine rotor comprising, in combination, two disks having a common axis, a coupling flange on each disk, the coupling flanges having mating face spline teeth extending across a pitch plane normal to the said axis, an outer flange on each disk of greater diameter than the coupling flanges, the outer flanges being in mutually confronting non-overlapping relationship adjacent to the said pitch plane, the outer flanges having notches in the mating edges thereof with support pins extending axially between the notches and a sealing ring mounted on the outer flanges covering the said notches and backed up by the support pins.

3,356,340
TURBINE ROTOR CONSTRUCTIONS
Melvin Bobo, Topsfield, Mass., assignor to General Electric Company, a corporation of New York
Filed Mar. 15, 1965, Ser. No. 439,900
3 Claims. (Cl. 253—39.15)



1. In a multi-stage turbine rotor comprising,
first and second axially spaced wheels having turbine buckets spaced around their peripheries,
the buckets of said first wheel having radial cooling holes therethrough,
heat shield means extending between said wheels adjacent the peripheries thereof,
a ring, spaced inwardly of the heat shield means, connecting the two wheels,
the buckets of said first wheel having corrugated tangs and said first wheel having correspondingly formed slots lockingly receiving said tangs in a radial sense,
said heat shield means comprising a flange clamped against the radial face of said wheel, marginally of its periphery, to provide, at least in part, means for axially clamping said tangs in said slots,
a plurality of axially extending holes through said first wheel for introducing pressurized cooling air into said annular chamber and inducing it to rotate at a high velocity,
passageway means extending through said flange from said annular chamber to the holes of said buckets,
the entrance to said passageway means being spaced radially inwardly from the adjacent portion of said heat shield means,
whereby when the turbine rotor is rotating at a high speed in normal operation, dirt entrained in the air within said annular chamber will be thrown past the entrance to said passageway means and collected against the heat shield means spaced radially outwardly therefrom.

3,356,341
WINDING AND STRETCHING ATTACHMENT FOR WIRE FENCES
Jack S. Brown, 403 Elm St., Clyde, Tex. 79510
Filed Feb. 9, 1967, Ser. No. 614,881
6 Claims. (Cl. 254—64)



6. In combination with a towing vehicle having a load supporting hitch mechanism and a power take-off, a winding and stretching attachment for barbed wire comprising, a platform supported by the hitch mechanism above the ground, a shaft assembly, means journaling said shaft assembly on the platform about a horizontal axis, a stretching reel connected to the shaft assembly, a spool of barbed wire, means removably mounting said spool on the shaft assembly and right angle drive means drivingly connecting the shaft assembly to the power take-off for controllably rotating the reel and spool and holding the barbed wire under tension at all times.

3,356,342
BARB WIRE TOP
John S. Case, Towson, and Kenneth G. Appell, Baltimore, Md., assignors to Anchor Post Products, Inc., Baltimore, Md., a corporation of New Jersey
Filed Aug. 6, 1965, Ser. No. 477,855
5 Claims. (Cl. 256—32)

1. A top arrangement for a post of a fence for supporting a longitudinal strand element, comprising, a base portion having a recess in its bottom for receiving the top of a post for mounting thereto, a vertical bracket portion formed integral with said base portion, a top portion having a pair of symmetrical converging top sides arranged substantially parallel to the direction of said

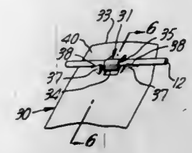
fence positioned on top of said bracket portion and formed integral therewith, said bracket and top portions having parallel vertical sides, said bracket and top portions being arranged co-extensive with each other, said top portion being narrower in the direction between its parallel vertical sides than the parallel vertical sides of said bracket portion, symmetrical rounded shoulder portions formed between the parallel vertical sides of said bracket and top portions where said bracket and top portions come together, and a channel shaped support structure for supporting a longitudinal strand element, said support structure having two parallel sides spaced apart a distance substantially equal to the distance between said parallel vertical sides of said top portion, with said support structure having symmetrical rounded ends corresponding in shape to the rounded shoulder portions between said bracket and top portions, said channel shaped support structure having a web portion joining its two parallel sides together and having an end terminating short of said rounded ends of said support structure, with



said terminating end of said web section being in surface engagement with one of said converging top sides of said top portion and said rounded ends of said sides of said channel shaped support structure being in engagement with the respective rounded shoulder portions located between said bracket and top portions, said top portion having at least one mounting aperture extending therethrough in the longitudinal direction of said strand element, and said support structure having a corresponding aperture in its sides for registering with said aperture in said top portion when said support structure is positioned against said top portion, and means for securing said top portion with respect to said support structure consisting of a fastening element extending through the registering apertures in said top portion and support structure, whereby said channel shaped support structure can be adjustably mounted at an angle selected from the group consisting of vertical and an angle defining by one of the two converging top sides of said top portion.

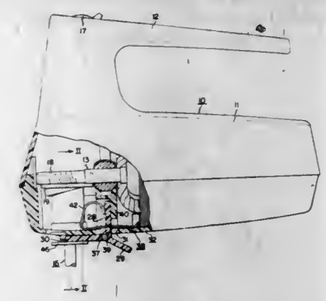
3,356,343
SLAT FOR CHAIN-LINK FENCE
William H. Taylor, Los Angeles, Calif. (5510 S. Sepulveda Blvd., Culver City, Calif. 90230)
Filed Oct. 23, 1965, Ser. No. 503,092
4 Claims. (Cl. 256—34)

1. In combination with a chain-link fence, the fence being woven of intersecting wire strands and forming a series of channels, the improvement comprising slat means formed from a resilient material and being elongated, transversely arched, and received in one of the channels, a hooking tab means cut from and integrally secured to the body of the slat and spaced from one end of the slat in engagement with one of the fence strands, and a latch-



ing tab cut from and integrally secured to one of said means and positioned to restrain the strand from moving out of engagement with the hooking tab means.

3,356,344
FOOD MIXER
David B. Price, Washington, Mansfield, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 2, 1965, Ser. No. 476,528
8 Claims. (Cl. 259—1)

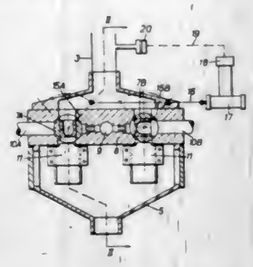


1. In a portable food mixer having a housing, a pair of beaters each including a shaft having a shoulder thereon, the shaft being insertable in a spindle in the housing and means releasably securing the shafts in said spindles for rotation therewith, the improvement comprising: a multi-armed beater ejecting mechanism, one of said arms being insertable through an opening in the housing and provided with an aperture therein, spring support means inserted through said aperture, means for positioning said spring support means across said opening, another of said arms being disposed in a position to contact the shoulders carried by said shafts upon actuation of said mechanism to apply axial force thereto for ejecting said beaters, said spring support means having a portion thereof abutting said one arm for biasing thereof in a direction opposing the direction of travel of said mechanism.

3,356,345
APPARATUS FOR THE MECHANICAL PRODUCTION OF ACOUSTIC VIBRATIONS FOR USE IN DISPERSION OR LIKE PROCESSES
John Edward Goodman, Rawdon, York, England, assignor to Ultrasonics Limited, Shipley, England
Filed Dec. 27, 1965, Ser. No. 516,556
6 Claims. (Cl. 259—4)

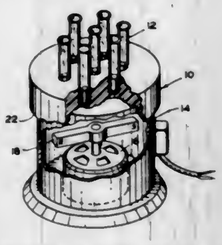
1. In apparatus for the mechanical production of acoustic vibrations for producing dispersions of fibrous substances in a liquid, the combination of a pipe system for conveying said fibre-bearing liquid under pressure, a plu-

rality of liquid whistles arranged in parallel in said pipe system, means for rendering inoperative each whistle independently by closing it to the passage of said liquid, means for passing a flushing fluid under pressure in the reverse direction through the jet structure of each said



whistle when so rendered inoperative to clear its jet outlet, and means for keeping at least one of said whistles always in operation to maintain the flow of said fibre-bearing liquid through said pipe system.

3,356,346
TEST TUBE STIRRING SUPPORT
Kurt Landsberger, 103 Harrison St., Verona, N.J. 07044
Filed Jan. 3, 1966, Ser. No. 518,163
8 Claims. (Cl. 259—71)

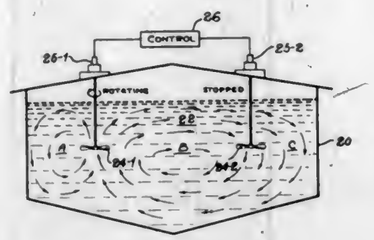


1. A stirring support in combination with a magnetic stirring machine comprising, means for removably connecting said stirring support onto said machine without slippage and wherein said stirring support defines means for supporting a plurality of vessels adapted to contain material therein for stirring, each of said vessels including means agitated by the magnetic force produced by said magnetic stirring machine for stirring the material within said vessels, each of said vessels extending vertically and wherein said last-mentioned means further comprise a stirring bar slightly smaller than the vertical cross-section of said vessel, said stirring bar having south and north pole ends extending vertically within said vessel and said machine comprising magnetic means for attracting and repelling said stirring bar upon applying a north field and a south field beneath said stirring bar and thereby vertically agitating the stirring bar to stir the material within said vessel.

3,356,347
METHOD OF PRODUCING A UNIFORMLY DISTRIBUTED, TRUE, INTERFERING CURRENT, MIXING CONDITION AND APPARATUS THEREFOR
William O. Boschen, Tenafly, N.J., assignor to Ralph B. Carter Company, Hackensack, N.J., a corporation of New York
Filed Aug. 16, 1966, Ser. No. 572,854
15 Claims. (Cl. 259—104)

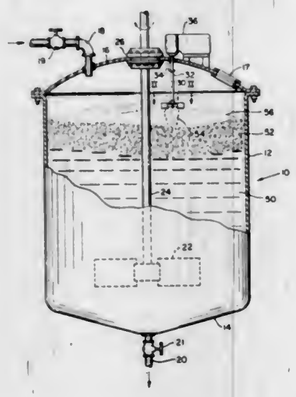
1. The method of mixing a plurality of ingredients, at least one of which is a liquid, in a large vessel to maximize turbulent liquid movement and minimize uniform or laminar flow by producing true, interfering current, mixing in the absence of baffles, partitions or flow intercepting surfaces which comprises:

inducing motion of the plurality of ingredients from a plurality of spaced points within the vessel in a time sequence and for periods of time such that the motion induced from at least one of the spaced points



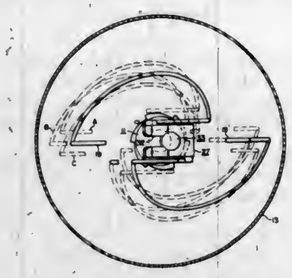
continues only long enough to interrupt and counteract the liquid motion pattern previously induced and to set up a new, liquid motion, pattern in such a manner as to produce, after a plurality of such periods of time, a series of short duration, interfering current, liquid mixing, motions throughout the entire volume of the contents of the vessel.

3,356,348
BREAKING FOAM
Frank W. Paul, Jr., Macedon, N.Y., assignor to Mixing Equipment Co., Inc., Rochester, N.Y., a corporation of New York
Filed Dec. 29, 1965, Ser. No. 517,223
5 Claims. (Cl. 259—108)



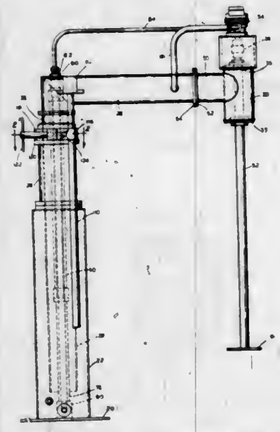
1. A process for breaking foam within a generally horizontal, foam area, which comprises: rotating above said area in a gas an impeller on a generally vertical axis with an axial flow barrier structure disposed on said axis in the region of said impeller, said rotating being at a speed and at a height whereat there is a tornado-like flow of gas from below said impeller to said region of said impeller at a velocity sufficient to entrain in said flow at least a substantial portion of foam in said area, whereby foam is broken and foam residue formed without said impeller impacting a substantial portion of foam and foam residue in said region, said impeller being in a position relative to any substantial, vertical surface, whereat impingement of foam residue on said surface at a foam generation velocity is at a minimum.

3,356,349
RANGE STIRRING APPARATUS
Arthur T. Keppler, Mansfield, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Apr. 14, 1966, Ser. No. 542,525
11 Claims. (Cl. 259—111)



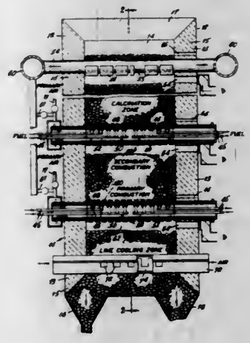
1. In combination, a hub adapted for rotation within a liquid-containing vessel, stirring means for agitating the contents of said vessel, means interconnecting said hub with said stirring means and responsive to rotation of said hub for imparting oscillatory motion to said stirring means, means carried by said hub adapted to cooperate with said stirring means for effecting rotation thereof simultaneously with said hub and in the same direction, said interconnecting means comprises a post member and an apertured member, said post member being loosely received in the aperture of said apertured member, said post member being carried by said hub member at a point remote from its center of rotation.

3,356,350
MIXING APPARATUS
Harold S. Burr, Syracuse, and Gerald W. Schardt, Camillus, N.Y., assignors to Strathmore Products, Inc., a corporation of New York
Filed Sept. 28, 1966, Ser. No. 582,644
3 Claims. (Cl. 259—135)



1. A mixing apparatus comprising a hollow support column, having spaced annular guide collars at its upper end, a cylindrical hollow tubular member telescopically disposed in said collars, a laterally extending tubular arm affixed to the upper end of said tubular member and opening thereinto, a mixing shaft bearing housing on the end of said arm having spaced bearings disposed above and below said arm and a mixing shaft journalled therein, a hydraulic motor mounted on the housing and coupled to said shaft, an elevating cylinder disposed concentrically within said tubular member, said elevating cylinder having an apertured piston and hollow piston rod, the upper end of which is affixed to said arm, means for supporting said elevating cylinder from its lower end in fixed relation to said column, a tube extending from the lower end of said elevating cylinder upwardly through said apertured piston and telescopically into said hollow piston rod, means for delivering fluid under pressure to said elevating cylinder to move said piston and raise and lower said arm, means for delivering high pressure fluid to drive said motor through said last named tube and said hollow piston rod, said means including a conduit connected to the upper end of said hollow piston rod to said motor and a discharge connection from said motor to said tubular arm for return flow into said hollow column.

3,356,351
VERTICAL LIME KILN
James E. Roberts, Ashtabula, and James B. Wilson, Amherst, Ohio, assignors to Union Carbide Corporation, a corporation of New York
Filed Sept. 10, 1965, Ser. No. 486,443
2 Claims. (Cl. 263—30)



1. In a kiln for the production of lime from limestone which includes:

(1) a vertical shaft having
  (a) a feed zone in the upper portion thereof through which a charge is introduced for passage downwardly through the shaft
  (b) a calcining zone in said shaft below the feed zone in which said charge is heated to form lime and
  (c) a cooling zone in the lower portion of the shaft below said calcining zone for receiving product from said calcining zone and from which said product is discharged from said shaft.

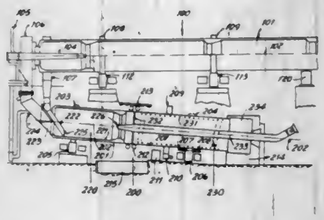
(2) means for introducing air into the lower end of the shaft to rise successively through at least the cooling zone and the calcining zone so as to cool the product and at the same time preheat the air before it passes into the calcining zone

(3) a plurality of horizontal hollow metal beam members extending across the calcining zone, each having oppositely disposed lateral openings along the length of the beam and

(4) fluid fuel conduits and primary combustion air conduits located within said beams, said conduits having outlets positioned to discharge fuel and air mixtures through said openings in substantially uniform amounts along the length of the beam and said hollow beam members having a plurality of longitudinally extending ducts for the circulation therethrough of cooling water; the improvement in combination therewith which comprises:

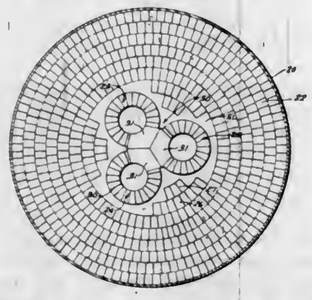
a refractory lining affixed to the outer surfaces of said metal beams and being in close contact therewith, said refractory lining being arranged to substantially cover the portions of the beams located within said kiln shaft without obstructing the outlets of the conduits located within said beams.

3,356,352
COOLER FOR FINELY DIVIDED MATERIALS AND METHOD
Georges Cerles, Gardanne, and Emile Dupuy, Grenoble, France, assignors to Pechiney, Compagnie de Produits Chimiques et Electrometallurgiques, Paris, France
Filed Dec. 9, 1964, Ser. No. 417,088
Claims priority, application France, Dec. 18, 1963, 957,655
15 Claims. (Cl. 263—32)



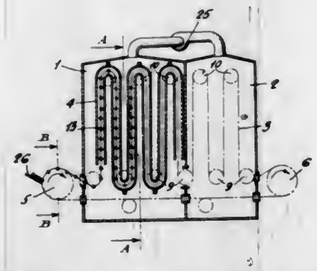
1. A cooler for finely divided material at elevated temperature comprising an elongate cylindrical casing, a screening member extending crosswise of the casing through which the material passes to subdivide the casing into an upper chamber and a lower chamber each of which has an upper end portion and a lower end portion and in which the screening member blocks passage of material from the upper chamber to the lower chamber, means extending through the lower chamber and the screening member for the passage of cooling gases through the lower chamber and into the upper chamber for passage in indirect heat transfer relation with finely divided material passing through the lower chamber, diffuser means in the upper chamber in communication with the means extending through the lower chamber and the screening member for distributing the cooling gases directly into the upper chamber for passage therethrough in direct heat transfer relation with the walls lining the upper chamber and the finely divided material passing through the upper chamber, outlet means in the upper end portion of the upper chamber for the removal of gases from the upper chamber and inlet means in the lower end of the lower chamber in communication with said means extending through the lower chamber and screening member for the passage of cooling gases through said means and into the upper chamber and out of said outlet means, inlet means in the upper end portion of the upper chamber, separate and apart from the outlet means, for the introduction of finely divided material at elevated temperature directly into the upper chamber and outlet means in the lower end portion of the lower chamber for removal of finely divided material from the lower chamber, a passage external of said casing communicating the lower end portion of the upper chamber with the upper end of the lower chamber for the flow of finely divided material from the upper chamber to the lower chamber, and means mounting the casing for rotational movement about its axis arranged at a slight incline with the horizontal with the upper chamber at a higher level than the lower chamber and at a rate sufficiently slow to avoid turbulence of the finely divided material whereby the finely divided material travels lengthwise through the upper chamber in direct heat transfer relation with the walls of the casing and with the cooling gases and from the upper chamber to the lower chamber for passage therethrough in indirect heat transfer relation with the cooling gases.

3,356,353
DOME-SHAPED ELECTRIC FURNACE ROOF CONSTRUCTION
Robert F. Nale, 5141 Azalea Drive, Pittsburgh, Pa. 15236, and Robert W. Cassidy, 153 Clemson Road, Bryn Mawr, Pa. 19010
Filed Feb. 14, 1966, Ser. No. 527,144
7 Claims. (Cl. 263—46)



1. In electric furnace construction in which three electrode ports are defined by three electrode port rings equispaced substantially centrally in the delta area of a dome-shaped electric furnace roof the improvement comprising a set of equishaped substantially identical refractory pieces which together cooperate to fill the delta area of said furnace and form a minor portion of each of the electrode port rings, the remainder of each said port ring being of conventional refractory brick.

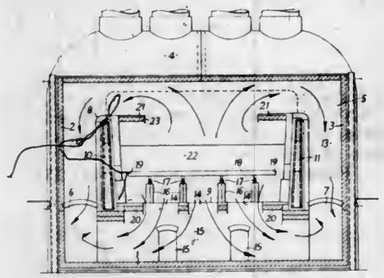
3,356,354
APPARATUS FOR DRYING AND HARDENING WELDING ELECTRODE COATINGS
Anatoly Nikolaevich Beljaev, B. Serpookhovskaja St., 22–a, Apt. 4, Podolsk, Moscow Region, U.S.S.R., and Ivan Stepanovich Shilov, Zavodskaja St., 9/1, Apt. 8, Klimovsk 1, Moscow Region, U.S.S.R.
Filed June 2, 1964, Ser. No. 371,960
5 Claims. (Cl. 266—5)



1. An apparatus for drying and hardening the coating of welding electrodes with high frequency current comprising a treatment chamber, air circulating means for the chamber, inductor means for heating the electrodes

mounted within the chamber, said inductor means including a plurality of spaced apart bars defining coils within the chamber, the width of the outermost bars of the inductor means being such that the surface current density thereof is approximately 1.5 times higher than the surface current density of the middle bars thereby producing a uniform high frequency electromagnetic field for effecting heat treatment along the entire length of the electrode, a supply circuit for the inductor means, means for maintaining invariable temperature conditions in the inductor means defined by a capacitor connected in the supply circuit and having a capacity such as to maintain stable current regardless of the number of electrodes in the inductor means, and means for conveying electrodes along the coils of the inductor means.

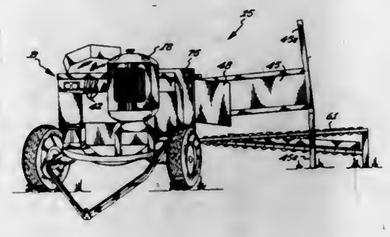
3,356,355
SLAB FURNACE WITH RESTRICTED ENCLOSING CHAMBER
John F. R. Jones, Neston, England, assignor of one-third to John Summers & Sons Limited, Shotton, and one-third to Stein Atkinson Stordy Limited, Richmond, England, both British companies
Filed Jan. 18, 1965, Ser. No. 426,120
Claims priority, application Great Britain, Jan. 20, 1964, 2,410/64
3 Claims. (Cl. 266—24)



1. A slab furnace comprising an enclosing chamber defining a discharge opening for exhaustion of combustion gases, a hearth within the chamber having a floor over which slabs to be treated are passed with the leading and trailing edges of successive slabs substantially joining, a number of firing zones disposed at spaced locations along the length of the furnace above and below the hearth, the hearth and the chamber defining a space below the slabs which space is connected to the discharge opening, the hearth having side walls spaced from the chamber walls and extending above the level at which the slabs are supported and defining between them a space above the slabs, the walls further defining an opening forming part of a flow passage connecting the space above the slabs with the discharge opening, and a constriction in the flow passage so dimensioned that under optimum firing conditions the pressures of gases above and below the slabs is balanced to prevent flow of gases around the edges thereof.

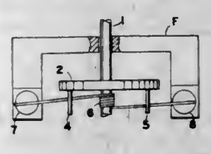
3,356,356
METAL SEPARATING APPARATUS
Francis E. Kutina, 1818 1st Ave., SE., Rochester, Minn. 55901
Filed Oct. 17, 1963, Ser. No. 316,961
3 Claims. (Cl. 266—33)

1. Apparatus for separating unlike metals in scrap metal materials, and reducing the same to ingots comprising in combination, an enclosed firebox having a feed opening and an inclined tubular pre-heater chute detachably connected to the firebox in communication with the feed opening whereby said scrap materials to be reduced, are fed to the said firebox, means for closing the pre-heater chute to atmosphere thereby pre-heating the materials enroute to the said firebox and means for selectively opening and closing the pre-heater chute, a driven air pressure blower directing air into the firebox and a high pressure fuel system integrated with the said pressure blower and a system of burners whereby said firebox



is fired to produce and maintain a high temperature flame in said firebox, the bottom of the firebox having an inclined trough in which the molten metal will accumulate and be immediately discharged, the trough having an open and unobstructed discharge end from which molten metal is continuously poured, means associated with said firebox whereby ingot pans are transported into and out of register with a pouring area below the discharge end of said trough, and the firebox having an access door in one side to permit removal of unmelted scrap metal.

3,356,357
ADJUSTABLE SELF-CENTERING MEANS FOR ROTATABLE SHAFTS
Marvin I. Levine, Carle Place, N.Y., assignor to Optomechanisms, Inc., Plainview, N.Y.
Filed Dec. 28, 1965, Ser. No. 516,871
3 Claims. (Cl. 267—1)



1. Adjustable self-centering means for a shaft rotatably mounted in a frame comprising:

a pair of members fixedly connected to and spaced from said shaft,

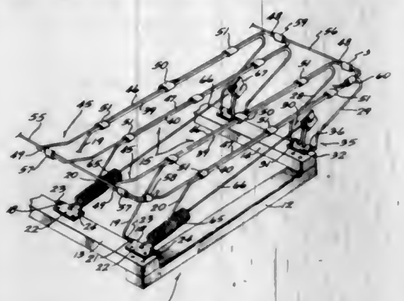
a spring mounted on said shaft adjacent said members,

a pair of adjustable stops mounted in said frame and equally spaced outwardly of said members, the ends of said springs extending outwardly past said members and adapted to come into contact with said adjustable stops when said shaft is in neutral position so that when said shaft is rotated in either direction, one end portion of said spring will bear against one of said members in a direction to restore said shaft to neutral position, said neutral position being determined by the position of said adjustment stops.

3,356,358
CHAIR SPRING CONSTRUCTION
John J. Bond, Milwaukee, Wis., assignor to No-Sag Spring Company, Detroit, Mich., a corporation of Delaware
Filed Feb. 14, 1966, Ser. No. 527,169
9 Claims. (Cl. 267—102)

1. In a furniture spring assembly mounted on a frame; a plurality of front spring arms; means mounting said

front spring arms to said frame for pivotal movement relative to said frame; said plurality of front spring arms extending angularly from the frame and being resiliently movable toward and away from the frame; a plurality of rear spring arms; means mounting said rear spring arms to said frame for pivotal movement relative to said frame; said plurality of rear spring arms extending angularly from the frame in spaced relationship to said front

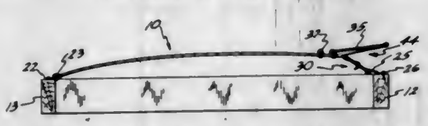


spring arms and being resiliently movable toward and away from the frame; said front and rear spring arms extending generally in a rearwardly direction; and a plurality of support bars for receiving the load to be applied to the spring assembly with each of said support bars having a resilient connection with one of said front arms and with one of said rear arms for cooperative operation.

3,356,359
PRESTRESSED FURNITURE SPRING

John J. Bond, Wickenberg, Ariz., assignor, by mesne assignments, to Lear Siegler, Inc., Santa Monica, Calif., a corporation of Delaware

Continuation of application Ser. No. 399,700, Sept. 28, 1964. This application May 23, 1967, Ser. No. 640,627
15 Claims. (Cl. 267—102)



1. In a spring assembly for mounting on a furniture frame; a sinuous spring shaped to have its length follow an arcuate path when said spring is in its relaxed condition, a prestress lever formed by a portion displaced from the relaxed path of the remainder of the spring, said prestress lever supported by the furniture frame and coupled to said sinuous spring, said prestress lever exerting a prestress force on said sinuous spring to flatten its arcuate configuration when said spring is mounted on the furniture frame to improve the characteristics of said spring for furniture applications; an auxiliary spring extending from said sinuous spring to provide a spring support at an extremity of the furniture frame; mounting means for mounting said auxiliary spring to said sinuous spring; and reinforcing means on said auxiliary spring in engagement with said prestress lever to reinforce said prestress lever to avoid damage to the spring by the prestress forces.

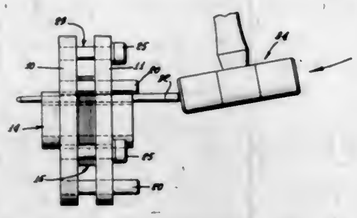
3,356,360
APPARATUS FOR SUPPORTING STACKED AND BONDED LAMINATIONS FOR ELECTRICAL APPARATUS

Elmer F. Ward, Santa Ana, Calif., assignor to Task Corporation, Anaheim, Calif., a corporation of California

Filed Aug. 25, 1964, Ser. No. 391,846
3 Claims. (Cl. 269—52)

1. In apparatus for supporting a stack of generally annular thin laminations usable in a rotary electric machine, said laminations each having slots therethrough which are aligned when the laminations are assembled in face to face relationship in a stack, and including a mandrel means for internally supporting said stack of laminations so that the exterior periphery of the stack is exposable to receive an application of liquid bonding agent, the improvement in the mandrel means comprising:

a mandrel which is expandible sufficiently to internally support all laminations of said stack when

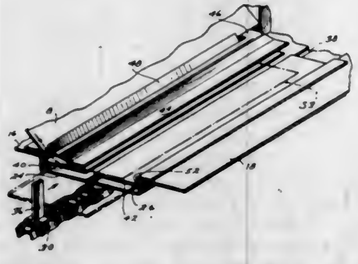


the mandrel is projected centrally within the stack and expanded, said mandrel being expandible by a pin means insertable into a split portion of the mandrel means which extends longitudinally of the mandrel, said pin means being of such a diameter that the mandrel is uniformly expanded when said pin means is forcibly driven into said split portion.

3,356,361
SHEET PACKAGING MACHINE

Thomas J. Geisler, Norwalk, Conn., Joseph A. Fuchs, Jr., Rye, N.Y., and Rogers A. Wells, Stamford, Conn., assignors to Pitney-Bowes, Inc., Stamford, Conn., a corporation of Delaware

Filed June 4, 1965, Ser. No. 461,252
3 Claims. (Cl. 270—58)



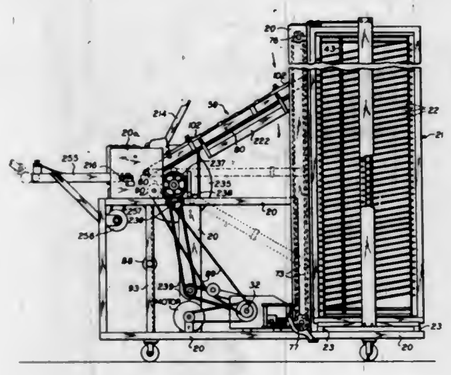
1. Apparatus for compiling sheets of paper currency from different supply points into discrete piles comprising a plurality of sheet delivery stations arranged side by side in an extended row, each station including a hopper for holding a supply of sheets of paper currency and a feed roll disposed in position to engage the leading edge of the foremost sheet in said hopper and operative to remove sheets from said hopper one at a time and deliver them to a predetermined delivery point in front of said hopper; structural means providing a horizontally extending floor and spaced vertical side walls defining an elongate channel along which sheets delivered from said hoppers are to be conveyed, said side walls being spaced from each other a distance sufficient to permit lengthwise movement of said sheets while simultaneously holding accumulated sheets in confined edge alignment, said channel located immediately adjacent to and in front of said hoppers and extending parallel to said row of sheet delivery stations past each said delivery point, said floor having a longitudinally-extending slot, a like plurality of ledges located in said channel in front of said hoppers so as to intercept

and support sheets removed from said hoppers by said feed rolls, each ledge comprising first and second substantially coplanar ledge members supported by said structural means, said ledge members all being located above and disposed in parallel spaced relation to said floor with each pair of first and second ledge members having adjacent edges that define a longitudinally-extending slot aligned with the slot in said floor, guide means for guiding sheets removed from said hoppers by said feed rolls onto said ledges, said guide means comprising a like plurality of parallel plates attached to said structural means immediately in front of said hoppers, said plates located above but spaced vertically from said first ledge members, said plates extending away from said hoppers and terminating close to but just short of the slots defined by the said adjacent edges of said first and second ledge members, each plate defining a longitudinally extending aperture in position to admit sheets fed from the adjacent hopper into the space between said each plate and the first ledge member located below said each plate, the distance between each aperture and the feed roll adjacent to said each aperture being such that the leading edge of a sheet fed by said adjacent feed roll will enter said aperture while said sheet is still engaged by said adjacent feed roll, the spacing between said plates and said first ledge members being greatest adjacent said apertures and smallest in the region adjacent to the slots between said first and second ledge members, said plates being sufficiently close to said first ledge members to tend to hold fed sheets substantially flat on said first ledge members, each plate having an upturned lip at the edge of its said aperture to facilitate entry of sheets into the said space, and an endless conveyor with a run which extends parallel to said slots, and lugs carried by said conveyer that travel along said channel in said slots and are adapted to remove sheets from said ledges and accumulate them in discrete piles as they are conveyed along said channel.

3,356,362
SHEET SORTER HAVING PIVOTED RAMP

Luis Mestre, 305 E. 46th St., New York, N.Y. 10017

Filed Oct. 20, 1965, Ser. No. 498,744
30 Claims. (Cl. 270—58)

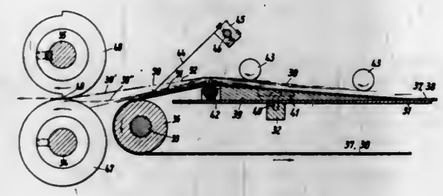


1. A sheet sorter comprising a frame, a drive shaft rotatably mounted on the frame, a plurality of pockets disposed one above the other and adjacent to or carried by the frame, ramp means having an entry end and a delivery end, the delivery end being adjacent to the pockets, endless means extending between the ends of the ramp means to feed sheets thereon from the entry end to the delivery end including directing means at the delivery end to direct each sheet into its pocket; pivot means carried by the frame and pivotally mounting the entry end of the ramp means at a point spaced from the pockets, and the delivery end of the ramp means being adjacent to the ends of the pockets as the ramp means pivots; ramp operating mechanism operatively connected between the drive shaft and the ramp means including step by step indexing means moving the ramp means in one direction a distance corresponding with the pocket spacing, return operating means operatively connected between the drive shaft and the ramp means to move the latter in the opposite direction; trigger means carried by the ramp means and connected with the indexing means to initiate its operation including a trigger in the plane of the endless means to be engaged by a sheet moving thereon; and limit control means operable by the movement of the ramp means at the ends of its downward and upward movement to halt the ramp means including a first limit control connected with the indexing means to discontinue its operation, a second limit control connected with the return operating means to discontinue its operation, and means to initiate operation of the return operating means.

3,356,363
DEVICE FOR FEEDING BLANKS OF WINDOWED SHEET MATERIAL

Günter Ehlscheid, Neuwied, Germany, assignor to Richard Winkler, Rengsdorf uber Neuwied, and Kurt Dünnebier, Gladbach, Germany

Filed Oct. 21, 1965, Ser. No. 499,188
Claims priority, application Germany, Jan. 12, 1965, W 38,333
16 Claims. (Cl. 271—2)



1. A device for withdrawing windowed envelope blanks, one by one, from a supply of such blanks, said device comprising stationary support means for supporting a supply of blanks, drive means having a portion disposed in substantially coplanar relationship with said support means for moving the blank to be withdrawn along a predetermined path, said drive means tensioning the blank while being moved, and deflection means first engaging the blank while being moved and then engaging the next adjacent blank to deflect the same through a predetermined angle in reference to said path whereby a spacing between the trailing window edge of the moving blank and the leading window edge of the next adjacent blank in said supply is provided.

3,356,364
FEED CATCH FOR APPARATUS HANDLING SHEET MATERIAL

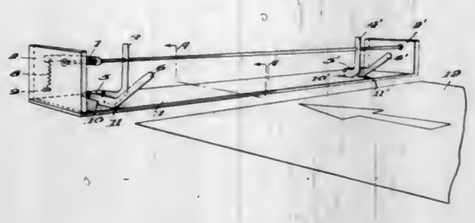
Helmut Grigerelt, Kaufbeuren, Allgau, Germany, assignor to Ciba Limited, Basel, Switzerland, a Swiss company

Filed July 6, 1966, Ser. No. 563,199
Claims priority, application Switzerland, July 12, 1965, 9,726/65
4 Claims. (Cl. 271—60)

1. A feed catch device for ensuring straight feed of sheet material comprising, in combination,

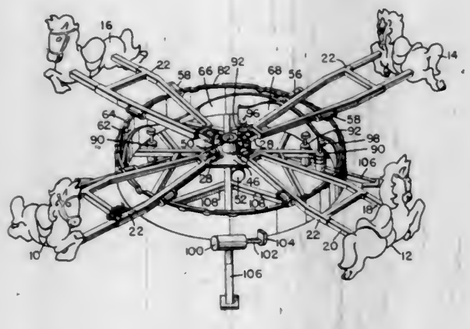
(a) a base plate,

(b) first and second side members mounted on said base plate,
(c) a shaft positioned between said side members and mounted in said side members for rotation, said shaft being spaced apart from said base plate, and normal to the intended direction of feed of sheet material,
(d) areas of said base plate defining a plurality of first slots,
(e) a plurality of check levers mounted on said shaft for rotation therewith each check lever having a



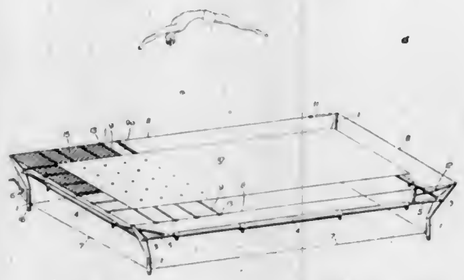
lower edge, and each lower edge being engageable in a different first slot in said base plate,
(f) areas of said base plate defining a plurality of second slots,
(g) a plurality of pawls; each pawl being rotatably connected to a different check lever and being engageable in a different second slot in said base plate, release of the feed catch being enabled only when all said pawls are released from their associated second slots allowing movement of all the check levers from their associated first slots.

3,356,365
CARROUSEL WITH RELATIVELY MOVABLE TRACK SUPPORTING CAM MEMBERS FOR SELECTIVELY CHANGING THE TRACK UNDULATIONS
Alphonse D. De Shano, 950 Noyes Ave., Hamilton, Ohio 45015
Filed Nov. 29, 1963, Ser. No. 326,905
13 Claims. (Cl. 272—36)



1. A carrousel comprising in combination: a rotor, a plurality of rocker frames each extending radially outwardly from the rotor, said frames each having an inner end and an outer end, swivel means connecting the inner ends of the frames to the rotor for movement therewith in a circular orbit, a carriage imitating a riding animal attached to an outer end of each frame, a pair of spaced cam followers on each frame intermediate the ends thereof, a stationary circular cam member concentric with the rotor axis and having a track to support the cam followers of the frames, a movable circular cam member concentric with the stationary cam member and disposed in close proximity thereto, said movable cam member having an undulatory track thereon, and means for shifting the movable cam member relative to the stationary cam member, for selectively placing the undulatory track in a dominating position relative to the stationary cam member track, for alternate support of the cam followers.

3,356,366
COLLAPSIBLY SUPPORTED PLATFORM WITH ADJUSTABLE TENSIONING MEANS
Johann Barthel, Flughafen Graz-Thalerhof, Post Kalsdorf, Steiermark, Austria
Filed Apr. 5, 1965, Ser. No. 445,373
17 Claims. (Cl. 272—65)



1. A platform and support structure comprising: a tubular frame, four uprights supporting said frame, said upright comprising levers mounted to said tubular frame in a manner permitting pivotal movement in the two vertical planes which include the diagonals of said frame; a mat made of flexible material; a fastener connected to the top end of each of said uprights; a mat rope connected to said fasteners forming a rope frame to which said mat is connected; a plurality of cord-like means connecting said mat to said mat rope; a tension rope connected to the other end of said uprights; and means including a winch mounted on one of said uprights to vary the tension in said tension rope.

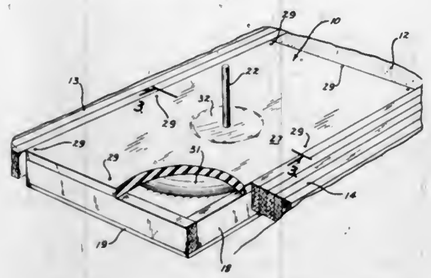
3,356,367
AMBULATORY EXERCISE DEVICE
Robert L. Tewksbury, 21—03 73rd St., Jackson Heights, N.Y. 11372
Filed Aug. 7, 1964, Ser. No. 388,084
7 Claims. (Cl. 272—69)



1. An ambulatory exercise device comprising a housing adapted to support the weight of a user, a lower surface on the housing to support the device stably on a supporting surface, an upper surface on the housing having at least a portion thereof inclined at an angle to the lower surface, a flexible and elastic unitary covering on the housing extending over its lower and upper surfaces and engaging the supporting surface beneath the lower

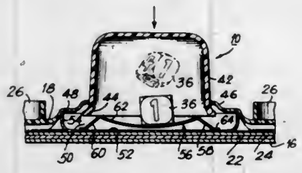
surface of said housing, and a layer of anti-friction material between the covering and housing and coextensive therewith to facilitate sliding movement of the covering with respect to the housing surfaces to enable the user to stand on the covering over the inclined surface of the housing and cause ambulation of the device.

3,356,368
HORSESHOE TARGET WITH FLOOR SIMULATING CLAY
Dale E. Dixon, 2616 49th St., Des Moines, Iowa 50310
Filed Mar. 4, 1964, Ser. No. 349,437
5 Claims. (Cl. 273—104)



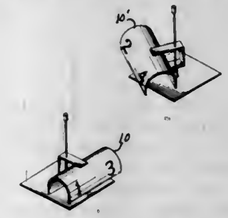
2. A horseshoe game apparatus comprising:
(a) a box-like structure having upright side walls and a bottom member,
(b) a floor means formed of a material having the yieldability and resilience characteristics of reclaimed rubber positioned over the top of the box-like structure and secured to the side walls thereof,
(c) an upright stake secured to the bottom member and projected through said floor, and
(d) biasing means positioned between said bottom member and the floor and engageable with portions of the underside of said floor and the upper surface of said bottom member to resiliently support the floor between the side walls of the structure.

3,356,369
DIE AGITATING CHANCE DEVICE
Albert Stubbmann, North New Hyde Park, N.Y., assignor to Kohner Bros., Inc., New York, N.Y., a corporation of New York
Filed Jan. 22, 1965, Ser. No. 427,225
5 Claims. (Cl. 273—145)



1. A chance indicator including a flat floor which is horizontal when the chance indicator is in use, a leaf spring including a rectangular, broad, substantially flat span having a snap-acting portion, two opposed downwardly diverging broad legs in one piece with opposite edges of the span whereby when the lower ends of the legs are spread apart the span is bowed downwardly, the lower ends of said legs being supported on the flat floor whereby when the span is pressed downwardly the lower ends of the legs are spread apart and cause the span to bow downwardly, said snap-acting portion being constructed to snap downwardly when the span bows downwardly and to snap upwardly when downward pressure is removed from the span, said legs being of equal length and diverging downwardly in a like manner so that the span is supported in a horizontal position on the flat floor by the legs, a die resting on the snap-acting portion and a transparent open bottomed cage supported on the span over the die so that the die is viewable therethrough, said cage being sufficiently large to permit the die normally to freely lie upon the snap-acting portion of the spring and to be tumbled within the cage by the upward snap of the snap-acting portion, and means mounting the cage for movement perpendicular to the flat floor so that downward force manually applied to the cage moves the cage and the span of the spring from its rest position to a position in which the span is bowed downwardly, whereby upon subsequent release of the cage the snap-acting portion snaps upwardly to tumble the die.

3,356,370
SURFACE PROJECTILE GAME APPARATUS
Ralph L. Larsen, 1822 Colby Ave., Everett, Wash. 98201
Filed Aug. 4, 1964, Ser. No. 387,351
10 Claims. (Cl. 273—176)



1. A wicket for a rolling ball game, comprising: a member having horizontally elongated spaced sides defining a horizontally elongated path for the ball, and means supporting said member for rotary movement in a horizontal plane above the game playing surface about a vertical axis displaced laterally from the center of said path.

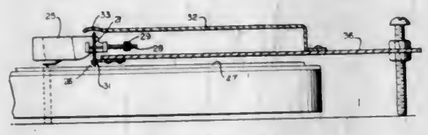
3,356,371
DICTATING MACHINE WITH AUTOMATIC FEED FOR INDICATOR SLIPS
John R. Montgomery, Trumbull, John G. Wallace, Branford, and George L. Soltis, Shelton, Conn., assignors to Dictaphone Corporation, Bridgeport, Conn.
Original application May 21, 1962, Ser. No. 196,426, now Patent No. 3,254,347, dated May 31, 1966. Divided and this application June 22, 1965, Ser. No. 492,347
9 Claims. (Cl. 274—11)



1. In a dictating machine, the combination of a strip of flexible material wound in a roll, means to hold an end portion of said strip in position to be marked to indicate certain events on the dictation record, said strip being provided at uniformly spaced intervals along its length with

designation means to define distinct strip portions each forming a complete indicator slip; means for controllably bringing a fresh slip from said roll comprising roller means engaged with said strip and operable when activated to feed said strip from said roll, drive means for supplying power to said roller means, gear means shiftable into engaged position to couple said drive means to said roller means, start means operable to shift said gear means into engaged position, latch means for maintaining said gear means engaged, sensing means to detect said designation means at a predetermined position thereof while said strip is being fed out of said roll, and control means responsive to said sensing means to automatically disengage said gear means when the next one of said designation means has reached said predetermined position.

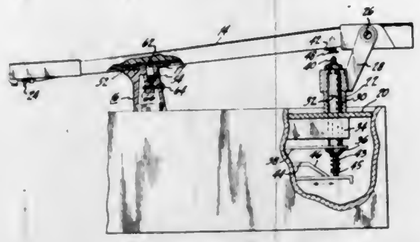
3,356,372
FREE-TRACKING PHONOGRAPH PICKUP
Jacob Rabinow, 6920 Selkirk Drive, Bethesda, Md. 20034
Filed Dec. 9, 1964, Ser. No. 417,178
2 Claims. (Cl. 274—23)



1. In a phonograph for playing grooved disc records on a turntable, a pickup assembly comprising
(a) a stylus for following the disc grooves,
(b) a head mounting said stylus,
(c) guide means supported by the phonograph,
(d) said guide means including low-friction bearing means between said head and said guide means permitting limited pivotal vertical motion of the head about an axis substantially at the surface of a record disc mounted on said turntable,
(e) said guide means including also bearing means for guiding said head with very low friction in a horizontal path such that the stylus moves along a radial path on the record,
(f) said bearing means comprising horizontal linear track means mounted on said phonograph in a plane which is very close to the plane of the phonograph disc record,
(g) two wheels fixed to said head, one wheel on each side of the head, said wheels riding on said track means for guiding the stylus laterally along said radial path,
(h) said wheels being thin discs with sharp edges, said track means comprising a grooved element for receiving said sharp edges with substantially line contact between the sharp edges and the bottom of the groove,
(i) said wheels and the attached head being free to move pivotally as a whole for a limited distance about the line of contact between the wheels and the track, to permit at least a small amount of vertical movement of the stylus with respect to the surface of a record.

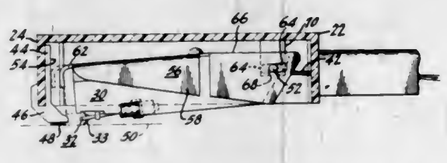
3,356,373
TONE ARM LATCHING DEVICE
David E. Laux, Indianapolis, Ind., assignor to Radio Corporation of America, a corporation of Delaware
Filed Feb. 26, 1965, Ser. No. 435,554
6 Claims. (Cl. 274—23)

1. In an automatic record player mechanism of the type including a turntable, a tone arm; means for mounting said tone arm near one end thereof for movement in vertical and horizontal planes, and a tone arm controlling mechanism for moving said tone arm in horizontal and vertical planes:
a magnet;
an armature;
a tone arm rest piece assembly positioned adjacent said turntable for supporting said tone arm when said record player is not operating and including one of said magnet and armature mounted therein;
means for mounting the other of said magnet and armature in said tone arm at a position to engage said one of said magnet and armature when said tone arm is supported by said rest piece assembly; and



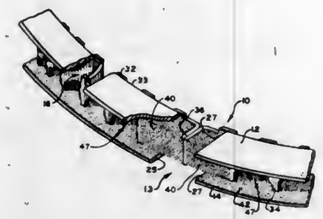
fulcrum means positioned in alignment with said tone arm when said tone arm is supported by said rest piece and spaced at a greater distance from the tone arm mounting means than said one of said magnet and armature in said rest piece to engage and provide a fulcrum for said tone arm when said one end of said tone arm is moved in a vertical plane,
said tone arm controlling mechanism operable to move said tone arm mounting means in a vertical plane to cause said tone arm to pivot about said fulcrum means and thereby break the contact between said magnet and said armature.

3,356,374
SUSPENSION SYSTEM FOR STEREOPHONIC PICKUPS
John A. Tourtellot and Ronald P. Peterson, Indianapolis, Ind., assignors to Radio Corporation of America, a corporation of Delaware
Filed Feb. 15, 1965, Ser. No. 432,655
4 Claims. (Cl. 274—24)



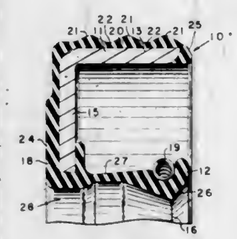
2. In a phonograph record playing apparatus, the combination with an elongated tone arm movable over a record to be played and supported in spaced relation to and by the playing surface thereof, of
a stereophonic pickup device having a stylus in one portion and a pair of transversely aligned slotted openings in another portion thereof,
bearing means provided on said tone arm and received by said slotted openings coupling said tone arm to said pickup device for movement of said pickup device toward and away from the record surface at the stylus end thereof, and for movement along the length of said tone arm, and
means comprising a portion of said tone arm for engaging and limiting the movement of said pickup device along the length of said tone arm in the direction of movement of said record.

3,356,375
UNITIZED OIL RINGS
Paul E. Harris, 400 S. Plum St., Hagerstown, Ind. 47346
Filed Dec. 4, 1964, Ser. No. 419,267
13 Claims. (Cl. 277—9.5)



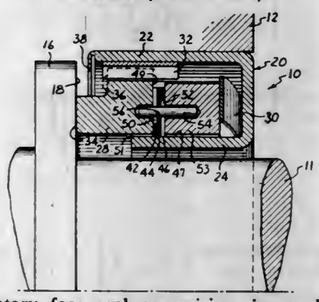
1. A multi-component oil ring assembly adapted for insertion in a piston groove comprising in combination a pair of circumferentially extending axially spaced rail means, a circumferentially extending and circumferentially resiliently precompressed spacer-expander means engaging and urging said rail means radially outwardly and having at least a portion thereof disposed intermediate to and axially spacing said rail means, and a resinous adhesive means acting in shear to bond said precompressed spacer-expander means to said rail means, said adhesive means having a shear strength which is sufficiently high to bond said spacer-expander means to said rail means at room temperatures and maintain the compression thereof and which shear strength at approximately 180° F. is insufficient to maintain the compression of said spacer-expander means whereby said adhesive means releases said spacer-expander means from said rail means when exposed to internal combustion engine operating conditions.

3,356,376
AXLE SEAL
John H. Bradfute, Santa Clara, and Berkeley E. Ward, Belmont, Calif., assignors to Federal-Mogul Corporation, a corporation of Michigan
Filed May 11, 1964, Ser. No. 366,561
8 Claims. (Cl. 277—37)



1. A shaft seal of the type having a rigid annular metal case with a cylindrical portion and an elastomeric sealing element bonded to said case and having a generally cylindrical portion bonded to the outer periphery of the cylindrical portion of said case to provide a bore-engaging elastomeric portion and a rotatively sealing portion, characterized by a series of circumferential elastomeric ridges and valleys, said valleys providing space into which the elastomer of said ridges extending radially a substantial amount beyond the remainder of said bore-engaging elastomeric portion and can flow when compressed, said ridges serving to retain said seal in a bore and able to accommodate a bore size range from a minimum bore size having a radius at least as large as the sum of the radius of the deepest part of said valley plus half of the ridge height, to a maximum bore size having a radius equal to said radius of the deepest part of said valley plus about eighty percent of the ridge height.

3,356,377
FLUID SEALING ASSEMBLY WITH RESILIENT SEALING RINGS
Robert M. Voitik, Glenview, Ill., assignor to Continental Illinois National Bank and Trust Company of Chicago, trustee
Filed Aug. 13, 1965, Ser. No. 479,515
7 Claims. (Cl. 277—40)



7. A rotary face seal comprising, in combination, a stator defining a primary sealing surface, a casing surrounding said stator, said stator and said casing defining a pair of secondary sealing surfaces including a cylindrical surface and an annular surface disposed generally radially of said cylindrical surface, a first annular flexible ring fitted flatly against said annular surface with an edge of the ring engaging said cylindrical surface, a second annular flexible ring fitted flatly against said first ring with an edge of the ring engaging said cylindrical surface, said rings being notched from both their inner and outer edges so as to impart radial residience thereto, said notches in said rings being disposed out of alinement to preclude the existence of an axially extending opening through said rings along said cylindrical surface, means for urging said rings together and against said annular surface, and a pin extending axially through said rings with the pin passing through one of said first ring notches that extends from the ring edge not in engagement with said cylindrical surface.

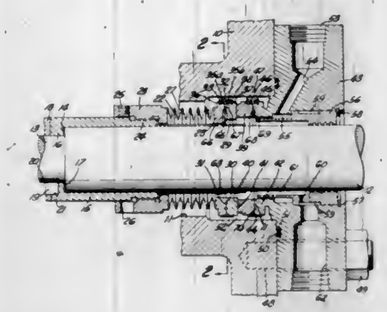
3,356,378
SEALING RING ASSEMBLY FOR A MECHANICAL SEAL
Herbert E. Tracy, Alhambra, Calif., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed Apr. 26, 1965, Ser. No. 450,589
3 Claims. (Cl. 277—136)

1. A mechanical seal assembly for sealing a rotary shaft member to a housing member having a shaft opening through which the shaft member extends, said assembly including:
(a) a closed, rotary sealing ring carried by and rotated by the shaft member;
(b) a closed, fixed sealing ring carried by and fixed against rotation with respect to the housing member;
(c) said sealing rings having opposed, generally radially extending, annular, continuous, sealing surfaces in relatively rotatable, sealing engagement;
(d) resilient means for urging said sealing rings into said sealing engagement;
(e) a closed backing ring carried by and sealed to one of the members and fixed against rotation with respect to the one member; and

(f) said backing ring and one of said sealing rings having opposed, generally radially extending, annular, continuous sealing faces in relatively stationary sealing engagement with each other,

wherein the improvement comprises:

a closed mounting ring engaging peripheries of said backing ring and said one sealing ring for preventing said one sealing ring from moving transversely with respect to said backing ring; and key-and-keyway means for interlocking said backing ring, said

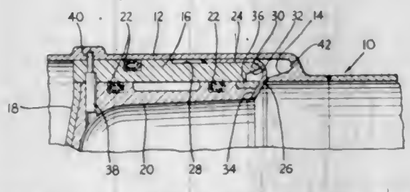


mounting ring, and said one sealing ring against relative rotation while permitting said one sealing ring and said backing ring to be withdrawn from said mounting ring in the axial direction, said key-and-keyway means comprising an elongated key affixed to said mounting ring and extending axially thereof, and said backing ring and said one sealing ring provide axially aligned keyway sections for receiving said key.

3,356,379
DISAPPEARING HERMETIC SEAL

John J. Townsley, Parsippany, N.J., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware

Filed Mar. 15, 1965, Ser. No. 439,825
6 Claims. (Cl. 277—237)



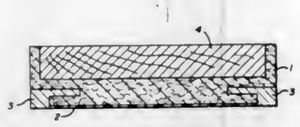
1. The combination with a fluid storage tank from which fluid is to be expelled and a wall including dynamic seals mounted for sliding movement on the inner surface of said tank to expel the fluid; of a frangible hermetic seal sealed to the tank and to the movable wall to isolate the fluid from the dynamic seals to prevent their deterioration during storage, the fluid expelling movement of the wall effecting a shearing of said hermetic seal.

3,356,380
FABRICATED SKI

Arthur L. Scott, Richland County, S.C., assignor to Columbia Products Company, Columbia, S.C., a corporation of South Carolina

Filed Apr. 22, 1965, Ser. No. 449,950
11 Claims. (Cl. 280—11.13)

1. A ski comprising an elongated generally channel-shaped body member having a flat bottom surface, a covering material bonded to said bottom surface of said body member, a pair of elongated edge strips abutting on opposite sides of said covering material, each of said edge strips having a portion extending into and bonded within

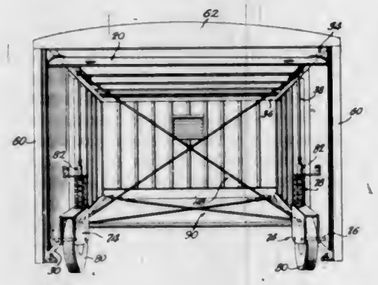


said body member and an insert member bonded within the channel of said body member.

3,356,381
MOBILE BUILDING WITH TOWING BRACKET AND BRACING SYSTEM

Scott Rayfield Rich, Carmichaels, Pa. 15320

Filed Jan. 3, 1966, Ser. No. 518,270
7 Claims. (Cl. 280—30)



1. A mobile building structure embodying side walls, a front end wall, a rear end and a roof, means supporting the structure for towing comprising running gear removably connected to the structure adjacent to the rear end thereof, hitch means connected to the front end of the structure for attachment to a draft vehicle, guy means within the structure extending from side-to-side thereof and cross bracing the structure for resisting twisting and straining of the structure during towing thereof, and said guy means being readily removable for facilitating occupancy of structure, said guy means comprising a first system of cables in crossed relation and disposed in a substantially horizontal plane closely adjacent to the bottom of the structure and each cable extending from a point adjacent to the said front wall rearwardly obliquely across the width of the structure to a point intermediate the ends thereof and forwardly of said running gear and a second system of cables in crossed relation and disposed in a substantially vertical plane.

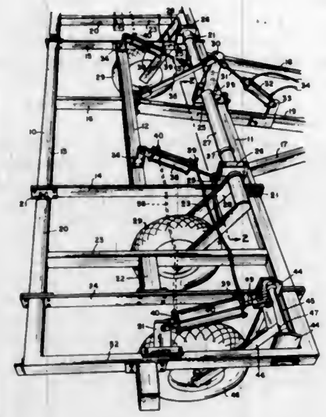
3,356,382
HYDRAULIC HEIGHT CONTROLS

Lawrence P. Fay, Regina, Saskatchewan, Canada, assignor to Roll-O-Flex Limited, Regina, Saskatchewan, Canada

Filed Nov. 16, 1966, Ser. No. 594,847
5 Claims. (Cl. 280—43.23)

1. In a land working machine of the class described having a frame and a pivoted wing extending from said frame; a hydraulic height control for said frame and wing, comprising: a shaft rotatably mounted on the frame and having a crank connection with a frame support wheel; a master ram mounted on the frame for power rotation of the shaft, to change the height of the frame on the support wheel, through said crank connection; a control ram mounted on the frame and operable by the

rotation of the shaft; a crank pivotally mounted between the wing and a wheel for said wing support; a slave ram pivoted between said crank and the wing for changing the height of the wing on its support wheel; and a flexible

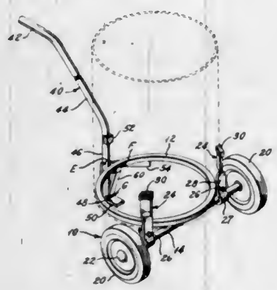


connection between one end of the control ram and one end of the slave ram for fluid transfer therebetween to raise and lower the frame and the wing, in the operation of the master ram.

3,356,383
HANDLE PROPELLED CART

Eugene A. Sneed, Pontotoc, Miss. 38863

Filed Jan. 27, 1967, Ser. No. 624,112
7 Claims. (Cl. 280—47.26)

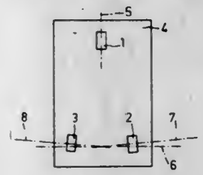


7. A cart in combination with a container having a bottom, a body and a closed depending lip extending below said bottom, said cart comprising a ring-like, circular platform having an open center and a top surface lying in a plane, said platform having an outer dimension equal to or less than the inner dimension of said depending lip, said top surface supportingly engaging said container bottom, wherein said depending lip is disposed outside said platform and extends downward from the plane of said top surface, an axle connected to two spaced locations under the front of said platform, a wheel rotatably mounted to each end of said axle, whereby the wheels and said axle support the front of said platform, a handle having a horizontally extending foot at its lower end, said foot being connected to a vertical section which extends above and below said platform, an upwardly and outwardly extending intermediate section connected to the top of said vertical section and a hand grip connected to the top of said intermediate section, said hand grip being approximately 30 inches above said foot, a first metal strap connected between said foot and the inside of the rear end of said platform, a second metal strap having two interconnecting legs, the forward edge of each leg being secured under the rear of said platform and the interconnection of said two legs being connected to the back side of said vertical section of said handle, a resilient cushion mounted in front of and near the top of said vertical section of said handle to define a rear limit for the container supported by said platform, said cushion contacting the body of said container and pressing said depending lip against the rear of said platform, two spaced upstanding brace members axially movable on said axle and releasably secured thereon, each said brace member comprising an elongated steel strap having releasable clamping means at its lower end engaging said axle and having its upper end twisted with respect to the longitudinal dimension thereof so that one side of its upper portion faces the container body, and a resilient cap mounted on the top of said upper portion contacting said body, whereby said container is supported upright and rigidly braced on said platform so that unwanted relative movements between said container and said platform are prevented.

3,356,384
MOUNTING WHEELS FOR A WASHING MACHINE

Cyprien Jean Dupeux, Chatou, France, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Jan. 13, 1966, Ser. No. 520,503
Claims priority, application France, Jan. 15, 1965, 2,017
3 Claims. (Cl. 280—62)

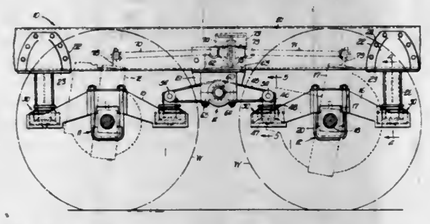


1. A wheel mounting assembly for resisting displacement along a longitudinal axis of a machine comprising: a plurality of wheels rotatably mounted on the base of said machine, the central axes of at least two of said wheels being substantially parallel to said base and positioned at an obtuse angle to one another, said angle ranging from 170°–179°, said obtuse angle being bisected by the longitudinal axis of said machine.

3,356,385
SHEAR SPRING SUSPENSION

Charles L. Small, Chicago, Ill., assignor to Hendrickson Mfg. Co., Lyons, Ill., a corporation of Illinois

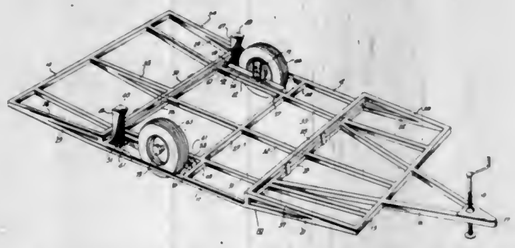
Filed Apr. 8, 1966, Ser. No. 541,336
9 Claims. (Cl. 280—104.5)



1. A vehicle suspension adapted to be interposed between a vehicle frame and a pair of tandem axles each having wheels journaled on opposite ends thereof, said suspension comprising a rigid load balancing beam pivotally connected intermediate its ends to said frame between said axles and adapted to oscillate about an axis

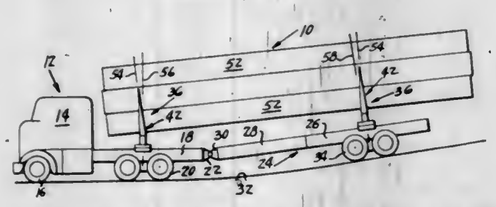
generally parallel with said axles, a rigid beam disposed longitudinally of the vehicle frame and secured intermediate its ends to each end of each axle, bracket means providing rigid pins depending from the vehicle frame at each side thereof and in longitudinally spaced relation, a resilient suspension unit connecting the forward end of the front axle beam and the rearward end of the rear axle beam to said depending pins and connecting means between the ends of said load balancing beam and the rearward and forward ends of said front and rear axle beams, respectively, each said beam connecting means including a hanger bracket pivotally mounted adjacent the end of the balancing beam and a resilient suspension unit connecting the hanger bracket and the end of the axle beam whereby eight resilient connecting points are provided between the vehicle frame and the axles for absorbing and transferring vertical and horizontal stresses resulting from wheel contact with uneven roadway surfaces.

3,356,386
UNDERSLUNG WHEEL SUSPENSION SYSTEMS
Ralph Wendell Taylor, 1121 Seymour Ave., Iowa City, Iowa 52240
Filed Oct. 20, 1965, Ser. No. 498,707
1 Claim. (Cl. 280—106.5)



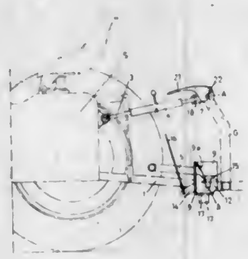
In a spring suspension system for a trailer, means for mounting a wheel to secure the lowest possible frame position above the ground including a trailer main frame having a wheel well therein with one of the lowest main frame members positioned beside the wheel well, a hinge pin secured to the main frame member, a lever arm pivotally attached to the hinge pin and extending rearwardly therefrom beside the trailer frame, an upwardly extending member secured intermediate the ends of the lever arm and carrying an axle and wheel, a vertically arranged spring receiver attached to the lower frame member in the wheel well behind the wheel, and a spring in the spring receiver between the rear end of the lever and the upper end of the spring receiver.

3,356,387
DOUBLY PIVOTED LOG BUNK STAKES FOR ARTICULATED VEHICLES
Enoch Skirvin, Walter W. Skirvin, and Paul G. Skirvin, all of Rte. 2, Box 1m, Philomath, Oreg. 97370
Filed Oct. 15, 1965, Ser. No. 496,260
5 Claims. (Cl. 280—404)



1. A log bunk comprising an elongate support having a longitudinal axis, a pair of elongate bunk stakes, means mounting each of said bunk stakes in spaced apart upstanding relation on said support for limited movement in a first plane perpendicular to said longitudinal axis, said mounting means including means rotatably mounting said stakes in a second plane perpendicular to said first plane, said mounting means comprising a pivot pin connecting said support and each of said stakes perpendicular to said second plane surrounded by a resilient bushing, said support and said stakes forming a log receiving area.

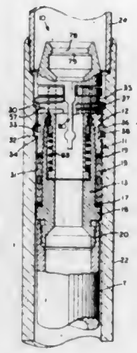
3,356,388
SELF-COUPLING TRACTOR-TRAILER HITCH
Hans Prillinger, Wels-Wimpassing 19, Austria, and Karl Wanitschka, Heimstattenring 6, Wels, Austria
Filed May 6, 1965, Ser. No. 453,765
6 Claims. (Cl. 280—479)



1. A hitch arrangement for connecting a tractor to a trailer having a pair of spaced laterally extending connecting pins, comprising:
(a) a pair of traction arms adapted to be attached to said tractor;
(b) two housings;
(c) a pair of ball points for interconnecting each traction arm to an associated one of said housings in a position in which the housing is secured to the traction arm above the upper surface thereof;
(d) means securing said one housing to one of said ball joints for limited movement about a first axis;
(e) means securing said traction arm to the other ball joint for limited movement about a second axis;
(f) link means interconnecting said ball joints and movable with respect to said ball joints about a third axis, said ball joints and said link means being free to move into a position in which said three axes are non-parallel with respect to each other,
(g) a bearing in each of said housings and adapted to receive an associated connecting pin of the trailer, the bearing being formed with a vertical opening to permit dropping said pin into said bearing,
(1) said housing having a pair of relatively angled guide surfaces inclined toward said opening; and
(h) a spacer bar, said bearings being secured to opposite ends of said spacer bar.

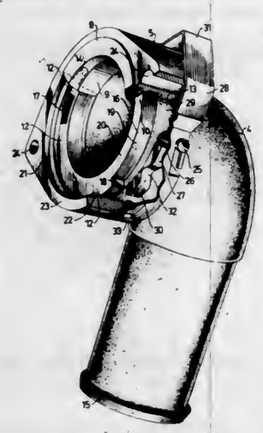
3,356,389
LOCKING DEVICES FOR WELL TOOLS
John V. Fredd, Dallas, Tex., assignor to Otis Engineering Corporation, Dallas, Tex., a corporation of Delaware
Filed Aug. 6, 1965, Ser. No. 477,754
18 Claims. (Cl. 285—3)

1. A latch tool including: a mandrel having an external annular recess; a resilient split latch ring disposed about said mandrel in said recess and having outer portions extending outwardly of said mandrel, said latch ring being radially contractible into said recess to a retracted position therein, said latch ring being smaller in longitudinal dimension than said recess and movable longitudinally of said mandrel in said recess, said latch ring having free end portions, said free end portions have facing circumferentially spaced end surfaces; and lock means extending longitudinally of said mandrel and traversing said recess between the free ends of said latch ring and having stop surfaces projecting circumferentially of said recess in a portion of the recess and engageable by said end surfaces of said latch ring to prevent radial contraction of said latch ring to said retracted position when said latch ring



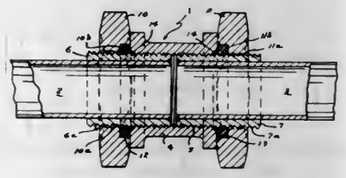
is in one extreme longitudinal position in said recess, said latch ring being movable longitudinally in said annular recess between an inoperative releasing position wherein at least one of said end surfaces of said ring is not engageable with one of said stop surfaces and an operative locking position wherein both of said end surfaces of said latch ring are engageable with said stop surfaces of said lock means and contraction of said latch ring is prevented.

3,356,390
HOSE COUPLINGS, HOSE CONNECTIONS, ETC., PARTICULARLY FOR SUBMERSIBLE PUMPS
Jens Karl Adolf Dahlgren, Stockholm, and Carl Evert Sjöstrand, Bandhagen, Sweden, assignors to Aktiebolaget Flygts Pumpar, Solna, Sweden, a corporation of Sweden
Filed May 13, 1965, Ser. No. 455,565
Claims priority, application Sweden, June 15, 1964, 7,272/64
9 Claims. (Cl. 285—27)



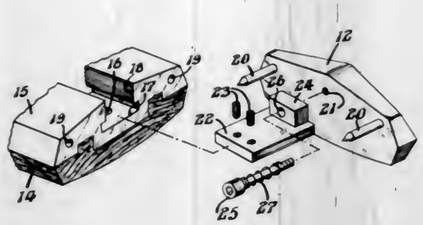
1. A hose couping comprising: a pair of joinable tubular sections, which sections upon being joined are rotatable relative to each other from a first position, said coupling permitting axial fluid flow through said section at any position of rotation; a plurality of opposed lugs mounted on the circumference of one of said sections, at least one of said lugs extending across a longer arc length of said circumference than any other of said lugs; a plurality of vanes mounted on the other of said sections, said vanes fitting between and complementary in size to said lugs to allow said sections to be joined together when said sections are in said first position, said vanes engaging said lugs upon rotating said sections from said first position; interengageable guide means on said sections for releasably holding said sections in said first position; and rotation limiting means on said sections operative to engage one of said guide means to prevent said sections from being returned to said first position after said sections have been rotated therefrom; said one guide means being selectively disengageable from said rotation limiting means to allow said sections to be rotated to said first position whereby said sections may be separated.

3,356,391
PIPE OR TUBE COUPLING DEVICE
Richard L. Bailey, Van Nuys, Calif., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Air Force
Filed Jan. 10, 1967, Ser. No. 608,950
2 Claims. (Cl. 285—89)



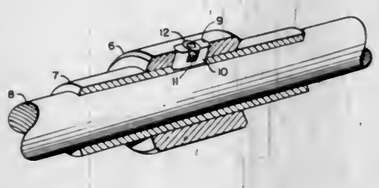
1. A pipe coupling device for connecting the end portions of similar unthreaded uniform diameter pipe sections together in end to end aligned relation comprising a pair of identical diameter identically threaded elongated sleeve members each having a concentric cylindrical bore for telescopically receiving and means fixing the outer end portion of each one of the pipe sections snugly therein in fluid tight relation and against relative axial movement, said sleeve members each having identical external threads thereon with identical pitch directions from end to end thereof, a clamping nut threadably mounted on each of said sleeve members for rotative displacement axially along said sleeve members, an elongated cylindrical coupling having a continuous internal thread therein from end to end, complementary in size pitch and direction to the external threads on said elongated sleeve members to threadably receive either of said sleeve members therethrough, and an annular deformable packing ring surrounding each of said elongated sleeve members disposed between each clamping nut and one end of said coupling, said deformable packing ring having an internal diameter to closely receive the sleeve member therethrough, whereby when said sleeve members with said pipe end portions therein are screwed into the opposite ends of said coupling and said clamping nuts are rotated in opposite directions on said sleeve members toward the ends of said coupling to clamp, compress, and deform said deformable packing rings into fluid sealing relation between ends of the coupling, the clamping nuts, and the threads on the threaded sleeve members, to provide a fluid tight connection between the pipe sections.

3,356,392
ORNAMENTAL RAILING TERMINAL
Louis Blum and William J. Horgan, Jr., Pittsburgh, Pa., assignors to Blumcraft of Pittsburgh, Pittsburgh, Pa., a firm
Filed Dec. 13, 1965, Ser. No. 513,277
3 Claims. (Cl. 287—20.924)



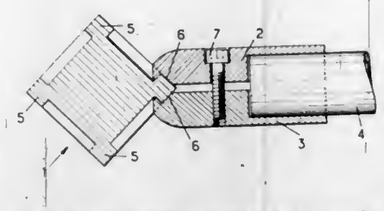
1. A terminal piece for an ornamental handrail comprising a receiving member affixed to the handrail and forming a part thereof, said member including channel means for receiving a spacer block, an end cap shaped to conform to the end of said handrail, a spacer block removably mounted in said channel means having an elongated portion substantially parallel thereto, and having an opening extending substantially parallel to said channel therethrough, bolt means passing through said opening and threadably engaging said end cap and spring means disposed between said bolt means and the elongated portion of the spacer block surrounding said opening urging said end cap longitudinally into flush engagement with the end of said handrail.

3,356,393
METHOD OF AND DEVICE FOR KEYING MEMBERS TOGETHER
Raymond C. Casanov, Chicago, Ill., assignor to Teletype Corporation, Skokie, Ill., a corporation of Delaware
Filed Apr. 6, 1965, Ser. No. 446,064
2 Claims. (Cl. 287—52.08)



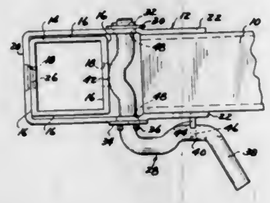
1. A drive connection for a cylindrical member having a notch formed in its cylindrical surface and a tube having a partially threaded hole formed radially through it and positioned in telescoping engagement over the cylindrical member including:
- a key having a blind threaded hole formed part way through it positioned in the hole through the tubular member and extending into and bottomed on the notch in the cylindrical member; and
- a screw positioned in the hole through the tubular member in engagement with the threads thereof and bottomed in the hole in the key in engagement with the threads of the key for securing the key in the hole through tubular member and thereby securing the key in the notch in the cylindrical member without imposing thrust on the cylindrical member.

3,356,394
MEANS FOR TUBE ASSEMBLAGE AND ANALOGOUS APPARATUS
Gerard Chamayou, Paris, France, assignor to Societe Anonyme dite: Vallourec, Paris, France, a company of France
Filed June 30, 1965, Ser. No. 468,479
Claims priority, application France, July 3, 1964, 980,585, Patent 1,418,868
6 Claims. (Cl. 287—54)



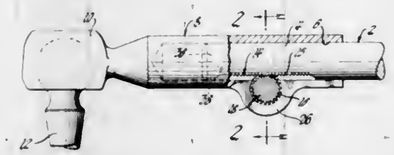
1. A device for connecting elongated members which comprises in combination
- a plurality of pairs of opposed jaws, each pair forming at one end, when brought together, a socket for receiving an end of one of said elongated members, and each jaw being provided near its other end with a recess facing a corresponding recess in the other jaw of the same pair,
- a rigid core having at least two polygonal surfaces bordered by adjacent edges which are bridged by elongated abutments extending longitudinally of said adjacent edges and projecting outwardly from the surfaces bordered by said edges, said abutments having opposed corners parallel to said surface edges,
- at least one fastener means connecting each pair of jaws, said fastener means being adjustable to clamp said one end of the pair of jaws connected thereby onto one of said elongated members and the other end of that pair of jaws onto one of said abutments, the recesses in each pair of opposed jaws being shaped to mate with the opposed corners on said abutments while said jaws and elongated members are positioned at an angle to both the surfaces bridged by said abutments.

3,356,395
ADJUSTABLE CLAMP FITTING
George C. Dygert, Livonia, Edwin E. Walters, Ann Arbor, and Rockwell H. Smith, Plymouth, Mich., assignors to Unistrut Corporation, Wayne, Mich., a corporation of Michigan
Filed July 27, 1965, Ser. No. 475,210
6 Claims. (Cl. 287—54.1)



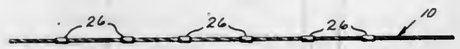
1. In a structural assembly, means for adjustably clamping a first structural member to a second structural member, said means comprising
- (a) a fitting carried by said first structural member and embracing said second structural member,
- (b) means carried by said fitting for producing a locking engagement between said fitting and said second structural member upon relative movement of said second structural member and said fitting in one direction,
- (c) means carried by said fitting for producing relative movement of said second structural member and said fitting in the direction producing locking engagement,
- (d) said last mentioned means comprising a bell crank rotatably carried by said fitting and having a cam portion engaging said second structural member to produce relative movement of said fitting and said second structural member, and
- (e) said locking engagement producing means comprising said second structural member being provided with a face having a plurality of spaced perforations and said fitting having a face having at least one projection adapted to be received by any selected one of said perforations upon alignment of said projection with a selected one of said perforations.

3,356,396
TIE ROD ASSEMBLY
Herbert D. Drown, Saginaw, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Apr. 17, 1967, Ser. No. 631,342
3 Claims. (Cl. 287—58)



1. A tie rod assembly comprising, a tie rod having a transversely serrated recessed flat portion formed near one end thereof, an end housing including a tubular portion surrounding said end of said tie rod, means forming a longitudinal slot in said tubular portion, integral bosses formed on said tubular portion at opposite sides of said slot, said bosses having transversely aligned bores formed therein, an adjusting and retaining bolt extending through said bosses, said bolt having a shouldered head at one end, a transversely serrated midportion engaging the transverse serrations of said tie rod end, and a threaded opposite end extending outwardly from one of said bores for engagement with a nut and lock washer, said rod and end housing being axially adjustable responsive to rotation of said bolt, and said adjustment being retained by tightening said nut and lock washer.

3,356,397
WIRE ROPE LONG SPLICE AND METHOD OF MAKING
Percy R. Bagby, 27844 Conestoga Drive, Rolling Hills, Calif. 90274
Filed May 7, 1965, Ser. No. 453,950
2 Claims. (Cl. 287—78)



1. A long splice for the severed strands of a wire rope and adapted for passage about a sheave or the like, said long splice comprising: complemental pairs of the severed strands of the rope ends arranged in abutting relation to define splice joints, the abutting ends of each of said pairs being axially spaced from the abutting ends of the others of said pairs whereby said splice joints are axially spaced along said wire rope;
- and a plurality of sleeves pressed upon said rope and about all of said strands, said sleeves being axially spaced to locate a separate one of said sleeves about each of said splice joints, the length of each said sleeve being approximately twice the diameter of said wire rope, the wall thickness of each said sleeve being not more than approximately one-fourth the diameter of said wire rope, and the axial spacing between adjacent ones of said splice joints being such that, upon passage of said long splice portion of said wire rope about a usual sheave, the section of said wire rope between adjacent said sleeves engages upon the periphery of the sheave.

3,356,398
JOINTING DEVICES FOR CONCRETE PILES
Jan Åke Nilsson, Bjorboholm, Sweden, and Sten Börje Nilsson, 1 Brittsommargatan, Goteborg, Sweden
Filed Mar. 25, 1965, Ser. No. 442,748
Claims priority, application Sweden, Apr. 1, 1964, 3,977/64
2 Claims. (Cl. 287—103)

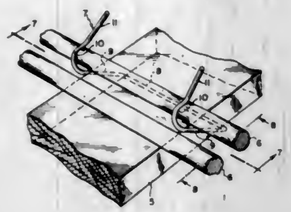


1. In a jointing device for joining concrete piles, a pair of corresponding plate members, each said plate member being substantially identical in shape and having a first axially projecting portion and a second axially projecting portion spaced from said first portion and terminating in the same plane as said first portion, each said projecting portion having a lateral extension in said plane projecting in the same direction and transverse to the axis of said projecting portion and defining a transverse groove between the main portion of said plate member and its lateral extension, the transverse groove of one said plate being adapted to interlock with said lateral extension of the other said plate member, whereby said plate members may be brought together to mutually interlock, said first axially projecting portions being triangular in shape and said second axially projecting portions being substantially V-shaped so as to complement the shape of said first axially projecting portions.

3,356,399
HANGER FOR FURRING STRIPS
James A. Young, 2032 Buchanan St., Hollywood, Fla. 33020
Filed Oct. 8, 1964, Ser. No. 402,525
1 Claim. (Cl. 287—189.35)

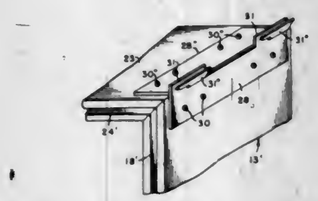
A clip, a bar of a metallic rafter, the bar being cylindrical in cross section, and a wood furring strip supported against the underside of the bar by said clip, the clip

being composed of a single piece of springy wire rod, said clip having a straight, elongated base part underlying and extending crosswise of the furring strip, the opposite ends of said base part each being provided with a laterally projecting leg, the legs extending divergently from their points of connection to the base part, each leg being provided at its free end with a laterally projecting extension, each of said extensions having an arcuately curved saddle conforming to the curvature of the bar and acting as a positioning means when the clips is fitted on the bar, said extensions each having a normally straight part ex-



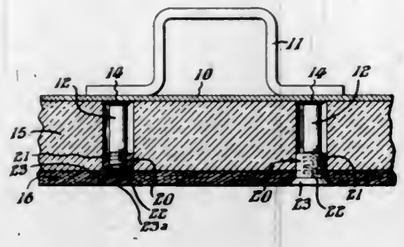
tending from the saddles, said straight part being bent to co-operate with the saddle in forming a loop completely encircling the bar, the springiness of the legs on the clip being such as to enable said legs to be sprung toward one another in fitting the clip on the bar, and the biasing of the legs away from one another causing the looped portions of the same to exert downward pressure on the encircled bar so that the bar will be held in close contact with the furring strip regardless of variation in diameter of the encircled bar, by the tendency of the diverging legs to spring apart.

3,356,400
CLAMP ASSEMBLY FOR PRE-HUNG FRAME ASSEMBLIES
Cary M. French, Phoenix, Ariz., assignor to John H. Parker, Fremont, Calif.
Filed Oct. 21, 1965, Ser. No. 499,603
7 Claims. (Cl. 287—20.924)



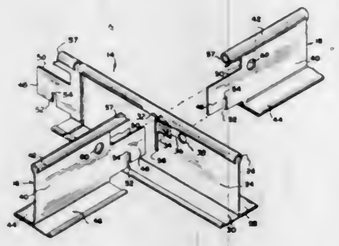
1. A clamp assembly for locking together adjacent edges of frame units, the assembly including clamp plates secured to the outside surfaces of the frame parts to be held together, each clamp plate including a body portion, an extension comprising a locking element beyond the terminal of the frame unit, the locking element being formed to provide a lug having a free end, and a lug-receiving slot between the lug and the body portion of the clamp plate, the slot being at least as wide as the thickness of said clamp plate, the lug of the locking element extending laterally of the body portion, one of said clamping plates being uniplanar, and parallel to the surface to which it is attached, the locking element and lug of the other of said clamping plates being disposed at an included obtuse angle to its body portion to effect binding and locking of the clamp plate upon entry of the lug of one clamping plate into the lug-receiving slot of the other clamping plate, the clamping plates being arranged so that the free end of the lug of one plate faces the open end of the slot of the other plate.

3,356,401
SELF-LOCKING HEAT-INSULATING FEMALE SCREW
Leroy W. Bertram, Norristown, Pa. (26 W. 165 Tomahawk Drive, Wheaton, Ill. 60187)
Filed Sept. 24, 1964, Ser. No. 399,033
2 Claims. (Cl. 287—189.36)



1. In combination; a steel sheathing; heat-insulation panels; and heat-insulation self-locking fastening means for securing said heat-insulation panels to said sheathing, said fastening means comprising: a plurality of stationary steel studs threaded-externally at their outer ends and having their inner ends secured to said steel sheathing at spaced locations, said studs extending into holes provided therefor in said heat-insulation panels, and solid enlarged headed hollow-shank internally-threaded female screws of resilient deformable plastic material of good heat-insulation properties threaded on to said steel studs for securing said insulation panels, the internal diameter of the hollow shank of said screws and the pitch and type of the internal threads of said screws conforming to the threaded ends of said steel studs, at least said shank portion of said fastener screws and the internal threads thereof deforming sufficiently by axial extension during rotational tightening on the stationary threaded stud to resist loosening under vibration.

3,356,402
FRAMING SYSTEM FOR A SUSPENDED CEILING
Donald L. Smith, Lincoln Park, Mich., assignor to Wolverine Aluminum Corporation, Lincoln Park, Mich., a corporation of Michigan
Filed Jan. 8, 1965, Ser. No. 424,343
14 Claims. (Cl. 287—189.36)



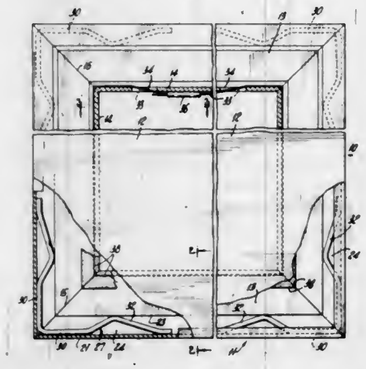
1. In a ceiling construction having a plurality of spaced parallel longitudinal members, and a plurality of spaced transverse members connected to said longitudinal members to form openings in which ceiling tiles and the like are supported, said longitudinal and transverse members having substantially equal height, an improved locking system for said longitudinal and transverse members, comprising:

(a) hook portions formed at the end of each transverse member,

(b) an opening in said longitudinal member adapted to receive simultaneously the hook portions of transverse members intersecting said longitudinal member on opposite sides thereof, said longitudinal and transverse members intersecting in this manner without rotation of either of these members about its vertical axis, said transverse members and longitudinal member being then relatively movable vertically to a position wherein said hook portions engage said longitudinal member at the perimeter of said opening, in said last position said transverse and longitudinal members being locked together against relative movement in the horizontal plane,

(c) and a tab portion on said longitudinal member pivotable between an open and closed position, in said open position said tab permitting said hook portions to move vertically with respect to said opening, in said closed position said tab preventing such relative vertical movement and thereby locking said framing members together.

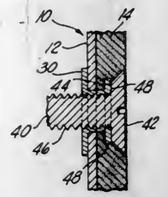
3,356,403
MODULAR CONSTRUCTION AND SUPPORT MEANS THEREFOR
August B. Sak, 23 W. 85th St. 10024, and Edison A. Price, 17 King St. 10014, both of New York, N.Y.
Filed Jan. 12, 1965, Ser. No. 424,975
11 Claims. (Cl. 287—189.36)



1. A modular structure comprising a polygonal frame member the sides of which are formed of channel members having abutting ends and provided with an inner cross web and outwardly directed legs delineating longitudinally extending tracks, an assembly band extending peripherally about said frame member and along the lengths of the sides thereof and tightly encircling the outer faces of said channel member webs and having the ends thereof secured to each other, and a coupling member registrable with and adjustable along the length of a track and provided with means for releasably locking said coupling member to said channel member in a preset position along a corresponding track.

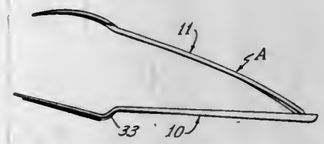
3,356,404
EYELET TYPE JOINTS
Fred Peters, Carlton Hills, N.J., assignor to United Shoe Machinery Corporation, Boston, Mass., a corporation of New Jersey
Filed Aug. 17, 1965, Ser. No. 480,448
4 Claims. (Cl. 287—189.36)

1. For use in a work piece having a rigid side and a relatively yieldable side, a joint comprising a headed bolt provided with a threaded stem extending through an aperture of the work piece, and a tubular metal fastener telescoped on said stem and having a preflanged end abutting the rigid side, the length of the fastener being



less than that of the aperture, the ends of the fastener axially clamping the work piece, and the internal wall of the fastener having gripping engagement with the threads of said bolt stem.

3,356,405
FOOD TONG
Francis E. Gruber, St. Paul, Minn., assignor to Northwest Plastics, Inc., St. Paul, Minn., a corporation of Minnesota
Filed Oct. 18, 1965, Ser. No. 497,142
1 Claim. (Cl. 294—3)



Food tongs including:

a pair of tong levers having handle ends and opposite ends,

the handle end of one of said tong levers being channel-shaped in cross-section having ribbed edges and a base portion therebetween,

said base portion having a transversely extending aperture therethrough near the handle end extremity,

the end extremity of said handle end having a partial cylindrical projection along the edge of said aperture interrupted by a rearwardly extending lip which connects said ribs and forms the rearward end extremity of said handle end,

the opposite or forward side of said aperture being defined by a downwardly and rearwardly inclined flange, the plane of which lies below said cylindrical projection and at an acute angle to the base of the channel-shaped portion,

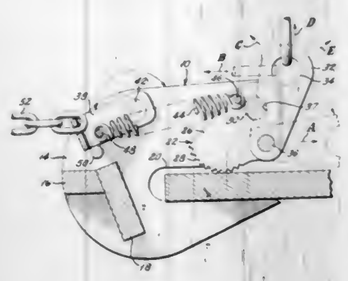
the other tong member having a handle end portion of inverted channel-shaped cross-section including downwardly projecting ribs along opposite side edges,

a hook-shaped projection forming the end extremity of said handle end of said other tong member,

said hook-shaped projection being of a width substantially equal to the width of said aperture and having a substantially semi-cylindrical upper surface having a radius substantially equal to the radius of said partially cylindrical projection and terminating in an end on a plane substantially flush wtih the upper surface of the handle end of said other tong member,

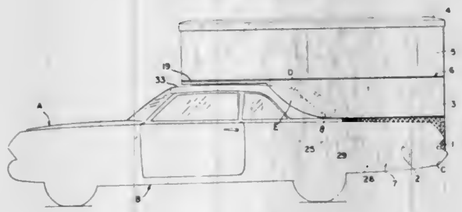
said hook-shaped projection being detachably engageable with said partial cylindrical projection with said end extremity of said hook-shaped projection engaged against said lip and with the ribs of said handle end portion of said other tong member resting flush against the surface of said rearwardly inclined flange.

3,356,406
LIFTING CLAMP
Josh L. Renfroe, Jacksonville, Fla., assignor to J. C. Renfroe & Sons, Inc., Jacksonville, Fla., a corporation of Florida
Filed June 15, 1965, Ser. No. 464,135
13 Claims. (Cl. 294—101)



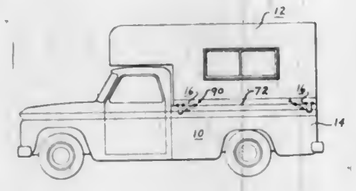
1. A lifting clamp comprising:
a hook shaped body including a horizontal slot to receive an article;
a cam jaw assembly for gripping an article in the slot, said cam jaw assembly including a cam jaw member and a first pivot pin pivotally mounting said cam jaw member to said body on one side of the slot;
a second pivot pin mounted on said cam jaw member and spaced from said first pivot pin;
and a shackle pivotally mounted on said cam jaw member by said second pivot pin to permit a force applied to said shackle in a direction which urges said shackle away from said cam jaw member to pivot said cam jaw member to a gripping relation with a structural article in the slot, said shackle and said cam jaw assembly being mutually engageable and said cam jaw assembly having a surface for abutting said shackle to permit a force applied to said shackle in a direction which urges said shackle into engagement with said cam jaw member to pivot said cam jaw member to gripping relation with a structural article in the slot.

3,356,407
AUTOMOBILE CAMPERS
Russell C. McGarry, 895 E. 20th St., Merced, Calif. 95340
Filed Feb. 3, 1965, Ser. No. 430,222
1 Claim. (Cl. 296—23)



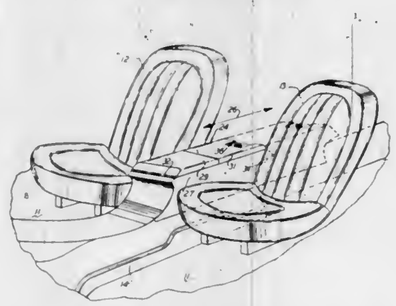
In combination with a sedan-type motor vehicle having a rigid enclosed body portion provided with a lidless open trunk area at the rear of the body portion and the sides of which area are on a level below that of the body portion; a camping attachment comprising rear end longitudinal panel elements fitting into the trunk area adjacent the sides thereof and upstanding to a level above the top of the trunk and secured at their rear ends to the vehicle at its rear end, and longitudinal side panels rigid with said panel elements laterally out therefrom and at their forward ends lapping the sides of the body portion at the rear end thereof and in adjacent relation thereto, the rear transverse part of said body portion of the vehicle extending downwardly and rearwardly to the trunk area, a transverse panel extending between the side panels in spaced and substantially parallel relation to said downwardly and rearwardly extending rear transverse part of said body portion, said transverse panel forming an enclosed space with such transverse part and with the side panels, and separate fuel and water tanks mounted in said space.

3,356,408
CAMPER ANCHORING DEVICE
Herbert D. Stutz, R.R. 5, Elkhart, Ind. 46514
Filed July 7, 1966, Ser. No. 563,478
8 Claims. (Cl. 296—23)



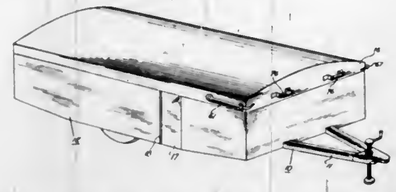
1. A camper anchoring device and a pick-up truck having a bed with sides and a plurality of fixtures in said sides, each fixture having a vertical hole therein, said device comprising a post for seating in the fixture hole, an arm connected to the upper end of the post and extending outwardly from the bed side and downwardly along the side thereof, a means for retaining said post in the hole in the fixture, and an adjustable arm means secured to the lower end of said arm and adapted to be attached to the camper on the truck bed.

3,356,409
SLIDING CONSOLE
Charles Belsky, Detroit, and Raymond T. Gage, Dearborn, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Sept. 9, 1965, Ser. No. 485,993
7 Claims. (Cl. 296—24)



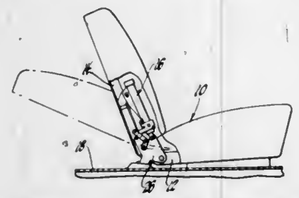
1. In a vehicle body, a passenger compartment having a floor and forward facing bucket-type seats mounted on said floor, a generally elongate console division positioned between said seats so that its longitudinal axis is parallel to the longitudinal axis of the vehicle, said console division comprising a fixed mounting bracket mounted on said floor and extending from forward of said seats to rearward of said seats, a console body mounted on said bracket, cooperating slide means carried by said bracket and said console body along a portion of the bottom surface of the latter for promoting sliding movement of said console body lengthwise along said fixed mounting bracket from a first position between said seats to a second position rearward of said seats.

3,356,410
COLLAPSIBLE TRAILERS
Ralph Wendell Taylor, 1121 Seymour Ave., Iowa City, Iowa 52240
Filed Oct. 15, 1965, Ser. No. 496,638
4 Claims. (Cl. 296—27)



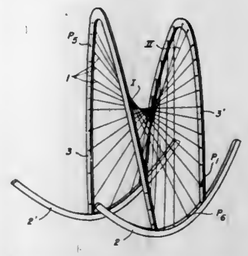
1. In a collapsible trailer including a box-like body and a shallow inverted box-like cover, front and rear end panels pivotally engaged to the upper edges of the respective ends of the body, spring means to bias the end panels into raised, extended position when the cover is raised, which spring means include springs secured with a dead end to the inside of the cover, and cords secured to the live ends of the springs and trained over pulleys at the ends of the cover and back to the upper edges of the end panels, the cover being longitudinally shiftable on the box while in the tilted position, means for engaging the end panels in rigid position at right angles with respect to the cover after they are extended, whereby the operator may raise one end of the cover and the corresponding end panel will swing up into place and may be locked and used as a fulcrum as the other end of the cover is raised.

3,356,411
SEAT BACK POSITIONING MECHANISM
Robert I. Homier, Farmington, and Raymond C. Posh, Livonia, Mich., assignors, by mesne assignments, to Lear Siegler, Inc., Santa Monica, Calif., a corporation of Delaware
Filed Feb. 18, 1965, Ser. No. 433,722
23 Claims. (Cl. 297—355)



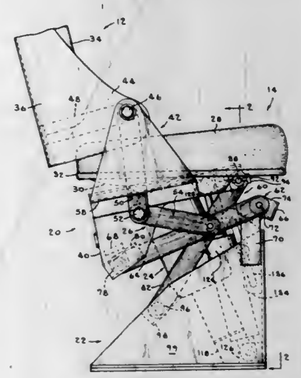
1. A seat assembly comprising; a seat frame, a seat back frame operably connected to said seat frame for pivotal movement relative thereto between an upright seat-forming position and various reclined positions, a positioning mechanism interconnecting said seat frame and said seat back frame including manually actuatable control means for selectively allowing relative pivotal movement between said seat frame and said seat back frame, and release means engageable with said seat back frame and operable with said control means for allowing said seat back frame to be moved from a reclined position toward said upright seat-forming position without manual actuation of said control means.

3,356,412
ROCKING TOY, SEAT AND THE LIKE
Jan W. Grondstra, 284 Arlington St., West Acton, Mass. 01780
Filed Mar. 2, 1966, Ser. No. 531,258
3 Claims. (Cl. 297—258)



1. A saddle-like seating structure comprising a pair of sets of strands defining the origin and adjacent regions of a substantially hyperbolic paraboloid, the strands of the pair of sets crossing in substantially straight lines extending from points along the edges of the structure at one end thereof to points along the edges on the opposite side of the structure at the other end, the said edges at the said ends of the structure defining substantially parabolic surface-terminating members disposed in planes transverse to the longitudinal axis of the structure and with their origins at the top thereof and the said strands strung therebetween, the lower ends of said transverse members at each end of the structure being interconnected by a pair of longitudinal base members and said base members being upwardly curved to constitute rockers, with the strands from some of said points connecting with points of said rockers.

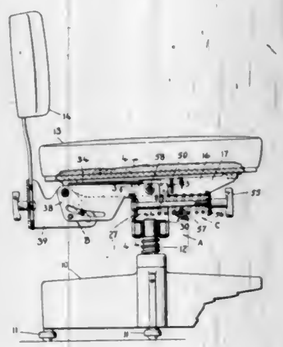
3,356,413
VEHICLE SEAT
Arthur O. Radke, Shorewood, Harvey N. Tengler, New Berlin, and Garth O. Hall, Brookfield, Wis., assignors to Bostrom Corporation, Milwaukee, Wis., a corporation of Wisconsin
Filed Sept. 10, 1965, Ser. No. 486,310
13 Claims. (Cl. 297—300)



1. A seat comprising:
a seat part;
a base part;
spring means supporting said seat part on said base part for biased travel in respect thereto; and
means connected to said seat and base parts to limit the travel of said seat part toward and away from

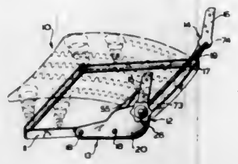
said base part to a predetermined path in which said entire seat part moves in respect to said base part, yet the front portion of said seat part moves at a predetermined smaller velocity than the back portion thereof to thereby cause said seat part during said travel to be in a line with a line which would generally pivot around a point ahead of the front edge of said seat part and generally in the area of the knee point of the occupant of the seat.

3,356,414
CHAIR CONTROL
Frank Doerner, Waterloo, Ontario, Canada, assignor to Doerner Products Co., Limited, Waterloo, Ontario, Canada, a corporation of Canada
Filed Mar. 7, 1966, Ser. No. 532,187
2 Claims. (Cl. 297—301)



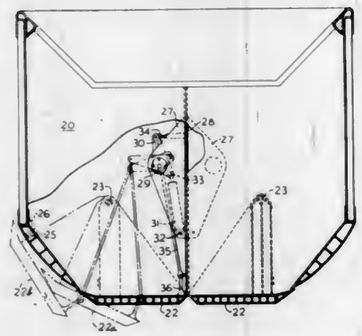
1. In a chair having a base, a vertical post supported by the base, a chair seat and a chair back, a chair control comprising, in combination, a fixed frame mountable on the post, a back frame member having one end connected to and supporting said chair back and the other end pivotally attached to the fixed frame for pivotal movement relative thereto permitting backward tilting movement of the chair back from a normal substantially upright position to a reclining position, and a tension device yieldably resisting the backward tilting movement of the seat back from said normal position, said fixed frame comprising a pair of spaced-apart spiders attachable to the seat, an U-shaped member having a base and spaced-apart upwardly extending arms, a portion of each arm adjacent the top edge thereof being bent to form outwardly projecting prongs, said prongs being entered in slits formed in the spider whereby said U-frame is permanently connected thereto, and a cross-plate having prongs entered in prong receiving slits formed in said upright arms to permanently connect the cross-plate thereto, and a post mount carried by said base consisting of an inverted U-frame having prongs permanently connecting the U-frame to the base and having a post receiving opening registering with a post receiving opening formed in said base; said back frame being formed from a single piece of sheet metal with downturned side portions and having the forward ends thereof pivotally connected to said arms, said forward ends having inwardly projecting end portions forming a pressure plate, the leading edge of each end portion being recessed to form a seat for one end of a spring forming part of said tension device and the rear edge of said pressure plates having an integral downturned flange forming a stop member engageable with said cross-plate, said spring means reacting between said cross-member and said back frame to yieldingly resist backward tilting movement of the chair back.

3,356,415
ADJUSTABLE BACKREST MECHANISM
Peter Ulrich Putsch, Remscheid-Hasten, Germany, assignor to Fritz Keiper, Remscheid-Hasten, Germany
Filed July 14, 1966, Ser. No. 565,120
Claims priority, application Germany, July 17, 1965, K 56,643
10 Claims. (Cl. 297—379)



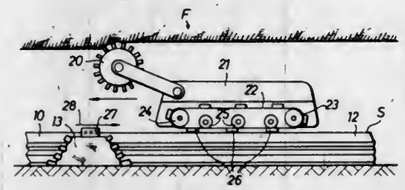
1. A seat, particularly a motor vehicle seat, comprising a seat portion; a seat back having a supporting frame comprising two spaced apart substantially upright members and a tubular cross member connecting said substantially upright members in the region of the lower ends thereof; pivot means coaxial with said tubular cross member for mounting the latter turnably about its axis so that said seat back may be turned relative to said seat portion between a substantially upright position and a plurality of rearwardly inclined positions, said pivot means comprising a hinge fitting on one side of said seat portion and including adjusting and releasable locking means for adjusting the position of said seat back relative to said seat portion and for locking said seat back in any adjusted position, and a simple pivot bearing on the other side of the seat portion; and a single loading spring in said tubular cross member and cooperating with the latter to bias the same in one direction to automatically turn said seat back in said one direction upon release of said locking means.

3,356,416
BOTTOM DUMP DOOR ACTUATING MECHANISM FOR VEHICLES
Ralph H. Kress, Peoria, Jackson C. Medley, East Peoria, and Donald E. Merritt, Peoria Heights, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Oct. 23, 1965, Ser. No. 503,037
1 Claim. (Cl. 298—35)



Means for actuating pivoted bottom dump vehicle doors which swing outwardly away from each other toward open positions comprising a lever pivoted between its ends for each door, a link pivoted between one end of the lever and the door, an extensible jack for imparting pivotal movement to the lever, first valve means contained within the jack body and responsive to a nominal fluid pressure to partially extend the jack to open the door to one position, second valve means within the jack body responsive to a fluid pressure substantially higher than said nominal fluid pressure to fully extend the jack to open the door to a second position, said pivot between the link and the lever having an over-center position with respect to the lever pivot when the doors are closed to prevent the weight of the vehicle door and load from being imposed on the extensible jack.

3,356,417
COAL WINNING APPARATUS WITH INDEPENDENTLY TRAVELING WINNING MACHINES
Wilhelm Heyer, Bochum, Gerthe, and Werner Rafael, Wethmar, near Lunen, Westphalia, Germany, assignors to Gewerkschaft Eisenhutte Westfalia, Wethmar, near Lunen, Westphalia, Germany, a corporation
Filed Sept. 17, 1965, Ser. No. 488,212
Claims priority, application Germany, Sept. 22, 1964, G 41,569
9 Claims. (Cl. 299—34)

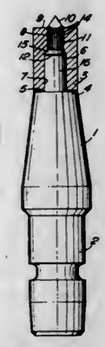


1. A mineral winning apparatus which comprises an elongated guide means adapted to extend longitudinally along the mine face, said guide means having a longitudinally extending guide surface, a first mineral winning means disposed for longitudinal movement back and forth along said guide means and for extractive engagement with the mine face to remove mineral therefrom, a guide member operatively connected with said first mineral winning means and disposed in operative engagement with said guide surface to guide the movement of said first mineral winning means along a predetermined path corresponding thereto, a second mineral winning means also disposed for longitudinal movement back and forth along said guide means and for extractive engagement with the mine face to remove mineral therefrom, and displaceable support means operatively connected to said second mineral winning means and disposed in operative engagement with said guide surface to support said second mineral winning means in a predetermined relation thereto, said support means and said guide member being disposed for limited yielding relative displacement to permit said first and second mineral winning means to pass each other without interference in their respective movements back and forth along said guide means.

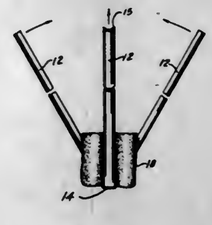
3,356,418
COAL-CUTTER PICK WITH HARD METAL TIP AND METHOD OF MAKING
John R. Healey and Francis E. Hoole, Sheffield, England, assignors to Tungsten Carbide Developments Limited
Filed Dec. 30, 1965, Ser. No. 517,875
Claims priority, application Great Britain, Jan. 9, 1965, 1,090/65
15 Claims. (Cl. 299—91)

1. A method of securing a plug-like hard metal tip in a bore in a coal-cutter pick comprises using a tip having a shouldered enlargement at the end remote from the operative end, fitting the tip into a bored nose of tool steel having a bore to fit accurately the length of the tip up to the shoulder and a counterbore the end of which fits the shoulder accurately, and butt-welding the nose to a tool steel body, with pressure applied in the lengthwise direction of the tip so as to leave the shoulder of the tip held to the end of the counterbore by metallic pressure maintained on the end face of the shouldered end when the weld has been completed.

7. A coal-cutter pick comprising a hard metal tip having a shouldered enlargement at the end, remote from the operative end, a tool steel nose having a bore fitting accurately the length of the tip up to the shoulder and a counterbore the end of which fits the shoulder accurately, and a tool steel body to which the nose is butt-welded with pressure applied in the lengthwise direction of the tip for the shoulder of the tip to be held to the end of the counterbore by metallic pressure maintained on the end face of the shouldered end when the weld has been completed.



3,356,419
METHOD OF MAKING A DISPOSABLE BRUSH
Samuel M. Peck, 33 E. 70th St. 10021, and Emanuel Nadler, 8 E. 83rd St. 10028, both of New York, N.Y.
Filed Aug. 27, 1965, Ser. No. 483,046
9 Claims. (Cl. 300—21)

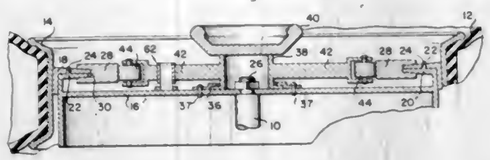


1. A method for producing a brush which comprises: forming a blank of sheet material with a plurality of radially spaced finger-like elements integrally connected to a common central segment; placing a preformed piece of compressible material onto said central segment of said blank; folding the free ends of said finger elements around said material and pressing said finger elements towards each other so as to grip said material and form it into a brush head; and sealing said finger elements together so that the portions thereof remote from the brush head form a handle for said brush.

3,356,420
VEHICLE WHEEL STRUCTURE WITH DEMOUNTABLE RIM ATTACHING PIVOTED SEGMENTS
Wilbur W. Whitehead, Wendell, Idaho 83355
Filed Aug. 17, 1966, Ser. No. 573,112
9 Claims. (Cl. 301—11)

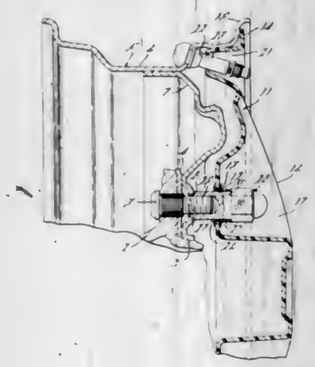
1. In a vehicle wheel and axle assembly wherein a brake cover is mounted on the axle and the wheel is provided with an internal rim: a radially inwardly directed,

annular lip on the wheel rim; a mating annular flange on the brake cover; a pair of holding shoes pivotally mounted on said cover, said pivot axis being substantially parallel to the wheel axis of rotation, each said shoe including means defining a slot therein, said slot being formed to



fit a substantial circumferential portion of said flange and lip, each said shoe also including an internal arcuate face defining a spiral segment, and means mounted on said brake cover cooperating with said spiral segments for camming said shoes outwardly into a locking position about said lip and flange.

3,356,421
WHEEL AND WHEEL COVER ASSEMBLY
David J. Trevarrow, Jr., Maple Glen, Pa., assignor to Kelsey-Hayes Company, Romulus, Mich., a corporation of Delaware
Filed July 28, 1966, Ser. No. 568,641
5 Claims. (Cl. 301—37)



1. In a wheel and wheel cover assembly, a plurality of nuts each having an elongated cylindrical body containing an internal thread and a taper on one end for clamping the wheel on a hub, said cover having a plurality of apertures, each aperture having a diameter slightly larger than said cylindrical body, means on the other end of said nuts for engaging said wheel cover when extending through an aperture thereof, said means including a head, and resilient means around said body providing a holding pressure between the head and the wheel cover.

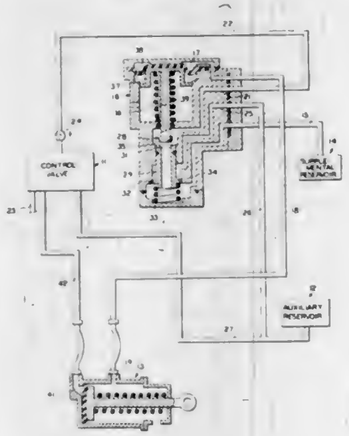
3,356,422
POULTRY GIBLET CONVEYOR SYSTEM
Ralph S. Zebarth, Kansas City, Mo., and Drexel T. Carlson, Leawood, Kans., assignors to Ralph Zebarth, Inc., Kansas City, Mo., a corporation of Missouri
Filed July 28, 1966, Ser. No. 568,657
9 Claims. (Cl. 302—49)

1. A poultry giblet conveyor system comprising:
(a) an elongated tubular conduit having one portion thereof disposed lower than the adjoining portions thereof, and an opening in said one portion for the insertion of giblets into said conduit,
(b) blower means interconnected to one end of said conduit and operable to force a current of air therethrough,
(c) air lock means in said conduit opening operable to permit the entry of giblets and water through



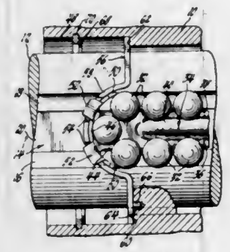
said opening but to prevent the escape of air therethrough, and
(d) means for delivering giblets together with a supply of water to said conduit opening.

3,356,423
AIR BRAKE WITH A SUPPLEMENTARY RESERVOIR
Charles E. Hart, Watertown, N.Y., assignor to The New York Air Brake Company, a corporation of New Jersey
Filed Oct. 27, 1965, Ser. No. 505,385
1 Claim. (Cl. 303—46)



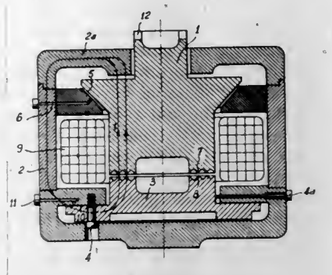
In an automatic fluid pressure brake of the type including a normally charged brake pipe, a control valve associated therewith, an auxiliary reservoir, a brake cylinder, and flow connections controlled by the control valve and effective in the release position of the control valve to interconnect the brake pipe and the auxiliary reservoir and vent the brake cylinder and effective in the application position of the control valve to disconnect the brake pipe from the auxiliary reservoir and interconnect the auxiliary reservoir and the brake cylinder, the improvement comprising: a supply connection extending from the brake pipe; a discharge connection extending from the auxiliary reservoir; a supplementary reservoir; a three-way valve, controlling communication between the supply connection, the discharge connection and the supplemental reservoir, shiftable between a first position in which it interconnects the charging connection and the supplementary reservoir while isolating the controlled connection, and a second position in which it isolates the charging connection and interconnects the supplementary reservoir and the discharge connection; fluid pressure motor means to shift the three-way valve between first and second positions; a piston-controlled side port in the brake cylinder effective when overtraveled to supply fluid under pressure to said motor means, and effective to vent said connection at other times; and biasing means to maintain said three-way valve in first position until the pressure in said motor reaches a predetermined value.

3,356,424
BALL SPLINE ASSEMBLY
George A. Edwards, Saginaw, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Apr. 30, 1965, Ser. No. 452,070
4 Claims. (Cl. 308—6)



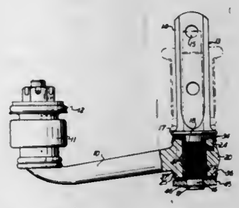
4. In combination, an outer cylindrical spline member having pairs of circumferentially-spaced, longitudinally-extending grooves, an inner cylindrical spline member received in said outer spline member and having a groove for cooperating with each pair of outer spline member grooves to provide pairs of circumferentially-spaced, longitudinally-extending races, said outer spline member having counterbores whose steps meet with the ends of said outer spline member grooves, an elongated ball retainer and guide member for each pair of races having an endless trough having depending guides with depending deflector fingers located in said counterbores and at opposite ends of the associated outer spline member grooves for providing arcuate passageways connecting the ends of the associated races to provide endless ball circuits, an endless train of balls in each of said ball circuits, each said trough having elongated, side by side trough portions extending the length of the outer spline member grooves and having clearances with respect to the outer edges of their associated pair of outer spline member grooves of less than the diameter of the balls for permitting said balls to extend freely through said clearances for full contact in said races, said troughs engaging said balls along their entire train lengths to retain said balls on said outer spline member when said inner spline member is removed, annular retainer supports received in said counterbores having flat portions abutting said steps and arcuate portions closely fitting said guides including said fingers, said arcuate portions having tongue and groove connections with their associated guides, each said retainer support and said outer spline member having a pin connection preventing relative, angular movement, a backup ring abutting the arcuate portions of each said retainer support and a snap ring fitted on said outer spline member abutting each said backup ring whereby said ball retainer and guide members are securely fixed in position on said outer spline member.

3,356,425
ROTATING MACHINE
Raymond Carriere, Paris, Henri Fehr, Montmorency, and Robert Dargier de Saint-Vaulry, Rue de Paris Meudon, France, assignors to Commissariat a l'Energie Atomique, Paris, France
Filed Aug. 12, 1963, Ser. No. 301,485
Claims priority, application France, Aug. 22, 1962, 907,476
12 Claims. (Cl. 308—10)



1. A rotating machine, comprising: a fixed frame; a rotor mounted in said frame for rotation about a vertical axis; gas bearing means supporting and centering said rotor at one end thereof, said gas bearing means comprising a conical, gas abutment on said rotor at said one end thereof concentric with the axis of said rotor, and a conical, gas abutment seat on said frame concentric with and opposed to said conical abutment and provided with ducts for supplying compressed gas to said conical abutment seat; magnetic centering means centering the other end of said rotor, said magnetic centering means comprising a plurality of concentric, annular generally V-shaped teeth on the other end of said rotor disposed concentric with the axis thereof, and a member fixedly secured to said frame and having a plurality of concentric, annular generally V-shaped teeth thereon equal in number to those on said rotor, each of said teeth on said member being disposed in opposed relation to a corresponding tooth on said rotor; and means for producing a continuous magnetic flux passing between the annular teeth on said member and the opposed annular teeth on said rotor.

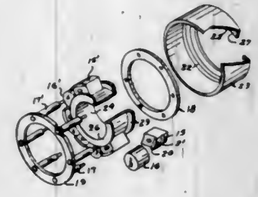
3,356,426
PIVOTAL BEARING ASSEMBLY
Paul D. Fadow, Dearborn Heights, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Aug. 11, 1965, Ser. No. 478,827
1 Claim. (Cl. 308—36.1)



In a steering linkage assembly, a fixed bracket having a spindle, an idler arm, said idler arm including a cylindrical end portion having a bore positioned therein, a combination radial bearing, thust bearing and seal positioned between said spindle and said cylindrical end por-

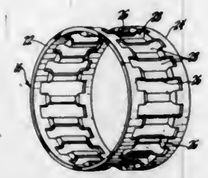
tion of said idler arm comprising a pair of metallic sleeve members each having an extending cylindrical body portion and a radially extending flange, each of said sleeves having a continuous thin layer of substantially rigid high density synthetic thermoplastic material bonded to the outer diameter thereof and covering the face of the flange facing said outer diameter, said thin layer of high density synthetic thermoplastic material having an axially extending lip portion integrally formed with the portion thereof covering said flange, said pair of metallic sleeve members being nonrotatably mounted on said spindle with the portion of the continuous thin layer of thermoplastic material bonded to the outer diameter of the sleeve members slidably engaging the inner diameter of said cylindrical end portion, the portion of the continuous thin layer of thermoplastic material covering the flange slidably engaging the ends of said cylindrical portion of said idler arm, said lip sealingly and slidingly engaging the outer surface of said cylindrical end portion of said idler arm, and the ends of said cylindrical portion of said idler arm and the outer surfaces engaging said lips being machined to provide a smooth bearing surface.

3,356,427
ROLLER ELEMENT BEARING-LUBRICANT COMPOSITE SEPARATOR
Jan W. Van Wyk, Kirkland, Wash., assignor to the United States of America as represented by the Secretary of the Air Force
Filed Aug. 9, 1965, Ser. No. 478,498
3 Claims. (Cl. 308—187)



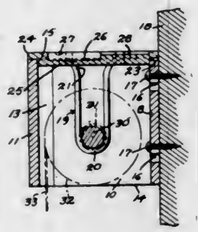
1. A bearing assembly for service in a substantially evacuated environment comprising a plurality of cylindrical roller bearings that are each freely rotatable, an inner bearing race with a cylindrical outer surface contacted by the cylindrical surfaces of the roller bearings, a pair of inner race flanges projecting radially outwardly from the inner race cylindrical surface to provide opposite end motion restrictions arresting the axial movement of the opposite ends of the roller bearings, a roller bearing lubricating separator between and lubricating both roller bearings adjacent to the bearing lubricating separator in the assembly and with a radially inner surface that substantially conforms in curvature with the curvature of the inner race surface that is contacted by the roller bearings and with a radially outer surface and the separator being apertured axially between its axial ends, a pair of cage rings dimensioned to accept the inner race flanges in axial registration therewith and to continue radially outwardly therefrom at the opposite ends thereof, a plurality of pins corresponding to the number of separators and each pin being disposed within the separator aperture and the opposite ends of the pins being secured in the cage rings, and an outer race with an inner surface contacted by the outer surface of the separators and by the cylindrical roller bearings and within which outer race are positioned the cage rings and the assembly therebetween and a frictional debris collecting groove provided in the inner surface of the outer race and not entered by the roller bearings.

3,356,428
ROLLER BEARING CAGE
Ralph Altson, East Orange, N.J., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Mar. 11, 1966, Ser. No. 533,703
5 Claims. (Cl. 308—217)



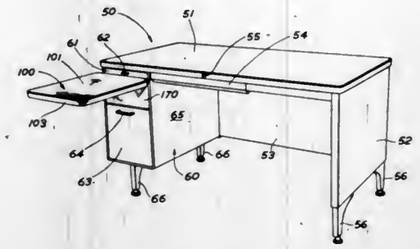
1. A roller bearing comprising in combination, a generally cylindrical race, a cage disposed in and radially spaced from said race, said cage comprising a pair of axially spaced end rings and a plurality of equally circumferentially spaced cross bars extending between said end rings to form windows, each of said cross bars having axial end portions, intermediate generally radial portions continuous with said end portions and a central portion spaced radially from said end portions on the side of the pitch diameter of said bearing opposite said race and connected to said end portions by said intermediate portions, said central portions being less in circumferential length than said end and intermediate portions, means on said race to retain said cage, a plurality of rollers, one of said rollers being disposed in each of said windows, said rollers being in line contact with the side walls of said cross bars and being retained in assembly with said race and cage by said radial portions.

3,356,429
BATHROOM UTILITY HOLDER
William Dana Davis, 801 6th Ave., Helena, Mont. 59601
Filed Apr. 29, 1966, Ser. No. 546,320
3 Claims. (Cl. 312—39)



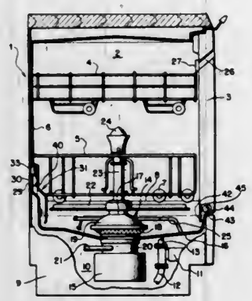
1. A bathroom utility holder comprising a body having an open bottom and an open top, a roller, means detachably supporting and journaling said roller in said body, and a cover detachably mounted on and closing the open top of the body and having a portion extending into said open top and a surrounding marginal flange portion resting on the upper edge of the body, said cover having an upper surface recessed to provide an ash receptable including cigarette receiving grooves of a lesser depth than the remainder of said receptacle, said roller being adapted to support a roll of toilet paper in a substantially concealed position within the holder to be dispensed through the open bottom thereof.

3,356,430
TYPEWRITER SHELF
Kenneth D. Schreyer, Doylestown, Pa., assignor to Lyon Metal Products, Incorporated, Aurora, Ill., a corporation of Illinois
Filed Mar. 29, 1966, Ser. No. 538,255
27 Claims. (Cl. 312—208)



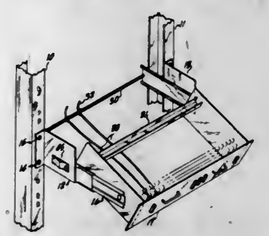
1. A pedestal and shelf construction comprising a pedestal including a body having a front drawer-receiving opening therein, a front pair of glides respectively mounted on the opposite inner sides of said body in general horizontal alignment, a rear pair of glides respectively mounted on the inner sides of said body in general horizontal alignment and in general longitudinal alignment with said front pair of glides, and a shelf mounted in said pedestal and extending outwardly therefrom through said front drawer-receiving opening, said shelf including a substantially flat top plate extending outwardly from said pedestal and mounting bracket structure disposed within said pedestal and fixedly secured to said top plate, said mounting bracket structure having a pair of forward support surfaces disposed respectively upon said front pair of glides and a pair of hooks engaged respectively beneath said rear pair of glides, thereby to mount said shelf in said pedestal with said top plate extending outwardly therefrom and supported in cantilever fashion with respect thereto, said mounting bracket structure serving to mount said shelf within said pedestal for ready disassembly therefrom and ready mounting therein without the use of tools and the like.

3,356,431
DISHWASHER HAVING A SUDS SUPPRESSOR
Leonard J. Martiniak, Waukesha, Wis., assignor to General Electric Company, a corporation of New York
Filed Jan. 27, 1966, Ser. No. 523,310
4 Claims. (Cl. 312—213)



1. A dishwasher having at least wash and rinse cycles, and comprising:
(a) a wash chamber formed with a bottom wall, a top wall, and side walls, at least one of said walls being movable to provide access to said wash chamber;
(b) one of said side walls having a vent therethrough permitting the entrance of air to said wash chamber;
(c) baffle means mounted on said side wall above said vent and having a portion thereof spaced from said side wall from a point above said vent and extending downwardly past said vent toward said bottom wall where it is spaced therefrom; said spaced portion of said baffle means and said side wall defining a passage for the inward flow of air from said vent to the bottom of said wash chamber upon termination of said wash and rinse cycles; said baffle means preventing the outward passage of water from said wash chamber through said vent when said dishwasher is in a wash or rinse cycle;
(d) said portion of said baffle means spaced from said side wall having at least one slot therethrough positioned below said vent in said side wall; and
(e) said portion of said baffle means immediately above said slot being deformed to provide a louver-shaped deflector extending into said passage, whereby water passing through said slot during the wash and rinse cycles will be deflected downwardly into said passage and toward the bottom wall of said wash chamber, said downward deflection of water effecting a suppression of suds within said passage during the wash cycle, and effecting a wash-down of suds residue within said passage during the rinse cycle.

3,356,432
HIGH DENSITY RACK EQUIPMENT
Kenneth E. Stroud and Charles F. Mariotte, Raleigh, N.C., assignors to International Telephone and Telegraph Corporation
Filed Apr. 4, 1966, Ser. No. 539,916
3 Claims. (Cl. 312—223)

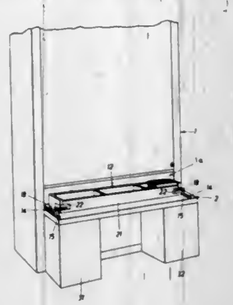


1. A high density rack mounted equipment comprising a terminal strip mounted in a drawer attached to the vertical side rails of said rack, said terminal strip being horizontally positioned in said drawer with connector elements extending vertically, the upper ends of said connector elements being exposed at the top of said drawer and the lower ends of said connector elements being exposed at the bottom of said drawer, a pair of drawer slides mounted on said vertical side rails, said drawer being attached to said slides to move between extended and retracted positions and means for tipping said drawer up when in an extended position to expose the lower ends of said connector elements to facilitate connecting wires thereto and means for tipping said drawer down when in an extended position to expose the upper ends of said connector elements to facilitate connecting wires thereto.

3,356,433
FILING CABINET
Georg Alfred Zippel, 31 Muhlweg, 8503 Altdorf, near Nurnberg, Germany
Filed Apr. 25, 1966, Ser. No. 545,061
Claims priority, application Germany, Apr. 23, 1965, Z 11,496, Z 11,498
24 Claims. (Cl. 312—223)

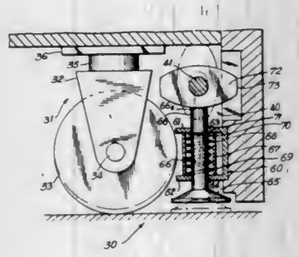
1. A filing apparatus, particularly usable with index cards, said apparatus comprising:
a cabinet;

a work counter having a work surface thereon positioned adjacent said cabinet;
a plurality of trays with each of said trays having abutment means thereon;
a plurality of carrier means for supporting said trays, each of said carrier means having a substantially horizontal shelf portion adapted to support thereon one of said trays;
first elevating drive means connected to said carrier means for moving said trays relative to said cabinet, said first drive means comprising a rotatable conveying device including an endless flexible drive member



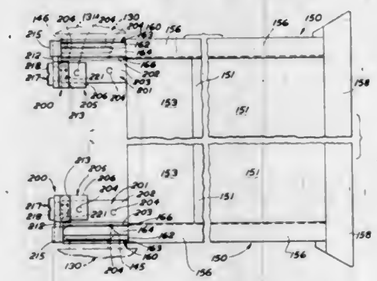
and means rotatably supporting each of said carrier means on said endless drive member;
means for stopping said first drive means whereby one of said trays is in an access position substantially adjacent the work surface on said work counter; and
second drive means operable when said first drive means is stopped for automatically moving said one tray in said access position from said shelf and positioning same substantially above said working surface, said second drive means including movable lug means adapted to engage the abutment means of said one tray for moving same in a substantially horizontal direction.

3,356,434
MODULAR FURNITURE
James L. Theodores, Box 124, Yorktown Heights, N.Y. 10598
Filed Apr. 5, 1966, Ser. No. 540,346
2 Claims. (Cl. 312—250)



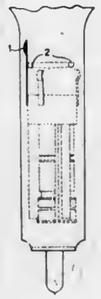
2. A furniture assembly comprising a furniture module, a first connector member supported on said module in horizontal position adjacent a side portion of said module, said connector member including an upwardly extending lock portion, an abutment member to which said module may be removably secured, said abutment member having affixed thereto a second horizontally directed connector member having a downwardly directed lock portion, a vertical upward movement of said first connector with respect to said second connector member being effective to inter-engage said lock portions and secure the latter against relative horizontal movement, support roller means disposed at the corners of said module for movably supporting said module for translatory movement across a floor surface, vertical adjustment means for simultaneously shifting said roller means clear of the floor and said first connector member into inter-engaged position with said second connector member, said adjustment means including foot portions disposed adjacent said support roller means, shafts rotatably mounted to said module, a cam affixed to each said shaft, said cam being disposed above and in contact with said foot portions, rotation of said cam serving to project said foot portions downwardly below said module, spring means yieldably urging said foot portions upwardly into contact with said cams, cam operating means including a lever and a first ratchet member for rotating said shaft in a first direction responsive to operation of said lever means, said ratchet means resisting rotation of said shaft in a direction opposite said first direction, a second ratchet affixed to said shaft in spaced relation to said first ratchet, a pawl biased into engagement with said second ratchet for preventing rotation of said ratchet and, hence, said shaft in said opposite direction, and a release lever operatively connected to said pawl extending to the exterior of said module for releasing said pawl from connection with said second ratchet, whereby said shaft may be rotated in said second direction.

3,356,435
COMBINATION DRAWER STOP AND RELEASE
Norman L. Hanson, Aurora, Ill., assignor to Lyon Metal Products, Incorporated, Aurora, Ill., a corporation of Illinois
Filed June 8, 1966, Ser. No. 556,102
5 Claims. (Cl. 312—348)



1. In a furniture construction, the combination comprising a furniture top, a pair of guide rails mounted beneath said top in spaced-apart positions, a drawer slidably supported upon said rails for movement between a closed position disposed beneath said top and extended positions disposed outwardly with respect to said top, abutment members mounted respectively on said rails adjacent to the path of movement of said drawer, a pair of stop plates mounted respectively on the opposite sides of said drawer and extending rearwardly therefrom and disposed inwardly with respect to said abutment members, and a pair of stop arms respectively pivotally mounted on said stop plates to the rear of said drawer and pivotal about axes substantially parallel to the direction of movement of said drawer on said rails, said stop arms being manually shiftable between stop positions and release positions and being held by gravity in said respective positions when manually placed therein, said stop arms in the stop positions thereof extending laterally beyond the respective sides of said drawer and in position to engage the associated abutment member after said drawer has been partially withdrawn from beneath said top thereby to prevent removal of said drawer from beneath said top, said stop arms in the release positions being confined within the sides of said drawer and in position to pass by the associated one of said abutment members when said drawer is moved to an extended position thereby to permit complete removal of said drawer from beneath said top.

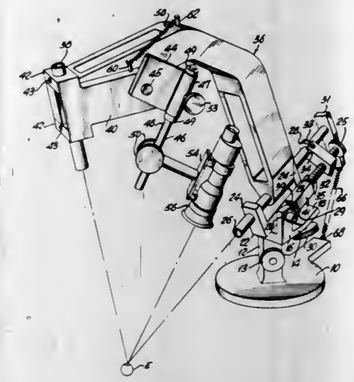
3,356,436
GETTERING SYSTEM FOR ELECTRON TUBES
Paolo Della Porta, Milan, Italy, assignor to S.A.E.S. Getters S.p.A., Milan, Italy, a company of Italy
Filed Oct. 21, 1964, Ser. No. 405,508
Claims priority, application Italy, Apr. 11, 1964, 7,935/64, Patent 720,119
6 Claims. (Cl. 316—25)



1. A method for the manufacture of an electron tube whereby deposition of a getter metal film on internal surfaces within the tube is avoided until after the tube has tested satisfactorily, said method comprising in sequence the steps of mounting in said tube a first getter device and a second getter device said first getter device having a heat activatable nonvaporizing gas adsorptive getter material, and said second getter device having a getter metal which is evaporable under the influence of heat in a vacuum, sealing the tube, activating the first getter device and testing the tube whereby, if the tube tests satisfactorily, the getter metal in the second getter device is vaporized depositing itself in the form of a gas adsorbtive film on the internal surfaces within the tube.

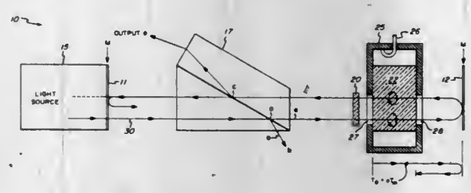
3,356,437
ADJUSTABLE MOUNTING MEANS FOR AN OPTICAL ASSEMBLY
Bernard D. Beamish, New Rochelle, N.Y., assignor of one-third to Albert C. Nolte, Jr., New York, N.Y.
Filed Aug. 15, 1963, Ser. No. 302,394
3 Claims. (Cl. 350—85)

1. An optical assembly comprising in combination: supporting base means having a substantially horizontal base plate, first elongated pivot means carried by said base means and defining a first pivot axis, an elongated curved bracket pivotable at one end about said first pivot means, second elongated pivot means carried at the other end of said bracket and spaced from said first pivot means in fixed relationship thereto and defining a second pivot axis intersecting said first pivot axis at a point where the object to be viewed is to be placed, lever arm means connected to said second pivot means and angularly movable with respect to said bracket through a range of positions, an optical instrument pivotally connected to said lever arm means and adjustable with respect to said lever arm means, whereby the optical axis of said optical instrument can be adjusted to coincide with the point of intersection of the first and second pivot axes, adjusting means for varying the angle of inclination of said first pivot axis of said first pivot means with respect to said base plate, said adjusting means including a substantially horizontal pivot carried by said base means and pivotally supporting said bracket about an axis transverse to said first pivot



axis, means supported in said base means and engaging said bracket for pivoting the same about said horizontal pivot to thereby vary the angle of inclination of said second pivot means with regard to said base plate, and means for displacing said bracket along the axis of said first pivot means.

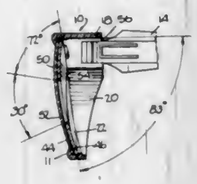
3,356,438
LIGHT MODULATOR EMPLOYING MULTIPLE-REFLECTIVE LIGHT PATH
Warren M. Macek, Huntington Station, and Joseph R. Schneider, Larchmont, N.Y., assignors to Sperry Rand Corporation, Great Neck N.Y., a corporation of Delaware
Filed June 12, 1963, Ser. No. 287,299
2 Claims. (Cl. 350—150)



1. Light modulator for use in conjunction with a laser having a resonant cavity, said modulator comprising,
first and second spaced light reflective surfaces aligned to provide a multiple-reflective light path outside of said resonant cavity, said path being non-resonant for light of the wavelength emitted from said laser,
light polarizing-analyzing means positioned in said path for passing substantially without attenuation light that is plane polarized at a first angle and for transversely reflecting from said path, substantially without attenuation, light that is plane polarized at an orthogonal angle,
means positioned in said multiple-reflective path for controllably producing an orthogonally polarized

component of light from light incident thereon from opposite directions along said path,
and means for controlling said last-named means to vary the magnitude of said orthogonally polarized component in a desired manner.

3,356,439
SUN GLASSES HAVING THREE PAIRS OF DIFFERENT COLOR TINTED LENSES
Finn H. Magnus, Washington Valley Road, Morristown, N.J. 07960
Filed Aug. 20, 1963, Ser. No. 303,237
1 Claim. (Cl. 351—47)



A pair of adjustable filtering sun glasses for use under varying conditions of sun exposure comprising a tinted opaque resilient plastic frame, a substantially vertically disposed flange-like projection extending substantially around a marginal edge of said frame, a plurality of spaced lugs projecting from said frame, a first pair of concave-convex lenses having a thickness of about .030 inch, a second pair of concave-convex lenses having a thickness of about .030 inch, and a third pair of concave-convex lenses having a thickness of about .030 inch, each of said lenses having a different color tint, said lenses being disposed in juxtaposed relation with respect to the next adjacent pair respectively, said lenses being adapted to be snapped into position having one face thereof engaging said flange-like projection and the other face thereof engaging said lugs, and said lenses when in their operative position being inclined with respect to the horizontal, said inclination being defined as the angle formed in a substantially central transverse section between a line connecting the end points of the concave surfaces with respect to the horizontal, said angle being about 83°, at least one of said pairs being provided with a pair of merging arcuate internal edges defining a horizontal slit, said edges being beveled at an acute angle of about 30° one with respect to the other, said bevel being further defined as an angle formed in a substantially central transverse section between a line connecting the end points of the concave surfaces and the upper portion of said edge, said angle being about 72°, said slit being elliptical shaped and having a minor axis length approximately ⅓ of the major axis length.

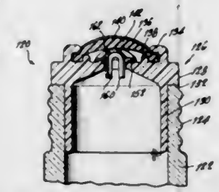
3,356,440
MARKING IMPLEMENT
Robert John Darst, Fort Madison, Iowa, assignor to W. A. Sheaffer Pen Company, Fort Madison, Iowa, a corporation of Delaware
Filed May 25, 1965, Ser. No. 458,658
9 Claims. (Cl. 401—118)

1. A marking implement including an elongate substantially air-tight barrel, a capillary reservoir element in each end of said barrel, a capillary point extending from one of said reservoir elements into releasable contact with the other, said point providing a fluid path extending between and communicating with said reservoir elements to permit the transfer of fluid therebetween and means for transferring air between said reservoir elements, said barrel being separable substantially inter-



mediate said reservoir elements to expose one end of said point for marking.

3,356,441
APPLICATOR WITH CAP CLOSED VALVES
Gilbert Schwartzman, 20 Wilmot Circle, Scarsdale, N.Y. 10583
Filed Aug. 18, 1965, Ser. No. 480,663
4 Claims. (Cl. 401—206)

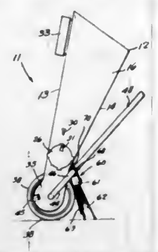


1. A fluid applicator comprising an applicator head having a web, a resilient cover secured to said applicator head, said web having a central opening therein, a raised rib on said web surrounding said opening and outwardly disposed with respect thereto, an upwardly extending valve seat on said web surrounding said central opening and extending about the periphery of said central opening and inwardly disposed to said rib, a valve member having a plurality of resilient fingers extending outwardly therefrom and a plurality of downwardly depending feet integrally formed with said valve member, said feet extending through said opening to retain said valve member in position in said web, said valve member further including a valve head positioned above said valve member and below said cover and being engageable with said valve seat, said resilient fingers normally urging said valve head away from said valve seat and against said cover, and a cap having means thereon for engaging said cover to depress said cover and said valve head to cause said valve head to engage said valve seat.

3,356,442
FOUNTAIN BRUSH AND ROLLER ASSEMBLY
Ragnvald G. Leland, 2334 W. 241st St., Lomita, Calif. 90717
Filed Dec. 17, 1965, Ser. No. 514,443
3 Claims. (Cl. 401—15)

1. A fountain roller assembly comprising a substantially vertically-elongated reservoir having downwardly-convergent front and rear walls and transverse sidewalls,

said front and rear walls having spaced parallel lower edges, a generally cylindrical multiply-apertured shell member secured horizontally between said front and rear walls above and adjacent said lower edges, a hollow cylindrical multiply-apertured valve core member rotatably



and sealingly-mounted in said shell member, said valve core member having an external end means for adjusting the rotated position of the valve core member in the shell member, the apertures in the core member being registrable with the apertures in the shell member, a roller rotatably-connected to said sidewalls below and engaging said lower edges and extending parallel to said lower edges, said roller being provided with a supporting axle, a radial extension on one end of said axle, opposite stop lugs on the sidewall adjacent said radial extension engageable therewith to limit rotation of the reservoir relative to the extension, an outwardly-extending handle rod integrally-connected to said extension and extending substantially perpendicular to said axle, said end means comprising an enlarged hollow head portion formed on the valve core member and located above and adjacent said stop lugs, an arm element integrally-connecting the outer end of said radial extension to the inner end of said handle rod, said arm elements extending parallel and adjacent to said roller, and a depending brush assembly connected to said arm element and extending adjacent and parallel to said roller, said brush assembly comprising a top bar, means to clampingly-secure the top bar to said arm element, a plurality of bristle tufts secured to and depending from said top bar, and a guard plate secured to said top bar and extending downwardly between said bristle tufts and said roller.

CHEMICAL

3,356,443
MIXTURE OF NAPHTHOLAZOBENZENE AND NAPHTHOLAZOTOLUENE AND ITS PRODUCTION IN GRANULAR FORM
Alexander Dziomba, South Plainfield, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed Apr. 1, 1964, Ser. No. 356,632
4 Claims. (Cl. 8—3)

1. A process for preparing a granular-form, oil-soluble orange dye which comprises the steps of (1) diazotizing a mixture composed of from about 60 to about 40 mole percent aniline and from about 40 to about 60 mole percent of mixed toluidines, the total of aniline and mixed toluidines in said mixture being 100%, (2) coupling the resulting diazo product under conventional conditions to beta-naphthol, (3) heating the coupling mixture rapidly to from 90 to 102° C. with agitation, (4) cooling the coupling mixture quickly to below 85° C., and (5) isolating the granular dye product.

3,356,444
VARYING-TONE COLOUR EFFECTS IN SYNTHETIC FIBRE FABRICS
Derek Haworth, Upper Cwmbran, Anil Chandrakant Parikh, Caerleon, and John Charles Turner, Ponthir, England, assignors to British Nylon Spinners Limited, Pontypool, England
No Drawing. Filed Feb. 13, 1964, Ser. No. 344,536
Claims priority, application Great Britain, Feb. 21, 1963, 6,949/63
2 Claims. (Cl. 8—21)

1. A dyed synthetic nylon fabric exhibiting varying tone colour effects, said fabric containing yarns of at least two different cross-sectional shapes selected from tri-lobal, elliptical and circular, and each of the yarn of different cross-sectional shape containing titanium dioxide in different proportons.

3,356,445
PROCESS FOR DYEING OR PRINTING NATURAL NITROGENOUS FIBROUS MATERIAL
Paul Ulrich, Basel, and Hans Heinrich Bosshard and Hans Niederer, Binningen, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a Swiss company
No Drawing. Filed Aug. 5, 1964, Ser. No. 387,762
Claims priority, application Switzerland, Aug. 29, 1963, 10,665/63
16 Claims. (Cl. 8—54)

1. Process for coloring natural nitrogenous fibrous material with dyestuffs that are at least dispersible in water and are selected from the group consisting of water-soluble reactive dyestuffs, acid wool dyestuffs and metal complex dyestuffs applicable from acid to neutral baths, which process comprises treating the natural nitrogenous fibrous material with an aqueous preparation having a temperature from 15 to 40° C. and consisting of at least 5% of a nitrile selected from the group consisting of acrylonitrile, benzonitrile, nitriles of the formula

$$B—CH_2—CN$$

wherein B represents a member selected from the group consisting of a hydrogen atom, a substituted alkyl radical, and unsubstituted alkyl radical, a substituent which imparts acidic character and a substituent which imparts basic character and

$$H_2N—CN$$

and then storing the so-treated natural nitrogen fibrous material in the moist state at 15 to 40° C. for at least one hour.

3,356,446
HEAT SETTING FIBROUS COTTON ESTERS
Albert S. Cooper, Jr., Metairie, Alton L. Murphy, New Orleans, and William G. Sloan, Metairie, La., assignors to the United States of America as represented by the Secretary of Agriculture
No Drawing. Filed Aug. 22, 1963, Ser. No. 303,969
12 Claims. (Cl. 8—131)

1. A process for imparting improved wrinkle resistance and crease retention to a fibrous cotton cellulosic ester prepared by esterifying cotton fibers without materially changing the physical appearance thereof and having a degree of acyl substitution of about from .7 to 1.25, and said ester being in fabric form and of predetermined configuration, which comprises apply dry heat thereto at a temperature of about from 160 to 250° C. for a period of time of about from 10 minutes to 24 hours, the higher temperature being used for the lower periods of time.

3,356,447
PROCESS FOR THE MANUFACTURE OF ALKALI METAL TRIPOLY PHOSPHATES HAVING DESIRABLE CHARACTERISTICS
George E. Tafler, Don Mills, Ontario, Canada, assignor to Electric Reduction Company of Canada, Ltd., Toronto, Ontario, Canada
No Drawing. Filed Aug. 5, 1963, Ser. No. 300,092
12 Claims. (Cl. 23—106)

1. A process which comprises compressing by ex-

ternally applied pressure a finely-divided alkali metal tripoly phosphate into a compact in the presence of water distributed throughout said alkali metal tripoly phosphate, and subsequently heating to remove said water from the compressed alkali metal tripoly phosphate, said water being present in said alkali metal tripoly phosphate prior to compressing in an amount effective to render the alkali metal tripoly phosphate compact capable of formation into a granular form having, after removal of said water, a high bulk density and increased abrasion resistance and an increased rate of solubility relative to alkali metal tripoly phosphate compressed in a like manner, absent the presence of water.

3,356,448

METHOD OF PREPARING DICALCIUM PHOSPHATE SUBSTANTIALLY FREE FROM F, Fe, AND Al IMPURITIES

Gordon J. Turner, Baltimore, Md., assignor to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Filed Aug. 18, 1964, Ser. No. 390,467

4 Claims. (Cl. 23—109)

1. The method of preparing dicalcium phosphate substantially free from F, Fe, and Al impurities starting from wet process orthophosphoric acid containing said impurities comprising adding urea to said impure wet process phosphoric acid in a substantially equimolar ratio of urea:H_3PO_4, thereby precipitating urea phosphate, recovering it, and then dissolving said recovered urea phosphate in water and adding to said urea phosphate solution a calcium compound selected from the group consisting of calcium carbonate, calcium hydroxide, calcium chloride, and calcium oxide, the pH of said solution being in the range of 5.0–7.0; then heating said solution at a temperature of 60–95° C. for 1 to 5 minutes, and recovering the fine crystalline precipitate of dicalcium phosphate dihydrate thus formed.

3,356,449

PREPARATION OF SODIUM TRISILICATE

Robert J. Shoaff, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Oct. 1, 1964, Ser. No. 400,944

8 Claims. (Cl. 23—110)

1. A method of preparing anhydrous sodium trisilicate from aqueous silica value-containing mixtures which comprises:

(a) providing an aqueous mixture containing at least one silica value-containing compound selected from the group consisting of silica and sodium metasilicate and in an amount so that said aqueous mixture contains from about 0.25 to about 20 percent by weight silica values and a corresponding predetermined quantity of sodium hydroxide such that the weight ratio of sodium hydroxide to silica values in said mixture, expressed as Na_2O/SiO_2, is within the range of from about 1 to about 1.5;

(b) mixing anhydrous ammonia with said aqueous mixture, said ammonia being present in an amount of from about 10 to 15.8 percent by weight of the final ammoniated reaction mixture maintaining the temperature of said reaction mixture under pressure within the range of from about 140° to about 250° C. for a period of from about 10 minutes to about 8 hours thereby precipitating out substantially anhydrous sodium trisilicate; and

(c) separating and recovering said substantially anhydrous sodium trisilicate from the residual mixture.

3,356,450

PROCESS FOR THE PRODUCTION OF MOLECULAR SIEVE GRANULES

Gerhard Heinze, Schildgen, Germany, assignor to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Dec. 24, 1964, Ser. No. 421,106
Claims priority, application Germany, Jan. 4, 1964, F 41,673

6 Claims. (Cl. 23—112)

1. Process for the production of substantially pure crystalline molecular sieve zeolite granules comprising forming granules comprising molecular sieve particles bound with silicic acid, treating said silicic acid bonded molecular sieve granules at temperatures of between 15 and 100° C. with an aqueous solution containing at least 0.4 mol of Al_2O_3 as alkali metal aluminate and at least 1.5 mols of alkali metal hydroxide per mol of binding agent calculated as SiO_2 whereby said binder is converted to molecular sieve particles of a composition identical to the composition of said molecular sieve particles, and whereby said granules consisting substantially of said molecular sieve composition are produced.

3,356,451

METHOD FOR PRODUCING MOLECULAR SIEVE ZEOLITE PARTICLES

Edward Michalko, Chicago, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Mar. 14, 1966, Ser. No. 533,866

10 Claims. (Cl. 23—112)

1. A method for the preparation of zeolite particles having molecular sieve properties, which comprises forming silica hydrogel particles from a mixture of silica sol and from about 10 to about 15 grams of hexamethylenetetramine per 100 grams of SiO_2, washing said hydrogel particles at a temperature above about 50° C. for a time period of from about 1 to about 24 hours with an equeous acid solution having a pH of less than about 5.5 and containing from about 5 cc. to about 50 cc. of concentrated acid per 5 gallons of water, drying and calcining the thus washed hydrogel particles to form low density solid silica particles, and contacting said silica particles with an aqueous treating solution containing alkali metal cations and aluminate anions to form said zeolite particles.

3,356,452

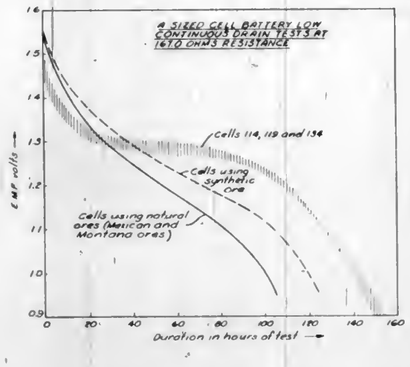
METHOD OF PREPARING MANGANESE DIOXIDE

William G. Moore, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Aug. 16, 1965, Ser. No. 479,733

4 Claims. (Cl. 23—145)

1. A method for preparing a manganese dioxide product which comprises: (a) reacting at a temperature of at least about 55° C., and at an apparent pH from about 5.7 to about 7.2, a soluble manganese salt with a soluble metal carbonate, in an agitated aqueous liquid inventory containing from about 1 to about 700 grams per liter of seed particles of manganese dioxide, the relative proportions of reactants in the reaction mass being such to provide a continuous molar excess of manganese values over carbonate values, thereby forming a precipitate of solid manganese carbonate occluded with said manganese dioxide seed particles; (b) separating said precipitate from the reaction mass, and (c) heat oxidizing the manganese carbonate so-separated to produce manganese dioxide occluded with said seed particles.



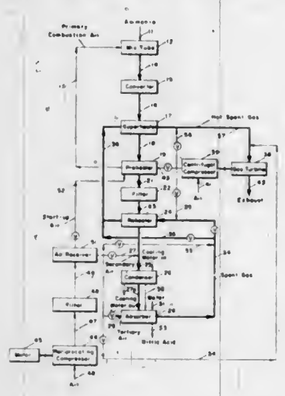
3,356,453

AMMONIA OXIDATION PROCESS FOR PRODUCTION OF NITRIC ACID

Clarence S. Miller, Jr., Kennett Square, Pa., assignor to Hercules Incorporated, a corporation of Delaware

Filed Nov. 9, 1964, Ser. No. 409,650

2 Claims. (Cl. 23—162)



1. In a process of making nitric acid wherein ammonia mixed with compressed primary combustion air is oxidized under pressure and the products of oxidation are cooled by successive passage through a series of heat exchangers and a condenser and are then contacted in countercurrent flow with water in an absorbing column to produce nitric acid, and wherein compressed secondary air is mixed with said products of oxidation prior to passage through the condenser and compressed tertiary air is introduced into the system at the absorber, the improvement which comprises compressing the primary combustion air, comprising up to about 80% by weight of the total air required by the process, with a centrifugal compressor driven by a gas turbine which derives its power from spent gas from the ammonia oxidation process reheated by indirect heat exchange with the hot gases of the ammonia oxidation, compressing secondary air, comprising about 10% to about 20% by weight of the total air requirements of the process, and tertiary air, comprising about 5% to about 10% by weight of the total air requirements of the process, with a motor-driven reciprocating compressor, and keeping the compressed primary combustion air separated from the compressed secondary and tertiary air.

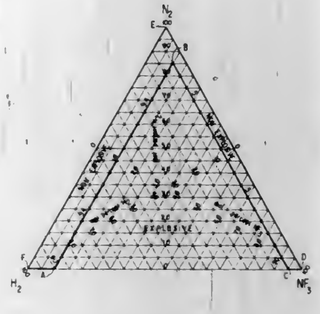
3,356,454

METHODS AND APPARATUS FOR HANDLING NITROGEN TRIFLUORIDE AND ITS CONVERSION TO TETRAFLUOROHYDRAZINE

James F. Tompkins, Jr., Allentown, Pa., and Emile S. J. Wang, Tullahoma, Tenn., assignors to Air Products and Chemicals, Inc., a corporation of Delaware

Original application Oct. 2, 1961, Ser. No. 142,404, now Patent No. 3,235,474, dated Feb. 15, 1966. Divided and this application Aug. 9, 1965, Ser. No. 510,996

10 Claims. (Cl. 23—190)



8. A process for preparing tetrafluorohydrazine from substantially pure nitrogen trifluoride in a manner which reduces explosion hazards comprising the steps of (a) diluting said nitrogen trifluoride with an inert gas to reduce its concentration in the resulting diluted mixture to less than 9.4 mol percent and (b) reacting said gaseous mixture at a reaction temperature not exceeding 860° F. in the presence of a fuel which acts as a fluorine acceptor.

3,356,455

PROCESS FOR PRODUCING PIGMENTARY METAL OXIDES SUBSTANTIALLY FREE FROM FALLING ACCRETION MATERIAL

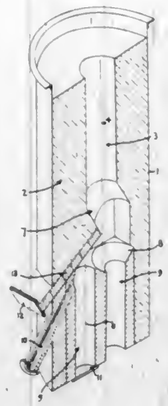
Bernard Harris, Middlesbrough, and Peter Alan Jones, Stockton-on-Tees, England, assignors to British Titan Products Company Limited, Billingham, England, a corporation of the United Kingdom

Filed Mar. 1, 1965, Ser. No. 440,956

6 Claims. (Cl. 23—202)

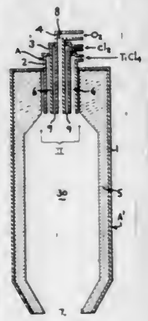
1. In a two-stage process for the production of finely divided metal oxides wherein vaporized metal halide is oxidized to corresponding metal oxide particles in a vertically rising gas stream of oxidizing gas and said metal oxide particles in said rising gas stream are passed to a second reaction zone for the reaction of additional metal halide and oxidizing gas in the presence of said metal oxide particles, the improvement which comprises (a) positioning said first and second reaction zones in lower and upper relationship with their vertical axes laterally offset, (b) providing an accretion collection zone adjacent said first reaction zone vertically beneath said second reaction zone, (c) effecting said first oxidation step in said first reaction zone, (d) passing the metal oxide reaction product of said first reaction zone into said second reaction zone, (e) effecting said second oxidation step in said second reaction zone, (f) withdrawing from said second reaction zone the desired final product, and (g) withdrawing from said accretion collection zone loosened accretion products formed therein which have fallen through

said second reaction zone into said collection zone whereby said first oxidation step in said first reaction zone pro-



ceeds substantially unimpeded by accretion product from said second reaction zone.

3,356,456
PROCESS FOR PREPARING TITANIUM DIOXIDE
William L. Wilson, Barberton, Ohio, assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 22, 1965, Ser. No. 474,075
12 Claims. (Cl. 23—202)

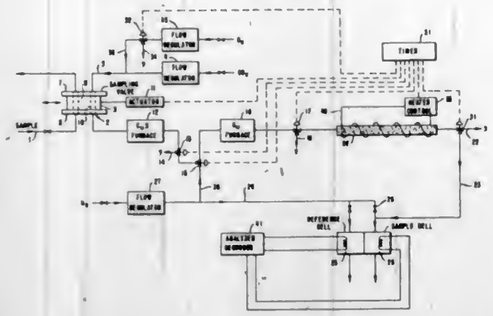


1. A process of preparing pigmentary titanium oxide, which comprises reacting a titanium tetrahalide selected from the group consisting of titanium tetrachloride, titanium tetrabromide, and titanium tetraiodide with an oxygenating gas in the vapor phase in the presence of an effective amount of at least one rutile promoting agent, an effective amount of zinc ion, an effective amount of a metallic ion selected from the metals of Groups IA, IB, and IIA, and cadmium, and an effective amount of a source of silicon ion.

3,356,457
PREVENTION OF SOLIDS SEPARATION IN H_2O_2
George V. Morris, Riverside, and Paul B. Weill, Newport, R.I., assignors to the United States of America as represented by the Secretary of the Navy
No Drawing. Filed May 5, 1965, Ser. No. 453,527
8 Claims. (Cl. 23—207.5)

1. An aqueous solution of hydrogen peroxide containing a stannate stabilizer and aluminum ions in the concentration range 7 to 50 parts per million.

3,356,458
CHROMATOGRAPHIC ANALYSIS
Shelton E. Steinle, Richmond, William B. Milligan, El Cerrito, and Frederick Comendant, Berkeley, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Sept. 13, 1965, Ser. No. 486,921
16 Claims. (Cl. 23—230)



1. The method of analyzing a fluid to determine the concentrations of the constituents of said fluid comprising:

injecting a known volume of the fluid into a stream of a first carrier gas which is substantially free of the constituent to be detected;

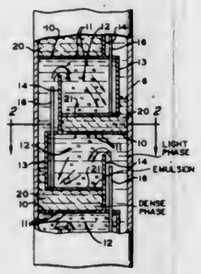
passing the carrier gas and the volume of fluid into a zone containing a material which selectively retards the passage therethrough of the constituents of said fluid and said first carrier gas and which completely adsorbs said fluid and said first carrier gas;

terminating the flow of said stream of said first carrier gas after said volume of fluid has completely passed into said zone and before said zone is completely full;

passing a stream of a second carrier gas, which is less adsorbed by said material than the constituent to be detected, through said zone; and

measuring the effluent from said zone with a chromatographic analyzer to detect the particular constituent desired.

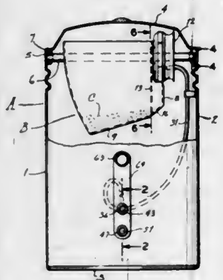
3,356,459
COUNTER-CURRENT LIQUID-LIQUID EXTRACTOR WITH EMULSION LAYER REMOVAL
Paul D. Hann and Rolland E. Dixon, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed June 18, 1964, Ser. No. 376,131
7 Claims. (Cl. 23—270.5)



1. In a liquid-liquid contacting column having upper liquid inlet and outlet means, lower liquid inlet and outlet means, and multiple horizontal perforated plates forming contacting zones on the opposite side of each of said

plates, the combination, comprising a first vertical liquid conduit extending above and below each of said plates and having an open end in each of said contacting zones; and at least one second vertical liquid conduit, said second liquid conduit having open ends, substantially uniform cross-sectional area over the entire length, and smaller cross-sectional area than said first conduit; the open end of the second conduit extending above each of said plates being below the open end of said first conduit extending above each of said plates, the open end of the second conduit extending below each of said plates being above the open end of said first conduit extending below each of said plates, and the ratio of the cross-sectional area of said second liquid conduit to the cross-sectional area of said first liquid conduit being in the range of 1:40 to 1:60.

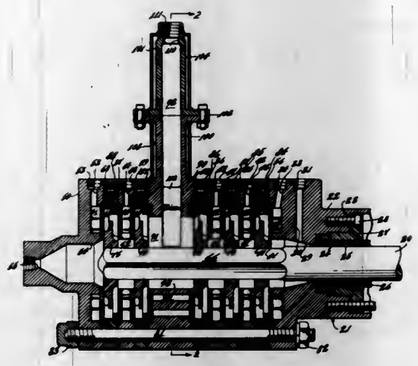
3,356,460
LIQUID TREATMENT APPARATUS
Willard Van Beuren King and David W. Kratz, St. Louis, Mo., assignors to King-Kratz Corporation, St. Louis, Mo., a corporation of Missouri
Filed Jan. 13, 1964, Ser. No. 337,294
8 Claims. (Cl. 23—272)



2. A liquid treatment apparatus comprising a tank-forming member constituting a reservoir for treated liquid, a process vessel provided in the upper portion of said tank-forming member, said vessel receiving a supply of a normally solid agent soluble in the liquid to be treated, a flow plate inclined at an angle to the horizontal constituting the base of said vessel, said vessel further having a chamber for liquid to be treated, means connecting said chamber and the upper projecting portion of said flow plate, said flow plate at its lower end communicating with said reservoir, means for delivering liquid to said chamber responsive to the level of treated liquid in said reservoir, said chamber having an inlet opening, flow control means provided adjacent said chamber, and comprising a rotatably mounted receptacle, having a plurality of discharge openings of varying diameter for coaxial registration with said chamber inlet opening, and means for maintaining said receptacle in selected position.

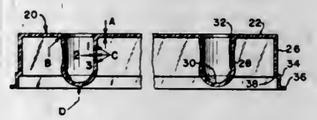
3,356,461
CONDENSATE DOME FOR CONTINUOUS CHEMICAL REACTORS
John F. Lynch, Chester, Pa., and Raymond A. Nichols, Wilmington, Del., assignors to Marco Development Co., Inc., Wilmington, Del., a corporation of Delaware
Filed Apr. 26, 1965, Ser. No. 450,807
2 Claims. (Cl. 23—290.5)

1. Chemical reaction apparatus comprising a shaft, a housing surrounding the shaft made up of a series of in-line impeller chambers and a series of heat exchange plates interposed between the impeller chambers and providing material flow passages therein for advancing material through the chambers and adjacent heat exchange plates, impellers mounted on the shaft, rotatable with it, positioned in the respective impeller chambers, the impellers feeding a liquid material outwardly on one side and inwardly on the other side, in combination with a vapor outlet plate interposed between two impeller chambers, having an interior opening surrounding the shaft in spaced relation to form a vapor chamber free from any



impeller, heat exchange passages in the radially inner wall of the vapor outlet plate for heating the interior of the vapor outlet plate which is exposed to the liquid material of the reaction apparatus, the vapor chamber communicating with the impeller chambers on either side thereof, a condensate dome connected with the vapor outlet plate and with the interior of the vapor chamber, extending above the reactor housing, and means for creating a partial vacuum within the condensate dome for withdrawing vapor therefrom.

3,356,462
DISPOSABLE MICROTITRATION PLATE
Nelson M. Cooke, Great Falls, Va., and Paul H. Hall, Clinton, Md., assignors to Cooke Engineering Company, Alexandria, Va., a corporation of Delaware
Continuation of application Ser. No. 271,003, Apr. 5, 1963. This application Aug. 9, 1966, Ser. No. 571,357
5 Claims. (Cl. 23—292)



1. A disposable plate for microtitration and like purposes comprising a molded, synthetic plastic shell having a planar top wall supported by a continuous depending marginal flange and having a plurality of parallel equal length transversely aligned rows of uniformly arranged, equal depth, open top cups formed in and depending from said top wall in parallel spaced apart relation and in a uniform pattern, said cups having annular side walls the internal surfaces of which are cylindrical and end walls the internal surfaces of which are surfaces of revolution, the thickness of said end walls of said cups being greater than the thickness of said top wall and of said side walls of said cups whereby said cup end walls are provided with increased strength, said depending marginal flange being

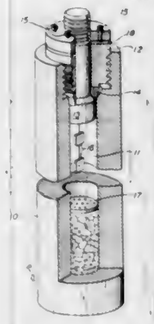
of a height slightly greater than that of the depending cups whereby contact between the external surfaces of said cup end walls and a planar work surface supporting such plate is precluded so long as said planar top wall is not deformed.

3,356,463

SYNTHETIC QUARTZ GROWTH

Albert A. Ballman, Woodbridge, and Robert A. Laudise, Berkeley Heights, N.J., and David W. Rudd, Topsfield, Mass.; said Ballman and said Laudise assignors to Bell Telephone Laboratories, Incorporated, and said Rudd assignor to Western Electric Company, Incorporated, both of New York, N.Y., both corporations of New York

Filed Sept. 24, 1965, Ser. No. 490,018
7 Claims. (Cl. 23—301)



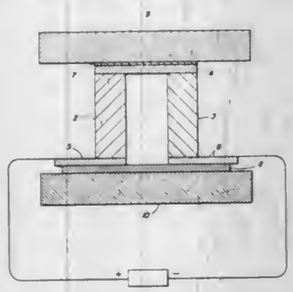
1. A method for synthesizing quartz crystals which comprises disposing a quartz crystal seed and a mass of nutrient SiO_2 in an aqueous medium comprising sodium ions at least .2 molar has been inserted, lithium ions at least .02 molar and an anion selected from the group consisting of nitrate and nitrite, heating said medium to a temperature of at least 300° C. while under a pressure exceeding the pressure present when the vessel is filled to at least 60 percent of its volume with said aqueous medium at room temperature and then heated to 300° C. and maintaining a temperature difference between said seed and said nutrient mass of at least 15° C. until a substantial increase in the size of said seed is obtained.

3,356,464

SEMICONDUCTORS AND DEVICES EMPLOYING THE SAME

Fritz Hulliger, Uerikon, Zurich, Switzerland, assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

Filed Aug. 30, 1963, Ser. No. 305,601
8 Claims. (Cl. 23—315)



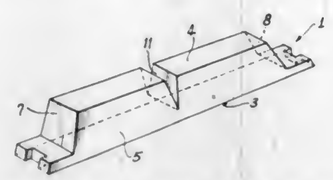
5. As a new composition of matter a semiconductor selected from the group consisting of MAsSb and MPAs wherein M is Ir or Rh.

3,356,465

METAL INGOTS

Jacques Chambran, Tarascon-sur-Ariege, France, assignor to Pechiney, Compagnie de Produits Chimiques et Electrometallurgiques, Paris, France

Filed Oct. 28, 1964, Ser. No. 407,033
Claims priority, application France, Oct. 31, 1963, 952,423
3 Claims. (Cl. 29—187)



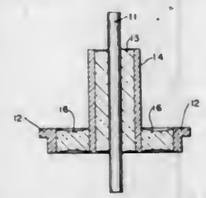
1. An ingot of prismatic shape having flat bottom and top walls and vertically disposed side and end walls with the side walls having a length greater than the end walls and a notch extending inwardly from at least one of the side walls throughout the height of the ingot from the bottom wall to the top wall and for a distance to include the major width of the ingot whereby only a minor section of the ingot extending continuously from the top wall to the bottom wall remains to join the segments of the ingot on opposite sides of the notched portion.

3,356,466

METAL-TO-GLASS-TO-CERAMIC SEAL

Nicolaas Wildeboer and David T. Landsittel, Murray Hill, N.J., assignors to Philips Electronics and Pharmaceutical Industries Corp., New York, N.Y., a corporation of Maryland

Filed July 28, 1965, Ser. No. 475,538
9 Claims. (Cl. 29—191)



1. A seal comprising: An outer metal member having an aperture therein; an inner metal member within said aperture and spaced therefrom; a hollow ceramic member completely encircling said inner member between said inner and outer members and spaced from both said inner and outer members; and glass encircling and fused to said inner member completely to form an unbroken bridge from said inner member to said ceramic member and fused to said ceramic member and encircling and fused to said ceramic member to form an unbroken bridge from said ceramic member to said outer metal member and fused to said outer metal member.

3,356,467

ARTICLE COATED WITH A COELECTRODEPOSIT OF NICKEL AND PLASTIC PARTICLES, AN OVERLAYER THEREON, AND METHOD OF MAKING SAID ARTICLE

Henry Brown, Huntington Woods, and Thaddeus W. Tomaszewski, Dearborn, Mich., assignors to The Udylite Corporation, Warren, Mich., a corporation of Delaware

No Drawing. Filed Dec. 28, 1964, Ser. No. 421,623
20 Claims. (Cl. 29—194)

1. A method of electroplating which comprises co-electrodepositing organic resinous particles with nickel from an aqueous acidic nickel bath containing an electrolyte selected from the group consisting of nickel sulfate, nickel chloride, nickel sulfamate, nickel fluoborate, and mixtures thereof and containing from 1 to about 300 grams per liter of insoluble organic resin particles dispersed therein having an avergae diameter less than about 50 microns selected from the group of resins consisting of saran, nylon, polyolefins, polyphenyleneoxide, acrylonitrile-butadiene styrene polymers, acetal polymers, polyvinylchloride polymers, and mixtures thereof.

7. A method of electroplating which comprises co-electrodepositing organic resinous particles with nickel from an aqueous acidic nickel bath containing an electrolyte selected from the group consisting of nickel sulfate, nickel chloride, nickel sulfamate, nickel fluoborate, and mixtures thereof and containing from 1 to about 300 grams per liter of insoluble organic resin particles dispersed therein having an average diameter less than about 50 microns selected from the group of resins consisting of saran, nylon, polyolefins, polyphenyleneoxide, acrylonitrile-butadiene-styrene polymers, acetal polymers, polyvinylchloride polymers, and mixtures thereof, and thereafter electrodepositing on said surface an over-layer of less than 0.1 mil thickness of a metal selected from the group consisting of chromium, gold, brass, and rhodium.

16. An article comprising a substrate and an electroplate thereon, said electroplate comprising a nickel plate with a metallic over-lay, said nickel plate having been electrodeposited from an aqueous acidic nickel plating bath having dispersed therein from 1 to about 300 grams per liter of at least one type of insoluble organic resin particles having an average diameter less than about 50 microns selected from the group of resins consisting of saran, nylon, polyolefins, polyphenyleneoxide, acrylonitrile-butadiene-styrene polymers, acetal polymers, polyvinylchloride polymers, and mixtures thereof, and an electrodeposited over-lay plate of less than about 0.1 mil of a metal selected from the group consisting of chromium, gold, brass, and rhodium.

3,356,468

WELDED CONDUCTORS TO CARBON AND GRAPHITE CLOTH

Henry J. Pinter, Alliance, Ohio, assignor of twenty-five percent to George E. Schick

No Drawing. Filed Nov. 9, 1964, Ser. No. 409,976
4 Claims. (Cl. 29—195)

1. Carbon and graphite cloth products including cloth formed of one of carbon and graphite; a conductor formed of a metal selected from the group of copper, silver and copper silver alloys; and an alloy forming a welded bond between the cloth and conductor selected from the group consisting of at least essentially 0.2 percent vanadium and the remainder essentially silver with there always being at least a minute quantity of said silver, at least essentially 9.09 percent vanadium and the remainder essentially copper with there always being at least a minute quantity of said copper, and at least essentially 0.125 percent titanium and the remainder essentially silver with there always being at least a minute quantity of said silver.

3,356,469

COATED FUEL BODIES

Edward E. Stephenson, Richland, and George G. Rumberger, Kalamazoo, Mich., assignors to Brown Company, Kalamazoo, Mich., a corporation of Delaware

Filed July 29, 1966, Ser. No. 568,965
4 Claims. (Cl. 44—6)

1. A readily ignitable dust-free fuel selected from the group consisting of charcoal briquettes and cannel coal, having a coating thereon, said coating comprising a composition of wax and fly ash dispersed therein, said coating composition comprising about 40 to about 55 percent by weight of fly ash, the proportion by weight of said coating composition to said fuel being about 20 percent to about 50 percent.

3,356,470

DUSTLESS CARBONIZED FUEL

John D. Klink, Marquette, Mich., assignor to Cliffs Dow Chemical Company, Marquette, Mich., a corporation of Michigan

No Drawing. Filed Nov. 18, 1964, Ser. No. 412,213
7 Claims. (Cl. 44—10)

1. The method of producing essentially non-dusting, non-smudging briquets of carbonized fuel comprising
(1) contacting green briquets of the carbonized fuel with an aqueous solution of a sugar containing 10 to 60% by weight of sugar, thus to impregnate at least the surface layer of the briquets, and then
(2) drying the briquets at an elevated temperature and for a time sufficient to render the briquets substantially non-tacky and non-smudging.

6. Briquets made by the process of claim 1.

3,356,471

TRIARYL PHOSPHATE MIXTURES

Edmund L. Niedzielski, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Aug. 9, 1963, Ser. No. 301,183
15 Claims. (Cl. 44—69)

1. A triaryl phosphate composition consisting essentially of a mixture of
(a) about 20 to about 50 mole percent of triphenyl phosphate,
(b) about 35 to about 60 mole percent of a two-ring-aryl diphenyl phosphate,
(c) about 10 to about 30 mole percent of a di(two-ring-aryl) phenyl phosphate, and
(d) 0 to about 6 mole percent of a tri(two-ring-aryl) phosphate,
(e) the mixed phosphates of (b) and (c) constituting a total of about 50 to about 80 mole percent of said mixture, and
(f) the phenyl groups constituting about 60 to about 80 mole percent of all aryl groups in said phosphates.

13. A motor fuel consisting essentially of a mixture of liquid hydrocarbons boiling in the gasoline boiling range of which at least 15% by volume are aromatic hydrocarbons of the character of those occurring in catalytically cracked and reformed gasolines, said mixture of hydrocarbons having an octane rating of at least 80 as measured by the ASTM Research Method, and which motor fuel contains
(A) an organolead antiknock agent in an amount to provide 0.1 to about 6 grams of lead for each gallon of the motor fuel,
(B) at least one halohydrocarbon scavenger for lead in an amount providing 1 to 5 atoms of halogen of atomic numbers 17–35 for each atom of lead of said organolead antiknock agent, and
(C) a triaryl phosphate composition as defined in claim 1 in an amount providing about 0.013 to about 0.4 atom of phosphorus for each atom of lead of said organolead antiknock agent.

3,356,472
GASOLINE COMPOSITION CONTAINING PHENYLTRIMETHYLLEAD

Wallace L. Richardson, Lafayette, Maurice R. Barusch, Richmond, and George J. Kautsky, El Cerrito, Calif., assignors to Chevron Research Company, a corporation of Delaware

No Drawing. Continuation of application Ser. No. 397,323, Sept. 17, 1964, which is a continuation of application Ser. No. 31,565, May 25, 1960. This application June 9, 1966, Ser. No. 556,526
1 Claim. (Cl. 44—69)

A hydrocarbon base fuel, boiling in the gasoline boiling range, adapted for use in spark ignition internal combustion engines, having a clear Research octane number of at least 90, said fuel being characterized in that the hydrocarbon composition contains from 20 to 60% by volume of aromatic hydrocarbons, not more than 30% by volume of olefinic hydrocarbons and not more than 60% by volume of paraffinic and naphthenic hydrocarbons, said fuel containing from about 0.5 to about 4 ml. of phenyltrimethyllead per gallon, said fuel having a Motor Method octane number greater than the corresponding octane number of a mixture of said hydrocarbon composition containing a molar equivalent of tetraethyllead.

3,356,473
METAL-BONDED DIAMOND ABRASIVE BODY

Edwin H. Hull and Thomas A. Vanderslice, Scotia, N.Y., assignors to General Electric Company, a corporation of New York

No Drawing. Filed May 28, 1964, Ser. No. 371,103
2 Claims. (Cl. 51—309)

1. In an abrassive body consisting essentially of a plurality of diamond particles, a first metal covering the surface of each of said diamond particles and a second metal brazed to the coating of first metal over each diamond particle thereby fixing the relationship of said diamond particles in said body relative to each other, the improvement comprising the first metal being molybdenum and the second metal being copper.

3,356,474
METHOD OF PROTECTING THE SURFACE OF THE MOLTEN BATH IN A GLASS SHEET FLOAT OPERATION

David Gordon Loukes, Eccleston Park, Prescot, and Albert Sidney Robinson, Birkdale, Southport, England, assignors to Pilkington Brothers Limited, Liverpool, England, a corporation of Great Britain

No Drawing. Filed Sept. 18, 1963, Ser. No. 309,878
Claims priority, application Great Britain Sept. 20, 1962, 35,901/62
5 Claims. (Cl. 65—26)

1. A method of manufacturing flat glass during which glass in ribbon form, of less width than the bath so as to leave an exposed surface at the sides of the ribbon, is advanced along a bath of molten metal and is subjected to a temperature gradient during its advance towards the cooler end of the bath where it is taken up from the bath surface for discharge from the bath, characterised by covering the exposed bath surface with a protective layer at least in the region of the discharge end of the bath at the sides of the advancing ribbon of glass and beneath the ribbon as it is discharged, lowering the temperature at the discharge end portion of the bath to maintain said layer in a solid state whereby the ribbon is taken up from the bath adjacent to a solid portion of said layer, said layer being of a material which is not reactive to the glass or to the bath and being of a material which is solid at the temperature of the discharge end of the bath and is in molten form higher up the bath, the part of the layer covering the exposed surface of the discharge end of the bath being substantially of sufficient depth to isolate the bath metal from the atmosphere over the bath.

3,356,475
METHOD OF PROTECTING THE SURFACE OF THE MOLTEN METAL IN A GLASS FLOTATION OPERATION

David Gordon Loukes, Eccleston Park, Prescot, and Albert Sidney Robinson, Birkdale, Southport, England, assignors to Pilkington Brothers Limited, Liverpool, England, a corporation of Great Britain

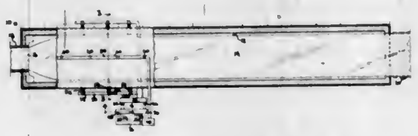
No Drawing. Filed Sept. 18, 1963, Ser. No. 309,884
Claims priority, application Great Britain, Sept. 20, 1962, 35,902/62
6 Claims. (Cl. 65—26)

1. In the manufacture of flat glass in ribbon form during which the glass is supported on a bath of molten metal over which a plenum of protective atmosphere is maintained, maintaining on the surface of the bath not engaged by the glass a layer of particulate refractory material which does not react appreciably with either the molten metal or the glass, thereby additionally protecting the molten metal against contamination.

3,356,476
METHOD OF REMOVING CONTAMINATES FROM THE PROTECTIVE ATMOSPHERE OF A GLASS SHEET FLOAT BATH

Joseph A. Gulotta, New Kensington, Pa., assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Feb. 8, 1965, Ser. No. 430,996
6 Claims. (Cl. 65—27)



1. In the method of producing glass wherein a mass of glass is supported on a bath of molten metal over which a protective atmosphere is maintained, which atmosphere becomes contaminated with gaseous contaminates, the improvement comprising:
withdrawing a substantial portion of said contaminated atmosphere from over said bath,
cooling the withdrawn atmosphere for a time sufficient to condense contaminates therein,
removing the condensed contaminates from said withdrawn atmosphere to clean said withdrawn atmosphere, and
thereafter reintroducing said cooled and cleaned protective atmosphere over said bath of molten metal.

3,356,477
METHOD OF INCREASING STAIN RESISTANCE OF A GLASS BODY SUBJECTED TO AN ION EXCHANGE STRENGTHENING SET-UP

Raymond S. Chisholm, Pittsburgh, George E. Sleighter, Natrona Heights, and Fred M. Ernsberger, Pittsburgh, Pa., assignors to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania

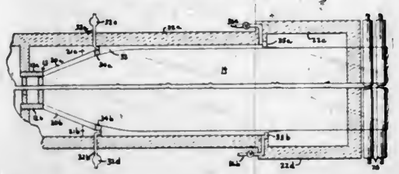
No Drawing. Filed Apr. 17, 1967, Ser. No. 631,125
15 Claims. (Cl. 65—30)

1. A method of strengthening an alkali silicate glass which comprises contacting the glass with a salt of an alkali metal having a larger ionic diameter than an alkali metal in said glass at a temperature below the glass strain point for a period of time sufficient to achieve alkali metal ion exchange in an amount sufficient to obtain a compressive stress at the surface of the glass while maintaining the alkalinity of said salt sufficiently low to prevent staining of said glass when subjected to cyclic humidity.

3,356,478
METHOD OF SHIFTING GLASS ON A MOLTEN METAL BATH

William F. Galey, Saxonburg, Pa., assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed June 4, 1965, Ser. No. 461,471
4 Claims. (Cl. 65—99)



1. In a method for producing flat glass wherein a layer of molten glass is floated on and moved over a wider bath of molten metal contained between sidewalls of a tank and wherein the glass has a tendency to deviate from a desired path, the improvement which comprises:
introducing a layer of a material other than the molten glass onto the surface of the bath between one edge of the molten glass and the adjacent sidewall of the tank and covering the entire surface of the bath therebetween with said material for at least a portion of the length of said tank in an amount sufficient to shift said glass laterally on said bath, said material being molten, non-volatile and stable at the operating temperatures and being substantially insoluble in said glass.

3,356,479
METHOD OF CONTROLLING THE THICKNESS OF FLOAT GLASS

William F. Galey, Saxonburg, Pa., assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Nov. 25, 1966, Ser. No. 597,032
12 Claims. (Cl. 65—99)

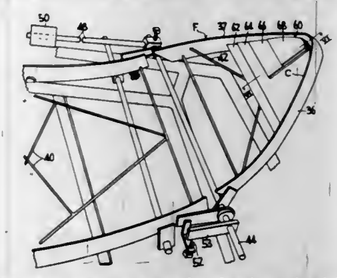
1. In a method of forming flat glass wherein a layer of molten glass is supported on a bath of molten metal contained between side walls of a tank in a controlled atmosphere, the improvement which comprises,
selecting an edge material other than said glass of a density and interfacial surface tension relationship to the atmosphere, bath and glass such that when in contact with the glass and walls the thickness of the molten glass body is controlled by the depth of the material and said material does not run over or under said glass and said glass does not run over or under said material,
said material being substantially chemically inert with respect to said glass and said bath,
floating a layer of said material on the metal bath between the molten glass and the side walls, so as to contact both said glass and said walls,
covering the entire surface of the bath outside the margins of the glass with said material for at least that portion of the tank in which said glass can flow,
cooling the glass at the thickness controlled by the depth of said material, and
thereafter removing the cooled glass from the bath.

3,356,480
METHOD FOR BENDING GLASS SHEETS

James Sidney Golightly, Fox Chapel, Pa., assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Feb. 25, 1963, Ser. No. 260,384
4 Claims. (Cl. 65—103)

1. A method of bending glass in sheet form to compound curvatures including a longitudinal bend of non-uniform severity comprising a pair of spaced, localized, severely bent regions extending transversely of the sheet and a transverse bend of non-uniform severity comprising only one severely bent region extending longitudinally of the sheet, said method comprising supporting the sheet along its marginal portion only in bending relation to a shaping surface, exposing the supported glass sheet to glass softening temperatures by conveying the sheet laterally through a hot atmosphere having a non-uniform temperature pattern longitudinally of the sheet including



spaced temperature zones maintained at the highest temperature of said pattern through which said regions extending transversely of the sheet are conveyed to accelerate the softening of said transversely extending regions and produce said longitudinal bend and concentrating heat upon said region extending longitudinally of the sheet while heating said sheet to accelerate the softening of said longitudinally extending region and produce said transverse bend, wherein said concentrated heating of said longitudinally extending region comences after said longitudinal bend is substantially completed.

3,356,481
METHOD OF MAKING A SAWDUST-CONTAINING SOIL CONDITIONER

Roy D. Wininger, Owensboro, Ky., and Gerald E. Wilcox, West Lafayette, Ind., assignors, by mesne assignments, to Dolly Madison Industries, Inc., Louisville, Ky., a corporation of Minnesota

Filed Dec. 4, 1964, Ser. No. 415,972
7 Claims. (Cl. 71—9)

1. A method of making a soil conditioner, comprising the steps of mixing about 95 pounds of green sawdust with about 5 pounds of a composted fungivorous sawdust culture including a composted mixture of sawdust, a mixture of sawdust-decomposing fungi present in an amount equal to about 20 pounds of said fungi mixture to each cubic yard of said composted mixture of sawdust, and a nitrogen-bearing nutrient present in an amount equal to about 10 pounds of said nutrient to each cubic yard of said composted mixture of sawdust to form a mixture of said green sawdust and culture, spraying a nitrogen-bearing nutrient solution onto said mixture, storing said mixture until it has partially decomposed, and mixing an Azotobacter culture with said mixture at the ratio to provide from about .45 pound to about .55 pound of Azotobacter for each cubic yard of the partially decomposed mixture.

3,356,482
FERTILIZER COMPRISING A SALT OF A SUGAR PHOSPHATE ESTER

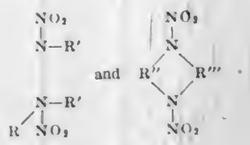
Ian Sargent Ogle, Cronulla, New South Wales, and Bruce M. Smythe, Roseville, New South Wales, Australia, assignors to The Colonial Sugar Refining Company Limited, Sydney, New South Wales, Australia, a company of New South Wales

No Drawing. Filed Oct. 5, 1966, Ser. No. 584,328
9 Claims. (Cl. 71—11)

1. A balanced organic fertilizer comprising a selected mixture of calcium, potassium and ammonium salts of sugar phosphate esters.

3,356,483
METHOD FOR PLANT GROWTH ALTERING
John K. Leasure, Midland, and Dorsey R. Mussell, Clare, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Sept. 10, 1963, Ser. No. 307,775
6 Claims. (Cl. 71—66)

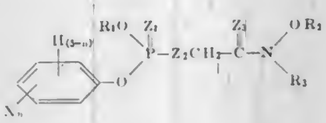
1. The method which comprises applying to plants and plant parts and their habitats a growth-altering amount of a dinitro compound selected from the group consisting of



wherein R represents an alkylene group containing up to 10 carbon atoms, R' represents a member of the group consisting of hydrogen, lower alkyl, and alkali metal, R'' represents an alkylene group containing up to 3 carbon atoms, and R''' represents a member of the group consisting of carbonyl, methylene, alkaline earth metal, and divalent heavy metal.

3,356,484
METHOD FOR THE CONTROL OF UNDESIRABLE PLANT LIFE
Sidney B. Richter, Chicago, Ill., assignor to Velsicol Chemical Corporation, a corporation of Illinois
No Drawing. Filed June 30, 1965, Ser. No. 468,595
8 Claims. (Cl. 71—87)

1. A method for the control of undesirable plant life which comprises applying to the locus of the said plant life a herbicidal composition comprising an inert carrier and as the essential active ingredient, in a quantity which is herbicidally injurious to said undesirable plant life, a compound of the formula



wherein Z_1, Z_2 and Z_3 are independently selected from the group consisting of sulfur and oxygen; R_1, R_2 and R_3 are independently selected lower alkyl; n is an integer from 1 to 5; and each X is independently selected from the group consisting of halogen, cyano, lower alkyl, lower alkoxy, and lower alkylthio.

3,356,485
HERBICIDAL COMPOSITION AND METHOD
Basil S. Farah and Everett E. Gilbert, Morris Township, Morris County, and Julian A. Otto, Stockholm, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed Dec. 11, 1963, Ser. No. 329,891
4 Claims. (Cl. 71—122)

1. A herbicidal composition comprising a phytotoxic quantity of a fluorinated ketone derivative having the following formula:

$$R—C(OH)(CF_2X)_2$$

in which R is a member selected from the group consisting of aryl, alkyl-substituted aryl wherein the alkyl has 1 to 4 carbon atoms and halo-substituted aryl radicals and X is a member selected from the group consisting of chlorine and hydrogen, a solid diluent therefor and at least one of wetting, dispersing and emulsifying agents.

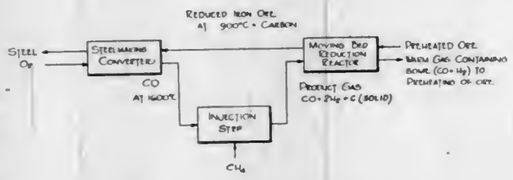
3,356,486
BENZENE HEXACHLORIDE AS A PREEMERGENCE HERBICIDE
Bryant Leonidas Walworth, Pennington, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed Mar. 16, 1964, Ser. No. 352,296
5 Claims. (Cl. 71—126)

1. A method for the preemergence control of undesirable grasses comprising applying to soil containing seeds of said undesirable grasses a composition containing an active ingredient selected from the group consisting of the gamma isomer of benzene hexachloride, the delta isomer of benzene hexachloride and mixtures of said gamma and delta isomers, said isomers and mixtures thereof being applied in an amount sufficient to effect preemergence herbicidal control of said undesirable grasses.

3,356,487
PREVENTION OF SPLATTERING DURING VAPORIZATION PROCESSING
Charles d'A. Hunt, Orinda, and Jack D. Merrill, Richmond, Calif., assignors, by mesne assignments, to Air Reduction Company, Incorporated, a corporation of New York
No Drawing. Filed Dec. 6, 1966, Ser. No. 599,415
7 Claims. (Cl. 75—10)

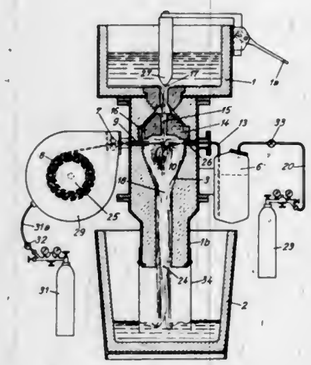
1. An improved electron beam vacuum vaporization process for vaporizing a metal from the upper surface of a molten pool comprising, heating a metal with an electron beam to form a molten pool, adding an additive metal to the molten pool to reduce surface tension at the upper surface of the molten pool, the additive metal having a lesser density and substantially lower vapor pressure than the metal, and heating the surface of the molten pool with the electron beam to a temperature sufficient to vaporize the metal, whereby the metal may be rapidly vaporized without splattering.

3,356,488
PROCESS FOR UTILIZING HYDROCARBON INJECTION INTO HOT REDUCING GASES IN STEELMAKING
John H. Walsh, Manotick, Ontario, Canada, assignor to Her Majesty The Queen in Right of Canada as represented by the Minister of Mines and Technical Surveys
Filed Feb. 23, 1965, Ser. No. 434,661
Claims priority, application Canada, Feb. 24, 1964, 896,376, Patent 752,792
19 Claims. (Cl. 75—34)



2. A process for producing steel directly from iron ore utilizing the exhaust gases from an oxygen steel making converter for reducing the iron ore, comprising the steps of injecting into said exhaust gases a hydrocarbon causing cooling of said exhaust gases and appreciable dissocation of the injected hydrocarbon to form a rich reducing gas, providing a bed of particulate iron oxide, and passing the said reducing gas through said bed to produce a reduced and preheated feed to the oxygen converter.

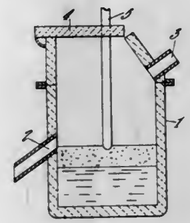
3,356,489
METHOD AND APPARATUS FOR TREATING METALLIC MELTS
Heinrich Feichtinger, Schaffhausen, Switzerland, assignor to Georg Fischer Aktiengesellschaft, Schaffhausen, Switzerland
Filed Feb. 24, 1965, Ser. No. 434,856
Claims priority, application Switzerland, Feb. 28, 1964, 2,478/64
10 Claims. (Cl. 75—46)



1. A method of treating metallic melts in a continuous flow through a treatment chamber having an inlet and an outlet, which includes the steps of: introducing the melt to be treated into said treatment chamber while splitting said introduced melt into a first portion and a second portion, passing said first portion along the wall surface of said treatment chamber in the direction toward said outlet while passing said second portion likewise in the direction toward said outlet in the form of a central stream through a portion of said chamber in spaced relationship to said second portion, prior to said central stream reaching said outlet introducing material to be added to said melt into said stream so as to cause said material in an explosion-like manner to break up into fine particles and to be thrown into said second portion flowing along said wall surface for intermixture therewith, and uniting said first and second portions prior to their leaving said outlet.

5. An apparatus for treating metallic melts in a continuous manner, which includes: a vessel for receiving the melt to be treated, said vessel having a discharge opening in the lower portion thereof, a chamber arranged below said vessel and having an upper inlet for communication with said discharge opening and also having a lower outlet for discharging treated melt, said chamber including an upper section flaring downwardly and a lower section tapering downwardly in the direction toward said outlet, and dividing means arranged in said upper section and having its central portion provided with first downwardly directed passage means and having its marginal area provided with second downwardly directed passage means for splitting the melt entering said upper section into a marginal flow along the wall surface of said upper section and into a central flow spaced from said marginal flow, said chamber being provided with passage means arranged below said dividing means and extending into said chamber below said dividing means for feeding material to be added to the melt into said lower section.

3,356,490
REFINING PIG IRON
Francois Muller, Griffith, Ind., and Paul Nilles, Embourg, and Etienne Denis, Grivegnee, Belgium, assignors to Centre National de Recherches Metallurgiques, Brussels, Belgium, a Belgian company
Filed Apr. 23, 1965, Ser. No. 450,386
Claims priority, application Luxembourg, May 4, 1964, 46,019; May 21, 1964, 46,119; May 23, 1964, 46,145; May 30, 1964, 46,202; June 2, 1964, 46,229; June 4, 1964, 46,249; July 7, 1964, 46,473; Oct. 17, 1964, 47,155, 47,156; Oct. 27, 1964, 47,219; Oct. 31, 1964, 47,265
6 Claims. (Cl. 75—60)



1. In a process of refining pig iron which comprises top blowing pig iron in a refining vessel with an oxidizing gas, the improvement comprising producing a foaming slag on the molten metal, and removing at least part of said foaming slag by continuously overflowing from the refining vessel during at least part of the operation.

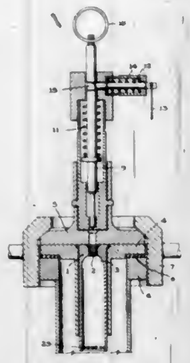
3,356,491
PURIFICATION OF CONTAMINATED REACTIVE METAL PRODUCTS
Stephen Matheson Shelton, Henry Gordon Poole, and Allen Dethman Abraham, Albany, Oreg., assignors to Oregon Metallurgical Corporation, Albany, Oreg., a corporation of Oregon
Filed July 26, 1966, Ser. No. 567,876
7 Claims. (Cl. 75—84)

1. A method of purifying a contaminated Group IV metal product containing impurities melting at a melting point below the melting point of the metal in said product and of processing such impurities, comprising heating the metal product while in a closed system to a temperature below the melting point of the metal to produce vaporization of the impurities, mixing such vaporized impurities with an inert gas stream, passing such stream of gas together with impurities into a condensing region in said system and there condensing the impurities to form solids thereof which separate from said stream, collecting said separated solid impurities in a collecting region in said system separate from said condensing region, heating said separated impurities in said collecting region thus to liquify them, and removing said impurities from said closed system by draining them while in liquid form from said collecting region.

3,356,492
METHOD OF REMOTE STARTING OF EXOTHERMIC CHEMICAL REACTIONS FOR THE PRODUCTION OF URANIUM
Maurice Delange, Ballancourt, and Henri Huet, Le-Verger-Saint-Vrain, France, assignors to Commissariat à l'Energie Atomique, Paris, France
Original application Apr. 27, 1959, Ser. No. 809,294. Divided and this application July 22, 1965, Ser. No. 482,976
Claims priority, application France, May 2, 1958, 764,605
1 Claim. (Cl. 75—84.1)

A method of remote starting of exothermic chemical reaction for preparing metallic uranium comprising the

steps of mixing a small portion of a reaction mixture of uranium tetrafluoride with a small quantity of an alkaline or earth-alkaline peroxide, placing said small portion in a detonator, placing a reaction mixture of uranium tetrafluoride in a vessel, providing an inert atmosphere or



vacuum in the vessel over the reaction mixture and then both igniting the small portion of reaction mixture in the vessel and shooting the ignited portion into the reaction mixture in the vessel by detonation of said detonator into the vessel.

3,356,493
ALLOYS FOR NITRIDING STEEL AND METHOD OF NITRIDING STEEL

François Danis, Annecy, and Raymond Cloppet and Jean Montanteme, Le Giffre, France, assignors to Societe d'Electro-Chimie, d'Electro-Metallurgie ... des Acieries Electriques d'Ugine, Paris, France, a ... rporation of France

No Drawing. Filed Jan. 15, 1965, Ser. No. 425,922
Claims priority, application France, Jan. 22, 1964, 961,173
5 Claims. (Cl. 75—134)

1. A metal alloy consisting essentially of about 40.0–90.0% by weight manganese, about 0.50–10.0% by weight aluminum, about 0.50–10.0% by weight nitrogen and up to 8% by weight carbon.

3,356,494
FLUXLESS ALUMINUM BRAZING ALLOYS

Nikolajs Bredzs, Chicago, Ill., assignor, by mesne assignments, to Reynolds Metals Company, Richmond, Va., a corporation of Delaware

No Drawing. Filed Dec. 23, 1964, Ser. No. 420,816
11 Claims. (Cl. 75—141)

5. A fluxless brazing alloy for aluminum consisting essentially of from about 63 to about 78.5 weight percent of aluminum and from about 4.5 to about 10.5 weight percent of magnesium, the balance at least one melting temperature depressant metal selected from the group consisting of copper and zinc, said alloy having a melting range such as to be effective for brazing at a temperature in the range from about 450° C. to about 500° C.

3,356,495
METHOD FOR PRODUCING HIGH DENSITY TUNGSTEN INGOTS

Gordon E. Zima, Danville, and John F. Lakner, Livermore, Calif., assignors to the United States of America as represented by the United States Atomic Energy Commission

Filed Mar. 13, 1967, Ser. No. 623,196
13 Claims. (Cl. 75—214)

1. In a process for producing high density tungsten ingots from degassed green ingots by compaction of said green ingots in a belt type high pressure apparatus, the steps comprising:

(a) compressing said green ingot to a pressure of at least about 1 kilobar, and

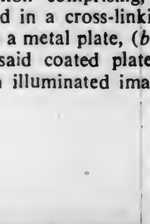
(b) heating said green ingot to a temperature between about 900 and 1400° C.,

(c) thereafter reducing said pressure to atmospheric pressure and reducing said temperature to ambient temperature, said pressure being reduced at a sufficient rate to depressurize said ingot prior to reducing the temperature of said ingot to about 700° C.

3,356,496
METHOD OF PRODUCING HIGH DENSITY METALLIC PRODUCTS

Robert W. Hailey, 5455 Oleta Turn, Long Beach, Calif. 90815

Filed Feb. 25, 1966, Ser. No. 536,524
14 Claims. (Cl. 75—226)



1. A process for consolidating a mass of materials in any of initially powdered, sintered, fibrous, or sponge form and having a bulk density less than the theoretical density of the material and being of the group consisting of metals, metalloids, metal alloys and inorganic metallic compounds, that includes providing a refractory container of a material of the group consisting of carbon, graphite and ceramics composed of chemically combined metals, heating said mass and container to elevated temperatures at which under compression the mass is compactable to coherency and densities approaching its maximum theoretical density and the container is deformable, then placing the heated mass in the container within a rigidly walled compression cavity and compressing the mass and container in the same direction within the cavity and relative to its wall to compact and increase the density of the mass while deforming the container in the direction of and in conformance with the mass compaction, the container and mass being retained within the cavity throughout the compression.

7. The process of claim 1, that includes also placement of a removable liner between the container and the cavity wall.

3,356,497
RINSE COMPOSITION AND METHOD FOR USE THEREOF IN ELECTROPHOTOGRAPHIC PRINTING

Clyde A. Moe, Sanford, and John A. Easley, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Nov. 9, 1964, Ser. No. 409,964
8 Claims. (Cl. 96—1)

1. In the electrophotgraphic preparation of etchable photoengraving plates including: (*a*) providing a photoconductive composition comprising, a photoconductive zinc oxide suspended in a cross-linking resinous insulating binder coated on a metal plate, (*b*) negatively electrostatically charging said coated plate, (*c*) exposing the charged plate to an illuminated image to form a latent

electrostatic image, (*d*) contacting said latent image with a cross-linking promoting catalyst material, (*e*) rinsing the plate so-contacted in a rinsing liquid, (*f*) curing the plate at an elevated temperature, (*g*) removing the non-image areas, and (*h*) contacting the so-treated plate with a powderless etching bath; the improvement comprising, rinsing the catalyst-contacted plate with a rinse composition comprising: (1) from about 40 to about 50 parts by volume of a stable, low toxicity, non-flammable fluorinated hydrocarbon liquid characterized by a Kauri-Butanol value of about 31, an evaporation rate of 170 seconds (based on CCl_4 being 100), a boiling point of about 117.63° F., and a molecular weight of about 187.39, and (2) from about 60 to about 50 parts by volume of a high purity, low toxicity, isoparaffinc solvent, having a Kauri-Butanol value of about 29.0, an evaporation rate of about 353 seconds, and a flash point (TCC) of about 50° F.

3,356,498
ELECTROPHOTOGRAPHIC METHOD COMPRISING RINSING THE IMAGED PLATE

Clyde A. Moe, Sanford, Mich., and Henderson C. Gillespie, Moorestown, N.J., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Nov. 9, 1964, Ser. No. 409,991
6 Claims. (Cl. 96—1)

1. In the electrophotographic preparation of etchable photoengraving plates including: (*a*) providing a photoconductive composition comprising, a photoconductive zinc oxide suspended in a cross-linking resinous insulating binder coated on a metal plate, (*b*) negatively electrostatically charging said coated plate, (*c*) exposing the charge plate to an illuminated image to form a latent electrostatic image, (*d*) contacting said latent image with a cross-linking promoting catalyst material, (*e*) rinsing the plate so-contacted in a rinsing liquid, (*f*) curing the plate at an elevated temperature (*g*) removing of the non-image areas and (*h*) contacting the so-treated plate with a powderless etching bath; the improvement comprising, rinsing the catalyst-contacted plate with an isoparaffinic hydrocarbon liquid characterized by a Kauri-Butanol valve of about 27, a flash point of about 104° F., and an evaporation rate at 100 percent concentration of 3180 seconds.

3,356,499
RINSE COMPOSITION FOR USE IN ELECTROPHOTOGRAPHIC PRINTING

Clyde A. Moe, Sanford, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

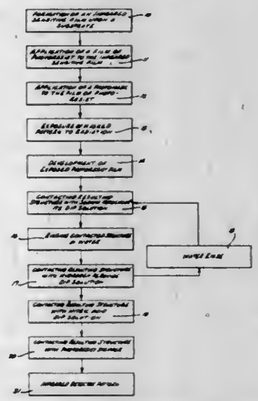
No Drawing. Filed Nov. 9, 1964, Ser. No. 409,992
8 Claims. (Cl. 96—1)

1. In the electrophotographic preparation of etchable photoengraving plates including: (*a*) providing a photoconductive composition comprising, a photoconductive zinc oxide suspended in a cross-linking resinous insulating binder coated on a metal plate, (*b*) electrostatically charging said coated plate, (*c*) exposing the charged plate to an illuminated image to form a latent electrostatic image, (*d*) contacting said latent image with a cross-linking promoting catalyst material, (*e*) rinsing the plate so-contacted in a rinsing liquid, (*f*) curing the plate at an elevated temperature, (*g*) removing the non-image areas, and (*h*) contacting the so-treated plate with a powderless etching bath; the improvement comprising, rinsing the catalyst-contacted plate with a rinse composition comprising: (1) from about 48.5 to about 49.5 parts by volume of a stable, low toxicity, non-flammable fluorinated hydrocarbon liquid characterized by a Kauri-Butanol value of about 31, and evaporation rate of 170 seconds (based on CCl_4 being 100), a boiling point of about 117.63° F. and a molecular weight of about 187.39; (2) from about 48.5 to about 49.5 parts by volume of a high purity, low toxicity, isoparaffinic solvent, having a Kauri-Butanol value of about 29, an evaporation rate of about 353 seconds, and a flash point (TCC) of about 50° F.; and (3) from about 1.0 to about 3 parts by volume of an aliphatic naphtha solvent characterized by a Kauri-Butanol value of about 30, an evaporation rate of about 3480 seconds, a flash point of about 147° F. (TCC), and a boiling range of from 364° to 402° F.

3,356,500
PRODUCTION OF INFRARED DETECTOR PATTERNS

Evert A. Autrey, Santa Barbara, Calif., assignor to Santa Barbara Research Center, Goleta, Calif., a corporation of California

Filed Sept. 28, 1964, Ser. No. 399,590
3 Claims. (Cl. 96—36)



1. A method for the production of infrared detector patterns of infrared sensitive material selected from the group consisting of lead selenide and lead sulfide which comprises the steps of applying a film of the infrared sensitive material to a substrate, applying a photoresist layer to the exposed infrared sensitive film, applying a photomask having clear and opaque areas of the desired pattern to the photoresist layer, exposing the resulting structure to radiation through the photomask to modify the photoresist layer in clear areas of the pattern, developing the photoresist to produce a coating to protect the predetermined infrared sensitive pattern from etching solutions, removing the infrared sensitive film not protected by photoresist by alternately dipping the resulting structure in an aqueous solution of hypochlorite and an aqueous solution of peroxide, removing the chemically converted infrared sensitive film not protected by photoresist, and removing the remaining protective layer of photoresist from the resulting structure to produce the desired infrared detector pattern.

3,356,501
GELATIN PRINTING PLATES WITH THERMOPLASTIC UNDERLAYER

Derek John Tongs, Brighton, Sussex, England, assignor to Koch Processes Limited, London, England, a British company

No Drawing. Filed Jan. 4, 1962, Ser. No. 164,410
Claims priority, application Great Britain, Jan. 6, 1961, 696/61
2 Claims. (Cl. 96—36.3)

1. A method of relief printing which comprises providing a sensitized plate stock formed of a sheet of base material having fixed thereto a layer of water-insoluble synthetic thermoplastic material selected from the group consisting of polyvinyl chloride, polystyrene and cellulose

acetate about 0.01 inch in thickness and superimposed thereon an adherent layer of gelatine about 0.01 inch in thickness that is sensitized to become insoluble in water upon exposure to light, exposing selected areas of said gelatine layer to light to render the gelatine in those areas insoluble in water, developing the face of the exposed plate stock with warm water to remove gelatine in the exposed areas, washing the face of the plate stock with an organic solvent capable of dissolving said thermoplastic material without substantial swelling in which gelatine is insoluble to remove the thermoplastic material from portions of the layer thereof exposed by complete removal of the gelatine covering said portions providing a relief printing plate having a relief pattern of depth greater than the thickness of said gelatine layer, drying the completed plate, applying printing ink to the patterned face of the printing plate and printing with the inked printing plate.

3,356,502
AMMONIUM OR ALKALI METAL THIOCYANATE AQUEOUS RINSE SOLUTION FOR STABILIZED SILVER PHOTOGRAPHIC IMAGES

Kintaro Nasu, Tatsuya Tajima, and Takao Kano, Kanagawa-ken, Japan, assignors to Fuji Shashin Film Kabushiki Kaisha, Kanagawa-ken, Japan, a corporation of Japan

Filed May 28, 1965, Ser. No. 459,802
Claims priority, application Japan, June 25, 1964, 39/35,748
1 Claim. (Cl. 96—50)

In a process for the rapid treatment of a silver halide photographic material wherein the silver halide photographic material is developed, the developed material is stabilized with a stabilizing bath containing at least one compound selected from the group consisting of ammonium thiocyanate and an alkali metal thiocyanate, and is then dried, the improvement which comprises immersing the developed material, after the stabilizing bath and before the drying, in an aqueous solution containing at least one of said compounds in a concentration of 1 to 15 weight percent and less than the concentration of said stabilizing bath.

3,356,503
STABILISING PHOTOGRAPHIC SILVER HALIDE EMULSIONS WITH ORGANIC MERCURY COMPOUNDS

Wilhelm Kairies and Anita von Konig, Leverkusen, Germany, assignors to Agfa Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Mar. 10, 1964, Ser. No. 350,673
Claims priority, application Germany, Apr. 13, 1963, A 42,879
6 Claims. (Cl. 96—109)

1. Photographic material comprising at least one supported light-sensitive silver halide emulsion layer containing a compound of the following formula:

$$R_1—Hg—X$$

wherein R_1 represents a radical of the group consisting of a phenyl or a naphthyl, X represents —O—R_2 or —S—R_2 and R_2 stands for a 5- or 6-membered heterocyclic ring containing at least two hetero atoms at least one of which is nitrogen, said compound being present in an amount that stabilizes the emulsion against storage changes.

3,356,504
GROWTH-PROMOTING COMPOSITIONS OF IMPROVED STABILITY

William L. Bender, Plainfield, and Nelson H. Ludwig, Franklin, Ind., assignors to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana

No Drawing. Filed Sept. 19, 1963, Ser. No. 310,138
15 Claims. (Cl. 99—2)

1. A growth-promoting animal feed premix composition of improved stability prepared by mixing with an edible solid carrier material, a solution of diethylstilbestrol in a solvent selected from the group consisting of propylene glycol and a polypropylene glycol of molecular weight up to about 20,000, the ratio of diethylstilbestrol to solvent being about 1 to 150 parts of diethylstilbestrol to 1000 parts of solvent.

3,356,505
POTENTIATION OF CHOCOLATE FLAVOR WITH AMMONIATED GLYCYRRHIZIN

Robert J. Morris, Jr., Cherry Hill, N.J., assignor to MacAndrews & Forbes Company, Camden, N.J., a corporation of New Jersey

No Drawing. Filed Dec. 23, 1964, Ser. No. 420,770
8 Claims. (Cl. 99—26)

1. The method of potentiating the chocolate flavor of cocoa which comprises combining with the cocoa a small amount of ammoniated glycyrrhizin to enhance the chocolate flavor but insufficient to provide the flavor of licorice.

3,356,506
DOUGH COMPOSITION AND PROCESS FOR PREPARING SAME

Samuel A. Matz, Liverpool, Ernest G. Linke, North Syracuse, and Donald E. Mook, Dewitt, N.Y., assignors to The Borden Company, New York, N.Y., a corporation of New Jersey

No Drawing. Filed Feb. 1, 1965, Ser. No. 429,618
6 Claims. (Cl. 99—90)

4. The method of preventing the formation of visible crystals of disodium phosphate dodecahydrate in cereal doughs for refrigerated storage and subsequent baking containing phosphate leavening acids, comprising the steps of adding disodium phosphate to the water used to form the dough in an amount sufficient to supersaturate the aqueous phase of the dough upon cooling and cooling the dough to a temperature above its freezing point but below 32° F. for a time sufficient to deposit microscopic crystals of disodium phosphate dodecahydrate substantially uniformly through the dough.

3,356,507
LACTALBUMIN PHOSPHATE LIPID COMPLEX

Winston H. Wingerd, Elgin, Ill., assignor to The Borden Company, New York, N.Y., a corporation of New York

No Drawing. Filed June 12, 1964, Ser. No. 374,832
9 Claims. (Cl. 99—139)

1. A water-dispersible complex suitable for use as an emulsifying agent comprising from about 10 to about 50 parts by weight for each 100 parts by weight of complex of an edible non-proteinaceous emulsifier capable of forming a complex and a protein selected from the group consisting of lactalbumin and a lactalbumin phosphate.

3,356,508
CONTINUOUS PROCESS FOR HIGH-FLAVORING MAPLE SIRUP

Charles O. Willits, North Hills, and Joseph C. Underwood, Sr., Plymouth Meeting, Pa., assignors to the United States of America as represented by the Secretary of Agriculture

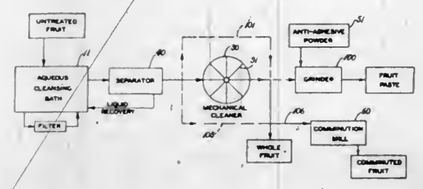
No Drawing. Filed Apr. 21, 1965, Ser. No. 449,899
7 Claims. (Cl. 99—142)

1. A continuous process for preparing maple sirup of intensified flavor and color comprising introducing a maple sirup under pressure into a first zone, heating said sirup in said first zone to a temperature of at least about 298° F. for a time sufficient to produce increased flavor and color, said pressure being sufficient to prevent boiling of said sirup at said temperature, conducting the heated sirup to a second zone, cooling the heated sirup rapidly in said second zone to below its boiling point at atmospheric pressure, releasing the cooled sirup from said second zone to atmospheric pressure, and collecting the released sirup.

3,356,509
DRIED FRUIT TREATING PROCESS

Claude C. Laval, Jr., Fresno, Calif., assignor of one-fourth to Herbert A. Huebner, Hollywood, and one-fourth to Richard M. Worrel, Fresno, Calif.

Filed July 29, 1963, Ser. No. 298,357
13 Claims. (Cl. 99—154)

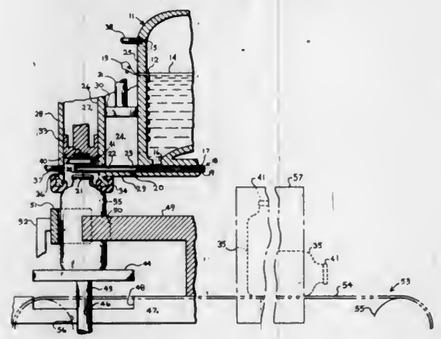


1. A process for preparing dried fruit for market comprising immersing the dried fruit in an aqueous bath consisting essentially of water and an additive of a water soluble material selected from the group of organo-silicon oxide polymers present in the bath in an amount of substantially between 1 to 33.3 parts per million by weight, agitating the products while in the bath sufficiently to dislodge surface impurities therefrom, removing the products from the bath, and removing surface moisture from the dried fruit with an imperceptible film of said selected material adherent thereto as a barrier to subsequent contamination and loss of internal moisture.

3,356,510
METHOD AND APPARATUS FOR STERILE PACKAGING

Herbert A. Barnby, deceased, late of Toledo, Ohio, by Bernice P. Barnby, executrix, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio

Filed Nov. 12, 1965, Ser. No. 507,590
22 Claims. (Cl. 99—182)



1. A method of packaging a liquid-containing food in a container which comprises:
(1) sterilizing said food at a temperature substantially above the atmospheric boiling point of the liquid and under a pressure at least equal to the vapor pressure of the liquid in the food at the sterilizing temperature;
(2) providing within a chamber at least part of a container having an open end so that gas in said chamber when closed communicates directly with at least said open end of said container until said end is closed;
(3) providing in said chamber and thereby in said container a predetermined elevated gaseous pressure by introducing through a gas inlet of said chamber pressurized gas directly from and only from a source of pressurized gas;
(4) transferring said sterile food at a sterilizing temperature and under a pressure at least equal to the vapor pressure of the liquid in the food through an inlet of said chamber other than said gas inlet into said chamber and then into said container in said chamber maintained at an elevated gaseous pressure sufficiently high to prevent substantial boiling of said food to displace gas by said food from said container into the gas-containing space of said chamber;
(5) hermetically sealing said container;
(6) closing said gas inlet to cease communication between said chamber and said source of pressurized gas;
(7) releasing the gaseous pressure in said chamber to provide said space of said chamber at atmospheric pressure; and
(8) removing the hermetically-sealed container from the chamber.

3,356,511
METHOD OF TREATING DRUPACEOUS FRUIT

D Loyd Hunter, 33 S. 2nd Ave., Yakima, Wash. 98902, and James R. Oyler, R.D. 1, Biglerville, Pa. 17307

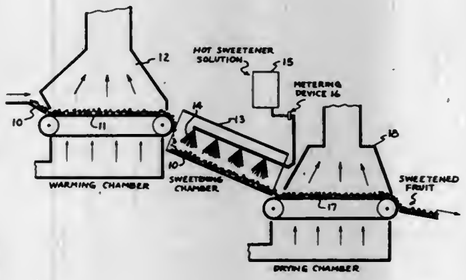
No Drawing. Filed Dec. 30, 1963, Ser. No. 334,597
9 Claims. (Cl. 99—193)

1. The method of pitting and handling drupaceous fruit to effect an optimum minimum loss of juice and flesh, said method comprising,
quick cooling the fruit in a manner such as to freeze only the outer layer of such fruit while leaving inner flesh portions unfrozen,
pitting the fruit while in such condition, and then immediately freezing such fruit solid throughout.

3,356,512
METHOD OF MAKING FREEZE DRIED ARTIFICIALLY SWEETENED FRUIT PRODUCTS

Normand A. Lemaire and Ralph D. Peterson, Battle Creek, Mich., assignors to Kellogg Company, Battle Creek, Mich., a corporation of Delaware

Filed Aug. 18, 1964, Ser. No. 390,283
1 Claim. (Cl. 99—204)



The method of sweetening pieces of fruit in a substantially uniform manner while substantially retaining the integrity of the shapes of said pieces, which comprises

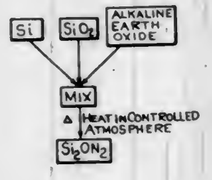
subjecting integral pieces of raw fruit to freeze drying to a moisture content of less than about 2% by weight, recovering the resulting porous pieces, impregnating them with a hot aqueous solution of artificial sweetener to a moisture content not greater than about 6% by weight, and heat drying them to substantially the aforesaid freeze-dried moisture content.

3,356,513

PRODUCTION OF SILICON OXYNITRIDE

Malcolm E. Washburn, Princeton, Mass., assignor to Norton Company, Worcester, Mass., a corporation of Massachusetts

Filed Dec. 20, 1966, Ser. No. 603,248
10 Claims. (Cl. 106—55)



1. A process for making silicon oynitride, Si_2ON_2, comprising:

(a) providing a mixture of 47.5 to 98 parts by weight of elemental silicon, 1 to 50 parts by weight of SiO_2 and a source of up to 5 parts by weight of an oxide selected from the group consisting of BaO, CaO, MgO, SrO, CeO_2, and Y_2O_3;

(b) firing the mixture to at least 1350° C. in a mixture of oxygen and nitrogen in which the ratio of oxygen to nitrogen is from 1 to 99 to 6 to 94 parts by volume.

8. A refractory body consisting of from 60 to 99% silicon oxynitride and from 1 to 40% clay, by weight.

3,356,514

ALUMINA REFRACTORIES

Berbl E. Wishon, 5428 Florida Ave., Bethel Park, Pa. 15102, and Stanley R. Pavlica, 1012 Robbin Station, Irwin, Pa. 15642

Filed Feb. 23, 1966, Ser. No. 529,538
4 Claims. (Cl. 106—65)

1. A method of making fired high alumina refractory shapes comprising the steps of:

(1) calcining bauxitic kaolin above about 2950° F.;

(2) preparing a size-graded refractory batch including, by weight, about 50–90% of said calcined bauxitic kaolin, the remainder being at least one material selected from the group consisting of finely divided calcined and crude aluminum ores, finely divided calcined and crude kaolin, and finely divided ball clay, the selected materials substantially all passing a 100 mesh screen, there being no more than about 1%, by weight, alkalies in the batch;

(3) forming refractory shapes from said batch; and

(4) burning said refractory shapes between about 2750 and 2850° F., said shapes being substantially free of vitrification, and being microscopically crystalline and characterized by substantially true mineral homogeneity, whereby the shapes have increased resistance to loads and alkali slag attack at elevated temperatures.

4. Shapes made according to the method of claim 1.

3,356,515

HIGH TEMPERATURE PROTECTIVE COATING

Quentin T. McGlothlin, Houston, Tex., assignor to Esso Research and Engineering Company

No Drawing. Filed Dec. 27, 1965, Ser. No. 516,701
17 Claims. (Cl. 106—84)

11. A composition for providing a high temperature coating consisting essentially of a silica-based vehicle made from a solution selected from the group consisting of tetraethyl-orthosilicate, alkali silicate, and alkali-stabilized colloidal silica, said vehicle having a total solids content of between 10 and 45 weight percent; a 325-mesh silica sand; a pigment selected from the group consisting of metallic and semi-metallic aluminum, nickel, stainless steel and iron alloys thereof having melting points above 1200° F.; and zinc dust in an amount sufficient to provide cathodic protection.

3,356,516

PROTEIN ADHESIVE PREPARATION

Hellmuth C. Schwalbe, Chillicothe, Ohio, assignor to The Mead Corporation, Dayton, Ohio, a corporation of Ohio

No Drawing. Filed Feb. 13, 1963, Ser. No. 258,153
10 Claims. (Cl. 106—146)

1. In a process for the reduction of the viscosity of proteinaceous materials at elevated temperatures without substantial discoloration thereof, the step which comprises subjecting an aqueous alkaline solution of a proteinaceous material to simultaneous high shear agitation and heating to above 270° F. for a relatively short period of time to effect reduction of the viscosity of said proteinaceous material without substantial discoloration thereof, by injecting high velocity steam at superatmospheric pressures into a stream of said aqueous alkaline solution of a proteinaceous material.

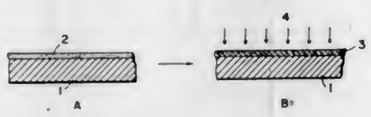
2. This process of claim 1, wherein the proteinaceous material is selected from the group consisting of casein, soya flour and native soya protein.

3,356,517

HEAT COAGULATABLE PAPER COATING COMPOSITION

Hideiku Nakajima and Hideo Shimizu, Takasago, Japan, assignors, by mesne assignments, to Scott Paper Company, Delaware County, Pa., a corporation of Pennsylvania

Filed Dec. 17, 1963, Ser. No. 331,220
7 Claims. (Cl. 106—148)



1. In a process for producing a coated printing paper wherein an aqueous coating slurry is applied to a paper web and dried thereon, said aqueous coating slurry having a total solids content of at least 30 weight percent and comprising a paper coating-grade adsorptive mineral pigment and an adhesive binder selected from the group consisting of proteinaceous and synthetic latex adhesives, said slurry containing a dispersing agent that has a dispersing action on said mineral pigment; the improvement comprising controlling, during the preparation of said aqueous coating slurry, the amount of said dispersing agent acting on said mineral pigment such that the aqueous coating slurry is stable at 25° C. and sets a non-flowable state at an elevated temperature in the range of 35° to 100° C. because of flocculation of said mineral pigment, said aqueous coating slurry being applied to said paper web

at a temperature at which it is in a flowable state and thereafter the resulting coating being heated to said elevated temperature prior to drying.

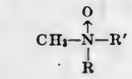
3,356,518

PROCESS OF INSOLUBILIZING PROTEIN WITH A TERTIARY AMINE OXIDE AND A WATER SOLUBLE FERRIC SALT

Daniel P. Gilboe, Minneapolis, Minn., and Garson P. Shulman, Baltimore, Md., assignors, by mesne assignments, to Ashland Oil & Refining Company, a corporation of Kentucky

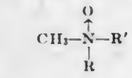
No Drawing. Filed Jan. 22, 1965, Ser. No. 427,511
11 Claims. (Cl. 106—154)

1. A composition comprising a protein containing a compound having the general formula



wherein R and R' are radicals selected from the class consisting of hydrocarbyl radicals having from one to ten carbon atoms and 2-hydroxyhydrocarbyl radicals having from one to ten carbon atoms and a water soluble ferric salt.

8. The process of cross-linking proteinaceous materials which comprises admixing a protein with a tertiary amine oxide compound having the general formula



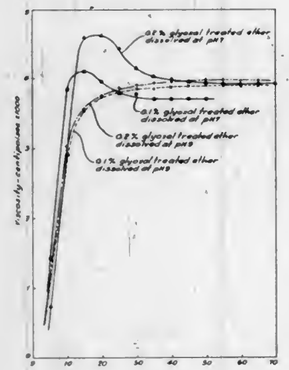
wherein R and R' are radicals selected from the class consisting of hydrocarbyl radicals having from one to ten carbon atoms and a water soluble ferric salt at a temperature below 70° C. and thereafter heating the mixture to a temperature above 70° C.

3,356,519

CELLULOSE ETHER COMPOSITION

William C. Chambers, Plaquemine, and Milford Lee, Baton Rouge, La., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Feb. 28, 1964, Ser. No. 348,023
1 Claim. (Cl. 106—187)



A composition of matter consisting essentially of a water-soluble, particulate cellulose ether having an aldehydic surface treatment to increase the dispersibility of the ether in water and an alkali metal salt of a weak protonic acid in an amount sufficient to maintain an aqueous solution of the ether and said salt in water at a pH within the range from about 7.5 to about 9.5.

3,356,520

DENSIFICATION OF CARBON BLACK

Alton E. Daniell, Houston, Tex., assignor to Ashland Oil & Refining Company, Houston, Tex., a corporation of Kentucky

No Drawing. Filed Mar. 13, 1964, Ser. No. 351,853
7 Claims. (Cl. 106—307)

1. A method of densifying carbon black, consisting essentially of: evenly distributing a stable densifying oil in the form of a fine mist onto particles of loose carbon black in a bulky mass of said particles in a confined zone, the addition of oil being accompanied at substantially all times by tumultuous agitation of said mass, in which substantially all of the carbon black particles in the mass which are being treated with said oil are subjected to agitation with sufficient intensity to forcibly throw them about in the treating zone and to maintain them in a state of vigorous commotion and thorough turbulent mixing the rate of oil addition being limited to a rate which is no greater than that at which the oil can be readily taken up by said particles to prevent the collection of localized accumulations of oil within said mass, and the amount of oil employed being about 5 to about 32 parts by weight per hundred parts black; and recovering from said confined zone an unpelletized loose carbon black product that is substantially free of difficultly dispersible aggregates and exhibits significantly enhanced bulk density.

3,356,521

ELECTROSTATIC FLOCKING PROCESS USING MODIFIED STEREOREGULAR POLYPROPYLENE FIBERS

Alexander Boltniew, Spartanburg, S.C., assignor to Hercules Incorporated, a corporation of Delaware

No Drawing. Filed Sept. 17, 1964, Ser. No. 397,310
3 Claims. (Cl. 117—17)

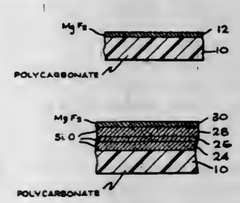
1. In the process of electrostatically flocking fibers of stereoregular polypropylene wherein anti-static treated yarn fiber flock is sifted onto and adhesive coated substrate in the presence of an electrostatic force field between the sifting means and the substrate, the improvement which comprises using stereoregular polypropylene flocking fibers prepared by incorporating into the polypropylene, prior to spinning into fibers, 0.5 to 2.0 percent by weight of a polar inorganic salt selected from the group consisting of titanium dioxide and zinc sulfide.

3,356,522

POLYCARBONATE FILM CONTAINING AN ANTIREFLECTION COATING

Barbara A. Libbert, Los Angeles, Calif., assignor, by mesne assignments, to McDonnell Douglas Corporation, Santa Monica, Calif., a corporation of Maryland

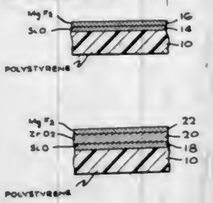
Filed Feb. 10, 1964, Ser. No. 343,637
8 Claims. (Cl. 117—33.3)



1. A transparent polycarbonate film containing on a surface thereof a multilayer transparent antireflection coating comprising three successive layers of silicon monoxide,

each of said layers having a different index of refraction from an adjacent silicon monoxide layer, and a fourth layer of magnesium fluoride over the third layer of silicon monoxide.

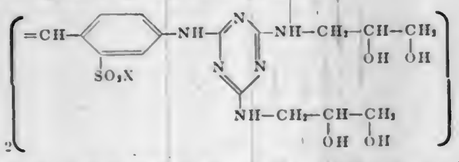
3,356,523
POLYSTYRENE FILM CONTAINING AN ANTIREFLECTION COATING
Barbara A. Libbert, Los Angeles, Calif., assignor, by mesne assignments, to McDonnell Douglas Corporation, Santa Monica, Calif., a corporation of Maryland
Filed Feb. 10, 1964, Ser. No. 343,674
11 Claims. (Cl. 117—33.3)



1. A transparent polystyrene substrate containing on a surface thereof a transparent multilayer antireflection coating comprising a first layer of silicon monoxide adjacent said substrate, and a second layer of magnesium fluoride over said first layer.

3,356,524
PROCESS FOR TREATING AND BRIGHTENING CELLULOSE FIBERS
Bennett George Buell, Somerville, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Original application May 11, 1964, Ser. No. 366,635, now Patent No. 3,309,363, dated Mar. 14, 1967. Divided and this application Sept. 29, 1966, Ser. No. 583,086
2 Claims. (Cl. 117—33.5)

1. A method of treating cotton fibers which comprises contacting said fibers with an aqueous solution having an effective amount of a thermosetting textile resin, an effective amount of a cationic softener and an effective amount of an optical brightener of the formula:



wherein X is a member selected from the group consisting of hydrogen, sodium, ammonium and potassium, and curing said resin at elevated temperature.

3,356,525
METAL CARBIDE FORMATION ON CARBON FIBERS
Carlos L. Gutzeit, Long Beach, Calif., assignor to Hitco Corporation, a corporation of California
Filed Nov. 18, 1963, Ser. No. 324,477
12 Claims. (Cl. 117—46)

1. A method of improving the oxidation resistance of amorphous carbon fibers, which method comprises covering the surfaces of carbon fibers with and bonding to said surfaces a layer of heat decomposable organic material containing carbon and metal selected from the group consisting of zirconium, chromium, nickel, titanium, and mixtures thereof, said carbon fibers having been heat shrunk at about 1800–2200° F., and thereafter decomposing said material under non-oxidizing conditions and at elevated temperatures to carbide of said metal while substantially preserving the carbon of said fiber, said temperature being below that at which graphitization occurs, whereby said fibers have improved oxidation resistance at temperatures in excess of 800° F.

3,356,526
METHOD OF PREPARING WATER-DISPERSIBLE SOFTENER COMPOSITIONS AND PRODUCTS PRODUCED THEREBY
Milton M. Waldman, Northbrook, and Andrea E. Mariahazy, Westchester, Ill., assignors to Armour and Company, Chicago, Ill., a corporation of Delaware
No Drawing. Filed May 13, 1964, Ser. No. 367,193
2 Claims. (Cl. 117—100)

1. The method of preparing a quaternary softener in the form of a dry, free-flowing powder which is readily dispersible in water, comprising:

(a) preparing a solution of a quaternary softener in a volatile organic solvent for the softener, said quatenary softener having a melting point of at least about 90° F. and being represented by the formula:

$$p[CH_3-\underset{\displaystyle R_3}{\overset{\displaystyle R_1}{\underset{|}{\overset{|}{N}}}}-R_2]^{+}[A]^{y(-)}$$

wherein R_1 and R_2 are straight chain hydrocarbon groups containing from 8 to 22 carbons, R_3 is methyl or $(CH_2CH_2O)_nH$ where n is an integer from 5 to 60, A is a mono- or divalent anion, and p and y are integers selected from 1 or 2 to balance the valence;

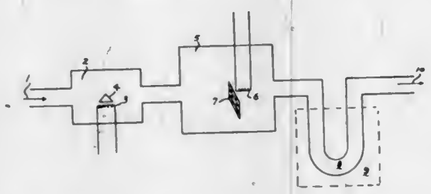
(b) spraying controlled quantities of said solution onto solid particles of urea while said urea is being agitated and forming a surface coating around the individual particles of said urea,

said urea being sized so that at least about 90° by weight thereof ranges from −20 to +100 mesh as determined by U.S. Standard Screens; and

(c) continuing said agitation and spraying until all of said solution has been applied and said solvent has evaporated, leaving the individual particles of said urea coated with said softener without appreciable chemical reaction between said urea and said softener coating,

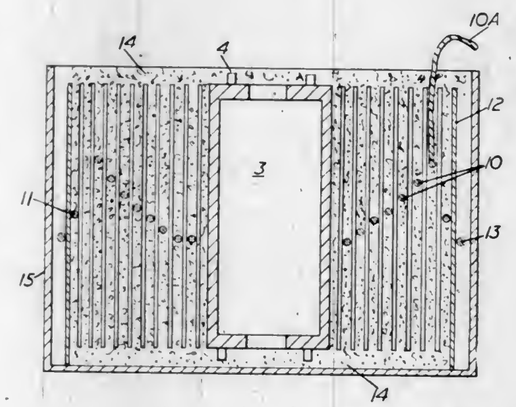
said coated urea still being sized so that at least 90% by weight thereof ranges from −20 to +100 mesh, and said coated urea containing from 4 to 30 parts by weight of said softener per 100 parts of urea.

3,356,527
VAPOR-PLATING METALS FROM FLUOROCARBON KETO METAL COMPOUNDS
Ross W. Moshier, Kettering, Ohio (1002 S. Kolb Road, Suite 23, Tucson, Ariz. 85710); Robert E. Sievers, 2628 N. Emerald Drive, Fairborn, Ohio 45324; and Lyle B. Spendlove, 1005 Bermuda Drive, Redlands, Calif. 92373
Filed Apr. 23, 1964, Ser. No. 362,212
3 Claims. (Cl. 117—107.2)



1. The process of applying a metal coating to the surface of a substrate target by heating a metal chelate selected from the group that consists of fluorocarbon keto metal compounds that consists of the hexafluoroacetylacetonates and the trifluoracetylacetonates of the metals copper, nickel, cobalt II and lead to its sublimation temperature, passing a reducing agent in vapor form over the metal chelate as a carrier gas, and decomposing the metal chelate in its vapor state and depositing at least a part of the metal content of the chelate on the surface of a substrate target maintained at the deposition temperature of the metal content of the chelate.

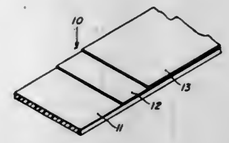
3,356,528
METHOD AND APPARATUS FOR DIFFUSION COATING OF METALS IN COILED STRIPS
Thomas Gibson, Motherwell, and William R. McAdam, Carluke, Scotland, assignors, by mesne assignments, to Colvilles Limited, Glasgow, Scotland, a British company
Filed Nov. 14, 1963, Ser. No. 323,750
Claims priority, application Great Britain, Nov. 15, 1962, 43,185/62
6 Claims. (Cl. 117—107.2)



1. A process for treating the surface of a flexible metal strip, comprising co-winding the strip with elongate flexible spacing means to form interleaved coils so that the turns of the metal coil are held substantially uniformly spaced from one another by the turns of the coiled spacing means, externally binding the metal coil by a flexible band to prevent self-unwinding of the metal coil, setting the bound metal coil on end, packing treating medium through the uppermost end, closing said uppermost end, inverting the bound metal coil, packing treating medium through the now uppermost end, removing the spacing means from the metal coil, and heating the coated coil.

5. Apparatus for use in treating the surface of flexible metal strip with a treating medium, comprising a bobbin for use in winding the strip into a coil and having a core and circular end plates detachable from the core to enable endwise packing of the coil with treating medium, an open ended cylindrical wall having a diameter less than said circular end plates and a length greater than the sum of the axial length of the bobbin and the thickness of one of said end plates, the cylindrical wall being arranged, on the removal of one end plate, to sit on the other end plate and surround the coil of strip and a cylindrical container having a diameter greater than said end plates and a length equal to the sum of the length of said cylindrical wall and the thickness of one of said end plates, said container serving to close the open top of the encircled coil to enable inversion of the coil during packing without loss of treating material.

3,356,529
METHOD FOR THE DEPOSITION OF AN ELECTRO-CONDUCTIVE TRANSPARENT INDIUM OXIDE COATING
Kenneth M. Kiser, Scotia, and Ray W. Shade, Burnt Hills, N.Y., assignors to General Electric Company, a corporation of New York
Filed July 31, 1964, Ser. No. 386,494
11 Claims. (Cl. 117—201)



1. A method for preparing on a flexible substrate a thin coating, substantially of an indium oxide, said coating having a resistance as low as about 1000 ohms per square and an optical transmittance in excess of 90% comprising the steps of:

(a) depositing a coating of indium on a flexible substrate at a predetermined rate in an environment containing oxygen gas with the pressure of the oxygen being at least as great as the pressure calculable from the formula:

$$Y=1.8\times10^{-3}X$$

wherein Y is the oxygen pressure in microns of mercury and X is the indium deposition rate in angstroms per minute,

(b) coiling the newly coated flexible substrate, and

(c) heating the coiled substrate to controllably convert indium in the coating to indium oxide.

3,356,530
RADIOMETRIC FILM
Ronald Withnell, Manorville, N.Y., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Sept. 2, 1964, Ser. No. 394,091
4 Claims. (Cl. 117—211)

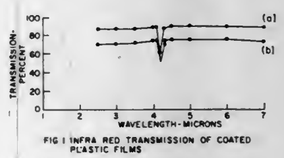


FIG 1 INFRA RED TRANSMISSION OF COATED PLASTIC FILMS

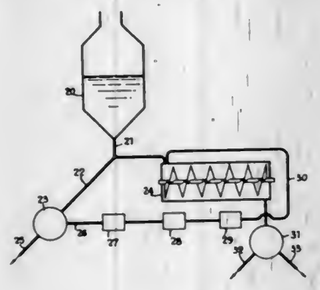
1. The method of coating a thin 4π source carrier film with a thin conducting coating in a vacuum jar, the film comprising a thin, polyvinyl chloride-acetate copolymer film having a density of up to 15 micrograms/cm.^{2}, comprising placing a 10 milligram flat ribbon of solid palladium in conforming contact on a cold foil-shaped tungsten filament in said jar, placing said 4π source carrier film with one side uniformly 50 cm. above said palladium, evacuating said jar around said source carrier film to about 10^{-6} Torr, and supplying alternating electrical current to said tungsten filament to heat said palladium to 1570° C. to avaporize said palladium by molecular emission to deposit said palladium by condensation in a uniform conducting amorphous network on said one side

of said source carrier film for providing a thin conducting film with high near infra-red light transmission and low radiation absorption and scattering.

3,356,531
STABILIZATION OF PASTED STARCH
Robert E. Lanphere, Camanche, Iowa, assignor to Standard Brands Incorporated, New York, N.Y., a corporation of Delaware
No Drawing. Filed July 30, 1964, Ser. No. 386,410
6 Claims. (Cl. 127—33)

3. A composition comprising a pasted starch dispersion and a small amount of hydrogen peroxide effective to prevent substantial reduction on standing of the cementing properties of the starch but insufficient to substantially affect the fluidity of said dispersion.

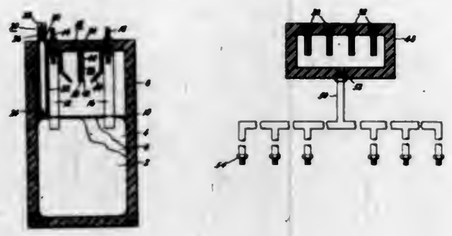
3,356,532
CRYSTALLIZATION OF SUGAR
Albert René Grandadam, Saint-Maur, France, assignor to Andre Pierre Osmond Bizet, Saint-Maur, France
Filed Jan. 7, 1964, Ser. No. 336,172
Claims priority, application France, Jan. 8, 1963, 921,119
12 Claims. (Cl. 127—58)



1. In a process for crystallizing sugar from syrups from sugar works and sugar refineries including at least one run of treating steps consisting of concentrating said syrup in a concentrating apparatus to obtain a massecuite containing sugar crystals, cooling the massecuite in mixing means to further crystallize the massecuite, and centrifuging the cooled massecuite in a centrifugal separator to separate the sugar crystals from a residue which is substantially free from sugar crystals, the improvement consisting of further treating in said run at least a portion of said massecuite after said concentrating step and before the end of said cooling step by centrifuging said portion of massecuite in a centrifugal separator to separate the sugar crystals from a mother liquor, and introducing said motor liquor in said mixing means.

3,356,533
SECONDARY CELL HAVING HYDROGEN-OXYGEN RECOMBINATION CATALYST IN COMMUNICATION WITH ELECTROLYTE CHAMBER
William N. Carson, Jr., Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed Jan. 7, 1965, Ser. No. 423,970
17 Claims. (Cl. 136—6)

1. An aqueous electrolyte secondary cell including
spaced positive and negative plates,
means encapsulating said positive and negative plates forming an electrolyte chamber,
an aqueous electrolyte within said electrolyte chamber and contacting each of said positive and negative plates,
a hydrogen-oxygen recombination catalyst in communication with said electrolyte chamber electrically insulated from each of said positive and negative plates and spaced from contact with said electrolyte, and
a wet-proofing agent having a critical surface tension less than the surface tension of water forming an exterior layer covering said recombination catalyst.



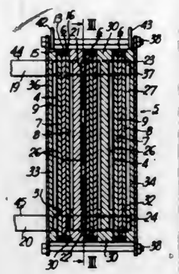
13. A catalyst plenum including
means forming a catalyst chamber,
means connecting said catalyst chamber to at least one aqueous electrolyte secondary cell,
a catalyst structure within said catalyst chamber comprising
a Group VIII metal having an atomic number in excess of 43, and
a wet-proofing agent having a critical surface tension less than the surface tension of water forming an exterior layer on said Group VIII metal.

3,356,534
PRODUCTION OF ELECTRODES FOR ALKALINE STORAGE BATTERIES WHEREIN ACTIVE MATERIAL IS AT LEAST PARTIALLY FORMED FROM THE METALS IN SAID GRID
Karl Ackermann, Mannheim, Germany, assignor, by mesne assignments, to Societe des Accumulateurs Fixes et de Traction (Societe Anonyme), Romainville, Seine, France, a French company
No Drawing. Continuation of application Ser. No. 281,361, May 17, 1963. This application Oct. 12, 1966, Ser. No. 586,307
Claims priority, application Germany, May 26, 1962, B 67,427
9 Claims. (Cl. 136—6)

1. A process for producing electrodes for alkaline storage batteries comprising the steps of treating an at least partly metallic porous electrode grid which is inactive to electrolytes with an aqueous solution consisting essentially of at least one weak acid dissolved in water, said acid being a member selected from the group consisting of acetic acid, propionic acid, citric acid and glycocoll and a metal salt having an oxidizing anion, and subsequently treating said grid with an aqueous solution of an alkali metal hydroxide whereby electrochemically active material consisting of oxidic compounds of the metals contained in said grid are formed within the pores of said grid, said active material being at least partially formed from the metals contained in said grid.

3,356,535
FLUID DISTRIBUTION MEANS IN A FUEL CELL
Richard D. Drushella, Milwaukee, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Dec. 26, 1962, Ser. No. 247,796
8 Claims. (Cl. 136—86)

5. A fuel cell comprising a fluid permeable electrode; a fluid distribution member having a surface abutting and in contact with the electrode, said surface having a distribution recess contiguous the electrode and a collection recess contiguous the electrode; and a thin partition between the surface and the electrode with said partition



having selectively placed relatively small perforations between said electrode and at least one of the recesses.

3,356,536
FUEL CELL ELECTRODES COMPRISING MIXTURES OF SILVER, NICKEL, MOLYBDENUM AND NICKEL-PHOSPHORUS ALLOYS AND METHOD OF MAKING SAME
Henry J. Seim, Brookfield, James P. Murdock, West Allis, and Theodore L. Larson, Milwaukee, Wis., assignors to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
No Drawing. Filed Oct. 22, 1965, Ser. No. 502,590
5 Claims. (Cl. 136—86)

1. The method of producing a catalytic fuel cell electrode comprising the steps of preparing a solution consisting essentially of a dissolved nickelous salt and a dissolved silver salt having a silver ion concentration not exceeding 0.55 mole Ag^+ per mole of Ni^{++}, a molybdenum salt in which molybdenum is in an oxidation state of from +2 to +6 in a quantity sufficient so that the finished catalytic material contains from 6 to 8.5% molybdenum by weight, a dissolved alkali pyrophosphate having at least 1.00 mole of $P_2O_7^{---}$ for each 1.45 moles combined total of Ag^+ and Ni^{++}; a dissolved alkali hypophosphite having in excess of 2.75 moles of $(H_2PO_2)^-$ for each 1.00 mole of Ni^{++}; and maintaining the pH of said solution in excess of pH 10 through addition of ammonium hydroxide; reacting said solution with the hypophosphite of said alkali hypophosphite thereby reducing said nickelous, molybdenum, silver ions to a flocculant precipitate of catalytic material, said catalytic material consisting essentially of nickel, molybdenum, silver and nickel-phosphorus alloy; collecting the catalytic material; and fabricating the catalytic material into a fuel cell electrode.

4. A fuel cell electrode comprising a catalyst consisting essentially of from about 6.75 to 25.4 weight percent silver, from about 6.0 to 8.5 weight percent molybdenum, from about 43.6 to 78.4 weight percent nickel and from about 0.6 to 2.24 weight percent phosphorus.

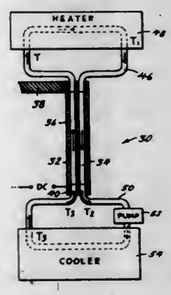
3,356,537
FOAMED SILVER ELECTRODE AND A METHOD FOR PREPARING IT
Joseph C. Duddy, Trevose, Pa., assignor, by mesne assignments, to ESB Incorporated, Philadelphia, Pa., a corporation of Delaware
No Drawing. FHed May 25, 1964, Ser. No. 370,089
5 Claims. (Cl. 136—120)

1. A method for preparing a foamed silver electrode which comprises forming a mixture of monovalent silver oxide powder with a silica powder, the weight ratio of silver oxide to silica ranging from about 7:1 to about 8:1, to form an electrically conductive electrode, shaping the silver oxide-silica composition by compressing it under a pressure ranging from about 5 to about 8 tons per square inch, heating the shaped silver oxide-silica composition to a temperature ranging from 550° C. to about 600° C. so as to decompose silver oxide to generate oxygen and produce a foamed structure of silver and silica, and thereafter sintering the foamed structure at a temperature ranging from about 950° C. to about 1000° C., the method producing a foamed porous electrode in which silver is present with silica and in which the pores are interconnected.

3,356,538
ELECTRODEPOSITED ION EXCHANGE MEMBRANE AND METHOD OF FORMING
Richard G. Miekka, Natick, Ernest H. Lyons, Jr., Marblehead, and Russell M. Dempsey, Hamilton, Mass., assignors to General Electric Company, a corporation of New York
No Drawing. Filed Sept. 29, 1964, Ser. No. 400,228
15 Claims. (Cl. 136—120)

1. A process for applying electrodes of catalytically active metals to ion exchange membranes comprising:
electrolytically depositing a thin layer of catalytically active platinum group metal onto an electrically conducting base,
washing the deposit to remove the residue of the deposition bath,
drying the washed electrodeposited metal,
placing an ion exchange membrane in contact with said electrodeposited catalytic metal,
applying heat and pressure to the assembly to bond the catalytically active metal to the ion exchange membrane, and
removing the ion exchange membrane, with the layer of electrodeposited metal attached, from the conducting base.

3,356,539
THERMOELECTRIC GENERATOR
Zbigniew O. J. Stachurski, 4005 Baltimore Ave., Philadelphia, Pa. 19104
Filed Nov. 5, 1962, Ser. No. 235,580
6 Claims. (Cl. 136—205)



1. In a thermoelectric generator comprising a first arm of P-type thermoelectric material, a second arm of N-type thermoelectric material, a hot junction conductor coupling one end of each of said arms together, an electric terminal at the opposite end of each of said arms, two fluid flow passages extending through each of said arms of thermoelectric material, first means for coupling one end of each of said fluid flow passages in communication with each other, fluid heating means for heating fluid flowing through said first coupling means, second means for coupling the other end of each of said fluid flow passages in communication with each other, fluid cooling means for cooling fluid flowing through said second coupling means, said two passages being closely adjacent to each other

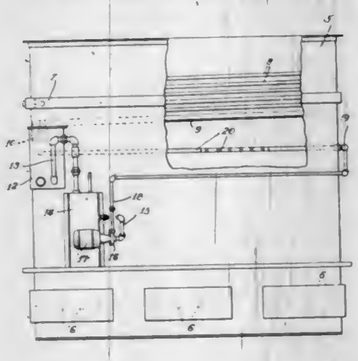
throughout their lengths, the terminus of each of said passages adjacent the first coupling means defining a hot junction for said thermoelectric generator and the terminus of each of said passages adjacent the second coupling means defining a cold junction for said thermoelectric generator, and means for circulating fluid from said first coupling means through one of said passages to said second coupling means and from said second coupling means through the other of said passages back to said first coupling means, whereby heat is transferred from fluid flowing from said first coupling means to said second coupling means through the thermoelectric material separating said passages to fluid flowing from said second coupling means to said first coupling means.

3,356,540

METHOD OF PHOSPHATIZING ARTICLES

Joseph Pokorny, Lincolnwood, Ill., assignor, by mesne assignments, to Baron Industries of California, Los Angeles, Calif., a corporation of California

Filed May 28, 1964, Ser. No. 371,019
5 Claims. (Cl. 148—6.15)



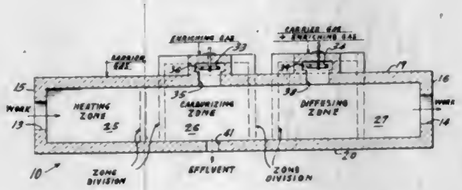
1. The method of treating metal articles for painting, which comprises subjecting the articles to a bath of a phosphatizing solution containing a volatile solvent and heated to the boiling point of the solvent at atmospheric pressure, confining the evolved vapor of the solvent in a zone overlying the area of the bath, withdrawing the articles from the bath into the vapor zone, and washing the articles in the vapor zone with pure condensate of the solvent vapor.

3,356,541

CARBURIZING METHOD AND APPARATUS

Orville E. Cullen, Toledo, Ohio, assignor to Midland-Ross Corporation, Toledo, Ohio, a corporation of Ohio

Filed Aug. 20, 1965, Ser. No. 481,199
18 Claims. (Cl. 148—16.5)



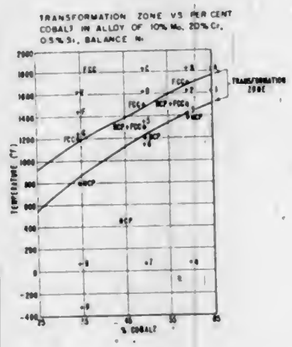
1. In a continuous method for carburizing ferrous metal work which includes the steps of passing the work successively through longitudinally extending and aligned heating, carburizing, and diffusing zones while maintaining a temperature between 1350° F. and 1800° F. in each of the zones, the improvement of controlling the carbon potential of the carburizing zone between 0.6 and 1.4 percent and diffusing zone between 0.6 and 1.1 percent by causing atmosphere flow in one direction while preventing such flow in the opposite direction between the two, introducing into the heating zone a carrier gas incapable of appreciable carburization of the work, preventing appreciable flow of the carrier gas except in the direction of work movement through the heating zone and into the carburizing zone, mixing with the atmosphere which flows into the carburizing zone from at least one of the other zones an enriching gas in a proportion to provide the carbon potential desired therein, preventing appreciable flow of atmosphere from the carburizing zone to the heating zone, introducing into the diffusing zone an atmosphere which, when mixed with any atmosphere flowing into the diffusing zone from the carburizing zone, provides the atmosphere required therein, and withdrawing atmosphere from the one of the carburizing and diffusing zones toward which atmosphere flows from the other at substantially the rate at which atmosphere is introduced into the several zones.

3,356,542

COBALT-NICKEL BASE ALLOYS CONTAINING CHROMIUM AND MOLYBDENUM

Gaylord Smith, Timonium, Md., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Apr. 10, 1967, Ser. No. 637,613
6 Claims. (Cl. 148—32.5)



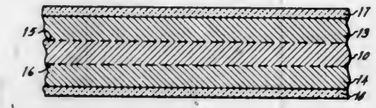
4. A work-strengthened alloy consisting essentially of a matrix phase having dispersed therein at least 5 volume percent of a platelet phase, said matrix phase being a solid solution of a composition consisting essentially of, by weight, 5 to 45% nickel, 7 to 16% molybdenum, 13 to 25% chromium, up to 0.05% carbon, up to 2% aluminum, up to 2% titanium, up to 2% zirconium, the sum of aluminum, titanium and zirconium being no greater than 4%, up to 0.5% silicon, up to 6% copper, up to 6% iron and incidental elements not exceeding 0.1%, the balance being cobalt in the proportion of at least 25%, the sum of the cobalt and nickel being in the range of 62 to 80% and the sum of the percents of cobalt and nickel divided by the percent chromium being at least 2.6 having a face-centered-cubic crystal structure and said platelet phase being a solid solution of said alloy composition having a hexagonal-close-packed crystal structure, the platelets being about from 20 to 1000 A. thick and being distributed substantially on the [111] planes of the matrix-phase crystals, said work-strengthened alloy being characterized by having, in a tensile test at 68° F., an ultimate tensile greater than 160,000 p.s.i. and a ductility, as measured by reduction in area, greater than 3%.

3,356,543

METHOD OF DECREASING THE MINORITY CARRIER LIFETIME BY DIFFUSION

Timothy J. Desmond, Mountaintop, Leon S. Greenberg, Kingston, and Harry Weisberg, Forty Fort, Pa., assignors to Radio Corporation of America, a corporation of Delaware

Filed Dec. 7, 1964, Ser. No. 416,521
9 Claims. (Cl. 148—186)



1. The method of decreasing the minority carrier lifetime of a crystalline silicon body without unduly increasing the resistivity of said body, comprising the steps of:
depositing a metallic coating selected from the group consisting of nickel, cobalt, and nickel-cobalt alloys on at least one major face of said body;
heating said body to diffuse a portion of said coating into said body to form a metal-diffused region adjacent said one major face;
removing said metallic coating;
then depositing a film of gold on said one major face; and,
heating said body in a non-oxidizing ambient to diffuse said gold through said metal-diffused region into said body.

3,356,544

INORGANIC OXIDIZER SALT AQUEOUS BLASTING COMPOSITIONS CONTAINING A NITROPARAFFIN

Harry R. Fee, Hopatcong, N.J., and John David Ferguson, Troy, N.Y., assignors to Hercules Incorporated, Wilmington, Del., a corporation of Delaware

No Drawing. Filed May 5, 1966, Ser. No. 547,777
16 Claims. (Cl. 149—38)

1. In an inorganic oxidizer salt explosive composition of the aqueous slurry type, the improvement comprising, from 3 to 40 weight percent of a nitroparaffin component, as a sensitizer, selected from the group consisting of nitroparaffins containing from 1 to 3 carbon atoms in the molecule, and mixtures thereof, and said slurry also containing a supplemental sensitizer selected from the group consisting of particulate aluminum, powdered coal, dinitrotoluene, and a hydrocarbon oil when the total amount of said nitroparaffin sensitizer component of said slurry is below about 9 percent.

14. A method for the manufacture of an inorganic oxidizer salt explosive of the aqueous slurry type containing from 3 to 40 weight percent of a nitroparaffin component, as a sensitizer, selected from the group consisting of nitroparaffins containing from 1 to 3 carbon atoms in the molecule, and mixtures thereof, and guar gum as a thickener, which comprises the steps of forming a premix of a hydratable portion of the said guar gum and a portion of the contemplated oxidizer salt component, in a ratio of said salt to said gum of about 3:1 to 5:1, and the said portion of guar gum not exceeding about 1 percent of the finished slurry product; partially gelling said nitroparaffin sensitizer and mixing the resulting partial gel with not more than 20 percent of its weight, of another portion of the said oxidizer salt, to form a resulting nitroparaffin slurry; admixing the premix, formed as above described, with the total contemplated water component of said slurry to permit hydration of the said guar gum portion; admixing the remaining of the said oxidizer salt and guar gum ingredients with the thus thickened aqueous mixture, and the last said added guar gum being cross-linkable; admixing the above-described nitroparaffin slurry with the resulting aqueous mixture, and also admixing a supplemental sensitizer selected from the group consisting of particulate aluminum, powdered coal, dinitrotoluene, and a hydrocarbon oil, with said resulting aqueous mixture, as the last added ingredient, when the total amount of said nitroparaffin sensitizer component of the resulting slurry explosive product is below about 9 percent; and retaining the resulting slurry mixture under conditions for effecting cross-linking of guar gum therein to regulate consistency of same to a predetermined degree.

3,356,545

AQUEOUS SLURRY TYPE NITROCARBONITRATE BLASTING COMPOSITIONS CONTAINING FLAKE ALUMINUM-DINITROTOLUENE AS THE ONLY SENSITIZER

John D. Ferguson, Wilmington, Del., assignor to Hercules Incorporated, a corporation of Delaware

No Drawing. Filed July 20, 1965, Ser. No. 473,483
9 Claims. (Cl. 149—39)

1. In a nitrocarbonitrate inorganic oxidizer salt explosive of the aqueous slurry type, the improvement comprising, on a weight basis, from 3 to 20 percent flaked aluminum in combination with from 2 to 15 percent dinitrotoluene, as the only sensitizer component.

3,356,546

SAFETY BLASTING COMPOSITION WITH A METAL FORMATE AS A FUEL

William Dick, Stevenston, and Owen Allen Gurton, Fairlie, Ayrshire, Scotland, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Nov. 14, 1966, Ser. No. 593,721
Claims priority, application Great Britain, Dec. 1, 1965, 50,982/65
5 Claims. (Cl. 149—47)

1. A safety blasting explosive for gassy mines comprising 12 to 25% by weight of an explosive sensitiser selected from the group consisting of self-explosive liquid nitric esters of polyhydric alcohols, trinitrotoluene and nitrocellulose, 25 to 50% by weight of an oxidising salt selected from the group consisting of alkali metal nitrates and ammonium nitrate, 10 to 30% by weight of a compound selected from the group consisting of metal chloride and ammonium chloride, and, as fuel, 4 to 40% by weight of metal formate, the explosive composition being free from fibrous cellulosic material.

3,356,547

WATER-IN-OIL EXPLOSIVE EMULSION CONTAINING ORGANIC NITRO COMPOUND AND SOLID EXPLOSIVE ADJUVANT

Adolf Berthmann and Clemens Franze, Leverkusen, and Paul Lingens, Cologne-Marienburg, Germany, assignors to Dynamit Nobel A.G., Troisdorf, Bez. Cologne, Germany, a corporation of Germany

No Drawing. Continuation of application Ser. No. 301,178, Aug. 9, 1963. This application Apr. 4, 1966, Ser. No. 544,346
Claims priority, application Germany, Aug. 24, 1962, D 39,680
4 Claims. (Cl. 149—51)

1. An explosive composition comprising a detonatable water-in-oil explosive emulsion containing an emulsifying agent and wherein the oil is nitroglycerine or nitroglycol, and solid exposive adjuvant of the group ammonium nitrate, the salt pair sodium nitrate and ammonium chloride,

RDX, the proportion of emulsion being about 10–75% by weight of the composition.

3,356,548

SAFETY MINING EXPLOSIVE COMPOSITION OF NITRIC ACID ESTER OF A POLYHYDRIC ALCOHOL AND THE TERNARY MIXTURE OF AMMONIUM CHLORIDE, ALKALI METAL NITRATE, AND ALKALINE EARTH METAL CARBONATE

Adolf Berthmann and Paul Lingens, Leverkusen, Germany, assignors to Dynamit Nobel Aktiengesellschaft, Troisdorf, Germany, a corporation of Germany

No Drawing. Filed Sept. 1, 1966, Ser. No. 576,550
Claims priority, application Germany, Sept. 7, 1965, D 48,143
8 Claims. (Cl. 149—66)

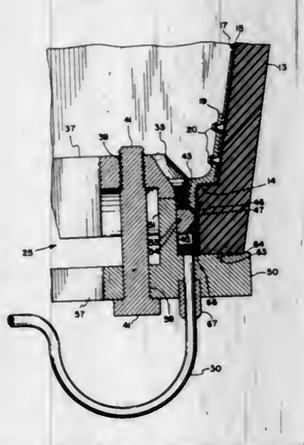
1. In a plastic and gelatinous explosive composition comprising about 18 to 40 weight percent referred to the explosive of a gelatinous component formed of at least one liquid, possibly thickened nitric acid ester of a polyhydric alcohol and an inorganic salt component; the improvement which comprises utilizing as the inorganic salt component a ternary mixture consisting of ammonium chloride, alkali metal nitrate and alkaline earth metal carbonate.

3,356,549

METHOD AND APPARATUS FOR BONDING A PLASTICS SLEEVE ONTO A METALLIC BODY

Charles B. King, Hampton, Va., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed July 31, 1964, Ser. No. 386,800
20 Claims. (Cl. 156—3)



1. A method of bonding a thermally protective plastics lamination to a metallic surface comprising:

heating a metallic surface and a plastics lamination for said metallic surface to approximately 200° F. under controlled conditions,

fixedly positioning the plastics lamination and the metallic surface relative to each other so as to provide a controlled-gap distance therebetween,

forcing a low viscosity thermosetting resin between the plastics and metallic surface to completely fill the gap distance therebetween,

subjecting the resulting structure to controlled ambient pressure within a pressure chamber while maintaining the chamber temperature at approximately 200° F. for approximately sixteen hours to cure the thermosetting resin and thereby permanently bond said plastics lamination to said metallic surface,

cooling the bonded structure to room temperature while maintaining it under pressure.

3,356,550

CHEMICAL MILLING OF ALUMINUM ALLOYS

Gerald L. Stiffler, Portland, Oreg., and John A. Tershin, Seattle, Wash., assignors to The Boeing Company, Seattle, Wash., a corporation of Delaware

No Drawing. Filed Mar. 16, 1964, Ser. No. 352,342
13 Claims. (Cl. 156—22)

5. A chemical milling process for aluminum and aluminum alloys comprising the steps of initially freeing the surface of the alloy from foreign substances, attacking the surface of the alloy for 50% to 80% of the desired metal removal with a solution substantially comprised of

	Ounces/gal.
Sodium hydroxide (NaOH)	20 to 30
Sodium sulfide (Na_2S)	15 to 25
Aluminum (Al)	5 to 15
Sulfonated castor oil	0.1
Tributyl phosphate	0.1

Water, balance.

and finally completing the attack on the surface of the alloy for the required time to achieve the desired dimensions with a solution substantially comprised of

	Ounces/gal.
Sodium hydroxide (NaOH)	10 to 21
Sodium cyanide (NaCN)	6 to 20
Aluminum (Al)	3 to 15

Water, balance.

3,356,551

METHOD OF JOINING BODIES OF POLYTETRAFLUOROETHYLENE

Richard E. Glenn, Lutherville, and Edwin G. Hood, Baltimore, Md., assignors to Martin-Marietta Corporation, a corporation of Maryland

No Drawing. Filed Aug. 21, 1961, Ser. No. 132,572
6 Claims. (Cl. 156—49)

4. The method of splicing at least two polytetrafluoroethylene insulated electrical wires comprising the steps of

cutting away the polytetrafluoroethylene insulation adjacent the ends of the wire to be spliced to bare the conductors,

joining the conductors in locked relationship,

wrapping the joined conductors with fluorinated ethylene propylene tape until the diameter thereof is approximately the same as the outside diameter of the original polytetrafluoroethylene insulation,

overlapping the fluorinated ethylene propylene tape wrapping onto the original polytetrafluoroethylene insulation of each of the wires to be joined,

placing a subsequent wrapping of unsintered polytetrafluoroethylene tape on the fluorinated ethylene propylene tape wrapping,

placing and securing a foil wrapping over the subsequent wrapping of polytetrafluoroethylene tape,

exposing the foil and its wrapped contents to heat of approximately 750° F. for approximately three minutes,

and cooling the foil and its contents.

3,356,552

METHOD AND APPARATUS FOR HEAT SEALING A FREE MARGINAL EDGE OF AN UPSTANDING COLUMNAR WALL TO A PERIPHERAL EDGE

Daniel M. Pearl, Skokie, Ill., assignor to Sealatron Corporation, Chicago, Ill., a corporation of Illinois

Filed Apr. 19, 1965, Ser. No. 449,198
6 Claims. (Cl. 156—69)

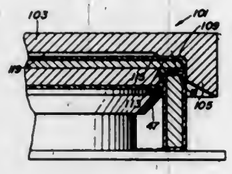
1. Apparatus for heat sealing a free marginal edge of an upstanding columnar wall of thermoplastic sheet material to a coextensive abutting peripheral edge of an overlying thermoplastic sheet-like top wall spanning said columnar wall and having a marginal contour corresponding to the cross sectional configuration of said

columnar wall at said free edge thereof to form a fused substantially smooth butt joint between corresponding contiguous abutting and registering edge portions of said columnar wall and said top wall, and to provide a unitary open-ended container;

said apparatus comprising cooperating inner and outer electrodes of a high frequency electronic plastic welding circuit, and means to apply high frequency current to said electrodes;

said inner electrode defining a cannister having horizontally extending vertically spaced parallel upper and lower platens and a vertical wall extending therebetween and radially inwardly of said columnar wall of said thermoplastic sheet material extending therearound;

said outer electrode comprising an inverted dish including a depending marginal flange having a vertically extending inner annular face which is flat in section;



said outer flat faced electrode disposed in use to overlie and span said upper platen of said inner electrode to provide a restricted substantially constant annular spacing between said inner annular face of said depending marginal flange and a peripheral bounding edge of said upper platen;

said vertically extending inner face of said depending marginal flange of said outer electrode spaced radially with respect to said peripheral bounding edge of said upper platen of said inner electrode to confine said columnar wall of said thermoplastic sheet material therebetween; and

means to press said upper electrode against said top wall of thermoplastic material to bring a peripheral edge portion of said top wall into pressured abutting contact with a terminal edge portion of said columnar wall to fuse said abutting edge portions together in response to sealing pressure and heat applied upon actuation of said high frequency current-applying means.

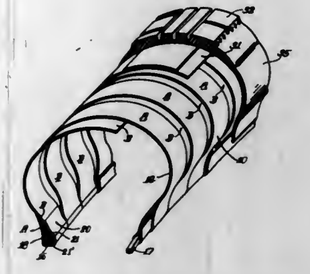
3,356,553

METHOD OF MAKING PNEUMATIC TIRES

Larry C. Frazier, Prescott, Ariz., assignor to National-Standard Company, Niles, Mich., a corporation of Delaware

Original application June 11, 1964, Ser. No. 374,331, now Patent No. 3,240,250, dated Mar. 15, 1966. Divided and this application June 15, 1965, Ser. No. 464,088
1 Claim. (Cl. 156—117)

The method of building a raw tire carcass comprising the steps of supporting a pair of annular bead rings in spaced apart relation on a common axis, laying continuous raw rubber cord-reinforced carcass strip material in a first layer extending from the center line of the inner periphery of one bead ring to the center line of the inner periphery of the other bead ring at a first slight angle to a plane passing radially outwardly of the axis of the bead rings and in a path having a crown lying radially outwardly of said bead rings, laying a second layer in a superposed path with respect to said first layer and extending from said center line of the inner periphery of said other bead ring to said center line of the inner periphery of said one bead ring at a second slight angle to said radial plane and opposite to the angle of said first layer, and continuing to lay successively such first and second layers circumferentially around the bead rings with the adjacent side edges of successive first and second layers, respectively, in substantially abutting



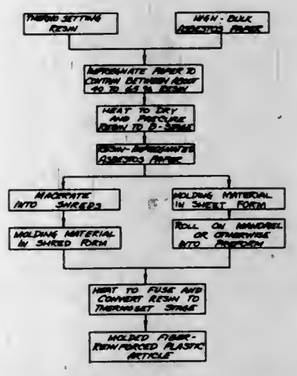
relation at said bead rings and in diverging relation with respect to each other in a direction away from said bead rings toward said crown, and with portions of said side edges of each of said successive first layers in overlapping relation with portions of opposing side edges of each successive pair of said successive second layers to complete a torus body.

3,356,554

METHOD OF MAKING A NON-WEEPING REINFORCED PLASTIC PIPE OF ASBESTOS FIBER PAPER

Robert T. Cronch, Middlesex, and Charles H. Barger, Nixon, N.J., assignors to Johns-Manville Corporation, New York, N.Y., a corporation of New York

Original application Oct. 6, 1960, Ser. No. 55,924, now Patent No. 3,235,530, dated Feb. 15, 1966. Divided and this application Nov. 18, 1965, Ser. No. 544,317
2 Claims. (Cl. 156—184)



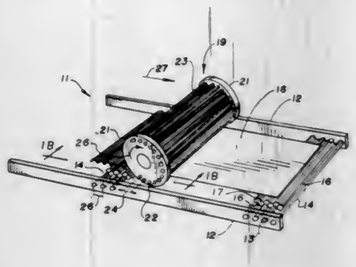
1. A method of making a non-weeping fiber reinforced plastic pipe having smooth inner and outer surfaces and which pipe may be threaded with standard pipe threading equipment comprising:

(a) providing a fibrous paper consisting essentially of asbestos fibers and having a bulk greater than 0.28,

(b) impregnating said paper with a solvent solution of a thermosetting resin to provide a resin content in the impregnated paper of between about 40 and 65% by weight,

(c) heating the impregnated paper to evaporate all solvent from the paper and to polymerize the resin to a B-stage whereby a resin impregnated abestos paper containing between about 40 and 65% by weight of thermosetting resin is obtained,
(d) forming said paper into a hollow cylinder, and
(e) subjecting the thus formed cylinder to heat and pressure sufficient to cure said resin to a thermoset stage to form a pipe which can be subjected to hydrostatic pressures of at least 600 p.s.i. at room temperature without weeping.

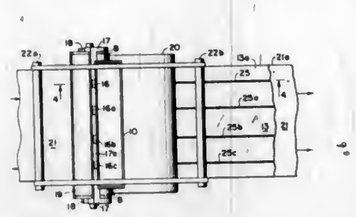
3,356,555
METHOD AND APPARATUS FOR THE MANUFACTURE OF HONEYCOMB PRODUCT
Wendell T. Jackson, Pleasant Hill, Calif., assignor to Hexcel Corporation, a corporation of California
Filed Oct. 29, 1964, Ser. No. 407,322
4 Claims. (Cl. 156—205)



1. A method of producing formed honeycomb from sheet material characterized by a curing condition which permanently sets the sheets in the shape held at time of curing, comprising the steps of: providing a plurality of corrugated sheets of said material having a series of spaced half-cells and node impressions shaped to correspond to the half-cells and nodes of said honeycomb; placing the first of said formed sheets on a holding fixture having a series of cross bars at spaced intervals and shaped in the same cross sectional form as the cells of said honeycomb; placing a series of cross bars of the same cross sectional shape as said holding fixture cross bars in the formed half-cell impressions of said first sheet; placing a second corrugated sheet of said material on the series of cross bars residing in the half-cells of said first sheet so that the nodes of the first sheet contact the nodes of the second sheet; placing successive sheets on cross on cross bars residing in the half-cells of preceding sheets in the steps above described until a formed honeycomb of desired depth is produced; applying said curing condition to permanently set said formed honeycomb of desired depth; bonding the said contacting nodes of said first, second and successive sheets to hold relatively permanently said formed honeycomb; removing said holding fixture and said series of cross bars.

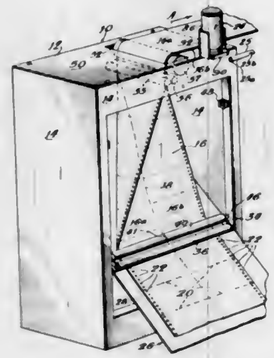
3,356,556
METHOD AND APPARATUS FOR COATING SUBSTRATES WITH FILMS OF UNIFORM THICKNESS
Glenn M. Violette, Greenwich, and Owen D. Mosher, Glens Falls, N.Y., assignors to International Paper Company, New York, N.Y., a corporation of New York
Filed May 11, 1964, Ser. No. 366,460
10 Claims. (Cl. 156—244)

1. In the coating of a moving substrate with an extruded thermoplastic material, the step of extruding the thermoplastic material in the form of a film, the step of directing the film along a path, the step of splitting the film longitudinally by means of at least one wire disposed in the path of the film, the step of drawing the split film



down to the substrate, and the step of laminating the split film to the substrate.

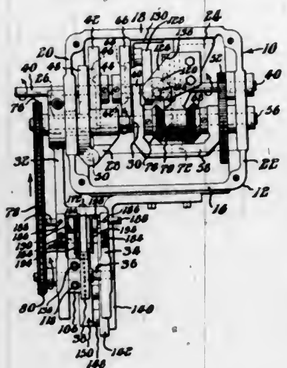
3,356,557
STATIONERY FORMS FOLDING ATTACHMENT FOR USE WITH AN ASSOCIATED BUSINESS MACHINE
Albert G. Enskat, Lake Zurich, Ill., assignor to Uarco Incorporated, a corporation of Illinois
Filed Apr. 20, 1964, Ser. No. 361,099
10 Claims. (Cl. 156—461)



7. A folding attachment for a business machine for folding continuous form stationery about a longitudinal line in the stationery, comprising: a frame; a first roller mounted in the frame and having a surface which the stationery may engage proir to being folded; a second roller mounted in the frame above the first roller and having its axis perpendicular to a first plane containing the axis of the first roller, the second roller intersecting a second plane perpendicular to the plane of the second roller and parallel to and spaced between said first plane and said second roller, said second plane being tangential to the surface of the first roller so that at least one peripheral edge of the stationery may travel in a straight line from contact with a second roller surface into contact with the second roller surface wholly within said second plane parallel to said first plane, said stationery between said first and second rollers being free of controlling contact permitting folding of the stationery between said rollers while being advanced from the first roller to the second roller; and guiding rollers positioned below said second roller on either side of the path of stationery travel at a point ahead of the point of folding of the stationery to prevent the free edges of the folded stationery from diverging outwardly after folding has occurred so that the stationery will be urged in a flattened folded condition about the periphery of the second roller for feeding into an associated business machine advancement of the stationery about the second roller changing the plane of travel of the stationery and producing flattened, folded stationery sheets.

9. The folding attachment of claim 7 having stationery sealing means thereon for sealing selected portions of the folded edges of said stationery.

3,356,558
APPARATUS FOR APPLYING TEAR TAPE
Dale R. Smith, Red Lion, Pa., assignor to York Production Engineering Company, Windsor, Pa., a corporation of Pennsylvania
Filed Feb. 14, 1964, Ser. No. 345,016
9 Claims. (Cl. 156—519)



1. In apparatus for applying tear tape to wrapping material, the combination comprising means providing a stationary surface area over which a continuous web of wrapping material may be advanced, a rock arm, a tape applying head revolvably mounted upon the end of said arm and overyling said stationary surface, said head being provided with leading and trailing tape applying surface areas, means for holding leading and trailing portions of a continuous web of tear tape respectively to said leading and trailing tape applying surface areas, and means operative in each cycle for bringing said leading tape applying surface area to bear upon said stationary surface area thereby to press said leading tape portion onto the wrapping material to effect adhesion thereto, severing said leading tape portion from said trailing tape portion, releasing the hold of said leading tape applying surface area upon said leading tape portion while continuing the hold of said trailing tape applying surface area upon said trailing tape portion, and turning said tape applying head to feed said tape and position the same for the next cycle including an input shaft adapted to rotate continuously, means operatively interposed between said shaft and rock arm for rocking said arm, and means interposed between said shaft and tape applying head for rotating the latter in predetermined timed relation to rocking of said arm.

3,356,559
COLORED FIBER METAL STRUCTURES AND METHOD OF MAKING THE SAME
Appy Juras, Detroit, Mich., assignor, by mesne assignments, to University Patents, Inc., Chicago, Ill., a not-for-profit corporation of Illinois
No Drawing. Filed July 1, 1963, Ser. No. 292,142
8 Claims. (Cl. 161—5)

8. A composite structure comprising in combination: a felted mass of metal fibers sandwiched between a pair of transparent sheet members, each of said fibers being in itself a composite structure consisting of an inner metal layer sandwiched between relatively thinner colored plastic coatings on each of the two opposed principal surfaces of said metal layer, each of said fibers being further characterized by
(a) having essentially a rectangular shape;
(b) an exposed metal layer edge on all four side edges thereof;
(c) a length of between 0.001 and 2 inches;
(d) a length to mean dimension in cross section ratio greater than ten to one,
said felted mass of metal fibers being bonded at points of fiber contact by a plastic means.

3,356,560
HEAT FORMABLE LAMINATED SHEET MATERIAL
George H. Callum, South Bend, Ind., assignor to Uniroyal, Inc., a corporation of New Jersey
No Drawing. Filed Apr. 2, 1964, Ser. No. 356,967
8 Claims. (Cl. 161—5)

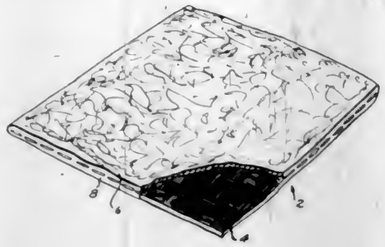
5. A rigid, heat-formable laminated structural material comprising a core layer (A–1) containing a blowing agent, solid sub-strate layers (A–2) and (A–3) on each face of said core layer, said core and sub-strate layers comprising a gum plastic composition selected from the group consisting of
(a) physical mixtures of butadiene-acrylonitrile rubber and a resin selected from the group consisting of styrene-acrylonitrile resin and mixtures of styrene-acrylonitrile resin with polyvinyl chloride resin,
(b) graft copolymers of styrene and acrylonitrile on polybutadiene, and
(c) mixtures of (b) with resin selected from the group consisting of styrene-acrylonitrile resin and mixtures of styrene-acrylonitrile resin with polyvinyl chloride resin,
a protective skin layer (B) on the outer surface of one of said sub-strate layers, the said skin layer (B) comprising a mixture of 60 to 85% of polyvinyl chloride resin and correspondingly 40 to 15% of butadiene-acrylonitrile rubber, the said butadiene-acrylonitrile rubber is the said skin being cured, and a glossy skin layer (C) on the outer surface of the other said sub-strate layer, the said glossy layer (C) comprising a homogeneous mixture of 51% to 98% of (C–a) a resinous vinyl chloride polymer and correspondingly 49% to 2% of (C–b) a graft copolymer of from 10 to 200 parts of a mixture of styrene and methyl methacrylate in ratio of from 25:75 to 40:60 graft copolymerized upon 100 parts of a rubber copolymer, in aqueous emulsion form, of butadiene and styrene in ratio of from 70:30 to 85:15 and (C–c) a resinous copolymer of styrene and methyl methacrylate in ratio of from 25:75 to 40:60, the amounts of (C–b) and (C–c) ranging from 75 to 25 parts of (C–b) and correspondingly from 25 to 75 parts of (C–c) per 100 parts of (C–b) plus (C–c), the said percentages, ratios and parts being by weight.

8. A laminate as in claim 5 in which the said glossy skin layer (C) is transparent and bears a design on its surface in contact with the adjacent sub-strate.

3,356,561
GLASS FIBER MATS
George L. Squire, Ridley Park, Pa., and John M. Ward, Wilmington, Del., assignors to Haveg Industries, Inc., a wholly owned subsidiary of Hercules Powder Company, New Castle, Del., a corporation of Delaware
Filed Nov. 7, 1962, Ser. No. 236,041
4 Claims. (Cl. 161—80)

1. As a new product woven acid extracted glass cloth

made of type E fibers having loose glass fibers independent of and extending into and through both sides of the cloth,



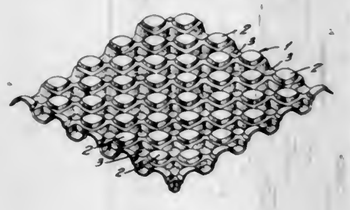
said etched glass having a sodium carbonate soluble silica content of at least 70%.

3,356,562

MATERIALS AND METHODS FOR THE PRODUCTION OF STEREOTYPE MATS

Richard H. Graham and Victor E. Calvin, Cincinnati, Ohio, assignors to Cincinnati Industries Inc., Cincinnati, Ohio, a corporation of Ohio

Filed June 22, 1964, Ser. No. 370,630
9 Claims. (Cl. 161—128)



1. A backing sheet for packing a stereotype mat consisting essentially of a web of universally stretchable paper of essentially uniform thickness having a multiplicity of gatherings which are sufficiently fine to avoid folding into multiple thicknesses when the sheet is applied to the back of a stereotype mat and compressed as the mat is molded, said sheet being indented on at least one side thereof to provide a series of uniform protuberances, said sheet bearing on one indented surface thereof a uniformly distributed coating of a moisture sensitive adhesive which uniformly covers both the protuberances and the areas of the sheet between said protuberances, said sheet being characterized by resident gatherings which persist after indentation and upon which said protuberances may collapse as the mat and backing are subjected to molding pressure, whereby the said collapsed areas will return to the original uniform thickness of the sheet.

3,356,563

METHOD FOR THE PREPARATION OF SILICA FIBERS

Alfred Marzocchi, Cumberland, R.I., assignor to Owens-Corning Fiberglas Corporation, a corporation of Delaware

Filed Feb. 21, 1967, Ser. No. 632,126
9 Claims. (Cl. 161—170)

1. A process of producing improved glass fibers, comprising: wetting a plurality of glass filaments containing leachable material immediately at forming with water devoid of protective film forming materials, gathering the wetted glass filaments into a wetted strand, coiling the wetted strand into a package having layers of coils the coils of each layer of which do not parallelly engage each other and with the coils of one layer extending at an angle relative to the coils of adjacent layers, said gathering and cooling being performed at a sufficiently low speed, low filament tension, and high coil crossover angle to prevent substantially any filament breakage during gathering and coiling, maintaining the strands in a wetted condition and exposing the package while the coils are in a wetted condition to an acid solution for a sufficient length of time to remove the leachable materials from the fibers to form an open celled highly porous fibrous structure.

3,356,564

PREPARATION OF LATEX SATURATED ASBESTOS SHEET MATERIAL WHEREIN ANTI-PRECIPITATING AGENT PREVENTS PREMATURE COAGULATION

Richard C. Breiner, Florham, N.J., assignor to Nicolet Industries, Inc., Morris County, N.J., a corporation of Delaware

No Drawing. Filed Oct. 2, 1964, Ser. No. 401,259
19 Claims. (Cl. 162—155)

1. In the process of preparing an asbestos sheet article wherein:

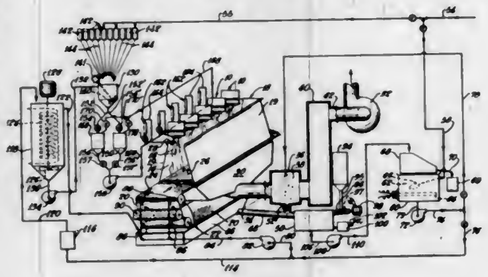
(a) there is formed a slurry of asbestos fibers in water;
(b) which slurry includes an anti-precipitating agent to prevent coagulation of dispersed solid polymeric material;
(c) an aqueous dispersion of solid polymeric material is added to said slurry;
(d) then an agent is added to cause coagulation of said dispersion so as to deposit said polymeric solids evenly onto said asbestos fibers;
(e) and said slurry of coated fibers is formed into a sheet article, the improvement wherein said anti-precipitating agent is an ammonium phosphate.

3,356,565

WASTE WASH WATER AND WASTE BINDER REUSE SYSTEM AND APPARATUS FOR MINERAL FIBER FORMING PROCESS

Clayton A. Smucker and William H. Rigby, Jr., Newark, and Philip H. Klein, Jr. and Burton M. Palmer, Toledo, Ohio, assignors to Owens-Corning Fiberglas Corporation, a corporation of Delaware

Filed Aug. 13, 1964, Ser. No. 389,337
8 Claims. (Cl. 162—199)



1. The method for continuously washing a mineral fiber-collecting foraminous conveyor with water and reusing said used wash water in the preparation of binder for application to the mineral fibers at a plurality of fiber-forming stations including the steps of feeding an alkaline detergent into the used wash water containing waste binder to raise the pH to an alkaline level, dividing the detergent-treated wash water into portions, washing the conveyor with one portion of the detergent-treated wash water to remove waste binder therefrom, directing another portion of the detergent-treated wash water to a binder preparing station, mixing binder ingredients with the detergent-treated wash water at the binder preparing station, feeding an acidic neutralizing agent compatible with the binder into the wash water for preparation of the binder to reduce the alkalinity to a pH of substantially 7, spraying the binder mix onto the fibers at the fiber-forming stations, and adding fresh water to the used wash water sufficient in amount to maintain substantially constant the total volume of wash water.

5. Apparatus for processing attenuated mineral fibers at a plurality of fiber-forming stations where the fibers are continuously collected on a moving conveyor, nozzle means disposed adjacent the conveyor arranged to project wash water in engagement with the conveyor to remove waste binder adhering to the conveyor, a wash water treating chamber, means for conveying the wash water and waste binder from the region of the conveyor into the wash water treating chamber, means for feeding alkaline detergent from a supply at a controlled rate into the chamber to raise the pH to an alkaline level, a receptacle to receive the wash water and waste binder from the wash water treating chamber, heating means in the receptacle for heating the wash water and binder, means for conveying a portion of the heated wash water and binder under pressure to the nozzle means, means for cooling another portion of the heated wash water and waste binder, a tank for preparing binder mix, means for feeding binder ingredients into the tank, means for conveying the cooled wash water to the binder preparing tank, binder applicators adjacent the respective fiber-forming stations, and means for conveying binder mix from the binder preparing tank to the applicators at the fiber-forming stations to apply binder onto the fibers at each station.

3,356,566

INSECT REPELLENTS

Lyle D. Goodhue, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Sept. 26, 1963, Ser. No. 311,660
6 Claims. (Cl. 167—22)

1. A method for repelling an insect which comprises subjecting said insect to a repelling amount of at least one compound of the formula



wherein R_1 is an alkyl radical of from 4 to 12 carbon atoms, inclusive, R_2 is an alkylene radical of from 1 to 8 carbon atoms, inclusive, and R_3 is selected from the group consisting of alkyl, aryl, cycloalkyl, aralkyl, alkylcycloalkyl, cycloalkylalkyl, and alkaryl radicals of from 1 to 8 carbon atoms, inclusive.

3,356,567

METHOD AND COMPOSITION FOR INHIBITING THE MULTIPLICATION OF PLANT VIRUS USING 1-ACENAPHTHENOL

Hilary F. Goonewardene, Moorestown, N.J., assignor to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Jan. 15, 1965, Ser. No. 425,939
4 Claims. (Cl. 167—30)

1. The method of inhibiting the multiplication of plant viruses selected from the group consisting of tobacco mosaic virus, bushy stunt virus, and tobacco ring spot virus comprising applying to living plants, a virus-growth inhibiting quantity of a compound selected from the group consisting of 1-acenaphthenol and an ester thereof selected from the group consisting of acetate, benzoate, nitrate, maleate, sulfate, citrate, succinate, pyruvate, fumarate and tartrate.

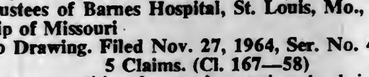
3,356,568

METHOD FOR CONTROL OF ARTHROPODS

Jean Metivier, Choisy-le-Roi, and Michel Sauli, Paris, France, assignors to Rhone-Poulenc S.A., Paris, France, a corporation of France

No Drawing. Original application Apr. 22, 1963, Ser. No. 274,827. Divided and this application July 2, 1964, Ser. No. 385,820
Claims priority, application France, Apr. 25, 1962, 895,544; Feb. 19, 1963, 925,287
1 Claim. (Cl. 167—53)

A method for the destruction of arthopods within or on animals which comprises administering to, or applying on, the animals, a composition comprising, as the parasiticide, at least one O,O-dimethyldithiophosphoric ester of the formula:



wherein R and R_1 represent alkyl groups containing up to 4 carbon atoms, and R_2 and R_3 when taken singly represent a member of the class consisting of a hydrogen atom and alkyl and alkenyl groups containing up to 4 carbon atoms, and R_2 and R_3 when taken together and with the nitrogen atom to which they are attached collectively represent a member of the class consisting of 1-pyrrolidinyl, piperidino, 1-piperazinyl and morpholino, the amount of said ester administered or applied being sufficient to destroy the arthopods.

3,356,569

CHOLINE CHLORIDE POWDER AND METHOD OF PRODUCTION

David Otis Nicodemus, Philadelphia, and John P. Mulroney, Southampton, Pa., assignors to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed May 27, 1964, Ser. No. 370,665
8 Claims. (Cl. 167—55)

1. A stable, substantially dry, free-flowing powder comprising choline chloride substantially encapsulated by a powdered additive selected from the group consisting of attapulgite clay, a mixture of attapulgite clay and a second additive selected from the group consisting of silica gel and sodium bicarbonate wherein said second additive is no more than 10% of the weight of the mixture, kaolinite clay, a mixture of kaolinite clay and a second additive selected from the group consisting of silica gel and sodium bicarbonate wherein said second additive is no more than 10% of the weight of the mixture, walnut shell flour, and a mixture of walnut shell flour and a second additive selected from the group consisting of silica gel and sodium bicarbonate wherein said second additive is no more than 10% of the weight of the mixture, said powder containing 68% to 85% choline chloride on an anhydrous weight basis.

3,356,570

COMPOSITION FOR TREATING SHOCK

Harvey R. Butcher, Jr., St. Louis, Mo., assignor to The Trustees of Barnes Hospital, St. Louis, Mo., a trusteeship of Missouri

No Drawing. Filed Nov. 27, 1964, Ser. No. 414,420
5 Claims. (Cl. 167—58)

1. A composition for use in treating shock in animals: consisting essentially of a lactated Ringer's solution combined with sodium hydroxide in a quantity sufficient to raise the pH to from 7.4 to about 9.1, and to provide a sodium content of about 137 to at least about 146 milliequivalents per liter.

3,356,571

POTENTIATION OF TETRACYCLINE BY POLYACRYLIC ACID OR HYDROLYZED POLYACRYLONITRILE

Edward Takesue, Mendham, N.J., Joseph John Hlavka, Tuxedo, N.Y., and James Howard Boothe, Montvale, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Nov. 25, 1964, Ser. No. 413,978
16 Claims. (Cl. 167—65)

1. A composition of matter for oral use comprising a tetracycline antibiotic and as an oral potentiating agent therefor from 0.1 to 10 parts by weight of polyacrylic acid having a molecular weight of from about 10,000 to about 500,000.

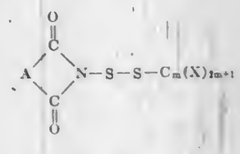
3,356,572

METHOD OF TRANQUILIZING LABORATORY ANIMALS WITH IMIDO PERHALOALKYL DISULFIDES

Bob L. McCaskey, San Pablo, Gustave K. Kohn, Berkeley, and Joseph E. Moore, Richmond, Calif., assignors to Chevron Research Company, a corporation of Delaware

No Drawing. Filed Jan. 6, 1965, Ser. No. 423,819
8 Claims. (Cl. 167—65)

1. A method of tranquilizing laboratory animals which comprises administering to said animals a pharmaceutically active amount of an imido perhaloalkyl disulfide of the formula



wherein m is an integer from 1 to 2, X represents halogens of atomic number 17 to 35 and A is 1,2-carbocyclic having 6 annular carbons and from 1 to 3 sites of olefinic unsaturation.

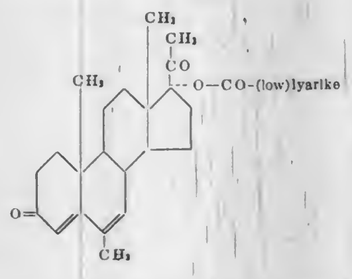
3,356,573

17α - ACYLOXY - 6 - METHYLPREGNA - 4,6 - DIENE-3,20-DIONES AND METHOD FOR PREPARATION OF THESE AND RELATED 6-METHYL-3-OXO-$\Delta^{4,6}$-STEROIDS

David Neville Kirk, Vladimir Petrow, and David Morton Williamson, London, England, assignors to The British Drug Houses Limited, London, England, a company of Great Britain

No Drawing. Filed Oct. 27, 1959, Ser. No. 848,917
Claims priority, application Great Britain, Nov. 4, 1958, 35,428/58
12 Claims. (Cl. 167—74)

4. A compound of the structural formula



12. A pharmaceutical preparation in dosage unit form comprising 17α-acetoxy-6-methylpregna-4,6-diene-3,20-dione in admixture with lactose, magnesium stearate and starch.

3,356,574

VACCINE FOR COMBATING *SALMONELLA DUBLIN* INFECTION

Herbert Williams Smith, Stock, Essex, England, assignor to National Research Development Corporation, London, England, a corporation of Great Britain

No Drawing. Filed Dec. 2, 1964, Ser. No. 415,472
Claims priority, application Great Britain, Dec. 17, 1963, 49,890/63
5 Claims. (Cl. 167—78)

1. A freeze dried culture of the attenuated strain of *Salmonella dublin* having the ATCC reference number 15480.

3,356,575

AUTOSTERILE INJECTABLE IODINATED OIL X-RAY CONTRAST MEDIUM

Börje Torvald Arbaeus, Ove Birger Fernö, and Torsten Ove Enok Linderot, Halsingborg, Sweden, assignors to Aktiebolaget Leo (A/B Leo), Halsingborg, Sweden

No Drawing. Filed Apr. 13, 1965, Ser. No. 447,875
5 Claims. (Cl. 167—95)

1. An autosterile X-ray contrast medium in the form of a substantially anhydrous emulsion, useful for sterile injection upon dilution with sterile water, which contains (1) a member selected from the group consisting of an iodinated vegetable oil and an iodinated lower-alkyl ester of a vegetable oil, (2) glycerol, and (3) an ethanol-soluble lecithin as emulsifier wherein the ratios by weight of glycerol, ethanol-soluble lecithin, and iodinated vegetable material (1) are in the range between about 30:3:20 and 75:10:65.

3,356,576

FUEL SHEATHING FAILURE DETECTION IN LIQUID COOLED NUCLEAR REACTORS

James Alan McKnight, Hale, Altrincham, England, assignor to United Kingdom Atomic Energy Authority, London, England

Filed Mar. 7, 1966, Ser. No. 532,238
Claims priority, application Great Britain, Mar. 8, 1965, 9,699/65
5 Claims. (Cl. 176—19)



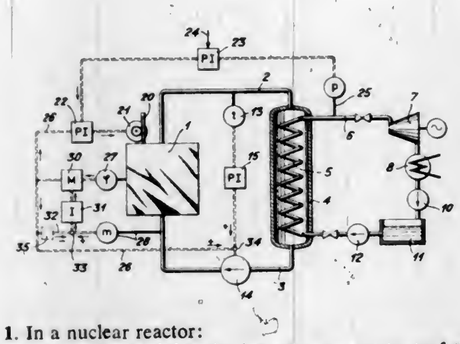
1. A method of testing for the occurrence of fuel sheathing failure in a liquid cooled nuclear reactor, said method comprising the steps of passing coolant over at least one fuel bearing member in the reactor and then through a tube defining a flow path for coolant, imparting to coolant flowing through the tube a rotary motion around the longitudinal axis of the tube such that bubbles in the coolant are urged centripetally to occupy a position about the longitudinal axis of the tube, restraining axial movement of the bubbles in said position by partial obstructions in the flow path, and testing for the presence of bubbles in said position.

3,356,577

APPARATUS FOR DETERMINING THE INSTANTANEOUS OUTPUT OF A NUCLEAR REACTOR

Ygal Fishman, Halden, Norway, assignor to Sulzer Brothers, Limited, Winterthur, Switzerland, a corporation of Switzerland

Filed Sept. 16, 1964, Ser. No. 396,901
Claims priority, application Switzerland, Sept. 19, 1963, 11,561/63
5 Claims. (Cl. 176—20)



1. In a nuclear reactor:
means for determining the instantaneous output of the reactor, for control purposes,
said means including:
first means for measuring the neutron flux in the reactor and producing a second signal corresponding to the neutron flux,
second means for measuring the heat output of the reactor and producing a second signal corresponding to the heat output of the reactor,
a dividing device operatively connected to said second means and to said first means for dividing said second signal by said first signal to produce an output signal, a smoothing device operatively connected to said dividing device for receiving and smoothing said output signal of said dividing device, and a multiplying device operatively conected to said first means and said smoothing device for receiving and multiplying said first signal by said smoothed output signal to produce a signal corresponding to the instantaneous output of the reactor.

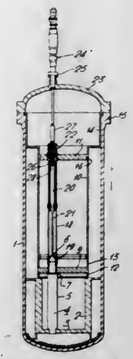
3,356,578

NUCLEAR REACTOR

Peter William Dryland, Cuddington, and Michael Charles Pugh, Warrington, England, assignors to United Kingdom Atomic Energy Authority, London, England

Filed Apr. 4, 1966, Ser. No. 539,758
Claims priority, application Great Britain, Apr. 29, 1965, 18,159/65
4 Claims. (Cl. 176—40)

1. A nuclear reactor comprising a vertically elongate pressure vessel having an upper end, a lower end and a middle, a reactor core located in the lower end of the vessel and comprising a number of fuel assemblies, each containing at least one relatively displaceable control pin of a material which affects the neutron flux in its vicinity, control mechanisms substantially aligned with the fuel assemblies for displacing the control pins within their respective fuel assemblies, an upper core support grid assembly, a lower core support grid assembly, the improvement comprising, fuel assembly raising devices supported in the upper end of the pressure vessel above both grid assemblies, each concentric about a control mechanism, and engageable with the fuel assembly with which



the control mechanism is aligned for pulling the fuel assembly against the upper grid assembly.

3,356,579

RADIATION WINDOW GLASS

Roy V. Harrington, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York

Filed Jan. 29, 1964, Ser. No. 340,939
1 Claim. (Cl. 106—53)

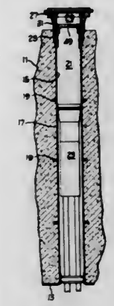
A glass, resistant to dielectric breakdown from gamma radiation of up to about 10^8 roentgens, consisting essentially on the oxide basis as calculated from the batch of 47.2% by weight SiO_2, 33% by weight PbO, 17% by weight K_2O and 2.8% by weight of CeO_2, said glass being characterized in being substantially free of halogens, soda, and lithia, having an initial luminous transmittance for a one inch thickness of greater than 90% at a wave length of 5500 A., and having an electrical resistivity in terms of the log of the resistivity at 50° C. of less than 16.5.

3,356,580

METHOD AND APPARATUS FOR CONTAINING RADIOACTIVE FLUID

Francis R. Bell and Ian P. Arthur, San Diego, Calif., assignors to the United States of America, as represented by the United States Atomic Energy Commission

Filed Sept. 7, 1966, Ser. No. 577,777
3 Claims. (Cl. 176—37)



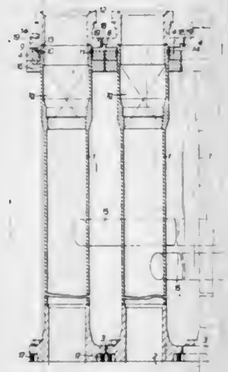
1. In a nuclear reactor having a pressure vessel wherein a fluid coolant is employed, containment apparatus for closing a penetration opening into the pressure vessel,

which apparatus comprises inner sealing means closing the penetration opening, outer sealing means also closing the penetration opening and disposed outward of said inner sealing means, means defining a chamber intermediate said inner and outer sealing means, means providing fluid communication with said intermediate chamber through which a fluid can be supplied thereto at a pressure higher than the operating pressure of the nuclear reactor, wherein means for increasing the pressure of a fluid is connected to said fluid-communication providing means and wherein means is provided to connect said pressure-increasing means to the fluid coolant stream of the reactor.

3,356,581
NUCLEAR REACTOR INSTALLATION

Walter John Cairns, Culcheth, and John Barry Healy, Northwich, England, assignors to United Kingdom Atomic Energy Authority, London, England

Filed Sept. 30, 1965, Ser. No. 491,540
Claims priority, application Great Britain, Oct. 7, 1964, 40,967/64, 40,968/64
11 Claims. (Cl. 176—40)



1. A nuclear reactor installation having a nuclear reactor core comprising:

a calandria vessel,

pressure tubes extending through calandria tubes in said calandria vessel and terminating in standpipes,

at least one radially outwardly extending projection on each standpipe in the region of its free end, the projections of the standpipes defining a complex of projections disposed in a transverse plane, and

means embracing said complex to urge said projections into abutment with one another.

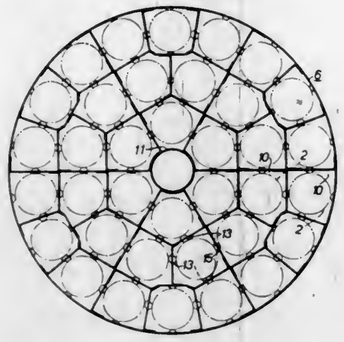
3,356,582
NUCLEAR REACTOR FUEL ELEMENT ASSEMBLIES

Alan Charles Anthony Saunders, Ribbleton, Preston, England, assignor to United Kingdom Atomic Energy Authority, London, England

Filed Aug. 4, 1965, Ser. No. 477,106
Claims priority, application Great Britain, Aug. 11, 1964, 32,763/64
4 Claims. (Cl. 176—41)

1. A bracing grid for bracing the nuclear fuel rods of a cluster in spaced relationship, said grid having a rim for embracing said cluster of fuel rods, said rim being slitted to define resilient fingers which co-operate to form a substantially continuous annular skirt of boundary greater than the boundary of the rim to enable the skirt to grip resiliently the inner wall surface of a coolant tube of a nuclear reactor core.

4. A nuclear reactor core comprising: a bulk of moderating material, a plurality of coolant tubes for containing nuclear fuel and for conducting coolant flow in liquid phase in heat exchange with the fuel to generate coolant in gaseous phase, said coolant tubes penetrating said bulk of moderating material in parallel array, a

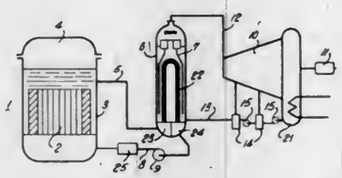


cluster of end supported, spaced, parallel nuclear fuel rods in at least one of said coolant tubes, at least one transverse bracing grid for said fuel rods disposed intermediate the ends of said cluster, said transverse bracing grid having an annular rim resiliently gripping the inner wall surface of said one of said coolant tubes continuously around the entire circumference of the tube.

3,356,583
LIQUID MODERATED NUCLEAR REACTOR

Thomas Deighton, Galveston, Tex., assignor to Babcock & Wilcox, Limited, London, England, a corporation of Great Britain

Filed Dec. 10, 1964, Ser. No. 417,316
4 Claims. (Cl. 176—64)



1. A method of operating a pressurized water-moderated heterogeneous reactor having a core provided with a plurality of fissile material-bearing fuel elements arranged in a fixed lattice and a plurality of fixed regular flow channels therethrough, said core being arranged to attain criticality under predetermined conditions of moderated water, said method comprising the steps of supplying moderating water to said core at a pressure within the range of 2800 to 3200 p.s.i., directing moderating water through the core to increase its temperature only to the extent that core moderating water outflow is at or close to the saturated liquid temperature corresponding to its pressure and so that the moderating water will be substantially free of stagnant vapor in passing over the fuel elements, maintaining the level of the moderating water in the reactor above the core, while maintaining the pressure of the moderating water within the range of 2800 p.s.i. to 3200 p.s.i., which range includes the predetermined conditions under which criticality of the core is attained, maintaining a body of steam in contact with the moderating water covering said core, circulating the moderating water in said core through a heat exchanger disposed outside of the reactor, circulating a secondary fluid through the heat exchanger, extracting heat from said secondary fluid in a prime mover that is connected to a loading device, and varying the pressure of the moderating water in said core within said range by varying the load on said prime mover, a change in load causing a change in the pressure and a relatively large change in the density of the moderating water in the core and of the reactivity of the core.

3,356,584
FUEL PELLET FOR NUCLEAR REACTOR

Carl E. Ockert, Broomall, Pa., assignor to the United States of America as represented by the United States Atomic Energy Commission

Filed Nov. 18, 1966, Ser. No. 595,541
6 Claims. (Cl. 176—67)



1. An improved ceramic fuel pellet for use in a rod-type nuclear reactor fuel element, wherein said ceramic fuel pellet is disposed within a tubular cladding, comprising: a nuclear fuel pellet having a generally cylindrical external lateral surface, said fuel pellet having a plurality of longitudinal slots in said external lateral surface, the depth of each of said slots being substantially greater than its width, said slots having rounded root portions to minimize crack formation in said fuel pellet due to said slots, said slots providing expansion room for pellet growth and thereby reducing the tensile hoop stresses induced in said cladding by said pellet.

3,356,585
VENTED FUEL SYSTEM

Edwin L. Zebroski, Los Altos, Calif., assignor to the United States of America as represented by the United States Atomic Energy Commission

Filed May 8, 1967, Ser. No. 637,881
10 Claims. (Cl. 176—68)

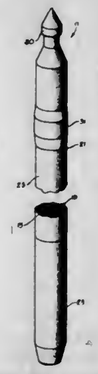


1. In a nuclear reactor fuel element having a fission product gas plenum, a fission product delay vent comprising an inner conduit open at both ends, having one end thereof in fluid communication with said fission gas plenum, means within said inner conduit nearest said plenum for delaying the flow of gases from said plenum through said conduit, valve means serially arranged with said delay means proximate the end of said conduit away from said fission product gas plenum for releasing fission product gases from the fuel region to the vent region above a predetermined pressure, and means defining an outer containment vessel concentric about said inner conduit and spaced apart therefrom, defining a plenum along the sides and top thereof, sealed and affixed to said inner conduit proximate the lower end of said conduit, said containment cover having ports proximate the lower portion thereof for the passage of fission product gases out of said vent after delay therein.

3,356,586
FUEL ELEMENT CONTAINING ACTIVATED CARBON

James F. Watson, San Diego, and Walter V. Goeddel, Poway, Calif., assignors to the United States of America as represented by the United States Atomic Energy Commission

Filed Apr. 14, 1967, Ser. No. 631,105
5 Claims. (Cl. 176—69)



1. A nuclear fuel element comprising a fuel chamber, nuclear fuel particles disposed in said chamber, and activated carbon dispersed in said chamber, said activated carbon having a surface area of at least about 300 square meters per gram.

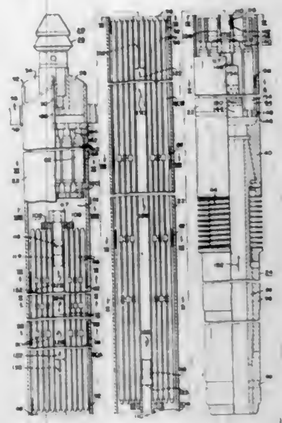
3,356,587
FUEL ASSEMBLIES FOR A NEUTRONIC REACTOR

Francis M. Heck, Jr., Pitcairn, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed June 21, 1963, Ser. No. 289,532
10 Claims. (Cl. 176—78)

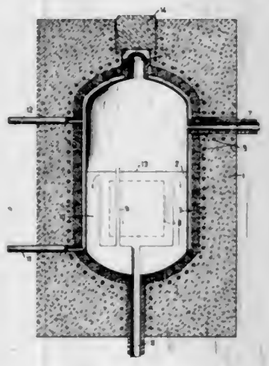
1. In a fuel assembly for a neutronic reactor, the combination comprising an elongated casing structure, a plurality of elongated fuel bundles tandemly and slidably mounted within said casing structure, an elongated supporting member coextending with substantially a total combined length of said fuel bundles, at least two of said fuel bundles being joined at the opposite outwardly disposed end portions to said supporting member and disposed so that the remaining portions of said bundles are mounted for movement relative to the adjacent portions of said supporting member, said supporting member being fabricated from a material having a greater coefficient of expansion than that of said fuel bundles so that said fuel bundles are separated by elongation of said supporting member with increase in temperature of said fuel assembly.

10. A fuel assembly for a neutronic reactor comprising an elongated supporting member, a plurality of elongated fuel bundles tandemly mounted on said supporting member, at least two of said fuel bundles being joined at the opposite outwardly disposed end portions thereof to said supporting member, means within said fuel assembly for longitudinally separating said fuel bundles upon a temperature increase, the remaining portions of said two



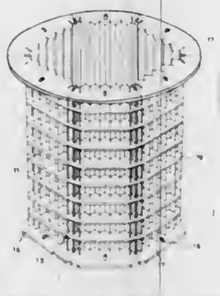
bundles being free to move relative to the adjacent portions of said supporting member, said separating means being formed to expand said supporting member faster than said fuel bundles, and said supporting member being fabricated from a material having a greater coefficient of expansion than that of said fuel bundles so that said fuel bundles are separated by elongation of said supporting member with an increase in temperature of said fuel assembly.

3,356,588
NUCLEAR REACTOR PRESSURE VESSEL AND METHOD OF CONSTRUCTING SAME
Karl Ivan Gunnar Beliaev, Saltsjobaden, Sweden, assignor to Aktiebolaget Atomenergi, Stockholm, Sweden, a company of Sweden
Filed Aug. 17, 1964, Ser. No. 390,090
Claims priority, application Sweden, Aug. 22, 1963, 9,178/63
4 Claims. (Cl. 176—87)



1. A nuclear reactor adapted to be cooled by a pressurized fluid, comprising an inner pressure vessel and an outer pressure vessel defining a space between the two pressure vessels in the pressureless state, said two pressure vessels being capable of absorbing, in combination, the total pressure of the pressurized fluid, said pressure vessels being so dimensioned that said inner pressure vessel will fill said space when subjected to a substantial part of said total pressure, thus coming into contact with the outer pressure vessel which will absorb any further increase of pressure.

3,356,589
NUCLEAR REACTOR CORE BAFFLE
Philippe Grell and Edouard Harmant, Brussels, Belgium, and John Alan Dodd and James Anthony Driscoll, Risley, England, assignors to Societe Anglo-Belge Vulcain, societe anonyme, Brussels, Belgium
Filed Feb. 1, 1965, Ser. No. 429,581
Claims priority, application Luxembourg, Feb. 7, 1964, 45,385
1 Claim. (Cl. 176—87)



In a nuclear reactor in which a core is internally cooled by a fluid, an impervious baffle surrounds said core and said baffle is in turn surrounded by a reflector fluid, an improved baffle; comprising, a plurality of sections extending throughout the length of said core; said sections having their edges bent over to form flanges projecting outwardly away from the center of said core; said plurality of sections being joined at complementary abutting flanges to form outwardly projecting ribs; and annular bands reinforcing the outer surface of said baffle and forming cavities with said ribs adapted to receive a portion of said reflector fluid.

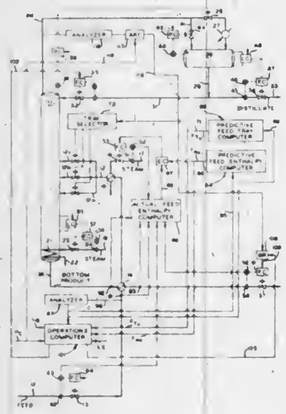
3,356,590
CONTROLLING A DISTILLATION OPERATION TO MAINTAIN SPECIFIED PRODUCT PURITIES WITH OPTIMUM FEED ENTHALPY
Merion L. Johnson, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Continuation of application Ser. No. 246,987, Dec. 26, 1962. This application Jan. 13, 1967, Ser. No. 609,259
4 Claims. (Cl. 203—1)

1. In a process wherein a multicomponent feed stream is heated and introduced into a distillation column for separation therein into a distillate product stream and a bottom product stream each of which possess a specified purity, a column overhead vapor stream is produced and at least partially condensed, some of said condensed overhead is recycled to said column as an external reflux stream, of said column overhead stream is yielded as a distillate product stream having a specified purity, wherein heat is supplied to said column to effect said separation, an improved control method for determining the optimum enthalpy of the heated feed stream introduced into said column necessary to produce said product purities while minimizing the input of heat to said column, said method comprising the steps of measuring a process variable indicative of the flow rate of feed to said column; producing a signal representative of the flow rate of feed to said column; analyzing said feed to determine the concentrations of components present in said feed; producing signals representative of the concentrations of said components in said feed; combining said signals in an operations computer in a manner based on the following expression:

$$X=f(F, F_c, E, F_T, F_e, H_D, L_B)$$

where:

X=predicted value for one of column reflux flow rate and heat input rate,
F=flow rate of said feed stream,
F_c=generic symbol for the concentrations of said feed components expressed as liquid volume fractions of said feed stream,
E=tray efficiency of said column,
F_T=feed tray of said column, numbering trays from the top of said column,
F_e=enthalpy of said feed stream,
H_D=specified liquid volume fraction of heavy key component in said distillate product stream,
L_B=specified liquid volume fraction of light key component in said bottom product stream;



producing in a predictive feed enthalpy computer a signal representative of the optimum feed enthalpy based on the following expression:

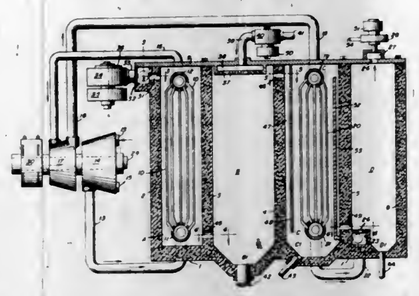
$$\frac{\partial \frac{X}{F}}{\partial F_e}=0$$

wherein:

X=predicted value for one of column reflux flow rate and heat input rate,
F=feed flow rate,
F_e=enthalpy of said feed stream;

measuring process variables indicative of the feed enthalpy; producing a signal representative of the actual enthalpy of the feed entering the column; comparing in an enthalpy controller said signal representing the predicted feed enthalpy and said signal representing the actual feed enthalpy; controlling in response to said difference the flow rate of a preheater heat supply stream; controlling from said predicted value X the flow rate of a stream selected from the group consisting of the external reflux stream, and the reboiler heat supply stream in order to operate the distillation column to maintain specified product purities at minimum total heat input to said column with respect to feed enthalpy.

3,356,591
METHOD AND APPARATUS FOR DISTILLATION OF MATERIALS IN SOLUTION BY DIRECT AND INDIRECT CONTACT WITH AIR
Adolphe C. Peterson, 4623 Bruce Ave. S., Minneapolis, Edina, Minn. 55424
Filed Apr. 17, 1961, Ser. No. 103,598
12 Claims. (Cl. 203—10)



1. In an apparatus for segregation of materials in solution of the character described: a heat dispersal conduit means a heat absorption conduit means; a primary low pressure conduit means for flow of a first stream of inducted air in indirect heat transfer association with said heat dispersal conduit means; a secondary low pressure air conduit means for flow of said first stream air in indirect heat transfer association with said heat absorption conduit means; an evaporative chamber to which the inducted air flows by connective means from said primary low pressure conduit means and from which said first stream inducted air flows by connective means to said secondary low pressure air conduit means; a means to supply solution for segregation to said evaporative chamber and for flow in direct contact with the inducted air flowing in said evaporative chamber from said primary low pressure evaporative conduit means; a means for compression of a second stream gaseous fluid to raise the temperature thereof and for passage of the compressed and temperature raised second stream gaseous fluid to said heat dispersal conduit means for transfer of heat therefrom to inducted air flowing in said primary low pressure conduit means; a means permitting and expanding restrictive flow of the second stream gaseous fluid from said heat dispersal conduit means to said heat absorption conduit means and for discharge of said second stream gaseous fluid from said heat absorption conduit means; and means driving said compression means the said means driving said compression means being comprised in combustion turbine receiving a proportion of air compressed by said compressing means and receiving fuel from a fuel supply means for combustion with air received by said combustion turbine in its combustion chamber and driving connection means between said combustion turbine and said compression means.

3,356,592
MULTI-STAGE FLASH EVAPORATOR WITH RECIRCULATION OF DISTILLAND
Franklin J. Eubank, Glendora, N.J., and Dennis E. Johnson, Havertown, Pa., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Sept. 4, 1963, Ser. No. 306,526
2 Claims. (Cl. 203—11)

1. A multi-stage flash evaporator system comprising,
means forming a plurality of flash evaporation chambers,
first heat exchange means associated with each of said evaporation chambers for cooling the vapors formed therein,

primary means for directing a stream of incoming impure water successively through each of said first heat exchange means to cool said vapors and preheating said impure water,

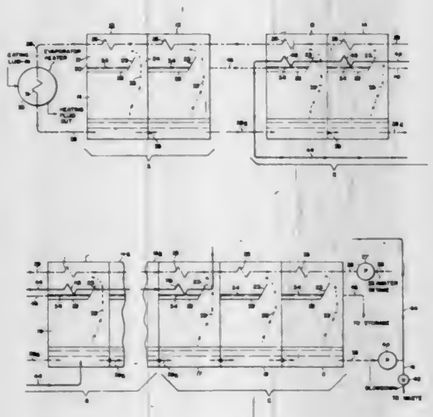
said chambers including a first group, an intermediate group and a last group,

said intermediate group including at least first, second and third chambers operable at successively lower temperatures,

heating means interposed between the first heat exchange means in said first group and the chambers in said first group for imparting additional heat to said impure water,

means for directing the heated impure water from said heating means to said first group of chambers for partial evaporation,

means providing fluid communication between said respective chambers, whereby the heated impure water undergoes successive partial evaporation in each of said chambers of said groups,



means for conducting the unevaporated water from said last group of chambers as a brine of increased mineral concentration,

means for directing a portion of said brine from said last group of chambers to waste,

second heat exchange means cooperatively associated with the chambers of said intermediate group for augmenting the condensation of the vapors formed therein, and

secondary means for returning the remaining portion of said brine through said second heat exchange means, and means disposed in bypassing relation with said first and second chambers for directing the brine from said second heat exchange means to said third chamber in said intermediate group of chambers, whereby the returning brine and the impure water from the second chamber of the intermediate group of chambers form a mixture of modified concentration in said third chamber.

3,356,593

SEPARATION OF METAXYLENE-PARAXYLENE MIXTURES BY EXTRACTIVE DISTILLATION

Shigeto Suzuki, San Francisco, Calif., assignor to Chevron Research Company, San Francisco, Calif., a corporation of Delaware

No Drawing. Filed Aug. 17, 1965, Ser. No. 480,515
6 Claims. (Cl. 203—29)

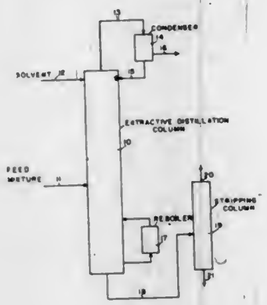
1. A process for the separation of metaxylene from a mixture of paraxylene and metaxylene, which comprises extractively distilling at a temperature below about 110° C. said mixture in contact with a liquid phase consisting essentially of a substantially anhydrous concentrated solution of silver ion in a solvent selected from the group consisting of phosphoric acid, lower alkane sulfonic acids or their mixtures, thereby producing a distillate portion which is substantially enriched in paraxylene and an extract portion which is substantially enriched in metaxylene.

3,356,594

SEPARATION OF HYDROCARBONS OF VARYING DEGREES OF UNSATURATION BY EXTRACTIVE DISTILLATION

Earle C. Makin, Jr., St. Louis, and George D. Davis, Creve Coeur, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

Filed Dec. 21, 1964, Ser. No. 419,940
6 Claims. (Cl. 203—55)



1. A process for the separation of mixtures of hydrocarbons of varying degrees of unsaturation by extractive distillation, said mixtures containing hydrocarbons having no greater than 7 carbon atoms per molecule, and which comprises continuously introducing said mixture into an intermediate section of a fractionating column, continuously introducing a solvent into the fractionating column at a point above the point of introduction of said mixture so that the solvent flows counter-current to and intimately contacts the ascending vapors of said mixture, withdrawing overhead a hydrocarbon fraction substantially richer in hydrocarbons of a lesser degree of unsaturation than said mixture and removing from the bottom of said column a solvent fraction rich in the more unsaturated hydrocarbons of said mixture, said solvent introduced in said fractionating column being one comprised of 75 to 99 percent by weight of 2-methoxyethanol and 1 to 25 percent by weight of water.

3,356,595

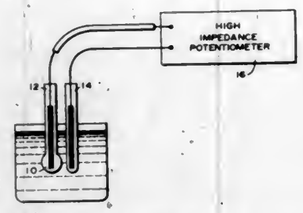
GLASS ELECTRODE COMPOSITION AND METHOD OF USING SAME FOR MEASURING SODIUM ION CONCENTRATION

George Eisenman, Salt Lake City, Utah, and James W. Ross, Newton, Mass., assignors to Corning Glass Works, Corning, N.Y., a corporation of New York

Filed Sept. 21, 1964, Ser. No. 397,732
15 Claims. (Cl. 204—1)

11. In a process of selectively measuring sodium ion activity in an ionic mixture including the sodium, potassium and hydrogen ions, which process includes the steps of providing a glass electrode with an active portion that is selectively sensitive to sodium ions in the presence of other cations including potassium and hydrogen ions, subjecting the mixture to said electrode and to a standard reference half-cell, and operatively connecting the glass electrode and reference half-cell to a high impedance

electrometric amplifier, the improvement comprising making said active portion from a glass composition consisting essentially of lithium oxide, gallium oxide and at least



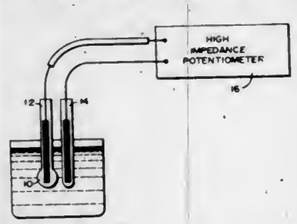
about 50 mole percent glass network forming oxide, and the ratio of the mole percent of lithium oxide to the mole percent of gallium oxide in the composition is less than 3.

3,356,596

GLASS ELECTRODE COMPOSITION AND METHOD OF USING SAME FOR MEASURING POTASSIUM ION CONCENTRATION

George Eisenman, Salt Lake City, Utah, and James W. Ross, Newton, Mass., assignors to Corning Glass Works, Corning, N.Y., a corporation of New York

Filed Sept. 21, 1964, Ser. No. 397,734
16 Claims. (Cl. 204—1)



13. In a process of selectively measuring potassium ion activity in an ionic mixture including the sodium, potassium and hydrogen ions, which process includes the steps of providing a glass electrode with an active portion that is selectively sensitive to potassium ions in the presence of other cations including sodium and hydrogen ions, subjecting the mixture to said electrode and to a standard reference half-cell, and operatively connecting the glass electrode and reference half-cell to a high impedance electrometric amplifier, the improvement comprising making said active portion from a composition consisting essentially of gallium oxide, network forming oxide and oxide of alkali metal selected from the group consisting of potassium where the ratio of the mole percent of K_2O to Ga_2O_3 is at least 1.6, rubidium where the ratio of the mole percent of Rb_2O to Ga_2O_3 is at least 1.0, cesium where the ratio of the mole percent of Cs_2O to Ga_2O_3 is at least 0.95, and mixtures of these named alkali metals where the sum of 0.625 times the mole percent K_2O plus the mole percent Rb_2O plus 1.053 times the mole percent Cs_2O at least equals the mole percent Ga_2O_3, said glass network forming oxide being at least about 50 mole percent of said composition.

3,356,597

METHOD AND APPARATUS FOR MEASURING ELECTROFINISHING STRESSES

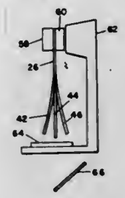
Francis Joseph Schmidt, Berwyn, Pa., assignor to General Electric Company, a corporation of New York

Continuation of application Ser. No. 246,743, Dec. 24, 1962. This application Feb. 18, 1965, Ser. No. 437,623
4 Claims. (Cl. 204—1)

2. The method of measuring the dependence of stress in electrodeposited coatings upon the current density employed in the deposition of the said coatings which comprises:

(a) providing a plurality of elongated electrode portions having plane faces lying in one common plane, the said electrode portions being flat, relatively thin, of the same material and of identical thickness, and alike in mechanical properties, each said electrode portion having one end connected to a header strip common to all said portions;

(b) immersing the said plurality of elongated electrode portions in an electrolytic bath, together with counterelectrode located non-parallel to the said common plane;



(c) restraining the said electrode portions from motion relative to said header strip;

(d) passing electric current between the said counter electrode and the said plurality of electrode portions in such polarity as to produce an electrodeposit upon the said plurality of electrode portions;

(e) removing the restraint from said electrode portions, releasing them for motion relative to said header strip;

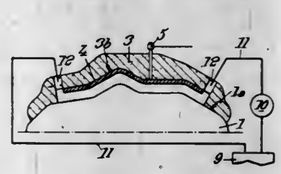
(f) measuring the displacements of the said electrode portions from their initial positions relative to the said header strip.

3,356,598

PROCESS FOR THE FABRICATION OF SPECIALLY CONTOURED ELECTRODES

Georges Clement Marcel Cabau, Neuilly-sur-Seine, France, assignor to Societe d'Exploitation des Materiels Hispano-Suiza, Bois-Colombes, Seine, France, a society of France

Filed Feb. 8, 1965, Ser. No. 431,112
Claims priority, application France, Feb. 13, 1964, 963,718
7 Claims. (Cl. 204—15)



1. A method of fabricating an electrode for use in an electrolytic process in which it is desired to produce a uniform effect over an irregular surface portion of an object, said method comprising the steps of: causing a deformable sheet of uniform thickness to conform closely to the irregularities in said surface portion so that the outer surface of said sheet substantially duplicates said surface portion; covering said outer surface of said sheet with a mass of hardenable material so as to cause one surface thereof to conform closely to the irregularities in said outer surface of said sheet, causing said material to become rigid; separating said sheet and said mass from said object and from each other; and covering at least a part of said one surface of said mass with a conductive sheet of uniform thickness in such a way as to cause said conductive sheet to conform closely to the irregularities in said one surface of said mass.

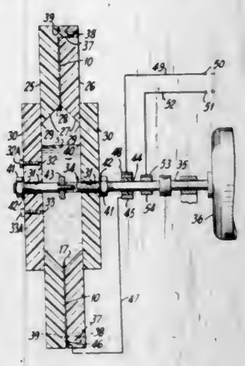
3,356,599

METHODS AND APPARATUS FOR MAKING ANNULAR CUTTING WHEELS

Shirley I. Weiss, 11 Riverside Drive, New York, N.Y. 10023

Original application July 20, 1964, Ser. No. 383,582. Divided and this application June 10, 1965, Ser. No. 462,945

6 Claims. (Cl. 204—16)



1. The method of forming an annular cutting wheel comprising providing a thin flat annular metal member, masking the opposite sides of said member to expose limited marginal surface portions extending from the inner annular edge thereof and said inner annular edge, electrodepositing abrasive grit in an electroplated metal matrix on said exposed marginal surface portions and the inner annular edge of said member, masking the entire surface portions on either side of said member and the grit deposit on the marginal surface portions thereof while exposing the inner annular edge of said member and the grit deposit thereon, and electrodepositing additional abrasive grit on said last mentioned exposed grit deposit to provide a total grit deposit on the inner annular edge of said member having a radial extent equal to a substantial multiple of the thickness of the grit deposit on the opposite marginal surface portions of said member.

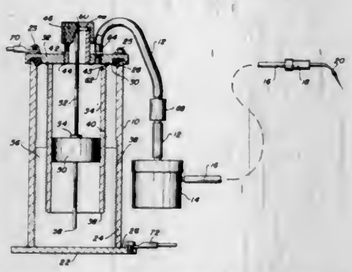
3,356,600

MEANS AND METHOD FOR PRODUCING A DRY HOMOGENEOUSLY MIXED HYDROGEN AND OXYGEN FUEL GAS FOR TORCHES

Richard W. Henes, Phoenix, Ariz., assignor to Henes Manufacturing Co., Phoenix, Ariz., a corporation of Arizona

Filed Dec. 24, 1963, Ser. No. 333,084

2 Claims. (Cl. 204—129)



1. A method of producing and burning a dry homogeneously mixed hydrogen and oxygen fuel gas for torches consisting of electrolytically decomposing an aqueous electrolyte and producing a mixture of hydrogen and oxygen, then passing said mixture of hydrogen and oxygen through a water collector to remove water vapor therefrom, then conducting said mixture of hydrogen and oxygen through a small diameter torch orifice ranging in diameter from .003 inch to .050 inch, and then creating combustion of the dry mixture to produce a high velocity high temperature flame.

3,356,601

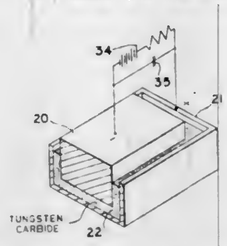
CONTROLLED ELECTRICAL DIFFUSION IN AN ELECTROMAGNETIC FIELD

Kiyoshi Inoue, 182 3-Chome, Tamawagayoga-machi, Setagaya-ku, Tokyo-to, Japan

Filed Mar. 4, 1963, Ser. No. 262,466

Claims priority, application Japan, May 21, 1962. 37/19,877

8 Claims. (Cl. 204—156)



1. A method of controlledly diffusing submicroscopic particles within a solid crystal-lattice structure, comprising the steps of imparting impulsive spark-discharge energy to said particles of an intensity and character sufficient to render at least some of said particles ionically charged and relatively mobile; applying a unidirectional electromagnetic force field to said particles, while they are ionically charged and relatively mobile, equivalent to an electric field of a potential gradient of at least 10^3 volts/cm. or a magnetic field with a flux dH/dt on the order of 10^8 to 10^{10} gauss/sec. and sufficient to effect a substantially unidirectional drift of said particles in the direction of said field; and thereafter terminating said force field to recover said lattice structure with said particles contained therein.

3,356,602

PROCESS OF DIMERIZING CARBOXYLIC ACIDS IN A CORONA DISCHARGE

John A. Coffman, Ballston Spa, and William R. Browne, Scotia, N.Y., assignors to General Electric Company, a corporation of New York

No Drawing. Filed Mar. 26, 1965, Ser. No. 443,159

6 Claims. (Cl. 204—165)

1. A process of corona discharge treatment comprising placing in an atmosphere containing a Group O inert gas maintained at a pressure of at least one atmosphere a material chosen from the group consisting of

a monocarboxylic acid having from 0 to 3 ethylenic linkages and from 2 to 30 carbon atoms and

an ester of said monocarboxylic acid and an alcohol having from 1 to 6 carbon atoms, and

subjecting the material to a corona discharge supplied with electrical energy in the amount of 0.01 to 10 watt-hrs./gram.

3,356,603

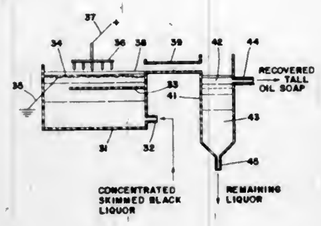
PROCESS OF TREATING BLOCK LIQUOR WITH AN ELECTRICAL DISCHARGE FOR THE RECOVERY OF TALL OIL

John Drew, Jacksonville, Fla., assignor, by mesne assignments, to SCM Corporation, New York, N.Y., a corporation of New York

Filed Nov. 27, 1964, Ser. No. 414,165

8 Claims. (Cl. 204—167)

1. A process for recovering tall oil soap from sulfate pulping black liquor which comprises subjecting a body of said black liquor to an electrical discharge, thereby inducing agglomeration of said soap, accumulating ag-



glomerated soap as a supernatant layer on the remaining liquor phase, and physically separating said supernatant layer from said remaining liquor phase.

3,356,604

METHOD AND APPARATUS FOR MAGNETO ELECTROPHORESIS

Tomonori Iwata, Hachioji-shi, Japan, assignor to Kabushiki Kaisha Hitachi Seisakusho, Tokyo-to, Japan, a joint-stock company of Japan

Filed Mar. 10, 1964, Ser. No. 350,773

Claims priority, application Japan, Mar. 14, 1963, 38/11,614

12 Claims. (Cl. 204—180)

1. A method of bidimensionally separating and individually extracting, respectively, components from a solution containing a plurality of charged colloidal particles of different mobilities which comprises dripping said solution in a uniform linear pattern onto an electrolyte contained and held in a medium kept in a horizontal plane, passing a direct current between a pair of electrodes along the horizontal plane of said medium in a direction transverse to said linear pattern and simultaneously applying a magnetic field in a direction perpendicular to the plane of the medium whereby said particles are separated.

3,356,605

ELECTRODEPOSITION MONITOR

Francis J. Schmidt, Berwyn, Pa., assignor to General Electric Company, a corporation of New York

Filed Mar. 2, 1967, Ser. No. 629,848

13 Claims. (Cl. 204—195)

11. Monitoring means for an electrodeposition system comprising:

(a) a bath representative of the deposition medium of the system to be monitored;

(b) a counterelectrode immersed in said bath;

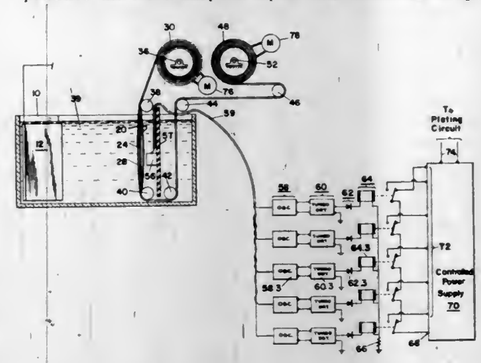
(c) an electrode strip;

(d) storage means for storing said electrode strip;

(e) support means for supporting said electrode strip for advance from said storage means through said bath;

(f) advancing means for advancing said electrode strip on said support means;

(g) current means for driving current between the said counterelectrode and the said electrode strip to produce an electrodeposit upon said electrode strip;



(h) instrumental deflection sensing means to sense the deflection of said electrode strip with respect to the said support means.

3,356,606

STUFFING TUBE FOR PROTECTIVE ANODES

Isidore Geld, Flushing, and Walter L. Miller, Lynbrook, N.Y., assignors to the United States of America as represented by the Secretary of the Navy

Filed Sept. 29, 1964, Ser. No. 400,282

6 Claims. (Cl. 204—196)

1. An anode mounting for a ship's hull having an exterior face, an interior face and an opening therethrough, said anode mounting comprising

a plate of rigid insulating material having an aperture therethrough,

means to secure said plate to such exterior face of such hull,

an anode for cathodic protection secured to the face of said plate distal such hull,

a stud having a passage therethrough aligned with said aperture of said plate,

means to secure said stud rigidly endwise to such interior face of such hull,

a first sleeve of insulating material extending through said aperture and extending snugly through said passage,

a rod of electrically conducting material anchored at one end in said anode, extending snugly through and then beyond said first sleeve, the portion of said rod distal said anchored end being threaded,

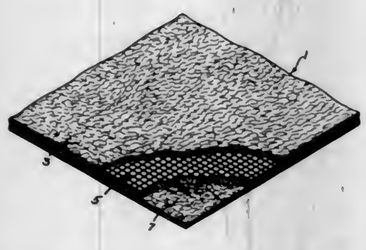
gasket sealing means of electrically insulating means snugly surrounding said rod in said passage,
a second sleeve of insulating material surrounding said rod in said stud outwardly from said gasket sealing means,
a gland nut adjustable in the open free end of said stud into variable pressing contact with said gasket sealing means and surrounding said second sleeve,
a first washer of insulating material disposed on said rod and abutting against the outer end of said gland nut,
a nut threaded on said rod and abutting said first washer,
a second washer of insulating material disposed on said rod and abutting said nut,
a retaining collar receiving and threaded over the end of said stud distal said anode, said collar having an aperture through which the end of said rod extends, and
a third sleeve of insulating material snugly surrounding said outer end portion of said rod, extending through and filling said aperture in said collar, abutting said second washer, and terminating short of the end of said rod to leave a threaded exposed end of said rod to which a cathodic current circuit connection can be secured.

3,356,607

REINFORCED ION-EXCHANGE MEMBRANES

John L. Eisenmann, Hingham, and Samuel S. Alexander, Boxboro, Mass., assignors to Ionics, Incorporated, Cambridge, Mass.

Filed July 22, 1964, Ser. No. 384,316
7 Claims. (Cl. 204—301)



1. An electrically conductive homogeneous ion-exchange membrane of synthetic, high molecular weight, polymeric compounds, the improvement consisting of a multi-layered reinforcing structure imbedded therein, said structure comprised of a plurality of sheets of textile fabric materials, said reinforcing structure comprising at least one non-woven fabric in combination with at least one woven fabric, said fabrics arranged in substantially face-to-face relationship with respect to each other.

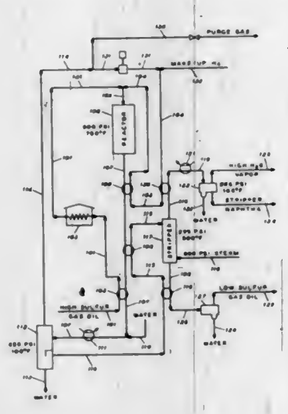
3,356,608

HYDROTREATING PROCESS WITH H_2S REMOVAL FROM THE EFFLUENT

Frederick C. Franklin, Pinole, Calif., assignor to Chevron Research Company, a corporation of Delaware

Filed Oct. 2, 1964, Ser. No. 401,021
9 Claims. (Cl. 208—212)

1. In a process for hydrotreating a sulfur-containing carbonaceous oil heavier than naphtha, wherein said oil and hydrogen are passed at elevated temperature through a hydroconversion zone containing a sulfactive hydrogenation catalyst at a pressure above 250 p.s.i.g. whereby there are produced H_2S and hydrocarbons lighter than naphtha desired to be recovered separately from hydrotreated oil heavier than naphtha, and wherein from the effluent of the hydroconversion zone there is separated under conditions including a pressure above 250 p.s.i.g. to obtain a liquid hydrotreated oil having dissolved therein most of the H_2S and hydrocarbons lighter than naphtha, the improvement of separating without compression said liquid hydrotreated oil into H_2S and relatively low sulfur content hydrotreated oil lighter than naphtha, naphtha and hydrocarbons heavier than naphtha, which comprises:
passing liquid hydrotreated oil so separated to a stripping zone and therein stripping with steam at a lower pressure above 200 p.s.i.g. to obtain bottoms stripped hydrotreated oil and overhead vapors comprising steam, H_2S, naphtha, and hydrocarbons lighter than naphtha;



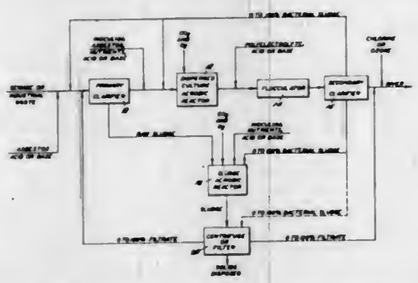
cooling the overhead vapors to condense and separate water and naphtha boiling range hydrocarbons from vapor comprising H_2S and uncondensed hydrocarbons lighter than naphtha at a lower pressure above 200 p.s.i.g.;
and flowing the separated vapor, without compression, to a gas recovery process including a step for removal of H_2S at a lower pressure above 150 p.s.i.g., to recover separately H_2S and relatively low H_2S content hydrocarbons lighter than naphtha.

3,356,609

AEROBIC TREATMENT OF SEWAGE

Joseph H. Bruemmer, Grand Island, N.Y., assignor to United Carbide Corporation, a corporation of New York

Filed May 3, 1966, Ser. No. 547,323
6 Claims. (Cl. 210—7)



1. Process for treating a water medium sewage stream containing a weight ratio of carbon to phosphorus of less than about 100 to 1 which comprises the steps of; (a) clarifying said sewage stream to a degree such that the suspended organic solids content thereof is less than about 0.0100 weight percent on an anhydrous basis; (b) feeding the clarified liquid to a dispersed culture aerobic reactor maintained at a temperature of from about 10° C. to about 50° C., maintaining the partial pressure of oxygen in the liquid at least at 20 mm. Hg, the pH at a value of from 3 to 11, and supplementing the nutrient carbon content of the sewage stream fed to said dispersed culture aerobic reactor to maintain a weight ratio of carbon to phosphorus such that there is a balance of carbon to phosphorus appropriate for protoplasm production using substantially all of said phosphorus, and agitating the composition thus established in said reactor for a period of about 1 hour to about 24 hours; (c) flocculating and separating the cell mass from the water in the discharge from the dispersed culture aerobic reactor; (d) passing the raw sludge solids separated from the liquid in step (a) to a sludge aerobic reactor containing bacterial inoculum including CO_2-fixing and protoplasmic floc forming species, and treating same therein at a temperature of from about 25° C. to 35° C. for from about 5 to 10 days at a pH of from 6 to 8 while bubbling through the liquid phase carbon dioxide and an oxygen containing stream of at least 30 percent oxygen at the rate of 0.05 to 0.5 volumes per minute per liquid volume; and (e) separating the water therefrom.

3,356,610

METHOD FOR TREATMENT OF WATER TO EFFECT PURIFICATION AND PREVENT FIRES

Marcel Maestre, Fresnes, Maurice Lefebvre, Sevres, and Claude Kaziz, La Courneuve, France, assignors to Produits Chimiques Pechiney-Saint-Gobain, Neuilly-sur-Seine, France

No Drawing. Filed June 16, 1964, Ser. No. 375,647
Claims priority, application France, June 18, 1963, 938,515
15 Claims. (Cl. 252—8)

1. In the process for the treatment of bodies of water having organic substances on the surface thereof to effect purification or to prevent combustion, the step of applying onto the surface of the body of water a liquid composition, an essential ingredient of which consists of a halogenated organic compound in which the organic base is selected from the group consisting of a butadiene, butane, pentane, pentene, cyclopentene, cyclopentane and cyclopentadiene, and in which the halogen is selected from the group consisting of chlorine, bromine and fluorine and mixtures thereof, and in which the organic liquid composition has a specific gravity of at least 1.3 and is applied in an amount to effect submergence of the organic substances.

3,356,611

SILICATE LAYER MINERALS AND PRODUCTS MADE THEREFROM

George Forbes Walker, Blackburn, Victoria, and William George Garrett, Ringwood, Victoria, Australia, assignors to Commonwealth Scientific and Industrial Research Organization, a body corporate of Australia

No Drawing. Filed July 13, 1964, Ser. No. 382,378
Claims priority, application Australia, July 12, 1963, 32,957/63
7 Claims. (Cl. 252—28)

2. A process for the production of a grease containing a crystalline layer lattice mineral produced from a natural crystalline layer lattice mineral containing at least a substantial proportion of vermiculite layers, said layers having an effective exchange capacity of about 115 to 190 milli-equivalents of a monovalent cation per 100 grams of the layers, which process comprises the steps of exchanging a proportion of the cations present in the said vermiculite layers with an organic cation by treating the said mineral with an aqueous solution containing the organic cation in an amount equivalent to about 0.7 to 1.3 times the said exchange capacity; said organic cation being selected from the group comprising substituted ammonium, phosphonium and sulphonium cations having substituent groups selected from saturated and unsaturated aliphatic chains containing not less than 6 carbon atoms, polyoxyethylene chains and aromatic and heterocyclic rings; the said cation being capable of promoting gross swelling of the crystalline mineral in a direction normal to the main cleavage plane of the mineral crystals during immersion of the crystals in an organic liquid subsequent to the exchange of said cations; drying the mineral subsequent to the exchange of said cations, immersing the dried mineral in an oil of lubricating viscosity, and subjecting the mineral whilst immersed in the said oil to mechanical disintegration.

3,356,612

STABLE DETERGENT COMPOSITIONS

David B. Guthrie, St. Louis, Mo., assignor to Petrolite Corporation, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Feb. 1, 1965, Ser. No. 429,620
1 Claim. (Cl. 252—99)

A stable detergent composition for machine dishwashing consisting essentially of a mixture of sodium carbonate, sodium tripolyphosphate and anhydrous sodium metasilicate, a defoaming type surfactant selected from the group consisting of
(A) the reaction product of one mole n-$C_{14}H_{29}OH$ with 30 moles ethylene oxide and 50 moles propylene oxide,
(B) the reaction product of one mole didodecylphenol with 45 moles ethylene oxide and 50 moles propylene oxide and
(C) the reaction product of one mole water with about 45 moles propylene oxide, about 60 moles ethylene oxide and finally with about 60 moles propylene oxide,
potassium dichloroisocyanurate, and an antioxidant selected from the group consisting of
(A) 1,2-dihydro-6-ethoxy-2,2,4-trimethyl quinoline,
(B) phenothiazine,
(C) t-butylphenol-formaldehyde resin,
(D) [2,2'-methylene bis - (4-methyl-6-t-butylphenol)] and
(E) dicyclohexylamine,
said antioxidant being present in an amount sufficient to reduce, inhibit and prevent degradation of both said nonionic surfactant and said potassium dichloroisocyanurate, whereby both said nonionic surfactant and said potassium dichloroisocyanurate are rendered stable thereby providing a stable detergent composition.

3,356,613

BUILT DETERGENT COMPOSITIONS CONTAINING A SYNERGISTIC MIXTURE OF STP, NTA, AND SODIUM SILICATE

Burton H. Gedge III, Wyoming, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

No Drawing. Filed Sept. 27, 1966, Ser. No. 582,215
5 Claims. (Cl. 252—137)

1. A detergent composition consisting essentially of a detergent selected from the group consisting of anionic, and zwitterionic synthetic detergents and mixtures thereof, and a builder mixture and at least 10% sodium silicate and sufficient to provide a pH in the range of 9 to 12, the weight ratio of detergent to builder mixture being from 2:1 to 1:10, the builder mixture consisting of sodium tripolyphosphate and sodium nitrilotriacetate in a molar ratio of 4:1 to 1:4.

3,356,614
FILM REMOVING COMPOSITION

Theodore E. Gilbert, Westlake, Ohio, assignor to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Filed Sept. 6, 1966, Ser. No. 577,194
4 Claims. (Cl. 252—171)

1. A film stripping composition consisting essentially of from about 50 to about 98 percent of trichloroethylene, from about 0.01 to about 6% of water and from about 0.5 to about 15% of a combined activator consisting essentially of acetic acid and trichloroacetic acid, wherein the ratio of acetic acid to trichloroacetic acid is within the range of 1:1 to 2.2:1.

3,356,615
PREPARATION OF A THORIA SOL BY HEATING AN AQUEOUS SOLUTION OF A THORIUM SALT IN AN AUTOCLAVE

Frederick T. Fitch and Jean G. Smith, Baltimore, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Filed Nov. 2, 1964, Ser. No. 408,326
6 Claims. (Cl. 252—301.1)

1. A process for preparing a stable thioria sol which comprises preparing an aqueous solution of a soluble thorium salt, heating the solution in an autoclave for a time and at a temperature sufficient to form a sol, removing the sol from the autoclave, reducing the electrolyte content, concentrating to the desired level and finally recovering the product sol.

3,356,616
PLASTIC SCINTILLATORS

Stanley R. Sandler, Philadelphia, Kwan C. Tsou, Huntingdon Valley, and Jordan E. Dannin, Philadelphia, Pa., assignors to The Borden Company, New York, N.Y., a corporation of New Jersey

Filed Mar. 5, 1964, Ser. No. 349,657
5 Claims. (Cl. 252—301.2)

1. A scintillator comprising (1), as the primary absorber, the copolymer of a monomer of the formula $R_3-M-C_6H_4-CR'=CR''_2$, in which M is tin, R is selected from the group consisting of C_{1-8} alkyls and alkenyls and C_{6-10} aryl, arylalkyl, alkylaryl, acryloxyaryl, and alkoxyaryl groups, and R′ and R″ are monovalent components selected from the group consisting of hydrogen and C_{1-8} alkyls and alkenyls, with a comonomer of the same formula except that M is lead, in the proportion of 10–90 parts of one of said comonomers for 100 parts total of the copolymer and (2) a primary fluor, the absorber and fluor being in a clear plastic solution in each other.

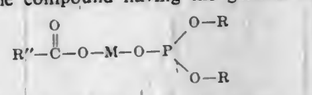
3,356,617
AN ALKALINE EARTH METAL CARBOXYLATE PHOSPHITE STABILIZING COMPOSITION

Gordon M. Juredine, Cleveland Heights, Ohio, assignor to Synthetic Products Company, Cleveland, Ohio, a corporation of Ohio

No Drawing. Original applications Oct. 18, 1965, Ser. No. 510,424, and Jan. 30, 1963, Ser. No. 255,071. Divided and this application Sept. 15, 1966, Ser. No. 615,860
4 Claims. (Cl. 252—400)

4. A composition useful for the stabilization of vinyl halide polymers comprising

(1) at least one compound having the general formula



where R and R″ are selected from the group consisting of alkyl, cycloaliphatic, aryl, aralkyl and alkaryl radicals and their halogen substituted derivatives,
where R has from 4 to 18 carbon atoms,
where R″ has from 3 to 17 carbon atoms, and
where M is selected from the group consisting of barium, calcium, and strontium,

(2) at least one compound selected from the group consisting of cadmium, stannous, and zinc salts of carboxylic acids,
where each carboxylic acid group attached to the metal of (2) has from 6 to 18 carbon atoms, and

(3) at least one organic phosphite other than (1) and wherein each organic group of said phosphite has from 4 to 18 carbon atoms,
where the parts by weight ratio of (1) to (2) is about 1:5 to 5:1, and
where the parts by weight ratio of (1) to (3) is about 5:1 to 1:1.

3,356,618
COATED BORON CONTAINING MATERIAL DISPERSED IN A METAL MATRIX

John Rich, Didcot, and George Arthur, Newcastle-upon-Tyne, England, assignors to International Research & Development Company Limited, Newcastle-upon-Tyne, England

No Drawing. Filed Nov. 23, 1964, Ser. No. 413,352
Claims priority, application Great Britain, Nov. 25, 1963, 46,506/63; Mar. 12, 1964, 10,569/64
12 Claims. (Cl. 252—478)

1. A boron-containing material comprising particles of boron material, an inert coating on each of said particles, and a metal matrix, said coated particles being dispersed in said matrix and said inert coating preventing reaction between said boron material and the matrix metal.

3,356,619
METHOD OF POLYMERIZING TETRAHYDROFURAN

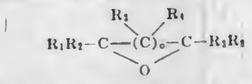
Irving Kuntz, Westfield, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Aug. 31, 1964, Ser. No. 393,405
8 Claims. (Cl. 260—2)

1. A method for polymerizing tetrahydrofuran which comprises costacting said tetrahydrofuran with a catalytic amount of a catalyst system composed of:

(a) An arylmethyl carbonium ion salt of the formula $Ar_xCH_yMX_z$ where Ar is selected from the class consisting of phenyl groups, and naphthyl groups; M is selected from the class of antimony, tin, aluminum, boron, zinc, iron, titanium, zirconium and vanadium; X is selected from the class of chlorine, bromine, and fluorine; x is an integer of from 2 to 3; x plus y is equal to 3; and z equals 1 + the highest valence of M; and,

(b) An epoxide of the formula



where n is an integer of 0 to 1; and R_1–R_6 are selected from the class consisting of hydrogen, C_1–C_{10} alkyls, C_1–C_4 haloalkyls, C_6–C_{10} aryls, and C_2–C_4 ethers, so long as at least one of R_2 and R_5 is hydrogen when n is equal to 0; wherein

(c) The mole ratio of epoxide to tetrahydrofuran is no more than about 0.001.

3,356,620
PROCESS FOR PREPARING CRYSTALLINE POLY (TRANS-2-BUTENE OXIDE)

Ralph W. Body, Wilmington, Del., assignor to Hercules Incorporated, a corporation of Delaware

No Drawing. Filed Sept. 17, 1964, Ser. No. 397,303
12 Claims. (Cl. 260—2)

1. A process for preparing highly crystalline poly(trans-2-butene oxide) which comprises polymerizing essentially pure monomeric trans-2-butene oxide by contacting, at a temperature within the range of from about −150° C. to about 100° C., said monomeric trans-2-butent oxide under essentially anhydrous conditions and in an inert atmosphere with a catalyst formed by reacting together in an inert atmosphere essentially anhydrous ingredients consisting essentially of an alkylaluminum compound selected from the group consisting of trialkylaluminums and dialkylaluminum hydrides, wherein said alkyl groups contain from 1 to 8 carbon atoms, and a saturated aliphatic polyhydroxy compound selected from the group consisting of chloral hydrate, vicinal alkane diols, and vicinal alkane polyols having more than 2 hydroxyls, said saturated aliphatic polyhydroxy compound being employed in an amount corresponding to from about 0.2 to about 3 moles of hydroxyl group per mole of aluminum in said alkylaluminum compound.

3,356,621
RIGID POLYURETHANE FOAMS PREPARED BY USING AS THE ACTIVE HYDROGEN COMPONENT A MIXTURE OF (A) THE TRANSESTERIFICATION PRODUCT OF PENTAERYTHRITOL WITH CASTOR OIL AND (B) POLYESTER POLYOLS

Henry Sheldon Hopkins, Jr., North Billerica, and Philip L. Gordon, Lexington, Mass., assignors to General Latex and Chemical Corporation, Cambridge, Mass., a corporation of Massachusetts

No Drawing. Filed Dec. 26, 1963, Ser. No. 333,632
2 Claims. (Cl. 260—2.5)

1. The method of making a rigid polyurethane foam, said method comprising reacting polyols with organic polyisocyanates in the presence of a halohydrocarbon blowing agent, said polyisocyanates being present in amounts so that there is about 0.95 to about 1.15 isocyanate groups per hydroxyl group, said polyols consisting essentially of a mixture of from about 25 to less than 50% on a hydroxy equivalent basis of the transesterification product of about 0.1 to 2.0 moles of pentaerythritol with one mole of castor oil, the remainder of said polyols consisting of polyester polyols formed by the condensation polymerization of polyols, at least a major portion of which have at least 3 hydroxy groups, with dicarboxylic acids.

3,356,622
POLYURETHANE FOAM PRODUCED FROM HYDROXYALKYLATED SUBSTANTIALLY PETROLEUM HYDROCARBON-INSOLUBLE PINE WOOD RESIN

David W. Delmonte, Wilmington, Del., assignor to Hercules Incorporated, a corporation of Delaware

No Drawing. Filed Dec. 31, 1963, Ser. No. 334,922
7 Claims. (Cl. 260—2.5)

1. The method of preparing a polyurethane foam which comprises reacting at a temperature from about 25° C. to about 100° C. a mixture of (1) a blend of (a) a polyol of the group consisting of polyesters and polyethers having at least two hydroxyl groups per molecule and (b) a hydroxyalkylated substantially petroleum hydrocarbon-insoluble pine wood resin in which the hydroxyalkyl group is selected from the group consisting of hydroxyethyl and hydroxypropyl, said blend having a hydroxyl number in the range of 40–650, (2) an organic polyisocyanate in amount such that about 0.7 to 1.1 isocyanato groups are available per reactive hydrogen in said mixture, and (3) a blowing agent.

3,356,623
PROCESS FOR USING HUMIC ACIDS AND LIGNIN IN VULCANIZABLE RUBBER

Nelson N. Schwartz, Lawrence Township, Mercer County, N.J., assignor to FMC Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 16, 1964, Ser. No. 352,334
8 Claims. (Cl. 260—17.4)

1. Process for producing a completely formulated, vulcanizable rubber stock comprising dispersing desired fillers, modifiers and curing agents along with an effective amount of a compound selected from the group consisting of a water-soluble humate and a water-soluble lignin salt as a dispersing agent in a latex of rubber, precipitating said dispersing agent in situ by adding a water-soluble zinc compound in an amount equivalent to at least 5 parts of zinc per 100 parts of rubber and an acid which does not form an insoluble salt with said zinc compound in amounts sufficient to neutralize said dispersion, and recovering a completely formulated, vulcanizable rubber product.

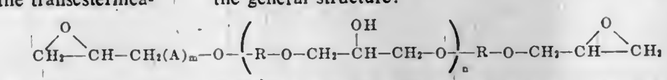
3,356,624
EPOXY RESIN BASED TRAFFIC PAINT COMPOSITIONS

Dennis Neal, Convent Station, and John A. Lopez, Springfield, N.J., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 28, 1964, Ser. No. 421,630
9 Claims. (Cl. 260—18)

2. A paint composition comprising a liquid resin blend, an inert organic solvent and pigment wherein the volume ratio of resin blend to solvent varies from about 70:30 to 30:70 and the volume ratio of resin blend to pigment varies from about 40:60 to 60:40, said liquid blend comprising

(a) from about 10% to 30% by weight of a solid glycidyl polyether of a polyhydric phenol having the general structure:



wherein A is an alkylene radical, R is a divalent hydrocarbon radical of a dihydric phenol, n is an integer having a value from 2 to 12 and m is an integer selected from 0 and 1, said polyether having a molecular weight from about 700 to 4,000, and

(b) from about 90% to 70% of a liquid epoxy-containing condensate prepared by reacting a dimerized octadecadienoic acid with a least 1.5 times the chemical equivalent amount of a liquid glycidyl polyether of a polyhydric phenol having the general structure defind in (a) wherein the average molecular weight is from about 284 to about 500.

3,356,625
GASKET-FORMING PLASTISOLS COMPRISING VINYL CHLORIDE RESIN, EPOXY PLASTICIZER, DIESTER PLASTICIZER AND FILLER

Donald A. Giessler, Center Township, Ind., assignor to Ball Brothers Company, Inc., Muncie, Ind., a corporation of Indiana

No Drawing. Continuation of application Ser. No. 277,690, May 3, 1963, which is a continuation of application Ser. No. 197,848, May 28, 1962. This application July 11, 1966, Ser. No. 564,432
7 Claims. (Cl. 260—23)

6. A gasket-forming composition adapted for use with a metal closure, said composition comprising a plastisol mixture of:

(A) from 125 to 300 parts of a plasticizer composition,

(a) said plasticizer composition consisting essentially of from 25 to 100 parts of an alkyl di-

ester of an alkyl dibasic acid and from 100 to 200 parts of an epoxidized unsaturated natural oil,

(B) 100 parts of a vinyl chloride polymer dispersed in the plasticizer composition, and

(C) an amount of a filler selected from the group consisting of calcium carbonate and barium sulfate which is equivalent on a volume basis to from 150 to 450 parts of barium sulfate.

3,356,626

MANUFACTURE OF FILMS OF N-SUBSTITUTED ACRYLAMIDE COPOLYMERS

Frank Reeder, Coventry, England, assignor to Courtaulds Limited, London, England, a British company

No Drawing. Filed Feb. 13, 1964, Ser. No. 344,535
Claims priority, application Great Britain, Feb. 15, 1963, 6,181/63
4 Claims. (Cl. 260—29.6)

1. A process for the manufacture of a film or filament of a linear addition copolymer which is insoluble in water and soluble in an aqueous solution containing 25% of $CaCl_2$ at 25° C. to the extent of at least 5 percent by weight, comprising

(a) stirring a mixture of

(i) an N-substituted amide having the formula $CH_2{=}CR{-}CO{-}NR'{-}CH_2OR''$ in which R is hydrogen or alkyl, R' is hydrogen, methyl or hydroxyethyl and R'' is hydrogen or methyl,

(ii) at least one other mono-ethylenically unsaturated compound capable of being copolymerized with the N-substituted amide,

(iii) a water-soluble free radical initiator, and

(iv) an aqueous salt solution containing at least 10% of a halide of a metal chosen from Groups I and II of the Periodic Table,

(b) thereby to form a water insoluble copolymer containing at least 35 mol percent of units of the N-substituted amide, in solution, in the salt solution,

(c) forming a thin layer or stream of the solution, and

(d) coagulating the thin layer or stream.

3,356,627

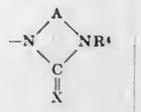
AQUEOUS BLENDS OF TWO WATER-INSOLUBLE POLYMERS, ONE OF WHICH HAS 1 TO 15% OF A MONOMER CONTAINING AN ALCOHOLIC HYDROXYL, AMINO, AMIDO OR UREIDO GROUP

Joseph David Scott, Philadelphia, Pa., assignor to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed June 17, 1963, Ser. No. 288,528
22 Claims. (Cl. 260—29.6)

1. A composition adapted to form flexible, tough adherent coating and impregnant films comprising an aqueous dispersion of (1) a water-insoluble addition polymer selected from the group consisting of vinyl ester polymers, acrylic ester polymers, and vinylhydrocarbon polymers and (2) a water-insoluble copolymer of copolymerizable monoethylenically unsaturated molecules comprising 1 to 15% by weight of at least one monomer containing a polar group selected from the group consisting of alcoholic hydroxyl, amino, amido, and ureido groups, the polymeric components (1) and (2) being compatible to form an adherent film on a substrate, component (1) being present in predominant proportion relative to components (1) and (2), and the relative amounts of components (1) and (2) being predetermined to provide from 0.005 to 7%, based on the total weight of (1) and (2), of polymerized monomer units containing the aforesaid polar group, the polymer of component (1) having an average particle size of at least 0.03 micron, the polymer of component (2) having an average particle size from 0.003 to 3 microns and the average particle size of component (2) being at least 30% smaller than the average particle size of component (1), the polymers of components (1) and (2) having molecular weights in the range of about 10,000 to 10,000,000, and the T_1 value of the polymers being not over 25° C.

7. A composition adapted to form flexible, tough adherent coating and impregnant films comprising an aqueous dispersion of (1) a water-insoluble addition polymer selected from the group consisting of vinyl ester polymers, acrylic ester polymers, and vinylhydrocarbon polymers and (2) a water-insoluble copolymer fo copolymerizable monoethylenically unsaturated molecules of which 1 to 15% by weight contain a cyclic ureido group of the formula



(I)

in which

A is an alkylene group having 2 to 3 carbon atoms,

R^4 is selected from the group consisting of H, $—CH_2OH$, and $—CH_2OCH_3$, and

X is selected from the group consisting of O and S,

the polymeric components (1) and (2) being compatible to form an adherent film on a substrate, component (1) being present in predominant proportion relative to components (1) and (2), and the relative amounts of components (1) and (2) being predetermined to provide from 0.005 to 7%, based on the total weight of (1) and (2), of mers containing the aforesaid cyclic ureido group.

3,356,628

COPOLYMERS OF PERFLUORO ACRYLATES AND HYDROXY ALKYL ACRYLATES

Samuel Smith, Roseville, and Patsy O. Sherman, Bloomington, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

No Drawing. Filed Dec. 1, 1964, Ser. No. 415,154
20 Claims. (Cl. 260—29.6)

1. A copolymer of a fluorocarbon acrylate, methacrylate or α-chloroacrylate and a hydroxyalkyl acrylate or methacrylate which is suitable for use as an oil and water repellent coating on a fibrous or porous surface, the copolymer having a carbon to carbon main chain and containing recurring monovalent perfluorocarbon groups containing from 4 to 18 carbon atoms and recurring hydroxyl radicals, from 20 to 70 percent of the weight of the copolymer being contributed by fluorine atoms in the perfluorocarbon groups and from 0.05 to 2 percent of the weight of the polymer being contributed by the hydroxyl radicals, said copolymer having improved surface adherability properties as compared to the homopolymer of a corresponding fluorocarbon monomer.

3,356,629

METHOD FOR PREPARING AQUEOUS DISPERSIONS OF HIGH MOLECULAR WEIGHT OLEFIN POLYMERS

William F. Smith, Lake Jackson, and Lon Truman Smith, Dallas, Tex., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Dec. 28, 1964, Ser. No. 421,402
9 Claims. (Cl. 260—29.6)

1. A process for preparing stable aqueous colloidal dispersions of solid high molecular weight polymers made from olefinically unsaturated hydrocarbons containing 2 to 10 carbon atoms and copolymers of said hydrocarbons with copolymerizable unsaturated monomers which comprises the steps of:

(a) feeding the solid polymer which is to be dispersed into a multizone extruder having, in sequence, a zone for melting, pumping and metering the polymer, a mixing zone and a discharge zone;

(b) melting, pumping and metering the polymer and continuously passing it to the mixing zone;

(c) injecting into the mixing zone a pressurized liquid mixture consisting of a water-immiscible solvent for the polymer and an aqueous solution of an emulsifying agent in which mixture the ratio of aqueous solution to water immiscible solvent is from 1:4 to 1:10 by weight;

(d) admixing the polymer, the water-immiscible solvent therefor, and the aqueous solution of emulsifier in the mixing zone in which the ratio of the liquid mixture to the polymer is from 2.5:1 to 6:1 by weight;

(e) passing the resulting emulsion mixture through the discharge zone into a temperature control and mixing zone, further mixing the emulsion while maintaining the temperature at from about 70° to about 120° C. and then

(f) volatilizing the water-immiscible solvent from the emulsion, leaving a colloidal dispersion of the solid polymer in aqueous medium.

3,356,630

STABILIZER FOR VINYL CHLORIDE POLYMERS

Joseph A. Vona, Westfield, and Edward J. Hensch, Fords, N.J., assignors to Celanese Corporation, a corporation of Delaware

No Drawing. Filed July 2, 1965, Ser. No. 469,340
3 Claims. (Cl. 260—30.4)

1. A polymerized vinyl chloride composition comprising at least 70 percent vinyl chloride polymerized therein plasticized with monoglycidyl ether of trimethylolpropane oxetane.

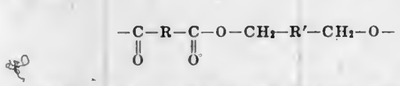
3,356,631

CHLORINATED POLYESTERS

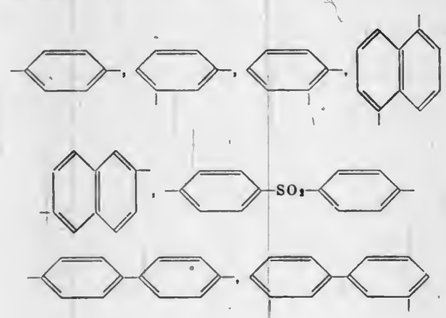
Winston J. Jackson, Jr., and John R. Caldwell, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

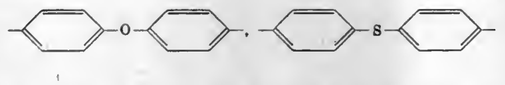
No Drawing. Filed Feb. 20, 1964, Ser. No. 346,125
24 Claims. (Cl. 260—31.2)

1. A polyester of at least one dibasic acid and at least one diol, said polyester consisting essentially of the repeating unit



wherein R is a bivalent radical selected from the group consisting of radicals of the formulas:





and $+CH_2+_n$, wherein *n* is 2–10 and R' is a member selected from the group consisting of 1,2-cyclohexylene, 1,3-cyclohexylene, 1,4-cyclohexylene, and $+CH_2+_m$, wherein *m* is 0–10, said polyester having an inherent viscosity as measured in 60/40 phenol/tetrachloroethane at 25° C. of from about 0.3 to 2.0, said polyester containing from about 5 to about 50% by weight of chlorine wherein at least 50 percent of the chlorination takes place on $—CH_2—$ groups which are covalently bonded to other carbon atoms.

3,356,632

VINYL POLYMERS MODIFIED WITH FLUOROESTERS

William A. Zisman, Silver Spring, Md., Neldon Lynn Jarvis, Fairfax County, Va., and Robert B. Fox, Bethesda, Md., assignors to the United States of America as represented by the Secretary of the Navy

No Drawing. Filed Sept. 9, 1964, Ser. No. 395,338
3 Claims. (Cl. 260—31.6)

1. A polymer composition comprising:

a vinyl polymer selected from the group consisting of polyvinylchloride, polyvinylidene chloride, copolymers of vinylidene chloride and vinyl chloride, copolymers of vinylidene chloride and acrylonitrile in proportions in which the vinylidene chloride is at least 70% by weight and polymethylmethacrylate.

and a fluoroester selected from the group consisting of bis (1H,1H-pentadecafluorooctyl) 4-chlorophthalate, -tetrachlorophthalate and -n-octylsuccinate, tris (1H,1H-pentadecafluorooctyl) tricarballylate and 3-(hydroxymethyl) 1,5-pentanediol tris (heptafluorobutyrate)

incorporated therein in a small amount sufficient to provide a surface of lower energy thereon.

3,356,633

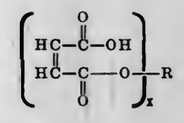
MODIFIED HALOGEN-CONTAINING VINYL RESIN COMPOSITIONS

Paul R. Graham, Ballwin, Mo., assignor to Monsanto Company, a corporation of Delaware

No Drawing. Continuation of abandoned application Ser. No. 195,368, May 21, 1962. This application June 14, 1966, Ser. No. 557,351
29 Claims. (Cl. 260—31.6)

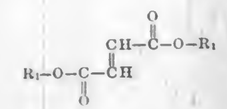
1. A vinyl halide resin composition comprising (a) a vinyl halide polymer selected from the group consisting of polymerized vinyl halide monomers and the copolymers of such monomers with an ethylenically unsaturated monomer, at least 50% of the monomer units of said copolymers being vinyl halide units, (b) a fumarate ester composition selected from the group consisting of

(1) the reaction product of an ester of maleic acid of the structure



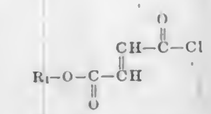
where R is selected from aliphatic and alicyclic hydrocarbon radicals and *x* is a whole number from 2 to 6 with a hydroxy compound of the structure R_1OH, where R_1 is selected from alkyl, cycloalkyl, alkenyl and aralkyl radicals; said recation being conducted in the presence of a hydrogen halide;

(2) the reaction product of a fumarate ester of the formula



where R_1 is selected from alkyl, cycloalkyl, alkenyl and aralkyl radicals; with a hydroxy compound having from 2 to 6 hydroxy groups;

(3) the reaction product of a fumaryl chloride of the formula



where R_1 is selected from alkyl, cycloalkyl, alkenyl and aralkyl radicals, with a hydroxy compound having from 2 to 6 hydroxy groups, and (c) a polyallyl ester of a polybasic acid having up to four carboxy groups, said composition comprising from about 5 to about 200 parts by weight of a mixture of (b) and (c) per 100 parts by weight of (a) and there being at least one part by weight of (b) per part by weight of (c).

3,356,634

DECORATIVE SURFACE COVERINGS CONTAINING IMBEDDED CHIPS COMPRISING VINYL CHLORIDE POLYMER, CHLORINATED POLYETHYLENE AND FILLER

John V. McGinley, Hackensack, N.J., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed May 25, 1965, Ser. No. 458,776
8 Claims. (Cl. 260—31.8)

5. A decorative covering comprising a vinyl chloride polymer matrix having imbedded therein compounded chips containing: (A) 100 parts of resin binder composed of (a) about 70% to 95% by weight of a vinyl polymer resin selected from the group consisting of polyvinyl chloride, vinyl chloride-vinyl acetate and vinyl chloride-vinylidene copolymers containing predominantly vinyl chloride, and polyvinyl chloride-polyvinyl acetate and polyvinyl chloride-polyvinylidene chloride mixtures containing predominantly polyvinyl chloride, and (b) about 5% to 30% of a chlorinated linear polyethylene having a chlorine content between about 30–55% by weight and high molecular weight corresponding to an intrinsic viscosity of at least 3.0 to 6.0 in o-dichlorobenzene at 100° C.; (B) about 20 to 60 parts by weight plasticizer for said resin binder; and (C) about 300–600 parts by weight filler.

3,356,635

ADHESIVE TAPE HAVING CHLORINE CONTAINING TACKIFIER

Eugene Francis Heer, North Plainfield, and Franklin Earl Bitting, Middlesex, N.J., assignors to Johns-Manville Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed July 28, 1965, Ser. No. 475,564
5 Claims. (Cl. 260—32.8)

1. A normally tacky and pressure-sensitive adhesive tape having an improved flame and hydrocarbon resistant adhesive comprising (a) 10 to 40% by weight of chlorine containing elastomer selected from the group consisting of polychloroprene elastomers and reclaimed polychloroprene elastomers; (b) urethane gum elastomer in a 9:1 to 1:9 ratio to (a); (c) between 20 and 140 parts per 100 parts (a) of a tackifier component containing between 10–90% of at least one chlorinated polyphenyl selected from the group consisting of chlorinated diphenyls and chlorinated triphenyls; and (d) up to 150 parts filler per 100 parts (a) and (b).

3,356,636

PRODUCTION OF FAST FLOWING POLYAMIDES

Anton Cadus, Ludwigshafen (Rhine), Germany, assignor to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed Sept. 20, 1965, Ser. No. 488,800
Claims priority, application Germany, Sept. 30, 1964, B 78,729
4 Claims. (Cl. 260—33.4)

1. A process for the production of fast flowing polyamides which comprises kneading polyamides having a K-value within the range of from 65 to 100 at temperatures between 180 and 350° C. with 0.05 to 2.5% by weight with reference to said polyamides of an acetylene compound containing a —C≡C— group and at least one oxygen atom in the molecule and having a boiling point above 100° C. at standard pressure.

3,356,637

VINYL CHLORIDE INTERPOLYMERS AND PROCESS

Robert J. Slocombe, Kirkwood, Mo., assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed May 27, 1963, Ser. No. 283,577
12 Claims. (Cl. 260—33.6)

1. An interpolymer of vinyl chloride and diester of fumaric acid in which the esterifying radicals are hydroxy(oxa) hydrocarbyl groups and in which from about 2% to about 75% by weight of the said interpolymer is from the said diester.

7. A solution containing interpolymer and monocyclic aromatic hydrocarbon solvent, the interpolymer constituting at least 30% by weight of the solution and being an interpolymer of vinyl chloride and bis(hydroxyalkyl) fumarate and having a molecular weight in the range of 1000 to 10,000 and a hydroxyl content of 1% to 4% by weight.

3,356,638

OXYCHLOROPOLYETHYLENE COATING

Richard C. Barrett, New Milford, N.J., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Jan. 20, 1964, Ser. No. 338,573
7 Claims. (Cl. 260—33.8)

7. A composition especially suitable for coating of surfaces comprising a volatile solvent solution containing: (A) between about 10–40% by weight of an oxychloropolyethylene of linear polyethylene containing chemically combined chlorine in an amount of 65–80% by weight and chemically combined oxygen in an amount of 1–2% by total weight of oxygen and carbon in the oxychloropolyethylene, said oxychloropolyethylene having an intrinsic viscosity between about 0.08 to 0.3 deciliter/gram in o-dichlorobenzene at 100° C.; (B) about 10 to 200 parts by weight per 100 parts of said oxychloropolyethylene of a chlorinated biphenyl having a chlorine content between about 40–70% by weight; and (C) about 10 to 200 parts by weight per 100 parts of said oxychloropolyethylene of a normally solid chlorinated polyphenyl having a chlorine between about 40–70% by weight and melting temperature between about 40–120° C.

3,356,639

STABILIZATION OF POLYOLEFINES WITH PHOSPHORUS HALIDES AND PEROXIDES

Gerhard Meyer, Obernburg, Erhard Siggel, Seckmauern uber Hochst, Odenwald, Albert Schöpf, Hering uber Hochst, Odenwald, and Helmut Mägerlein, Erlenbach, Germany, assignors to Vereinigte Glanzstoff-Fabriken AG., Wuppertal-Elberfeld, Germany

No Drawing. Filed Jan. 26, 1965, Ser. No. 428,239
Claims priority, application Germany, Jan. 31, 1964, V 25,296
17 Claims. (Cl. 260—45.7)

1. A process for improving the stability of a high molecular weight poly-α-monoolefine which comprises: dispersing said poly-α-monoolefine as a finely divided powder in an inert hydrocarbon containing 0.01 to 5% by weight with reference to the polymonoolefin each of

(A) a phosphorous compound selected from the group consisting of $POCl_3$, PCl_3, PCl_2R and $PClR_1R_2$ wherein R, R_1 and R_2 each represents a substituent selected from the class consisting of alkyl, aryl, aralkyl and cycloalkyl of 1 to 18 carbon atoms, and

(B) an organic peroxide;

heating said dispersion with agitation under a substantially oxygen-free atmosphere at a temperature from about 50° C. up to about 150° C. for a period of time sufficient to enhance the oxidation resistance of said poly-α-monoolefine; and separating the poly-α-monoolefine from said dispersion.

3,356,640

STABILITY OF POLYOLEFINES

Gerhard Meyer, Obernburg, Erhard Siggel, Seckmauern uber Hochst, Odenwald, Albert Schöpf, Hering uber Hochst, Odenwald, and Helmut Mägerlein, Erlenbach, Germany, assignors to Vereinigte Glanzstoff-Fabriken AG., Wuppertal-Elberfeld, Germany

No Drawing. Filed Jan. 26, 1965, Ser. No. 428,231
15 Claims. (Cl. 260—45.9)

1. A process for improving the stability of a high molecular weight poly-α-monolefine which comprises: dispersing said poly-α-monolefine as a finely divided powder in an inert hydrocarbon liquid containing a small amount of cyano compound selected from the group consisting of organic unsaturated mononitriles of 2 to 18 carbon atoms, unsaturated dinitriles of 2 to 18 carbon atoms, saturated mononitriles of 2 to 18 carbon atoms and saturated dinitriles of 2 to 18 carbon atoms heating said dispersion with agitation in the presence of UV-rays and at a temperature of from about 20° C. up to the boiling point of the inert hydrocarbon liquid for a period of time sufficient to enhance the oxidation-resistance of said poly-α-monoolefine; and separating the poly-α-monoolefine from said dispersion.

3,356,641

DIGLYCOL TEREPHTHALATE POLYESTERS PREPARED BY POLYCONDENSATION IN THE PRESENCE OF ZINC HEXAFLUOROSILICATE CATALYST AND OPTIONALLY CONTAINING A MANGANESE SALT AS A LIGHT STABILIZING AGENT

Hilmar Roedel, Elsenfeld, Erhard Siggel, Laudenbach am Main, Lothar Riehl, Oberbruch, Rhineland, and Walter Rein, Obernburg (Main), Germany, assignors to Vereinigte Glanzstoff-Fabriken AG, Wuppertal-Elberfeld, Germany

No Drawing. Filed Mar. 3, 1964, Ser. No. 349,140
Claims priority, application Germany, Mar. 9, 1963, V 23,778
9 Claims. (Cl. 260—45.75)

1. In a process for the production of a linear fiber-forming polyester by polycondensation under reduced pressure and at an elevated temperature of a diglycol terephthalate, the improvement which comprises: carrying out said polycondensation in the presence of zinc hexafluorosilicate as the essential polycondensation catalyst.

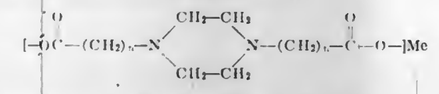
3,356,642

POLYOLEFIN STABILIZED WITH A SALT OF A PIPERAZINE-ALKANOIC ACID

Salvatore Algieri, Rome, Italy, assignor to Montecatini Edison S.p.A., Milan, Italy, a corporation of Italy

No Drawing. Filed Jan. 26, 1965, Ser. No. 428,220
Claims priority, application Italy, Jan. 27, 1964, 1,691/64, 1,692/64
10 Claims. (Cl. 260—45.75)

1. A dye-receptive, lightfast polyolefin composition comprising a mixture of (1) a crystalline polymeric olefin and (2) from 0.1 to 10% by weight of the mixture of a metal compound having the formula:



wherein Me is a metal selected from the group consisting of the metals of Group II-B and Group VIII of the Mendeleef Periodic Table and n is 1 or 2, said articles being stable to light and particularly receptive to disperse dyestuffs of the normal and phenolic types.

3,356,643

CHLORINE-CONTAINING VINYL POLYMER STABILIZED WITH ORGANOTIN SALT OF A POLYESTER

John W. Tamblyn and John R. Caldwell, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Original application June 5, 1963, Ser. No. 285,577, now Patent No. 3,306,920, dated Feb. 28, 1967. Divided and this application Sept. 26, 1966, Ser. No. 598,132
9 Claims. (Cl. 260—45.75)

1. A heat-stabilized composition comprising a chlorine-containing plastic vinyl polymer and 0.1 to 10 percent by weight of said composition of a compound selected from the group consisting of dibutyltin, diethyltin, dihexyltin, diphenyltin, dilauryltin, and tributyltin salts of a low molecular weight polyester obtained by condensing bicyclo-(2.2.1)-5-heptene-2,3-dicarboxylic acid with a glycol.

2. A heat-stabilized composition comprising a plastic selected from the group consisting of vinyl chloride and vinylidene chloride homopolymers and copolymers and a heat-stabilizing amount of a compound selected from the group consisting of dialkyltin and diphenyltin salts of a low molecular weight polyester obtained by condensing bicyclo - (2.2.1) - 5-heptene-2,3-dicarboxylic acid with a glycol.

3,356,644

STABILIZED COMPOSITIONS

Yoon Chai Lee, Springfield, Mass., assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed Oct. 11, 1963, Ser. No. 315,667
14 Claims. (Cl. 260—45.95)

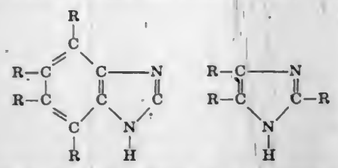
1. A composition which comprises an unsaturated nitrile polymer containing at least 10% by weight of a combined unsaturated nitrile of the group consisting of acrylonitrile, methacrylonitrile, ethacrylonitrile, propacrylonitrile, butacrylonitrile, and mixtures thereof, said nitrile polymer being selected from the class consisting of homopolymers of the nitriles of said group, interpolymers of the nitriles of said group with each other, and interpolymers of the nitriles of said group with a comonomer selected from the class consisting of monovinylidene aromatic hydrocarbons, alkyl acrylates, alkyl alkacrylates, acrylamides, N-alkyl acrylamides, dialkyl maleates, and dialkyl fumarates in intimate admixture with about 0.05–1%, based on the weight of the polymer, of the product of the polymerization of an alkylene oxide with a terminal epoxy group upon a polyol, said product having an average molecular weight of about 400–3000 and an average hydroxyl number of about 60–700.

3,356,645
PROCESS FOR CURING EPOXY RESINS WITH A SALT OF AN IMIDAZOLE AND COMPOSITIONS THEREOF

Daniel Warren, East Brunswick, N.J., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 20, 1964, Ser. No. 361,224
7 Claims. (Cl. 260—47)

1. A process for curing polyepoxides which comprises mixing and reacting a polyepoxide having more than one vic-epoxy group with a curing amount of a salt of an imidazole compound selected from the group consisting of



and mixtures thereof wherein R is a member selected from the group consisting of hydrogen, halogen, hydrocarbon radicals, amino-substituted hydrocarbon radicals, ester-substituted hydrocarbon radicals and mercaptan-substituted hydrocarbon radicals and the acid is selected from the group consisting of monocarboxylic acids containing 1 to 8 carbon atoms, lactic acid and phosphroric acid, said curing being accomplished at a temperature from about 60° C. to about 200° C.

3,356,646
PREPARATION OF HIGH MOLECULAR WEIGHT THERMOPLASTIC POLYHYDROXYETHERS

John Wynstra, Somerville, and Herbert G. Stine, Millington, N.J., assignors to Union Carbide Corporation, a corporation of New York

Filed July 14, 1965, Ser. No. 471,916
19 Claims. (Cl. 260—47)

1. Method for the preparation of thermoplastic polyhydroxyethers which comprises:

(1) interacting a dihydric polynuclear phenol in which the hydroxyl groups are attached to different nuclei with a substantially equimolar amount of an epihalohydrin per mole of said phenol and an excess over stoichiometric proportions of an alkali metal hydroxide in aqueous solution at the reflux temperature of the mixture until a prepolymer is formed;

(2) heating the reaction mixture to about 150–200° C. until a polyhydroxyether having a reduced viscosity of at least 0.45, measured at 25° C. as a 0.2 gram sample in 100 ml. of tetrahydrofuran, and a weight average molecular weight of at least about 30,000 is obtained;

(3) washing said polyhydroxyether with water; and

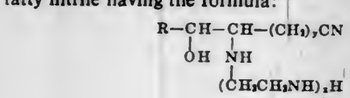
(4) recovering said polyhydroxyether substantially free of 1,2-epoxy groups.

3,356,647
CURING EPOXY RESINS WITH HYDROXY AMINO ALIPHATIC NITRILES

Walter M. Budde, Jr., Prior Lake, Minn., assignor to Ashland Oil & Refining Company, Ashland, Ky., a corporation of Kentucky

No Drawing. Filed May 18, 1966, Ser. No. 550,930
8 Claims. (Cl. 260—47)

1. In a process for curing epoxy resins having terminal 1,2-epoxide groups wherein curing agent is mixed with said resin to thereby cure said resin, the improvement which comprises using as curing agent a hydroxy amino fatty nitrile having the formula:



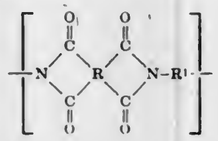
wherein R is an aliphatic group containing 2–16 carbon atoms, wherein y is an integer from 2–10, and wherein x is an integer of at least 1.

3,356,648
POLYAMIDE-ACIDS AND POLYIMIDES FROM HEXAFLUOROPROPYLIDINE BRIDGED DIAMINE

Francis Elliott Rogers, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Continuation of application Ser. No. 335,383, Jan. 2, 1964. This application Oct. 13, 1966, Ser. No. 586,572
8 Claims. (Cl. 260—47)

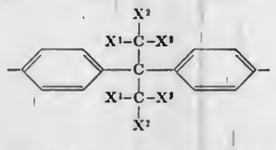
1. A linear polyimide consisting essentially of the recurring units of



wherein

R is a tetravalent aromatic radical containing at least one ring of six carbon atoms, said ring characterized by benzenoid unsaturation, the four carbonyl groups being attached directly to separate carbon atoms in a ring of the R radical and each pair of carbonyl groups being attached to adjacent carbon atoms in a ring of the R radical;

R^1 is a divalent benzenoid radical of the formula



wherein X^1 is fluorine and X^2 is selected from the group consisting of fluorine and chlorine, said polyimide having an inherent viscosity of at least 0.1 as measured at 30° C. on a 0.5% by weight solution in a solvent therefor selected from the group consisting of sulfuric acid, nitric acid, the monohydrate of dichlorotetrafluoroacetone and the hydrate of monochloropentafluoroacetone.

2. A linear polyimide as in claim 1 wherein R is selected from the group consisting of aromatic radicals in pyromellitic dianhydride, 2,3,6,7-naphthalene tetracarboxylic dianhydride, 3,3',4,4' - diphenyl tetracarboxylic dianhydride, 1,2,5,6 - naphthalene tetracarboxylic dianhydride, 2,2',3,3'-diphenyl tetracarboxylic dianhydride, 2,2-bis(3,4-dicarboxyphenyl) propane dianhydride, bis(3,4 - dicarboxyphenyl) methane dianhydride, bis(3,4 - dicarboxyphenyl) sulfone dianhydride, 3,4,9,10 - perylene tetracarboxylic acid dianhydride, bis(3,4-dicarboxyphenyl) ether dianhydride, 3,4,3',4'-benzophenone tetracarboxylic dianhydride and 2,2-bis(3,4 - dicarboxyphenyl) hexafluoropropane dianhydride.

3,356,649
POLYOXYMETHYLENE-ALPHA-OLEFINIC INTERPOLYMERS

Calvin N. Wolf, Princeton, N.J., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Apr. 9, 1963, Ser. No. 271,591
4 Claims. (Cl. 260—73)

1. A linear, thermoplastic copolymer consisting of recurring $\leftarrow CH_2O \rightarrow$ groups interspersed with recurring $\leftarrow H_2C—CCl_2 \rightarrow$ groups.

2. A process for preparing a copolymer composition having a high degree of thermal stability which comprises copolymerizing under substantially anhydrous conditions, in an anhydrous organic liquid reaction medium which is inert to the comonomers and to the catalyst, for a time period of 2 to about 6 hours, at a temperature within the range of 0° C. to 100° C. and in the presence of an ionic organometallic polymerization catalyst, formaldehyde with from about 0.1 to about 20 mole percent of vinylidene chloride; and recovering a solid copolymer containing recurring oxymethylene units and recurring units derived from the said vinylidene chloride.

3,356,650
THERMOPLASTIC POLYURETHANES

Wilbur R. McElroy, Hillside, W. Va., assignor to Mobay Chemical Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed Jan. 16, 1962, Ser. No. 166,692
7 Claims. (Cl. 260—77.5)

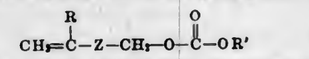
1. A thermoplastic polyurethane prepared by reacting (1) an organic polyisocyanate with (2) a mixture of organic compounds substantially free of ester groups, one of said compounds having only two and the remaining compounds having at least three active hydrogen containing groups per molecule as determined by the Zerewitinoff method, wherein said remaining compounds having at least three active hydrogen containing groups per molecule provide about 0.01 to about 20 mol percent of the total number of active hydrogen containing groups in said mixture (2), the average molecular weight of said mixture (2) being less than 500.

3,356,651
VINYLIDENEARYLENEALKYLENE CARBONATES AND POLYMERS THEREOF

Lieng-Huang Lee, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Mar. 6, 1964, Ser. No. 350,124
11 Claims. (Cl. 260—77.5)

8. A polymer of a monomer having the general formula



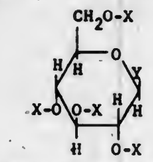
wherein R is a radical selected from the group consisting of hydrogen and methyl, Z is an arylene, R' is a radical selected from the group consisting of lower alkyls, and hydrocarbon radicals having from 5 to 20 carbon atoms.

3,356,652
NOVEL MONOMERIC SUGAR DERIVATIVES

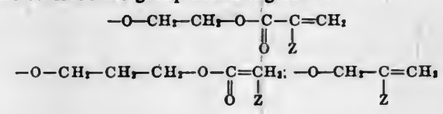
Dilip Kumar Ray-Chaudhuri, Toronto, Ontario, Canada, assignor to National Starch and Chemical Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 17, 1964, Ser. No. 352,661
36 Claims. (Cl. 260—78.4)

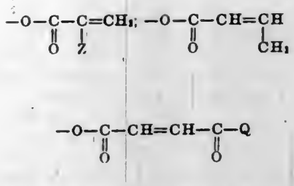
1. The monomeric sugar derivatives selected from the group consisting of



wherein X is an acetyl radical; wherein Y is a radical selected from the group consisting of the



and



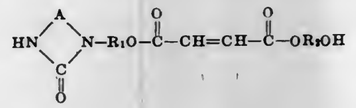
radicals, wherein Z in the latter radicals may be selected from the group consisting of the hydrogen and methyl radicals and wherein Q in the latter radicals is an oxyalkyl group containing from 1 to 4 carbon atoms.

3,356,653
COPOLYMERS CONTAINING HETEROCYCLIC UNSATURATED AMINO ALCOHOLS

Kazys Sekmakas, Chicago, Ill., assignor to De Soto, Inc., a corporation of Delaware

No Drawing. Filed Nov. 3, 1965, Ser. No. 506,273
6 Claims. (Cl. 260—78.5)

1. A solution copolymer comprising from 0.5 to 20% by weight of the copolymer of at least one compound of the formula



where:

R_1 is a (C_2–C_3)-alkylene group;
A is a (C_2–C_3)-alkylene group; and
R_2 is an alkylene group containing from 2–8 carbon atoms or a halogen-substitution product thereof,

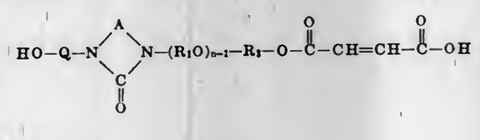
at least one copolymerizable monomer containing a single $CH_2=C<$ and carrying a functional group selected from the group consisting of hydroxy functionality and oxirane functionality, and at least one further copolymerizable monomer containing a single $CH_2=C<$ group.

3,356,654
COPOLYMERS OF HYDROXY DERIVATIVES OF CYCLIC UNSATURATED AMINO ACIDS

Kazys Sekmakas, Chicago, Ill., assignor to De Soto, Inc., a corporation of Delaware

No Drawing. Filed Feb. 18, 1966, Ser. No. 528,359
7 Claims. (Cl. 260—78.5)

1. A solution copolymer comprising from 0.5 to 20% by weight of the copolymer of the compound having the formula:



where:

R_1 is a (C_2–C_3) alkylene group;
R_3 is a (C_2–C_8) alkylene group;
A is a (C_2–C_3) alkylene group;
n is an integer having a value of 1 to 10; and
Q is the residue of aromatic mono-oxide

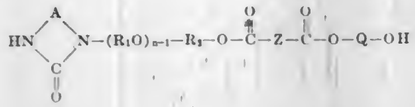
at least one copolymerizable monomer containing a single $CH_2=C<$ group and carrying a functional group selected from the group consisting of hydroxy functionality and oxirane functionality, and at least one further copolymerizable monomer containing a single $CH_2=C<$ group.

3,356,655
COPOLYMERS OF ETHYLENICALLY UNSATURATED HYDROXY-FUNCTIONAL AMINES

Kazys Sekmakas, Chicago, Ill., assignor to De Soto, Inc., a corporation of Delaware

No Drawing. Filed Aug. 15, 1966, Ser. No. 572,180
9 Claims. (Cl. 260—78.5)

1. A solution copolymer comprising from 0.5 to 20% by weight of the copolymer of the compound having the formula:



where:

R_1 is a (C_2—C_3) alkylene group;
R_3 is a (C_2—C_8) alkylene group;
A is a (C_2—C_3) alkylene group;
n is an integer having a value of 1 to 10;
Z is the residue of a saturated polycarboxylic acid; and
Q is the monoethylenically unsaturated residue of unsaturated mono-oxide

at least one copolymerizable monomer containing a single $CH_2=C<$ group and carrying a functional group selected from the group consisting of hydroxy functionality and oxirane functionality, and at least one further copolymerizable monomer containing a single $CH_2=C<$ group.

3,356,656
PROCESS OF PREPARING POLYMETHYLENE SULFIDE

Nathaniel L. Remes, Yonkers, N.Y., and Jesse C. H. Hwa, Stamford, Conn., assignors to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Sept. 23, 1965, Ser. No. 489,762
9 Claims. (Cl. 260—79)

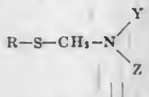
1. The process of preparing polymethylene sulfide which comprises reacting a salt of trithiocarbonic acid selected from the group consisting of alkali metal trithiocarbonates and alkaline earth metal trithiocarbonates with a methylene halide in the presence of a normally liquid aqueous medium at a temperature of from about 31 to about 80° C., said temperature range when operating at atmospheric pressure.

3,356,657
ACCELERATING VULCANIZATION WITH ARYLTHIOMETHYLAMINES

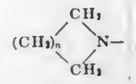
Lloyd A. Walker, Akron, Ohio, assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed July 2, 1964, Ser. No. 380,034
10 Claims. (Cl. 260—79.5)

1. The process of vulcanizing a sulfur-vulcanizable diene rubber which comprises heating the rubber and sulfur in the presence of an accelerating amount of a compound of the structure



where R is a member of the group consisting of aryl hydrocarbon of the benzene and naphthalene series, nuclear substituted derivatives thereof containing at least one but not more than two substituents selected from the group consisting of amino, lower alkoxy, nitro and halo, Y is selected from the group consisting of hydrogen and lower alkyl and radicals which with Z and N constitute a heterocyclic radical selected from the group consisting of morpholino and



where n is 2 to 4 inclusive and Z is selected from the group consisting of lower alkyl, phenyl, halophenyl and nitrophenyl and radicals which with Y and N constitute a heterocyclic radical as defined.

3,356,658
PROCESSES FOR SULFUR CURING ETHYLENE/VINYL CHLORIDE COPOLYMERS

Harry M. Andersen, Ballwin, Harry P. Holladay, Creve Coeur, and John H. Johnson, Kirkwood, Mo., assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed Oct. 21, 1963, Ser. No. 317,764
17 Claims. (Cl. 260—79.5)

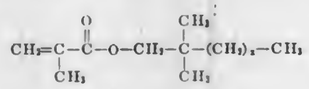
1. A process for preparing crosslinked ethylene/vinyl chloride copolymers which comprises curing an ethylene/vinyl chloride copolymer having about 5 to 95 mole percent polymerized vinyl chloride in the presence of a stabilizer selected from the group consisting of butylated urea-formaldehyde resin, pentaerythritol, glycerine, phenol, bisphenol, urea, thiourea and dimethylolurea and in the presence of a sulfur cure system containing elemental sulfur.

3,356,659
TERPOLYMERS AND PROCESS OF PREPARING SAME

Hugh J. Hagemeyer, Jr., Alden E. Blood, and Marvin B. Edwards, Longview, Tex., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed May 19, 1964, Ser. No. 368,735
12 Claims. (Cl. 260—80.7)

1. A resinous terpolymer of a mixture of (1) about 25 to about 40%, by weight, of 1,3-butadiene, (2) about 30 to about 45%, by weight, of acrylonitrile and (3) about 30 to about 40%, by weight, of a 2,2-dimethylalkyl methacrylate having the formula:



where x is an integer from 1 to 11.

3,356,660
PREVENTING COLOR DEGRADATION IN THE HYDROGENATION OF HYDROCARBON RESINS

Karsten Herbert Moritz and Leonard Joseph Delany, Baton Rouge, La., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Sept. 25, 1964, Ser. No. 399,378
3 Claims. (Cl. 260—82)

1. An improved continuous process for preparing a substantially water-white petroleum resin from a steam-cracked naptha fraction boiling between about 50 to 450° F. having the following composition:

	Parts by weight
Benzene	5–20
Toluene	5–15
C_9–C_{12} aromatic hydrocarbons	0–25
Cyclic diolefins	5–15
Aliphatic diolefins	10–15
Aliphatic mono-olefins	15–60
Paraffins	0–5

which comprises subjecting said fraction to polymerization in the presence of a Friedel-Crafts catalyst at a temperature between −150 and +200° F. to polymerize the resin-forming constituents, and form a solution of resin in non-resin-forming constituents, separating the resin from the non-resin-forming constituents, dissolving the resin in a hydrocarbon solvent, stripping the solution with an inert gas saturated with the solvent for a period of two to twenty-four hours, preheating said resin solution to reaction temperature in the absence of a catalyst and hydrogenating said preheated solution under pressure at said temperature in the presence of a hydrogenation catalyst to obtain a hydrogenated resin solution, and stripping said solution at an elevated temperature and reduced pressure to produce a substantially water-white resin.

3,356,661
PROCESS OF POLYMERIZING ISOBUTENE IN PRESENCE OF TITANIUM TETRAHALIDE AND A TRIHALOACETIC ACID

Lester E. Coleman, Cleveland, Ohio, assignor to The Lubrizol Corporation, Wickliffe, Ohio, a corporation of Ohio

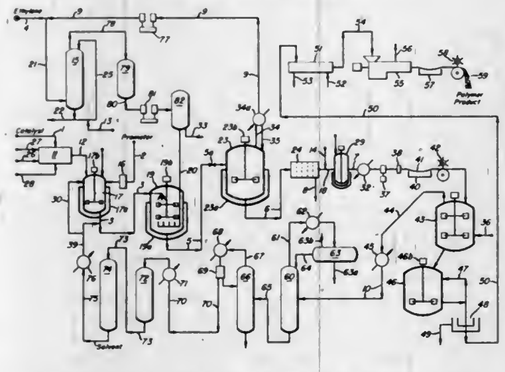
No Drawing. Continuation of application Ser. No. 255,205, Jan. 31, 1963. This application Nov. 28, 1966, Ser. No. 597,478
11 Claims. (Cl. 260—85.3)

1. In the process of polymerizing an olefin, the steps of preparing a homogeneous catalyst mixture by mixing a titanium halide selected from the class consisting of titanium tetrafluoride, titanium tetrachloride, and titanium tetrabromide with from about 0.1 to about 10 molar proportions of a trihaloacetic acid selected from the class consisting of trichloroacetic acid, tribromoacetic acid, and trifluoroacetic acid and thereafter contacting said homogeneous catalyst mixture with an olefin selected from the class consisting of isobutene; mixtures of isobutene and conjugated dienes, and mixtures of isobutene with 1-butene, cis-2-butene, or trans-2-butene to effect polymerization; with the proviso that said mixtures can contain minor amounts of C_3 and C_5 hydrocarbons.

3,356,662
PREPARATION OF HIGH QUALITY SOLID OLEFIN POLYMERS

John E. Anderson, Oakland, N.J., Ralph G. Zelmer, Oaklawn, Ill., and William Resnick, Haifa, Israel, assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana

Filed May 5, 1964, Ser. No. 369,049
8 Claims. (Cl. 260—88.2)



1. In a process wherein a 1-alkene monomer is polymerized in the presence of a solid polymerization catalyst and a substantially inert liquid hydrocarbon reaction medium under polymerization conditions, including a temperature within the range of about 200 to about 650° F., to produce a normally solid olefin polymer dissolved in said medium, the improved method of recovering said polymer, from a mixture of said monomer, said catalyst, said polymer and said medium, consisting of sequential operations as follows:

(a) flashing said mixture to separate a major portion of said monomer;
(b) physically separating said catalyst from a solution of said polymer in said medium;
(c) cooling said solution to a temperature just above precipitation temperature;
(d) extruding said cooled solution into water, to produce an admixture of a solid extrudate, having the same composition as said solution, with water; and,
(e) steam-stripping said admixture to remove residual medium from said extrudate and produce said polymer in solid form.

3,356,663
STABILIZED MONOMERS WITH ALKOXYPHENOLS

Richard Loversidge, Runcorn, and Leonard Louis Pearson, Slough, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Nov. 4, 1964, Ser. No. 408,745
Claims priority, application Great Britain, Nov. 12, 1963, 44,620/63
12 Claims. (Cl. 260—89.5)

1. A stabilized composition comprising an alkyl acrylate or methacrylate together with a stabilizing proportion of a 4-alkoxyphenol containing fewer than four carbon atoms in the 4-alkoxy group and carrying as substituent in one or both of the 2 and 6 positions a secondary or tertiary alkyl group containing at least four carbon atoms.

7. A composition as claimed in claim 1 wherein the 4-alkoxyphenol is a 2,2′-dihydroxy-3,3′-ditertiary-alkyl-5,5′-dialkoxydiphenylmethane.

3,356,664
UNSATURATED POLYMER, DERIVATIVES AND PROCESS OF PREPARATION

Richard P. Rhodes, Roselle, and Donald A. Guthrie, Cranford, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Oct. 26, 1961, Ser. No. 148,309
5 Claims. (Cl. 260—93.7)

3. Rubbery linear polymers of monomeric conjugated double bond polyenes which contain 3 to 4 conjugated double bonds, said monomeric polyenes being selected from the group consisting of 1,3,5-hexatriene and 1,3,5,7-octatetraene, said polymers having molecular weights of about 1,000 to 7,000, being miscible with benzene as a hydrocarbon solvent at 25° C., and being further characterized by being capable of high reactivity with bromine to the extent that the 2–3 double bonds per recurring unit in the polymer are 75% saturated with bromine by reaction with bromine at 25° C. while said polymers are in a freshly formed state and inhibited from crosslinking.

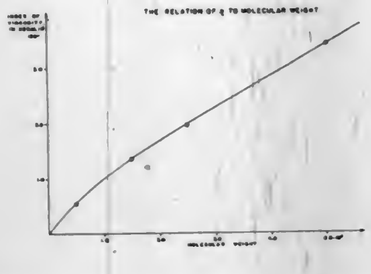
3,356,665
PROCESS FOR CONTROLLING THE MOLECULAR WEIGHT OF POLYPROPYLENE

Gerhard Meyer, Obernburg (Main), Wolfgang Rösener, Erlenbach (Main), and Erhard Siggel, Laudenbach (Main), Germany, assignors to Vereinigte Glanzstoff-Fabriken AG, Wuppertal-Elberfeld, Germany

Filed Oct. 18, 1962, Ser. No. 231,502
Claims priority, application Germany, Oct. 31, 1961, V 21,532
3 Claims. (Cl. 260—93.7)

1. The process for controlling the molecular weight of polypropylene produced by the polymerization of propylene in inert hydrocarbons with the use of an aluminum

trialkyl, titanium trichloride, and zinc diethyl, the improvement which comprises: placing in contact with the propylene to be polymerized a compound which complexes with zinc diethyl, said compound being selected from the group



consisting of ethyl iodide, diethyl ether, lithium butyl, aluminum chloride, and aluminum bromide, the amount of complex-forming compounds being from about 4 to 10 mols per 100 mols of zinc diethyl.

3,356,666

PROCESS OF POLYMERIZING BUTENE-1

Milton K. Rosen, Rockaway Township, Morris County, and Charles D. Mason, Florham Park, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Aug. 27, 1963, Ser. No. 304,955
7 Claims. (Cl. 260—93.7)

1. The process of polymerizing butene-1 to produce polybutene-1 which comprises mixing butene-1 with a solvent containing from 85% to 95% of isooctane and from 5% to 15% by weight of a mixture of isononane and isoheptane, a catalytic amount of a catalyst consisting essentially of a compound of a metal from the groups IV–B, V–B and VI–B of the Periodic Table and an aluminum alkyl, heating the resultant mixture to a temperature of from 50° to 90° C. and under superatmospheric pressure conditions of from 50 to 175 p.s.i.g. until the polymerization has been effected, thereafter adding water to the polymerization mixture to quench the catalyst, while maintaining the temperature within the range of from 50° to 90° C., thus precipitating the catalyst and producing a solution of the polybutene-1 in the solvent-water mixture, separating said solution of polybutene-1 from the catalyst, adding to said solution separated from the catalyst an aliphatic alcohol having from 1 to 4 carbon atoms and cooling the resultant mixture to effect precipitation of the bulk of the polybutene-1 and separating the polybutene-1 thus precipitated from the liquid.

3,356,667

PROCESS CONTROL

Dexter E. Smith, Raymond D. McCoy, and Robert M. Keeler, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

Filed Oct. 22, 1963, Ser. No. 318,013
7 Claims. (Cl. 260—93.7)

1. A method for controlling a continuous polymerization reaction for production of polymer of uniform melt index wherein monomer, hydrogen, and catalyst streams are continuously fed to a reaction zone and from which a reaction effluent containing polymer, unreacted monomer, catalyst and hydrogen is removed which comprises:

determining the concentration of hydrogen in the feed to the reaction zone and producing a first measurement signal proportional thereto;

determining the polymer concentration (percent solids) of the contents of said reaction zone and producing a second measurement signal proportional thereto;

measuring the temperature of the contents of said reaction zone and producing a third measurement signal proportional thereto;

measuring the flow rate of said monomer stream and producing a fourth measurement signal proportional thereto;

automatically combining said first, second, third and fourth measurement signals to produce a first computed output signal proportional to the melt index of the polymer being produced at any instant within said reaction zone (instantaneous melt index) in response to said first, second, third and fourth measurement signals;

comparing the thus-determined instantaneous melt index value with a desired polymer melt index value; and

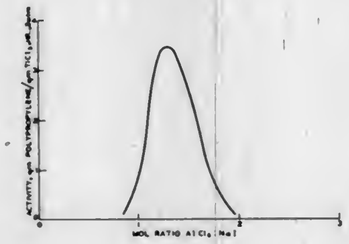
controlling the addition of hydrogen to said reaction zone responsive to changes in said determined instantaneous melt index so as to maintain the amount of hydrogen in said zone at a desired value to produce a polymer having a desired melt index by producing a first control output signal representative of said comparison so as to increase the amount of hydrogen passed to said zone when said determined instantaneous melt index is less than said desired melt index value and to decrease the amount of hydrogen passed to said zone when said determined instantaneous melt index is greater than said desired melt index value.

3,356,668

PROCESS AND CATALYST FOR THE POLYMERIZATION OF OLEFINS

Pierre Dassesse, Uccle, Brussels, and Roger Dechenne, Strombeek, Belgium, assignors to Solvay & Cie., Societe en commandite, a simple of the Kingdom of Belgium

Filed Oct. 24, 1963, Ser. No. 318,594
Claims priority, application Netherlands, Jan. 10, 1963, 287,653
11 Claims. (Cl. 260—93.7)



1. In a process for the polymerization of aliphatic 1-olefins in the presence of a catalyst obtained by commingling:

(a) a material selected from the group consisting of tetraalkyl tin, tetraaryl tin, tetraalkyl lead, and tetraaryl lead, said material containing up to 40 carbon atoms per molecule;

(b) a mineral acid salt of an element selected from the group consisting of titanium, vanadium, chromium, molybdenum, and tungsten; and

(c) a halide of an element selected from the group consisting of aluminum, antimony, and boron;

the improvement which comprises adding to the mixture forming said catalyst at least one iodide of the class alkali-metal iodides, including ammonium iodide, the mol ratio of catalyst component (c) to said iodide being in the range of 1.2:1 to 1.7:1 and the mol ratio of catalyst component (c) to catalyst component (a) is in the range of 0.3:1 to 2:1.

3,356,669

COMPOUNDS POLYMERIZATION

Clarence G. Houser, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Apr. 1, 1964, Ser. No. 356,505
8 Claims. (Cl. 260—93.7)

1. A process for the removal of catalyst and soluble polymer from a slurry of same and a solid polymer of a 1-olefin in a liquid diluent containing catalyst residues therein which comprises introducing said slurry into a liquid separation zone, removing a portion of said liquid diluent, catalyst and soluble polymers from said zone by the continuous addition and removal of a wash medium having a progressively declining temperature and selected from the group consisting of propylene and a mixture of propylene and a light hydrocarbon while retaining said polymer solids within said liquid separation zone and thereafter removing the resulting washed solid polymer from said liquid separation zone.

3,356,670

POLYOLEFIN TREATMENT

Bernard Rudner, Gulf Breeze, Fla., and George S. Achorn, Pittsburgh, Pa., assignors to Koppers Company, Inc., a corporation of Delaware

No Drawing. Original application Nov. 13, 1961, Ser. No. 152,065, now Patent No. 3,278,498, dated Oct. 11, 1966. Divided and this application Apr. 27, 1966, Ser. No. 545,577
5 Claims. (Cl. 260—94.9)

2. A process for making polymers of improved properties comprising the steps of (1) polymerizing alpha-olefins containing 2–9 carbon atoms initiated by a coordination metal catalyst system consisting essentially of organometallic compounds wherein the metal is selected from the Group IA, IIA, IIIA, of the Periodic Table and a member selected from the group consisting of the halides, alkoxides and alkoxy halides of a transition metal selected from Group IVB, VB, VIB and VIIB of the Periodic Table, and (2) terminating the reaction by reacting the carbon metal bonds on the terminal ends of the living polymers with an inorganic compound selected from the group consisting of the oxides, oxychlorides, and chloride of phosphorous, then (3) treating the product with a hydroxylic solvent selected from the group consisting of lower alkanols and water, and (4) filtering the mixture to obtain said polymer.

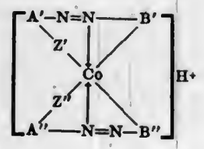
3,356,671

PROCESS OF PREPARING UNSYMMETRICAL 1:2-COBALT COMPLEXED AZO COMPOUNDS

Alan Johnson, Peter Albert Mack, and Raymond Price, Manchester, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Mar. 17, 1965, Ser. No. 440,641
4 Claims. (Cl. 260—145)

1. An improved process for the manufacture of the 1:2-cobalt complexes which, in the form of the free acids, are represented by the formula:

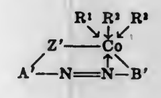


wherein

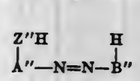
A' and A'' each independently represent a radical selected from the group consisting of phenylene and naphthalene;

Z' and Z'' which are attached to A' and A'' respectively in ortho position to the azo group are independently selected from the class consisting of —O— and —COO—;

B' and B'' each independently represent a radical of a coupling component selected from the group consisting of phenol, naphthol, acylacetarylamide and 5-pyrazolone, the cobalt atom being attached to B' and B'' through the oxygen atoms which are situated in ortho position to the coupling positions; and provided that at least one of A', Z' and B' is not identical with A'', Z'' and B'' respectively; which comprises reacting a 1:1-cobalt complex of the formula:



with a metallisable azo compound of the formula:



wherein A', A'', B', B'', Z' and Z'' have the meanings stated and R^1, R^2 and R^3 are each selected from the class consisting of ammonia and a monoamine selected from the group consisting of primary and secondary alkylamines, primary and secondary arylamines and heterocyclic compounds selected from the group consisting of pyridine, piperidine, isoquinoline, quinoline, β-picoline, morpholine and γ-picoline, the coordinate bonds which link the cobalt atom to R^1, R^2 and R^3 being bonded to the nitrogen atoms present in R^1, R^2 and R^3.

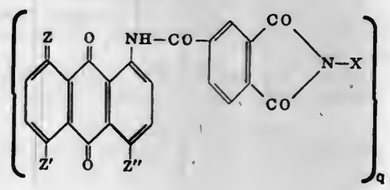
3,356,672

DYES CONTAINING TRIMELLITHAMIDE GROUPS

Ernst Schefczik, Ludwigshafen (Rhine), Germany, assignor to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

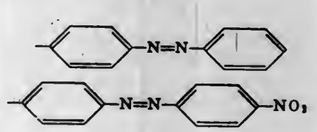
No Drawing. Filed Feb. 16, 1965, Ser. No. 433,170
Claims priority, application Germany, Feb. 25, 1964, B 75,581; Dec. 5, 1964, B 79,628
5 Claims. (Cl. 260—152)

1. A dye of the formula

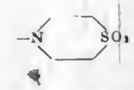


wherein:

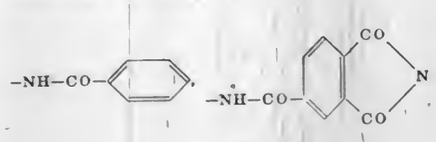
X represents a member selected from the group consisting of hydrogen, methyl, phenyl, bromophenyl, chlorophenyl, nitrophenyl,

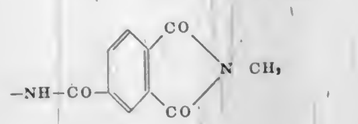


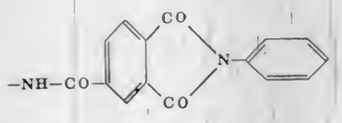
and



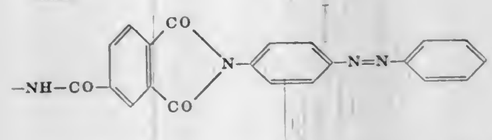
q represents one of the numbers 1 or 2 with the proviso that when q represents the number 1, one of the Z radicals represents a member selected from the group consisting of hydrogen,



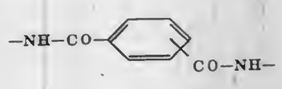




and



and that when q represents the number 2, two Z radicals in the same position taken together represent the divalent radical



the remaining Z radicals each representing a member selected from the group consisting of hydrogen and hydroxy.

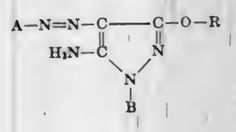
3,356,673

NON-SULFONATED MONO AZO AMINO PYRAZOLE DYESTUFFS

Francois Favre, Basel, and Paul Lienhard, Riehen, Switzerland, assignors to J. R. Geigy, A.G., Basel, Switzerland

No Drawing. Filed Aug. 20, 1964, Ser. No. 391,018
Claims priority, application Switzerland, Aug. 27, 1963, 10,631/63
5 Claims. (Cl. 260—163)

1. A non-sulfonated, non-metallizable azo dyestuff of the formula



wherein A represents a phenyl radical which contains at least in one of the positions ortho and para to the azo bridge in nitro group and from 0 to 2 further electron acceptor substituents selected from the group consisting of nitro; trifluoromethyl; cyano; halogen; lower alkanoyl; lower alkylsulfonyl; sulfamyl; sulfamyl N-monosubstituted by phenyl; sulfamyl N-mono- or N-disubstituted by lower alkyl, hydroxy-lower alkyl, alkanoyloxy-lower alkyl, lower alkoxy-lower alkyl, cyano-lower alkyl or cyclohexyl; benzoyl; lower alkoxy-carbonyl; phenoxy-carbonyl; cresyl-carbonyl; carbamyl N-monosubstituted by phenyl; carbamyl N-mono- or N-di-substituted by lower alkyl, hydroxy-lower alkyl, lower alkanoyloxy-lower alkyl, lower alkoxy-lower alkyl, cyano-lower alkyl or cyclohexyl; and phenylsulfonyl,

B is a member selected from the group consisting of alkyl of from 1 to 6 carbon atoms, cyclohexyl, benzyl, unsubstituted phenyl and unsubstituted naphthyl, and

R represents lower alkyl.

3,356,674

3-C-HYDROXYMETHYL-3,5-DIDESOXY-L-LYXOFURANOSE AND ITS DERIVATIVES, AND A PROCESS FOR THE PRODUCTION THEREOF

Hiroshi Ikeda and Hatsuko Ikeda, Tokyo, Japan, assignors to Rikagaku Kenkyusho, Saitama-ken, Japan

No Drawing. Filed May 27, 1966, Ser. No. 553,297
Claims priority, application Japan, July 7, 1961, 36/23,674; Apr. 7, 1962, 37/12,744
15 Claims. (Cl. 260—209)

1. 3-C-hydroxymethyl-3,5-didesoxy-L-lyxofuranose.

3,356,675

PRODUCTION OF CAPROLACTAM FROM CYCLOHEXANOYL COMPOUNDS

Werner Muench, Barlassina, Milan, Giuliana Silvestri, Milan, and Pietro Paolo Rossi, Garlasco, Pavia, Italy, assignors to Snia Viscosa Società Nazionale Industria Applicazioni Viscosa S.p.A., Milan, Italy, a company of Italy

Filed Apr. 28, 1965, Ser. No. 451,567
Claims priority, application Italy, May 15, 1964, 10,733/64, Patent 723,201
10 Claims. (Cl. 260—239.3)

1. In a process for production of caprolactam by reaction between a nitrosating agent and at least one cyclohexanoyl compound selected from the group consisting of hexahydrobenzoic acid, derivatives thereof hydrolyzable thereto, and ketones wherein a cyclohexane ring is attached to the carbonyl group of the ketone, in the presence of at least one member selected from the group consisting of sulfur trioxide and sulfuric acid, the improvement which comprises providing a plurality of reaction zones, feeding the cyclohexanoyl compound into the first of said reaction zones, feeding into said first zone a nitrosating agent in an amount not exceeding 65% by weight of the overall amount fed into all of the reaction zones, maintaining the reaction mixture in said first zone until the said nitrosating agent has reacted substantially completely with the cyclohexanoyl compound, while removing heat from the reaction mixture at such a rate as to maintain the temperature of the reaction mixture in the range between about 30° C. and about 110° C.; successively passing the reaction mixture comprising unreacted cyclohexanoyl compound and reacted cyclohexanoyl compound through at least one further reaction zone, supplying of each further reaction zone for reaction with said partially reacted cyclohexanoyl compound nitrosating agent in an amount not exceeding 65% by weight of the overall amount fed in all of the reaction zones, maintaining the reaction mixture in said zone until the said nitrosating agent has reacted substantially completely with the cyclohexanoyl compound, while removing heat from the reaction mixture at such a rate as to maintain the temperature of said mixture in the range between about 30° C. and about 110° C.

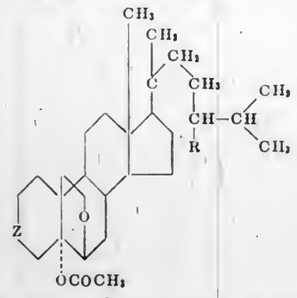
3,356,676

PROCESS AND INTERMEDIATES FOR THE MANUFACTURE OF 19-HYDROXY CHOLESTANES

Leonard N. Nysted, Highland Park, and Raphael Pappo, Skokie, Ill., assignors to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed May 19, 1965, Ser. No. 457,217
Claims priority, application Great Britain, June 18, 1964, 25,292/64
9 Claims. (Cl. 260—239.55)

3. A compound of the formula



wherein Z is a member of the class of radicals consisting of carbonyl, β-hydroxymethylene and β-(lower alkanoyl)-oxymethylene and R is selected from the group consisting of hydrogen and ethyl.

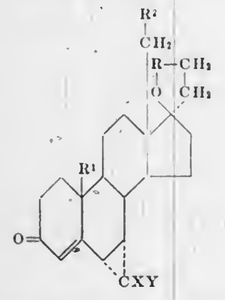
3,356,677

1α,2α- AND 6α,7α-DIHALOMETHYLENE ANDROSTENES

Colin C. Beard, Boulder, Colo., and Alexander D. Cross, Mexico City, Mexico, assignors to Syntex Corporation, Panama, Panama, a corporation of Panama

No Drawing. Filed Apr. 5, 1966, Ser. No. 540,180
15 Claims. (Cl. 260—239.55)

1. A compound of the formula



wherein X is selected from the group consisting of chloro and fluoro, Y is selected from the group consisting of hydrogen, chloro and fluoro, R is selected from the group consisting of methylene and keto, and R^1 and R^2 are indivdually selected from the group consisting of hydrogen and methyl.

3,356,678

DIBENZO-1,2-THIAZINES

Wilhelm E. Frick, Pfeffingen, and Guido Schetty, Aesch, Switzerland, assignors to J. R. Geigy A.G., Basel, Switzerland

No Drawing. Filed Mar. 25, 1966, Ser. No. 537,314
Claims priority, application Switzerland, Dec. 6, 1962, 14,325/62
16 Claims. (Cl. 260—243)

1. A chlorinated 6H-dibenzo[c,e]-1,2-thiazine-5,5-dioxide containing per molecule a total of from one to maximally seven chlorine atoms and being a member selected from

(a) a dioxide as defined which is substituted in 7-position by a radical of the formula R_1'—X—

wherein X is a member selected from the group consisting of —O—, —S—, —SO—, and —SO_2—, and

R_1' is a member selected from the group consisting of phenyl, chlorine-substituted phenyl, trifluoromethyl-phenyl, lower alkyl-phenyl, hydroxy-phenyl, lower alkoxy-phenyl and amino-phenyl,

(b) a dioxide as defined which is substituted in 9-position by a member selected from the group consisting of phenoxy, chlorophenoxy and nitrophenoxy, and

the 3-position of the said dioxide under (a) and (b) supra being substituted by a member selected from the group consisting of hydrogen, chlorine, nitro, and trifluoromethyl, and

the nitrogen atom in the 6-position in said dioxide under (a) and (b) supra being substituted by a member selected from the group consisting of lower alkyl, lower alkanoyl, benzyl, lower alkylbenzyl, chlorobenzyl, benzoyl chloro-benzoyl and hydrogen, and the alkali metal salt, alkaline earth metal salt, and ammonium salt thereof when the nitrogen atom in the 6-position is substituted with hydrogen.

3,356,679

PROCESS FOR THE PRODUCTION OF MONOCHLOROPYRAZINE

Godfrey Fort, Ardrossan, Scotland, assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

No Drawing. Filed Nov. 28, 1966, Ser. No. 597,209
Claims priority, application Great Britain, Dec. 14, 1965, 53,118/65
5 Claims. (Cl. 260—250)

1. A process for the preparation of monochloropyrazine comprising heating 2,3,5,6-tetrachloro-1,4-diformylpiperazine to a temperature within the molten range thereof to effect decomposition thereof.

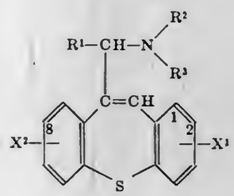
3,356,680

AMINOALKYL-DIBENZO-[b,f] THIEPINS AND INTERMEDIATES

Walter Schindler, Riehen, and Hans Blattner, Basel, Switzerland, assignors to Geigy Chemical Corporation, Greenburgh, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 27, 1964, Ser. No. 362,970
Claims priority, application Switzerland, May 4, 1963, 5,649/63
19 Claims. (Cl. 260—268)

1. A member selected from the group consisting of a thiepin derivative and a pharmaceutically acceptable acid addition salt, said thiepin having the formula:



wherein each of

X^1 and X^2, independently of the other is a member selected from the group consisting of hydrogen, chlorine, bromine, lower alkyl, lower alkoxy, and lower alkylthio,

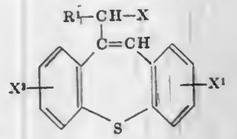
R^1 is taken from the group consisting of hydrogen and methyl,

each of

R^2 and R^3 taken independently is a member selected from the group consisting of hydrogen and lower alkyl, and

R^2 and R^3 taken together with the nitrogen atom to which they are linked, form a saturated heterocyclic ring radical selected from the group consisting of pyrrolidinyl, piperidinyl, hexahydroazepinyl, morpholinyl, piperazinyl, homopiperazinyl and N-(hydoxy-lower alkyl)-substituted and N-alkanoyloxy-alkyl substituted piperazinyl and homopiperazinyl, wherein alkyl is of from 2 to 4 carbon atoms and alkanoyloxy is of from 1 to 18 carbon atoms.

14. A compound of the formula



wherein each of

X^1 and X^2, independently of the other, is hydrogen, chlorine, bromine, lower alkyl, lower alkoxy or lower alkylthio,

R^1 stands for hydrogen or methyl, and

X represents chlorine or bromine.

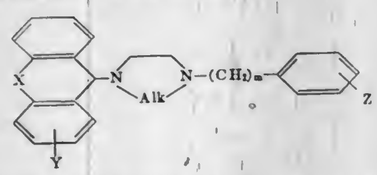
3,356,681

XANTHENYLPIPERAZINE ANTI-DEPRESSANTS

John W. Cusic, Skokie, and Peter Yonan, Chicago, Ill., assignors to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed July 22, 1966, Ser. No. 567,041
5 Claims. (Cl. 260—268)

1. A compound of the formula



wherein m is a whole number between 0 and 1 inclusive; Alk is selected from the group consisting of ethylene, propylene, and trimethylene; X is selected from the group consisting of O and S; Y is selected from the group consisting of hydrogen, chlorine, and methyl; and Z is selected from the group consisting of hydrogen, methyl, halogen, and methoxy.

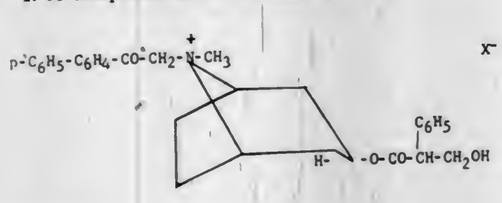
3,356,682

p-PHENYLPHENACYL DERIVATIVES OF l-HYOSCYAMINE AND dl-TROPYLATROPINE

Uberto Teotino and Davidi Della Bella, Milan, Italy, assignors to Whitefin Holding S.A., Lugano, Switzerland

Filed Aug. 17, 1966, Ser. No. 572,983
4 Claims. (Cl. 260—292)

1. A compound of the formula:



wherein X is a halogen.

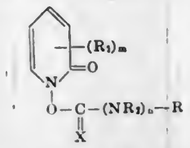
3,356,683

CHEMICAL COMPOUNDS

Jack Bernstein and Kathryn A. Losee, New Brunswick, N.J., assignors, by mesne assignments, to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed June 3, 1965, Ser. No. 461,193
4 Claims. (Cl. 260—295)

1. An anhydride of the formula



wherein n represents 0 or 1; R, when n represents 0, is selected from the group consisting of lower alkadienyl, lower alkynyl, phenyl and lower alkyl-phenyl; R, when n represents 1, is selected from the group consisting of lower alkyl, phenyl and m-tolyl; R_1 is selected from the group consisting of hydrogen, lower alkyl and halogen; m is 0 or 1; X is selected from the group consisting of oxygen and sulfur and R_2 is selected from the group consisting of hydrogen and lower alkyl.

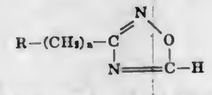
3,356,684

NOVEL COMPOSITIONS FOR THE TREATMENT OF HELMINTHIASIS

Walter E. Buting and Cameron Ainsworth, Indianapolis, Ind., assignors to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana

No Drawing. Continuation of application Ser. No. 438,782, Mar. 10, 1965. This application July 28, 1966, Ser. No. 568,675
10 Claims. (Cl. 260—296)

1. A compound of the formula



wherein n is a whole number from 0 to 3; R is selected from the group consisting of phenyl, naphthyl, fluorenyl, phenyl substituted by a member of the group consisting of lower alkyl of 1 to 4 carbon atoms, lower alkoxy of 1 to 4 carbon atoms, amino, lower alkylamino of 1 to 6 carbon atoms, dialkylamino of 2 to 6 carbon atoms, hydroxy, chloro, nitro, cyano, and trifluoromethyl, and a heterocyclic ring selected from the group consisting of pyridyl, thienyl, furyl, thiazolyl, oxazolyl, and pyrazolyl.

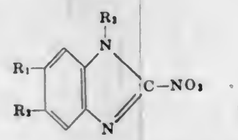
3,356,685

2-NITROBENZIMIDAZOLES

Alden Gamaliel Beaman, North Caldwell, and Robert Duschinsky, Essex Fells, N.J., and William Paul Tautz, New York, N.Y., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed Nov. 17, 1964, Ser. No. 411,694
8 Claims. (Cl. 260—309.2)

1. A compound of the formula



wherein R_1 and R_2 are selected from the group consisting of hydrogen and lower alkyl, and R_3 is selected from the group consisting of hydrogen, lower alkyl, and hydroxy lower alkyl.

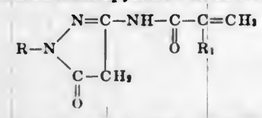
3,356,686

SUBSTITUTED AMIDOPYRAZALONES CONTAINING A TERMINAL ETHYLENICALLY UNSATURATED GROUP

John Charles Firestine, South River, and Jacob Quentin Umberger, Holmdel, N.J., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Apr. 10, 1964, Ser. No. 358,920
4 Claims. (Cl. 260—310)

1. A substituted amidopyrazolone of the formula



wherein R is a monovalent cyclic nucleus selected from the group consisting of benzene, naphthalene, pyridine, 2-quinolyl and 2-benzochalcazolyl and R_1 is a member selected from the group consisting of hydrogen, alkyl of 1–4 carbon atoms and chlorine.

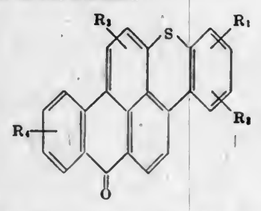
3,356,687

DYESTUFFS AND PROCESS FOR PREPARING THEM

Otto Fuchs and Helmut Tröster, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Mar. 3, 1966, Ser. No. 531,359
Claims priority, application Germany, Mar. 6, 1965, F 45,440
6 Claims. (Cl. 260—328)

1. A dyestuff of the formula



in which R_1 and R_2 represent hydrogen, chlorine, lower alkyl or lower alkoxy, R_3 stands for hydrogen, lower alkyl, lower alkoxy or phenyl and R_4 stands for hydrogen, bromine, nitro or hydroxy.

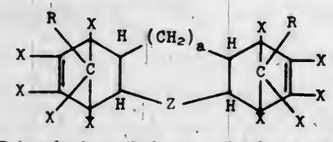
3,356,688

PESTICIDAL HALOCYCLOPENTADIENE ADDUCTS

Victor Mark, Norristown, Pa., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

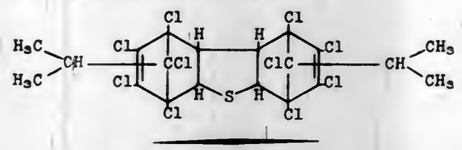
No Drawing. Continuation of application Ser. No. 329,915, Dec. 11, 1963. This application Nov. 14, 1966, Ser. No. 594,267
13 Claims. (Cl. 260—332.5)

1. A compound of the formula:



wherein R is a hydrocarbyl group, having a maximum of 8 carbon atoms, selected from the group consisting of alkyl, alkenyl, oxaalkyl and chloroalkyl, said chloroalkyl having an alpha carbon free of halogen substituents; X is a halogen atom selected from the group consisting of chlorine and bromine; Z is selected from the group consisting of —O—, —S—, and $—(CH_2)_b—$ in which b is an integer from one to three; and a is an integer from zero to three.

9. A compound of the structure



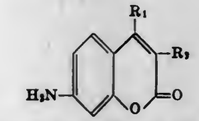
3,356,689

REARRANGEMENT OF ENAMINES TO FORM 7-AMINOCOUMARINS

Jorg Haeberli, Warwick, R.I., assignor to Geigy Chemical Corporation, Greenburgh, N.Y., a corporation of Delaware

No Drawing. Filed Feb. 28, 1966, Ser. No. 530,334
11 Claims. (Cl. 260—343.2)

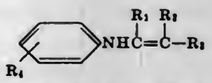
1. A process for making 7-aminocoumarins of the formula



I

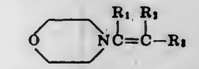
wherein R_1 is hydrogen or alkyl, and R_2 is hydrogen, alkyl, or aryl,

which comprises rearranging a compound of the formula



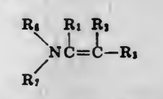
IIA

wherein R_1 and R_2 are as defined above, R_3 is carboxyl, alkoxycarbonyl, phenoxycarbonyl, nitrile, or the amide —$CONHR_5$ wherein R_5 is hydrogen, alkyl, or phenyl, and R_4 is hydrogen, hydroxy, nitro, alkyl, or alkoxy, but R_4 is fixed as 3-hydroxy when R_3 is other than 3-hydroxy; or a compound of the formula



IIB

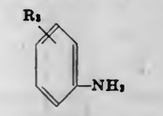
wherein R_1, R_2, and R_3 are as defined above; or a compound of the formula



IIC

wherein R_1 R_2, and R_3 are as defined above, and R_6 is alkyl, or aryl, and R_7 is alkyl;

in the presence of an amine of the formula



III

wherein R_8 is hydrogen, hydroxy, alkoxy or nitro; and R_8 is fixed as 3-aminophenol when IIA is used and R_4 is other than 3-hydroxy, or IIB or IIC is used, at a temperature of about 100° C. to about 225° C.

3,356,690

SYNTHESIS OF 2,3-DIHYDRO-2,2-DIMETHYL-7-BENZOFURANYL N-METHYLCARBAMATE

Edward F. Orwoll, Baltimore, Md., assignor to FMC Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Feb. 4, 1965, Ser. No. 430,455
7 Claims. (Cl. 260—346.2)

5. Process for the synthesis of 2,3-dihydro-2,2-dimethyl-7-benzofuranyl N-methylcarbamate which comprises

the steps of (a) reacting o-bromophenol with methallyl chloride in the presence of an acid acceptor to form o-bromophenyl methallyl ether, (b) rearranging at temperatures of about 150–300° C. o-bromophenyl methallyl ether to produce an isomer selected from the group consisting of 2-bromo-6-methallylphenol and 2-bromo-6-isobutenylphenol, (c) cyclizing said isomer in the presence of an acidic catalyst to 2,3-dihydro-2,2-dimethyl-7-bromobenzofuran, (d) hydrolyzing with an alkaline hydroxide at elevated temperatures of at least 150° C. 2,3-dihydro-2,2-dimethyl-7-bromobenzofuran in the presence of catalytic amounts of cupric nitrate to form 2,3-dihydro-2,2-dimethyl-7-benzofuranol, and (e) converting 2,3-dihydro-2,2-dimethyl-7-benzofuranol, to 2,3-dihydro-2,2-dimethyl-7-benzofuranyl N-methylcarbamate.

3,356,691

PROCESS FOR PURIFICATION OF BENZOPHENONE TETRACARBOXYLIC DIANHYDRIDE

Richard F. Gaertner, Rexford, N.Y., assignor to General Electric Company, a corporation of New York

No Drawing. Filed Apr. 1, 1966, Ser. No. 539,263

5 Claims. (Cl. 260—346.3)

1. A method for converting crude BPDA to a standard purity in the range of from 97.5% to 98.5% and a white color for the production of a solution of polyacidamide of relatively uniform intrinsic viscosity comprising the steps of:

preparing a slurry of the crude BPDA in the form of a powder in an aliphatic hydrocarbon alcohol having a boiling point of less than about 100° C.,

stirring the slurry at room temperature,

filtering the slurry to separate the BPDA from the alcohol containing dissolved impurities, and

heating the BPDA in an inert atmosphere at a temperature in the range of from about 75°–100° C. to remove residual alcohol.

3,356,692

TETRAHYDROFURYL-BENZENE SULFONAMIDES

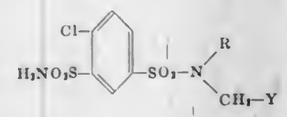
Harald Horstmann, Wuppertal-Vohwinkel, and Hartmund Wollweber and Karl Meng, Wuppertal-Elberfeld, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Feb. 17, 1966, Ser. No. 528,082

Claims priority, application Germany, Nov. 30, 1963, F 41,442

10 Claims. (Cl. 260—347.2)

1. A racemic or optically active compound of the formula:



wherein:

R is hydrogen or methyl and

Y is tetrahydrofuryl or lower alkyl-substituted tetrahydrofuryl.

3,356,693

α,α-BIS-(4-ANILINO-3-NITRO-BENZAMIDO)-ANTHRAQUINONES

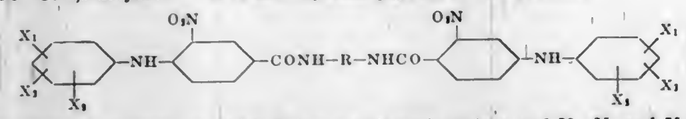
Ernst Reich, Bettingen, and Werner Dettwiler, Neuallschwil, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a Swiss company

No Drawing. Filed Jan. 17, 1964, Ser. No. 338,298

Claims priority, application Switzerland, Jan. 22, 1963, 719/63

3 Claims. (Cl. 260—377)

1. A nitro-dyestuff pigment of the formula



in which R is α,α-anthraquinonylene and X_1, X_2 and X_3 each represents a member selected from the group consisting of hydrogen, halogen, lower alkoxy and lower alkyl.

3,356,694

3-KETO-4-METHYLENE DERIVATIVES OF THE ANDROSTANE AND PREGNANE SERIES AND PROCESS THEREFOR

William H. W. Lunn, Montreal, Quebec, Canada, assignor to Syntex Corporation, Panama, Panama, a corporation of Panama

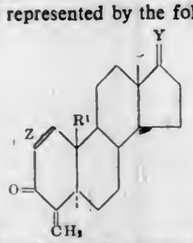
No Drawing. Filed Aug. 17, 1965, Ser. No. 480,487

Claims priority, application Mexico, Aug. 20, 1964, 78,579

22 Claims. (Cl. 260—397.3)

1. A process for introducing a methylene radical in α-position to a 3-keto group in a steriod of the androstane and pregnane series, which comprises condensing a steroid selected from the group consisting of androstanes and pregnanes with paraformaldehyde in dimethyl sulfoxide solution and in the presence of boron trifluoride-dimethyl sulfoxide complex as catalyst, at a temperature between 25° C. and 175° C. for a period of time of between 30 minutes and 20 days.

6. A compound represented by the following formula:



wherein R' is selected from the group consisting of hydrogen and methyl; Y is selected from the group consisting of two hydrogen atoms, a keto group, β-hydroxy and β-hydrocarbon carboxylic acyloxy of less than 12 carbon atoms, and Z is selected from the group consisting of a saturated linkage and a double bond between C–1 and C–2.

3,356,695

METHOD OF ISOLATING STEROIDS FROM CULTURE FLUIDS

Maria Avksentjevna Romanchuk, Nickolai Nickolaevich Suvorov, Zorja Vasiljevna Kalinkina, Elena Borisovna Trostjanskaja, Anna Semenovna Tevlina, Stanislava Ivanovna Antonova, Lidia Vasiljevna Sokolova, Faina Jakovlevna Leibelman, Zinaida Andreevna Jaroslavtseva, Nina Alexeevna Shchukina, Lev Beniaminovich Shagalov, Tatjana Ivanovna Grinjuk, Olga Konstantinovna Nikiforova, Lidia Alexeevna Krasnova, Ekaterina Grigorjevna Balashova, and Natalja Fedorovna Kovylkina, Moscow, U.S.S.R., assignors to Vsesojuzny Nauchno-Issledovatelsky Khimikofarmatsevtichesky Institute im. S. Ordzhonikidze, Moscow, U.S.S.R.

No Drawing. Filed Jan. 6, 1965, Ser. No. 423,827

4 Claims. (Cl. 260—397.3)

1. A method of isolating steroids from culture fluids, said method comprising directly introducing a culture fluid, containing a steroid to be separated, into an ion exchange column containing cation exchange resin such that the steroids are separated from the culture fluid by adsorption on the ion exchange resin, and desorbing the steroid from the resin with an organic solvent.

4. A method as claimed in claim 1 wherein said steroid is epi "F," prednisolone, $\Delta^{1,4}$-androstadiene-3,17-dione, prednisone, hydrocortisone or metandrostenolone.

3,356,696

METHOD FOR INTRODUCING AN OXYGEN FUNCTION INTO A STEROID MOLECULE CONTAINING A KETO GROUP

John N. Gardner, Wayne, N.J., assignor to Schering Corporation, Bloomfield, N.J., a corporation of New Jersey

No Drawing. Filed May 24, 1965, Ser. No. 458,386

10 Claims. (Cl. 260—397.4)

1. In the process for the introduction of a hydroxy function onto at least one tertiary carbon atom of a steroid molecule adjacent to a keto group characterized by reacting said keto steroid with molecular oxygen in the presence of a strongly basic enolizing agent to yield a stable hydroperoxy function on a tertiary carbon atom adjacent to said keto group and thereafter isolating said hydroperoxide and reducing the hydroperoxy function to a hydroxy group; the improvement which comprises carrying out said reaction with molecular oxygen in the presence of a tri-lower alkyl phosphite having from 1 to 8 carbon atoms in each alkyl moiety thereby introducing said hydroperoxy function and simultaneously reducing it in situ to a hydroxy group.

3,356,697

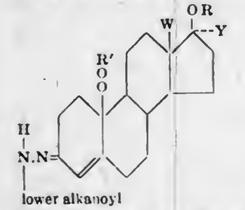
3 - LOWER ALKANOYLHYDRAZONO - 10 - HYDROPEROXY - 13 - ALKYL - 4 - GONENES AND METHODS FOR THEIR MANUFACTURE

Elliot L. Shapiro, Cedar Grove, and Lawrence E. Finckenor, Wayne, N.J., assignors to Schering Corporation, Bloomfield, N.J., a corporation of New Jersey

No Drawing. Filed July 14, 1966, Ser. No. 565,107

10 Claims. (Cl. 260—397.5)

1. A composition of matter selected from the group of compounds having the following structural formula:



wherein R and R' are members selected from the group consisting of hydrogen and a hydrocarbon carbonyl having up to 8 carbon atoms; W is lower alkyl; and Y is a member selected from the group consisting of hydrogen, lower alkyl, lower alkenyl, lower alkynyl, halogenoethinyl, and trifluoromethylethinyl; and the 1-dehydro analogs thereof.

3,356,698

PREPARATION OF ω-HYDROXIMINOALKANOIC ACIDS

Pierre Lafont, St. Foy-les-Lyons, and Michel Thiers, Lyon, France, assignors to Rhone-Poulenc S.A., Paris, France, a French body corporate

No Drawing. Filed Oct. 14, 1963, Ser. No. 316,184

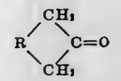
Claims priority, application France, Nov. 19, 1962, 915,860

7 Claims. (Cl. 260—404)

1. Process for the preparation of an ω-hydroximinoalkanoic acid of formula

$$HON{=}CH(CH_2)_nCOOH$$

wherein R represents a divalent radical selected from the group consisting of polymethylene radicals containing 2 to 9 carbon atoms and polymethylene radicals containing 2 to 9 carbon atoms and having one lower alkyl substituent which comprises the steps of (1) contacting a ketone of formula



with nitrosylsulphuric acid, a nitrosyl halide, an alkali metal salt of nitrous acid or nitrous vapours for less than 3 hours at up to 70° C. in the presence of concentrated sulphuric acid, (2) hydrolysing the product, and (3) separating the ω-hydroximinoalkanoic acid produced.

3,356,699

ALKALI ISOMERIZATION OF CREPENYNIC ACID TO 8,10,12-OCTADECATRIENOIC ACID

Marvin O. Bagby, Morton, and Kenneth L. Mikolajczak, Peoria, Ill., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Filed June 9, 1965, Ser. No. 462,759

2 Claims. (Cl. 260—405.6)

1. A mixture consisting of about 2 parts of conjugated trans,cis,trans-8,10,12-octadecatrienoic acid and about 1 part of conjugated trans,cis,cis-8,10,12-octadecatrienoic acid.

2. A process for obtaining the octadecatrienoic acid mixture of claim 1 comprising:

(a) subjecting a crepenynic acid member selected from the group consisting of cis-9-octadecen-12-ynoic acid and the methyl ester thereof to isomerization at room temperature in a t-butanol solution of potassium-t-butoxide for about 4 hours to form the corresponding conjugated ene-allenic triene intermediate;

(b) isolating the said triene intermediate from the acidified isomerization mixture;

(c) heating the isolated ene-allenic triene intermediate at about 100° C. under nitrogen and in the absence of alkali for about 100 minutes to convert the triene to a mixture consisting of about 2 parts of conjugated trans,cis,trans-8,10,12-octadecatrienoic acid and about 1 part of conjugated trans,cis,cis-8,10,12-octadecatrienoic acid.

3,356,700

PRODUCTION OF COMPOUNDS OF THE AXEROPHTHYLIDENE SERIES

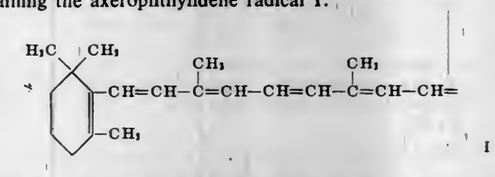
Wilhelm Sarnecki, Axel Nuerrenbach, and Werner Reif, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed May 14, 1963, Ser. No. 280,437

Claims priority, application Germany, May 23, 1962, B 67,364

11 Claims. (Cl. 260—410.9)

1. A process for the production of compounds containing the axerophthylidene radical I:



wherein the oxygen of the carbonyl group of a compound (II) selected from the group consisting of aldehydes, ketones and formic acid esters is replaced by said radical I, which process comprises: reacting (a) a fatty acid ester of vitamin A alcohol with (1) a triarylphosphine and an acid which is able to form a hydrosalt with

the triarylphosphine, or (2) a hydrosalt of said triarylphosphine and said acid, and (b) thereafter reacting the reaction product thus obtained with said compound II in the presence of an acid binding agent.

3,356,701

BLEACHING REFINED COTTON OIL

Paul H. Eaves, Metairie, La., assignor to the United States of America as represented by the Secretary of Agriculture

No Drawing. Filed Nov. 24, 1965, Ser. No. 509,614
2 Claims. (Cl. 260—424)

1. A process for bleaching refined cottonseed oil with activated alumina comprising

(a) dispersing activated alumina made up of particles ranging about from 0.5 to 40 microns in diameter, in about from 2 to 6 parts by weight of water, to form a fluid slurry,

(b) mixing the fluid slurry at high speeds of agitation with the refined cottonseed oil for about from 1 to 5 minutes,

(c) heating the agitated mixture under vacuum of about from 1 to 5 mm. mercury at about from 430° F. (220° C.) to 460° F. (240° C.) for about from 20 to 60 minutes of time,

(d) cooling the mixture under vacuum to about from 180° F. (82.2° C.) to 200° F. (93.3° C.), and

(e) separating the oil from the slurry.

3,356,702

MOLYBDENUM OXYSULFIDE DITHIOCARBAMATES AND PROCESSES FOR THEIR PREPARATION

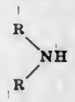
Homer H. Farmer, Westport, and Eugene V. Rowan, Rowayton, Conn., assignors to R. T. Vanderbilt Company, Inc., New York, N.Y., a corporation of New York

Filed Aug. 7, 1964, Ser. No. 388,110
11 Claims. (Cl. 260—429)

1. A compound having the general formula

$$[R_2N—CS—S]_2Mo_2O_mS_n$$

where $m+n=4$, m is in the range 2.35 to 3 and n is in the range 1.65 to 1, and R is a hydrocarbon group having 1–24 carbon atoms such that the compound



will react with carbon disulfide to form a dithiocarbamate.

3,356,703

YTTRIUM, DYSPROSIUM AND YTTERBIUM ALKOXIDES

Khodabakhsh S. Mazdiyasni, Dayton, Charles T. Lynch, Fairborn, and Jonathan S. Smith II, Dayton, Ohio, assignors to the United States of America as represented by the Secretary of the Air Force

No drawing. Original application Mar. 19, 1965, Ser. No. 441,388, now Patent No. 3,278,571, dated Oct. 11, 1966. Divided and this application Aug. 23, 1965, Ser. No. 481,987

The portion of the term of the patent subsequent to Oct. 10, 1983, has been disclaimed

6 Claims. (260—429.2)

1. A compound selected from the group consisting of yttrium, isopropoxide, yttrium tert.-butoxide, dysprosium isopropoxide, ytterbium isopropoxide, and yttrium isopropene oxide.

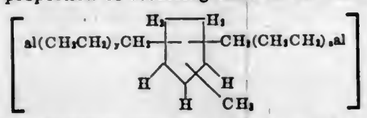
3,356,704

DI(ALUMINOALKYL)METHYLCYCLOPENTANE POLYMERS

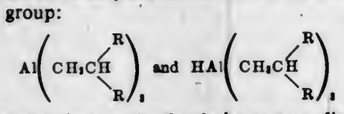
Erich Marcus, Charleston, W. Va., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Dec. 28, 1962, Ser. No. 247,838
1 Claim. (Cl. 260—448)

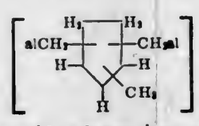
The ethylenically grown polymer composed in substantial proportion of recurring units of the formula:



wherein *al* designates one-third of an atom of aluminum, and *y* and *z* designate integers of from 0 to 8, at least one of which is a positive integer, said ethylenically grown polymer being produced by a process which comprises the steps of (a) bringing 1,3-butadiene into reactive admixture with an isoalkylaluminum of the formula selected from the group:



wherein each R, independently, designates an alkyl radical of from 1 to 4 carbon atoms, at a temperature of from about 80° C. to about 150° C. in a proportion of isoalkylaluminum to 1,3-butadiene providing an excess over one-third mole of isoalkylaluminum per mole of butadiene during the reaction, and while removing the isoolefin formed as a by-product from the resulting mixture, for a period of time sufficient to produce a polymer composed in substantial proportion of recurring units of the formula:



and (b) bringing said polymer into reactive admixture with at least 1.5 moles of ethylene per aluminum atom of said polymer in the absence of a catalyst, at a temperature of from about 80° C. to about 190° C., for a period of time sufficient to produce said ethylenically grown polymer.

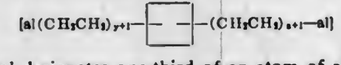
3,356,705

TRANS-DI(ALUMINOALKYL)CYCLOBUTANE POLYMERS

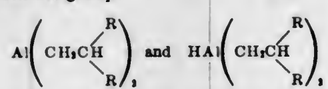
Erich Marcus, Charleston, and Donald L. MacPeek, South Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed June 28, 1963, Ser. No. 291,260
1 Claim. (Cl. 260—448)

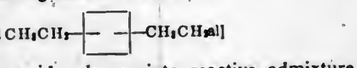
The ethylenically grown polymer comprised of recurring units of the formula:



wherein al designates one-third of an atom of aluminum, *y* and *z* designate integers of from 0 to 8, at least one of which is a positive integer, said ethylenically grown polymer being produced by a process which comprises the steps of (a) bringing trans-divinylcyclobutane into reactive admixture with an isoalkylaluminum of the formula selected from the group:



wherein each R, independently, designates an alkyl radical of from 1 to 4 carbon atoms, at a temperature of from about 70° C. to about 200° C., and while removing the isoolefin formed as a by-product from the resulting mixture, for a period of time sufficient to produce a polymer comprised of recurring units of the formula:



and (b) bringing said polymer into reactive admixture with at least 1.5 moles of ethylene per aluminum atom of said polymer, in the absence of a catalyst, at a temperature of from about 70° C. to about 200° C., for a period of time sufficient to produce said ethylenically grown polymer.

3,356,706

CHLOROMETHYL 1-BUTANETHIOSULFONATE

John D. Buckman, John D. Pera, and Fred W. Raths, Memphis, Tenn., assignors to Buckman Laboratories, Inc., Memphis, Tenn., a corporation of Tennessee

No Drawing. Filed Dec. 5, 1966, Ser. No. 598,945
1 Claim. (Cl. 260—453)

Chloromethyl 1-butanethiolsulfonate.

3,356,707

BORON ESTERS AND PROCESS OF PREPARING SAME

James B. Hinkamp, Birmingham, and John D. Bartleson, Franklin, Mich., and Glenn E. Irish, Fullerton, Calif., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed May 5, 1958, Ser. No. 732,819
7 Claims. (Cl. 260—462)

1. A boron ester derived from boron acids selected from the group consisting of pyroboric, boronic, and borinic acids wherein an esterifying group is a 2,6-dialkyl phenol wherein the alkyl groups are branched on the α-carbon atom and contain at least 4 carbon atoms.

3,356,708

PROCESS FOR THE REDUCTIVE DIMERIZATION OF ACRYLONITRILE

Duncan Sheppey Davies and David Colin Jones, Runcorn, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed May 10, 1965, Ser. No. 454,723
Claims priority, application Great Britain, June 2, 1964, 22,779/64
6 Claims. (Cl. 260—465.8)

1. In a process for the reductive dimerization of acrylonitrile wherein an aqueous liquid medium containing acrylonitrile is brought into intimate contact with an alkali metal amalgam, the improvement which comprises utilizing as the aqueous liquid medium, one that contains added acetonitrile.

3,356,709

DISULFONATE ANTI-CAKING AGENTS FOR STRAIGHT-CHAIN SULFONATE DETERGENTS

David M. Marquis, Orinda, Calif., assignor to Chevron Research Company, a corporation of Delaware

No Drawing. Filed June 17, 1964, Ser. No. 375,937
14 Claims. (Cl. 260—468)

5. A built particulate solid detergent composition consisting essentially of straight-chain sodium C_9–C_{18} alkyl benzene sulfonate nonsoap detergent component having caking tendencies, inorganic sodium salt detergent builder component, and an anticaking inhibitor component to suppress said caking tendencies selected from the group consisting of disodium benzene disulfonate, disodium toluene disulfonate, dipotassium benzene disulfonate, and dipotassium toluene disulfonate, the nonsoap detergent and the detergent builder each being present in a proportion within about the range of 5 to 95%, by weight, based on the two, and the anticaking inhibitor, in the range of about 2 to 25%, by weight, based on the nonsoap detergent, said composition being obtained by drying an aqueous dispersion of the aforementioned components.

3,356,710

ETHYL N-BENZOYL N(2-CHLOROETHYL)CARBAMATE AND PROCESS OF PREPARATION

Leonard Levine, Lake Jackson, Tex., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Feb. 20, 1964, Ser. No. 346,093
2 Claims. (Cl. 260—471)

1. Ethyl N-benzoyl N(2-chloroethyl)carbamate.

3,356,711

5-AMINOTRIHALOPHENYLACETIC ACIDS AND DERIVATIVES

Edward D. Weil, Lewiston, and Edwin Dorfman, Grand Island, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Filed Feb. 20, 1963, Ser. No. 260,079
17 Claims. (Cl. 260—471)

1. A mixture of compounds, selected from the group consisting of:

(a) aminotrihalophenylacetic acids;

(b) alkali metal salts of said acids;

(c) alkaline earth metal salts of said acids;

(d) the amine hydrochlorides of said acids;

(e) the ammonium salts of said acids;

(f) the N-substituted ammonium salts of said acids, selected from the group consisting of:

(1) mono-, di-, and trialkylammonium salts, wherein said alkyl group(s) has from 1 to 12 carbon atoms;

(2) mono-, di-, and trialkanolammonium salts, wherein said alkanol group(s) has from 2 to 3 carbon atoms;

(3) monoalkyl monoalkanolammonium salts, dialkyl monoalkanolammonium salts, and monoalkyl dialkanolammonium salts wherein the alkyl groups have from 1 to 4 carbon atoms and the alkanol groups have from 2 to 3 carbon atoms;

(4) piperidinium, pyrralidinum, and morpholinium salts;

(5) N-methylmorpholinium salts;

(6) cyclohexylammonium and dicyclohexylammonium salts;

(7) anilinium, N-methylanilinium, N,N-dimethylanilinium, naphthylammonium, and benzylammonium salts;

(g) the esters of said acids, selected from the group consisting of the methyl ester, the ethyl ester, the butyl ester, the lauryl ester, the cyclohexyl ester, the 2-hydroxyethyl ester, the 2-chloroethyl ester, the allyl ester, the phenyl ester, the benzyl ester, the trichlorobenzyl ester, polychlorophenyl esters, the 1,2-ethylene (bis) ester, glyceryl esters, and the methoxyethyl ester, and the furfuryl ester;

(h) the amides of said acids, selected from the group consisting of the unsubstituted amide, the N-methyl amide, the N,N-dimethyl amide, the N-phenyl amide, and N-hydroxyethyl amides;

wherein the halogens of said compounds are selected from the group consisting of chlorine, bromine, and mixtures thereof, wherein about 30 to about 75 percent of said mixture consists of a compound selected from the group consisting of 5-amino-2,3,6-trihalophenylacetic acid and salts, esters, and amides of 5-amino-2,3,6-trihalophenylacetic acid wherein said salts, esters, and amides are hereinbefore described; and wherein the remainder of said

mixture, in addition to the named 30 to 75 percent is comprised respectively of the analogous isomeric 3-amino-2,4,5-trihalophenylacetic acid, 5-amino-2,3,4-trihalophenylacetic acid and 3-amino-2,4,6-trihalophenylacetic acid or the salts or esters or amides of said acids wherein said salts, esters, and amides are as described above.

3,356,712
PROCESS FOR THE PREPARATION OF ARYL ESTERS OF CARBOCYCLIC AROMATIC CARBOXYLIC ACIDS

Gustav Renckhoff, Witten-Ruhr, and Hans Leo Hülsmann, Witten, Reudinghausen, Germany, assignors to Chemische Werke Witten G.m.b.H., Witten-Ruhr, Germany

No Drawing. Filed Feb. 12, 1963, Ser. No. 257,870
Claims priority, application Germany, July 6, 1962, C 27,396; Dec. 1, 1962, C 28,561
10 Claims. (Cl. 260—475)

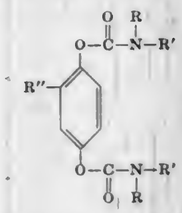
1. A process for the preparation of an aryl ester of an acid selected from the group consisting of carbocyclic aromatic mono- and polycarboxylic acids and halo- and alkyl-substituted derivatives thereof which comprises heating the methyl ester of said acid in the presence of an acidic, alkaline or metallic salt transesterification catalyst with at least an equivalent amount of a phenolic component to a temperature between approximately 180° and 250° C., said phenolic component being selected from the group consisting of phenol, naphthol and substituted phenols and naphthols, said substituted phenols and naphthols being substituted by one or more groups selected from the group consisting of the alkyl and aralkyl radicals, and continuously removing the methyl alcohol formed by the reaction between said methyl ester and phenolic component from the reaction mixture.

3,356,713
p-PHENYLENE-DICARBAMATES

Sidney B. Richter, Chicago, Ill., assignor to Velsicol Chemical Corporation, Chicago, Ill., a corporation of Illinois

No Drawing. Filed Nov. 14, 1962, Ser. No. 237,753
8 Claims. (Cl. 260—479)

1. A compound of the formula



wherein R' and R'' are lower alkyl and R is selected from the group consisting of hydrogen and lower alkyl.

3,356,714
4-FLUORO-4,4-DINITROBUTYRIC ACIDS AND ESTERS THEREOF

Mortimer J. Kamlet, Silver Spring, Md., assignor to the United States of America as represented by the Secretary of the Navy

No Drawing. Filed Sept. 15, 1965, Ser. No. 491,497
10 Claims. (Cl. 260—487)

1. A compound selected from the group consisting of:
(a) methyl-4-fluoro-4,4-dinitrobutyrate,
(b) 4-fluoro-4,4-dinitrobutyric acid,
(c) 2,2,2-trinitroethyl-4-fluoro-4,4-dinitrobutyrate and
(d) 2-fluoro-2,2-dinitroethyl-4-fluoro - 4,4 - dinitrobutyrate.

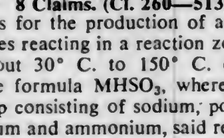
6. A process for producing a compound containing a fluorodinitromethyl group which comprises reacting an alkali metal salt of methyl-4,4-dinitrobutyrate with perchloryl fluoride to produce methyl-4-fluoro-4,4-dinitrobutyrate.

3,356,715
N-HEXAHALOHYDROXYISOPROPYL CARBAMATES

Peter E. Newallis, Morris Plains, and Edmund J. Rumanowski, Jersey City, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Jan. 6, 1964, Ser. No. 336,053
4 Claims. (Cl. 260—482)

1. N-hexahalohydroxyisopropyl carbamates having the formula:



3,356,716
NOVEL 6-SUBSTITUTED B-NORTESTOSTERONE DERIVATIVES

Kenneth G. Holden, Stratford, N.J., and James F. Kerwin, Broomall, Pa., assignors to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Aug. 13, 1964, Ser. No. 389,468
11 Claims. (Cl. 260—488)

1. A compound having the formula:

in which R is a member selected from the group consisting of ethylene and methylene; R_1 is a member selected from the group consisting of β-hydroxy and oxo; and X is a member selected from the group consisting of

and

3,356,717
PRODUCTION OF ALKYL SULFONATE

Clarence L. Furrow, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed June 19, 1964, Ser. No. 376,556
8 Claims. (Cl. 260—513)

1. A process for the production of an alkyl sulfonate which comprises reacting in a reaction zone at a temperature from about 30° C. to 150° C. dodecene with a bisulfite of the formula $MHSO_3$, wherein M is selected from the group consisting of sodium, potassium, lithium, rubidium, cesium and ammonium, said reacting conducted in the presence of water and an initiator-solvent combination wherein said combination is selected from the group consisting of
(a) tert-butyl peracetate with ethanol,
(b) tert-butyl peracetate with n-propanol,

(c) tert-butyl peracetate with isopropanol,
(d) tert-butyl peracetate with pyridine,
(e) tert-butyl peracetate with a 50/50 mixture of n-propanol and pyridine,
(f) tert-butyl perisobutyrate with n-propanol, and
(g) azobisisobutyramidine hydrochloride with n-propanol,

wherein the concentration of said bisulfite in said reaction zone will range from about 1–2 mols per mol of alkene feed to said reaction zone, the concentration of initiator present will range from about 0.005 to about 0.05 mol per mol of alkene feed to said reaction zone, the concentration of water in said reaction zone will range from about 0.5–10 grams per gram of sulfite compound, and the concentration of said solvent in said reaction zone will range from about 0.1 to 2 volumes per volume of water.

3,356,718
PREPARATION OF DICARBOXYADAMANTANE COMPOUNDS FROM DIHALOADAMANTANES

Robert E. Moore, Wilmington, Del., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

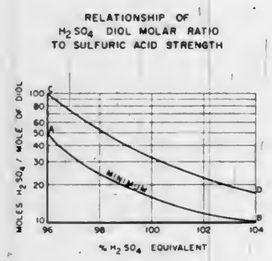
No Drawing. Filed Apr. 22, 1965, Ser. No. 450,182
13 Claims. (Cl. 260—514)

1. Method of preparing a 1,3-dicarboxyadamantane which comprises dissolving a dihaloadamantane compound, selected from the group consisting of dibromo and dichloro derivatives of adamantane and alkyladamantanes having attached to the adamantane nucleus 1–2 alkyl groups containing 1–10 total carbon atoms, in fuming sulfuric acid having a strength corresponding to 100–110% H_2SO_4 equivalent by weight, the molar ratio of H_2SO_4 to said dihaloadamantane compound being at least 10:1, reacting the mixture at a temperature below 20° C. with formic acid in amount of at least two moles of formic acid per mole of said dihaloadamantane compound, mixing the reaction mixture with water and separating said 1,3-dicarboxyadamantane compound from the resulting mixture.

3,356,719
PREPARATION OF DICARBOXYADAMANTANE COMPOUNDS

Abraham Schneider, Overbrook Hills, Pa., and Robert E. Moore, Wilmington, Del., assignors to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

Filed Apr. 22, 1965, Ser. No. 449,981
11 Claims. (Cl. 260—514)



1. Method of preparing a 1,3-dicarboxyadamantane which comprises dissolving a dihydroxyadamantane compound, selected from the group consisting of dihydroxyadamantane and dihydroxyalkyladamantanes having attached to the adamantane nucleus 1–2 alkyl groups containing 1–10 total carbon atoms, in sulfuric acid having a strength corresponding to 96–104% H_2SO_4 equivalent by weight, the molar ratio of H_2SO_4 to said dihydroxyadamantane compound being above that shown by line AB of the accompanying drawing, reacting the mixture at a temperature below 50° C. with formic acid in amount of at least two moles of formic acid per mole of said dihydroxyadamantane compound, mixing the reaction mixture with water and separating said 1,3-dicarboxyadamantane compound from the resulting mixture.

3,356,720
KETONES FROM SATURATED HYDROCARBONS AND CARBON MONOXIDE

Stanley B. Mirviss, Westfield, N.J., and Philip S. Skell, State College, Pa., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed July 1, 1963, Ser. No. 292,072
15 Claims. (Cl. 260—533)

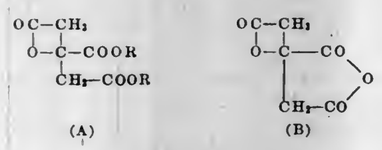
1. In a process for preparing oxygenated organic compounds of the class consisting of ketones and carboxylic acids from a saturated hydrocarbon which comprises reacting a C_2–C_{25} saturated hydrocarbon with carbon monoxide in the presence of a Friedel-Crafts catalyst, the improvement which comprises effecting such reaction in the presence of a hydrocarbon substituted carbinyl halide selected from the group consisting essentially of tertiary alkyl halides, tertiary phenyl alkyl halides and tertiary phenyl carbinyl halides wherein said halide is selected from the group consisting of chloride, bromide and iodide.

3,356,721
CITRIC ACID MANUFACTURE

Richard H. Wiley, Louisville, Ky.
(30 Beekman Place, New York, N.Y. 10017)

No Drawing. Filed Mar. 21, 1962, Ser. No. 181,466
8 Claims. (Cl. 260—535)

1. A process for the preparation of citric acid which comprises the steps of
(a) oxidizing maleic acid, di(lower alkyl) ester or anhydride, or fumaric acid or di(lower alkyl) ester, with air or oxygen in the presence of a palladium salt at a temperature within the range of 10° and 70° C. to form the corresponding oxalacetic acid, di(lower alkyl) ester, or anhydride;
(b) condensing said oxalacetic acid, di(lower alkyl) ester, or anhydride with ketene in the presence of a zinc chloride-acetic acid catalyst, a boron trifluoride etherate catalyst, or an alumina-silica-boron oxide catalyst, at a temperature within the range of −20 and +60° C., to form a β-lactone compound having structural Formula A when the starting compound is an acid or ester; or Formula B when the starting compound is an anhydride:



where R in Formula A represents hydrogen or lower alkyl; and
(c) hydrolysis of said β-lactone to citric acid at a temperature up to and including 60° C., by treating compound of Formula A with lime water to produce calcium citrate, followed by treatment of said calcium citrate with sulfuric acid; or by treating the compound of Formula B with water alone.

3,356,722
PRODUCTION OF DICARBOXYLIC ACIDS FROM CYCLIC KETONES
Thomas J. Wallace, Elizabeth, and Alan Schriesheim, Berkeley Heights, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Filed June 10, 1963, Ser. No. 286,516
7 Claims. (Cl. 260—537)

1. The conversion of cyclic ketones to carboxylic acids which comprises contacting a cyclic ketone having 4 to 20 carbon atoms with a base-solvent system wherein said solvent is an aprotic, non-hydroxylic liquid solvent having a dielectric constant of at least 15 at 25° C., a dipolar phosphoryl radical and is selected from the group consisting of hexamethylphosphoramide, tri(ethylene amide) phosphoramide, triphenyl phosphine oxide, and hypophosphite esters, said solvent being further characterised in that said dipolar radical and atoms adjacent to said dipolar radical are hydrogen-free, and recovering a dicarboxylic acid product.

2. The process for oxidizing a cyclic C_4 to C_{20} ketone to a dicarboxylic acid in which the said cyclic ketone is oxidized with oxygen and a basic compound in the presence of an aprotic, non-hydroxylic liquid solvent having a dielectric constant of at least 15 at 25° C., a dipolar phosphoryl radical and is selected from the group consisting of hexamethylphosphoramide, tri(ethylene amide) phosphoramide, triphenyl phosphine oxide, (and hypophosphite esters, said solvent being further characterized in that said dipolar radical and atoms adjacent to said dipolar radical are hydrogen-free, and recovering a dicarboxylic acid product.

3,356,723
PREPARATION OF UREA
Petrus J. C. Kaasenbrood, Sittard, Netherlands, assignor to Stamicarbon N.V., Heerlen, Netherlands
Filed Mar. 4, 1966, Ser. No. 531,833
Claims priority, application Netherlands, Apr. 8, 1960, 250,349
7 Claims. (Cl. 260—555)

1. In a continuous process for the preparation of urea wherein NH_3 and CO_2 are reacted at elevated temperature and pressure to continuously provide an ammonium carbamate melt, thereafter in an autoclave, said melt being converted into a urea solution containing ammonium carbamate and the carbamate being stripped from said solution by decomposing said carbamate into NH_3 and CO_2 by heat and expelling NH_3, CO_2 and H_2O from said solution, the improvement which comprises continuously stripping the urea solution with CO_2 in a stripping zone outside said autoclave and at a pressure of at least 50 atmospheres up to urea synthesis pressure wherein the urea solution flows downwardly along the inside of externally steam heated tubes in the stripping zone and CO_2 stripping gas passes upwardly in said tubes in contact with said urea solution, the pressure of the heating steam being in the range of 15–30 atm., whereby NH_3 and CO_2 are expelled from said solution, condensing the resulting mixture of CO_2 gas and gases expelled from said urea solution after addition of further NH_3 and at a pressure of at least 50 atmospheres up to urea synthesis pressure to form a carbamate solution and returning the thus formed carbamate solution to said autoclave for further urea synthesis.

3,356,724
HERBICIDAL α-HALO-N-CYCLOHEXYL-ACETAMIDES
John F. Olin, Ballwin, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed Sept. 18, 1964, Ser. No. 397,655
1 Claim. (Cl. 260—561)

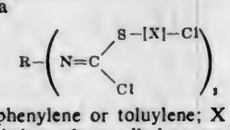
N - (2′ - tert - butyl - 6′ - methylcyclohexyl) - 2 - chloroacetamide.

3,356,725
PENTAHALOCYCLOPENTADIENYLAMINES AND PREPARATION THEREOF
Earl T. McBee, Lafayette, Ind., assignor to Purdue Research Foundation, West Lafayette, Ind., a corporation of Indiana
No Drawing. Filed Dec. 16, 1963, Ser. No. 330,604
12 Claims. (Cl. 260—563)

1. Pentahalocyclopentadieneamine of the formula C_5X_5NHR wherein X is chloro or bromo and R is hydrogen or an alkyl, hydroxyalkyl, cycloalkyl, aryl, alkaryl or aralkyl group having a molecular weight below 300, in which aryl is carbocyclic and contains 6 to 20 carbon atoms, alkyl contains from 1 to 20 carbon atoms and cycloalkyl contains from 3 to 8 carbon atoms.

3,356,726
S-(2-CHLOROETHYL) ISOTHIOCARBAMYL CHLORIDES AND PROCESS THEREFOR
Gerhard F. Ottmann, Hamden, and Haywood Hooks, Jr., West Haven, Conn., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia
No Drawing. Filed Aug. 17, 1964, Ser. No. 390,184
10 Claims. (Cl. 260—566)

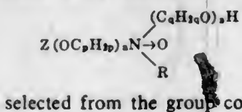
1. A S-(2-chloroethyl) isothiocarbamyl chloride having the formula



wherein R is phenylene or toluylene; X is selected from the class consisting of an alkylene group having 2–18 carbon atoms or cycloalkylene having 5–12 carbon atoms; and wherein said chlorine atom atttached to X is separated from the sulfur atom by two methylene groups.

3,356,727
ALKYL- AND ALKARYL-OXYALKYL-N-HYDROXYALKYL AMINE OXIDES
Adolf Koebner and Herbert Alexander Potts, Cumberland, England, assignors to Marchon Products Limited, London, England, a corporation of the United Kingdom
No Drawing. Filed June 23, 1964, Ser. No. 377,399
Claims priority, application Great Britain, June 25, 1963, 25,137/63; July 22, 1963, 28,837/63; June 4, 1964, 23,304/64
15 Claims. (Cl. 260—570.7)

1. Amine oxides of the formula



wherein Z is selected from the group consisting of alkyl and alkenyl having 12 to 18 carbon atoms and alkylphenyl wherein the alkyl group contains from 8 to 12 carbon atoms; R is selected from the group consisting of lower alkyl, $Z(OC_pH_{2p})_n$— and —$(C_qH_{2q}O)_xH$; p in each oxyalkylene group —OC_pH_{2p}— is an integer of from 2 to 3; q in each alkyleneoxy group —$C_qH_{2q}O$— is an integer of from 2 to 3; n has a value of from 2 to 5; and each x has a value of from 1 to 3.

3,356,728
PROCESS OF PREPARING AROMATIC POLYAMINES BY CATALYTIC HYDROGENATION OF AROMATIC POLYNITRO COMPOUNDS
Joseph J. Cimerol, Hamden, William M. Clarke, North Haven, and William I. Denton, Cheshire, Conn., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia
Filed Mar. 12, 1964, Ser. No. 351,398
11 Claims. (Cl. 260—580)

1. In the continuous process for the catalytic hydrogenation of an aromatic polynitro compound in the liquid phase in the presence of a nickel catalyst to yield the corresponding aromatic polyamine, wherein said aromatic polynitro compound and hydrogen are continuously fed to a reaction zone containing an agitated slurry of nickel catalyst, the improvement which comprises simultaneously and continuously

(a) maintaining the reaction zone saturated with hydrogen,

(b) feeding said aromatic polynitro compound to the liquid phase at a rate equivalent to a catalyst loading of no more than about 0.15 pound-equivalents of nitro groups per hour per pound of catalyst in the reaction zone,

(c) maintaining the concentration of said aromatic polynitro compound in the reaction zone below about 0.1 percent by weight,

(d) and continuously withdrawing from the reaction zone the liquid phase of said slurry while retaining said catalyst in the reaction zone.

3,356,729
PREPARATION OF AROMATIC POLYAMINES
William I. Denton, Cheshire, and Philip D. Hammond, North Haven, Conn., assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia
Filed Apr. 1, 1964, Ser. No. 356,619
12 Claims. (Cl. 260—580)

1. In the continuous process for the catalytic hydrogenation of an aromatic polynitro compound in the liquid phase in the presence of a palladium catalyst to yield the corresponding aromatic polyamine, wherein said aromatic polynitro compound and hydrogen are continuously fed to a reaction zone containing an agitated slurry of palladium catalyst, the improvement which comprises simultaneously and continuously

(a) maintaining the reaction zone saturated with hygen,

(b) feeding said aromatic polynitro compound free of catalyst to the liquid phase at a rate equivalent to a catalyst loading of no more than about 0.15 pound-equivalent of nitro groups per hour per pound of catalyst in the reaction zone,

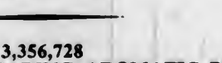
(c) maintaining the concentration of said aromatic polynitro compound in the reaction zone below about 0.1 percent by weight,

(d) continuously withdrawing from the reaction zone a portion of the liquid phase of said slurry while retaining said catalyst in the reaction zone, and

(e) maintaining the catalyst concentration within the reaction zone between about 2 and 25 percent by weight of said slurry.

3,356,730
MERCAPTOALKYL OXYALKYL AMINES
John C. James, Melrose, Robert J. Wineman, Concord, and Morton H. Gollis, Brookline, Mass., assignors to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed Nov. 25, 1964, Ser. No. 413,953
4 Claims. (Cl. 260—584)

1. Compounds selected from the class consisting of mercaptoalkyl oxyalkyl amines of the formula



where

each R is saturated aliphatic hydrocarbon,

each R′ is selected from the class consisting of hydrogen and saturated aliphatic hydrocarbon,

and x is an integer of from 2 to 3,

at least one of the oxy O and amino N atoms is exocyclic,

and N is separated from other hetero atoms by at least two carbon atoms;

and acid addition salts of said amines with protonic acids;

wherein each of said saturated aliphatic hydrocarbon radicals contains up to 18 carbon atoms, and the said mercaptoalkyl oxyalkyl amines are acyclic polyhydric alkanols.

3,356,731
METHOD FOR PRODUCING 2-ACETYL-1,3-DIKETONE
John Martin Nilsson, Framnasbacken 14, Solna, Sweden, and Ferenc Merényi, Sveavagen 166 D 24, Stockholm, Sweden
No Drawing. Filed May 11, 1964, Ser. No. 366,634
Claims priority, application Sweden, May 14, 1963, 5,285/63
15 Claims. (Cl. 260—586)

1. A method of producing 2 - acetyl - 1,3 - diketones, which comprises reacting isopropenyl acetate with a carboxylic acid derivative selected from the group consisting of the halides and anhydrides of phthalic acid, and of aliphatic mono and dicarboxylic acids wherein any unsaturation present is olefinic and wherein any functional substituents present other than the acid halide or anhydride is halogen; in the liquid phase, in the presence of a Lewis acid catalyst selected from the group consisting of aluminum chloride and titanium tetrachloride, at a temperature between approximately room temperature and the boiling point of said liquid phase, and recovering a 2-acetyl-1,3-diketone as the product.

3,356,732
2-[p-(PHENYLSULFONYL)PHENYL]-1,3-INDANEDIONE AND ITS TAUTOMER
Hans-Dieter Becker, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
No Drawing. Filed Mar. 29, 1966, Ser. No. 538,240
3 Claims. (Cl. 260—590)

1. The tautomeric compounds corresponding to the empirical formula $C_{21}H_{14}O_4S$ selected from the group consisting of 3-hydroxy - 2 - [p-(phenylsulfonyl)phenyl]-1-indenone and 2-[p-(phenylsulfonyl)phenyl]-1,3-indanedione.

3,356,733
PROCESS FOR PRODUCTION OF BIS(TRICHLOROACETYL)-BENZENE ISOMERS AND THEIR MIXTURES
Khachik Egorovich Khchejan, Alla Ezrievna Ioffe, and David Semenovich Azbel, Moscow, U.S.S.R., assignors to Nauchno-Issledovatelsky Institute Sinteticheskikh Spirtov i Organicheskikh Produktov, Moscow, U.S.S.R.
No Drawing. Filed Sept. 22, 1964, Ser. No. 398,387
4 Claims. (Cl. 260—592)

1. A process for manufacturing mixtures of isomers of bis-(trichloroacetyl)-benzenes consisting in the chlorination of a mixture of diacetylbenzene isomers in a molten state by chlorine gas in the presence of from 0.25 to 0.5% based on the starting diacetylbenzene weight of hexamethylenetetramine.

3,356,734
PROCESS FOR THE PRODUCTION OF ACETALDEHYDE
Michio Kuraishi, 27 Kogane-cho; Setsunobo Asano, 3–20 Kogane-cho; and Atsuo Takahashi, 34 Higashi Oyama-cho, all of Niigata, Japan
No Drawing. Filed Sept. 26, 1963, Ser. No. 311,642
Claims priority, application Japan, Feb. 28, 1963, 38/9,871
8 Claims. (Cl. 260—601)

1. A process for manufacturing acetaldehyde which comprises reacting methanol with hydrogen and carbon

monoxide in the presence of from about 0.1 to about 2 millimoles of a methanol soluble cobalt catalyst per mole of methanol, said cobalt catalyst promoted by a halogen promoter selected from the group consisting of iodine, bromine, chlorine, alkali metal iodides, alkali metal bromides, alkali metal chlorides, alkaline earth metal iodides, alkaline earth metal bromides, and alkaline earth metal chlorides, at a reaction temperature within the range of from about 150° C. to about 250° C. and a reaction pressure from about 200 to about 700 atmospheres gauge.

3,356,735
CHLOROMETHYL ETHER PROCESS

Shigeto Suzuki, San Francisco, Calif., assignor to Chevron Research Company, San Francisco, Calif., a corporation of Delaware

No Drawing. Filed Dec. 27, 1965, Ser. No. 516,693
3 Claims. (Cl. 260—611)

1. In a process for the production of a chloromethyl ether by the liquid phase reaction of formaldehyde, hydrogen chloride and a compound of the formula

$$R(OH)_n$$

wherein R is a saturated aliphatic hydrocarbon radical containing less than 21 carbon atoms and *n* is a whole number less than 5, said reaction being effected by passing hydrogen chloride gas into a mixture consisting essentially of formaldehyde, and said compound maintained at a temperature in the range of about 0° C. to 100° C., the improvement which comprises dissolving lithium chloride in said reaction mixture in an amount in the range from about 0.1 to 1 mol per mol of said compound, thereby increasing the yield of the corresponding chloromethyl ether by at least about 5 percent.

3,356,736
SUBSTITUTED BIBENZYL COMPOUNDS

Earl S. Huyser, Lawrence, Kans., and Gordon E. Hartzell, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Original application Mar. 28, 1963, Ser. No. 268,597, now Patent No. 3,278,502, dated Oct. 11, 1966. Divided and this application May 2, 1966, Ser. No. 571,660
1 Claim. (Cl. 260—611)

α-Methoxy-α,α'-diphenylbibenzyl.

3,356,737
METHOXY CHLOROBENZYL ALCOHOLS

Sidney B. Richter, Chicago, Ill., assignor to Velsicol Chemical Corporation, Chicago, Ill., a corporation of Illinois

No Drawing. Filed Sept. 3, 1964, Ser. No. 394,317
3 Claims. (Cl. 260—613)

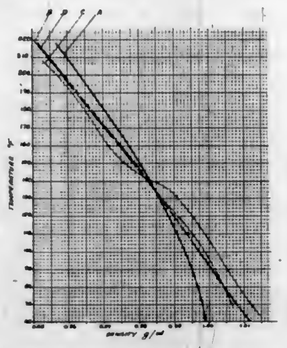
1. A compound selected from the group consisting of 2-methoxy-3,6-dichlorobenzyl alcohol and 3-methoxy-2,6-dichlorobenzyl alcohol.

3,356,738
PURIFICATION OF WATER-INSOLUBLE HYDROXYL-CONTAINING POLYETHERS

Henry W. Hauser, Naperville, Kurt L. Schoenrade, Chicago, and Scott J. Russell, Summit, Ill., assignors to Witco Chemical Company, Inc., New York, N.Y., a corporation of Delaware

Filed Dec. 11, 1963, Ser. No. 329,675
9 Claims. (Cl. 260—615)

1. In a method of removng water-soluble impurities from water-insoluble hydroxyl-containing polyethers, the steps which comprise providing a mixture of water with a normally liquid essentially water-insoluble hydroxyl-terminated polyether polyol having a molecular weight in the range of 600 to 7,000 and consisting of carbon, hydrogen, and oxygen at an elevated temperature, below the boiling point of water at the pressure involved, at which there is a difference in density between the water and the polyether sufficient to permit centrifugal sepa-



ration of said polyether and said water, and then effecting centrifugal separation, at said elevated temperature, of said polyether from said water containing dissolved therein substantially all of said water-soluble impurities.

3,356,739
CONVERSION OF NON-BRIDGEHEAD HYDROXY-ADAMANTANE COMPOUNDS

Abraham Schneider, Overbrook Hills, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

No Drawing. Filed Sept. 10, 1964, Ser. No. 395,556
7 Claims. (Cl. 260—617)

1. Method of isomerizing non-bridgehead hydroxyadamantane compounds which comprises dissolving in a concentrated mineral acid selected from the group consisting of sulfuric acid having a strength of at least 90% H_2SO_4 and phosphoric acid having a strength of at least 85% H_3PO_4 a hydroxyadamantane compound having 10–18 carbon atoms and selected from the group consisting of 2-hydroxyadamantane and 2-hydroxyalkyladamantanes having at least one unsubstituted bridgehead position, the weight ratio of mineral acid to said compound being in the range of 1:10 to 20:1 and the temperature of the mixture being in the range of 0–150° C., whereby the hydroxy group shifts to the bridgehead position, and recovering from the acid a 1-hydroxyadamantane compound.

3,356,740
PREPARATION OF HYDROXYALKYL-ADAMANTANES

Abraham Schneider, Overbrook Hills, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

No Drawing. Filed Sept. 10, 1964, Ser. No. 395,557
5 Claims. (Cl. 260—617)

1. Method of preparing hydroxyalkyladamantanes which comprises contacting an alkyladamantane selected from the group consisting of methyladamantane, ethyladamantane, dimethyladamantane, methylethyladamantane, trimethyladamantane, and ethyldimethyladamantane with a free oxygen-containing gas at a temperature in the range of 110–210° C. and in the presence of a small amount of oxidation catalyst consisting of a soluble hydrocarbyl carboxylic acid salt of a metal selected from the group consisting of cobalt, manganese, iron and magnesium, said contacting being effected in the absence of a solvent and under a pressure less than 50 p.s.i.g., whereby oxidation occurs to form bridgehead hydroxyalkyladamantane as the major oxidation product, stopping said contacting before 70% of the alkyladamantane has been oxidized, and recovering 1-hydroxyalkyladamantane from the reaction mixture.

3,356,741
PREPARATION OF DIHYDROXYALKYL-ADAMANTANES

Abraham Schneider, Overbrook Hills, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

No Drawing. Filed Sept. 10, 1964, Ser. No. 395,580
17 Claims. (Cl. 260—617)

1. Methods of preparing dihydroxyalkyladamantanes which comprises contacting an alkyladamantane selected from the group consisting of methyladamantane, ethyladamantane, dimethyladamantane and methylethyladamantane with a free oxygen-containing gas at a temperature in the range of 110–210° C. and in the presence of a small amount of oxidation catalyst consisting of a soluble hydrocarbyl carboxylic acid salt of a metal selected from the group consisting of cobalt, manganese, iron and magnesium, continuing said contacting until at least 80% of the alkyladamantane has been oxidized, whereby bridgehead dihydroxyalkyladamantane is formed in substantial amount, and recovering 1,3-dihydroxyalkyladamantane from the reaction mixture.

6. Method of preparing dihydroxyalkyladamantanes which comprises contacting an alkyladamantane selected from the group consisting of methyladamantane, ethyladamantane, dimethyladamantane and methylethyladamantane with a free oxygen-containing gas at a temperature in the range of 110–210° C. and in the presence of a small amount of oxidation catalyst consisting of a soluble hydrocarbyl carboxylic acid salt of a metal selected from the group consisting of cobalt, manganese, iron and magnesium, said contacting being effected in the absence of a solvent and under a pressure less than 100 p.s.i.g., whereby oxidation occurs to form 1-hydroxyalkyladamantane, ketoalkyladamantane and a minor amount of higher boiling oxidation products, stopping said contacting before 70% conversion of the hydrocarbon charge and while the 1-hydroxyalkyladamantane and ketoalkyladamantane are the main reaction products, separating a concentrate of the last-named products from said higher boiling oxidation products, hydrogenating said concentrate to convert the ketoalkyladamantane to non-bridgehead hydroxyalkyladamantane, isomerizing the hydrogenated concentrate by contacting said concentrate with a concentrated mineral acid selected from the group consisting of sulfuric acid and phosphoric acid to convert the non-bridgehead hydroxyalkyladamantane to its bridgehead isomer, contacting the isomerizate with a free oxygen-containing gas at a temperature in the range of 110–210° C. and in the presence of a small amount of oxidation catalyst as above specified, whereby bridgehead dihydroxyalkyladamantane is formed as the main oxidation product, and recovering 1,3-dihydroxyalkyladamantane from the reaction mixture.

3,356,742
PREPARATION OF FLUOROALCOHOLS BY REACTION OF FLUOROKETONES WITH SELECTED HYDROGEN DONORS

Thomas A. Ford, Hockessin, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Mar. 2, 1965, Ser. No. 436,632
11 Claims. (Cl. 260—617)

1. The process of producing a secondary fluoroalcohol which comprises reacting, at a temperature between 100 and 400° C. and at at least autogenous pressure, a polyfluoroketone of the formula

$$R^1-\overset{O}{\overset{\|}{C}}-R^2$$

wherein R^1 and R^2 are selected from the group consisting of perfluoroalkyl, ω-hydroperfluoroalkyl, ω-chloroperfluoroalkyl and ω-dichloroperfluoroalkyl of up to 8 carbons and $—CF_2CF_2C(X^1X^2)—$, X^1 and X^2 being selected from the group consisting of fluorine and chlorine, with a hydrogen donor selected from the group consisting of R^3CHO, R^3CHOHR^4 and $HCOOR^3$, R^3 and R^4 being selected from the group consisting of hydrogen and alkyl of up to 6 carbons.

11. 1H-hexafluorocyclobutanol.

3,356,743
PRODUCTION OF 1-NAPHTHOL

Benjamin T. Freure, Charleston, W. Va., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Nov. 21, 1963, Ser. No. 325,443
2 Claims. (Cl. 260—621)

1. The method for converting oxygenated 1,2,3,4-tetrahydronaphthalene to 1-naphthol which comprises the steps of (1) dehydrogenating said oxygenated 1,2,3,4-tetrahydronaphthalene in admixture with hydrogen in contact with a catalyst containing a metal selected from the group consisting of copper and nickel and mixtures thereof as the primary catalytic element at a temperature of from 200° C. to 325° C. for a period of time sufficient to reduce the 1,2,3,4-tetrahydro-1-naphthol content of said oxygenated 1,2,3,4-tetrahydronaphthalene to not greater than about 5 weight percent and (2) dehydrogenating the product of step (1) in admixture with hydrogen in contact with a platinum catalyst at a temperature of from 350° C. to 450° C.

3,356,744
COPPER RECOVERY FROM PHENOL REACTOR MIXTURE

Richard E. Woodward, Kalama, Wash., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Aug. 19, 1964, Ser. No. 390,749
3 Claims. (Cl. 260—621)

1. In a process for converting an aryl monocarboxy compound to the corresponding aryl hydroxy compound by forming a liquid reaction mixture comprising the aryl monocarboxy compound and a copper compound soluble in the reaction mixture and heating said reaction mixture in a reaction zone at a temperature of 200–250° C. in the presence of an oxygen-containing gas and water vapor and wherein at least a portion of said reaction mixture is withdrawn from said reaction zone and is intimately contacted with a liquid aqueous solvent to extract soluble components therefrom, the improvement wherein said reaction mixture, after being withdrawn from said reaction zone and prior to being contacted with said aqueous solvent, is contacted with an oxygen-containing gas at a temperature of at least about 140° C. but less than 200° C.

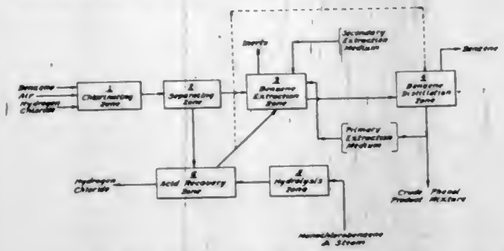
3,356,745
USE OF ABSORPTION MEDIA CONTAINING PHENOL IN RECOVERY OF BENZENE FROM INERTS IN RASCHIG PROCESS

Arthur W. Kelly, Basking Ridge, N.J., assignor to Pullman Incorporated, Chicago, Ill., a corporation of Delaware

Filed July 17, 1964, Ser. No. 383,404
10 Claims. (Cl. 260—629)

1. In a process for the production of phenol wherein benzene is reacted with a halogen ion and oxygen to produce a reactor effluent containing halobenzenes in admixture with unconverted benzene and inert materials, the monohalobenzene and any halogen acid is separated from the reactor effluent, and monohalobenzene is hydrolyzed with steam to produce phenol and hydrogen halide, the improvement for recovering benzene and preventing accumulation of inert materials which comprises: extracting the vaporous halogen acid free benzene mixture in an extraction column with a liquid mixture comprising between about 20 and about 95 weight percent monohalo-

benzene, between about 0 and about 65 weight percent dihalobenzene and between about 5 and about 30 weight percent phenol, selectively absorbing the organic com-



ponents of the benzene mixture in the liquid, venting vaporous inert materials from the top of the column and withdrawing and distilling the resulting liquid extraction medium to recover a vaporous benzene fraction.

3,356,746

PREPARATION OF 2,2,2-TRIFLUOROETHANOL BY CATALYTIC HYDROGENATION

Louis G. Anello, Basking Ridge, and William J. Cunningham, Rockaway, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Sept. 30, 1964, Ser. No. 400,562
14 Claims. (Cl. 260—633)

1. A method for the preparation of 2,2,2-trifluoroethanol which comprises passing a vaporous mixture of 2,2,2-trifluoroethyl trifluoroacetate and hydrogen at a temperature within the range of about 200° C. to 400° C. and at a pressure of one to five atmospheres through a reactor containing a catalyst consisting essentially of a noble metal selected from the group consisting of ruthenium, rhodium, palladium, platinum, osmium, and iridium, and separating 2,2,2-trifluoroethanol from the resulting reaction mixture.

3,356,747

PREPARATION OF 2,2,2-TRIFLUOROETHANOL BY CATALYTIC HYDROGENATION

Louis G. Anello, Basking Ridge, and William J. Cunningham, Rockaway, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Sept. 30, 1964, Ser. No. 400,563
13 Claims. (Cl. 260—633)

1. A method for the preparation of 2,2,2-trifluoroethanol which comprises passing a vaporous mixture of hydrogen and 2,2,2-trifluoroethyl trifluoroacetate at a temperature within the range of about 200° to 400° C. and at a pressure of one to five atmospheres through a reactor containing a chromium oxide based acid-to-alcohol reduction catalyst, and separating 2,2,2-trifluoroethanol from the resultant reaction mixture.

3,356,748

SYNTHESIS OF FLUOROOLEFINS FROM OLEFINS

Richard D. Cramer, Landenberg, Pa., and Frank N. Jones, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Jan. 30, 1964, Ser. No. 341,427
16 Claims. (Cl. 260—653.3)

1. A process for preparing fluorinated terminally unsaturated olefins containing from 2 to 8 carbon atoms, inclusive, wherein the fluorine is substituted on olefinic carbon which comprises heating an intimately mixed mixture comprising:

(1) an alkali metal fluoride;
(2) a terminally unsaturated olefin of from 2 to 8 carbon atoms, inclusive;
(3) palladous chloride; and
(4) an aprotic reaction medium comprising a compound of the class consisting of:
  (a) $R'(NO_2)_n$ wherein n is a cardinal number of from 1 to 2, inclusive, and R' is an aromatic hydrocarbon group of from 6 to 14 carbon atoms which can be substituted with a group of the class consisting of halo, lower alkyl, lower alkyloxy, lower alkoxycarbonyl, and aryloxycarbonyl;
  (b) $R''(COOR''')_n$ wherein n is a cardinal number of from 1 to 2, inclusive, R'' is a hydrocarbon group free of aliphatic unsaturation of from 1 through 18 carbon atoms, and R''' is alkyl of 1 through 18 carbon atoms;
  (c) ethers consisting of an aliphatically saturated hydrocarbon of from 2 through 18 carbon atoms interrupted by 1 to 4 ethereal oxygens, inclusive; and
  (d) mixtures thereof,

under substantially anhydrous conditions.

3,356,749

HYDROGEN HALIDE RECOVERY PROCESS

Christiaan P. van Dijk, Westfield, N.J., assignor to Pullman Incorporated, a corporation of Delaware

Filed May 2, 1963, Ser. No. 277,555
11 Claims. (Cl. 260—650)

1. In the extraction of hydrogen halide from a mixture containing said hydrogen halide and a halogenated hydrocarbon having not more than 7 carbon atoms, the improvement which comprises: in an extraction zone, countercurrently contacting the mixture with a solution of hydrogen halide wherein the hydrogen halide of the solution is dissolved in an inert solvent and is maintained at a concentration between about 15 percent and about 40 percent by weight of halide; maintaining a weight ratio in excess of 10:1 of the hydrogen halide in the solution with respect to the hydrogen halide in the mixture; extracting the hydrogen halide from the mixture in the hydrogen halide solution and increasing the concentration of the halide in the solution while allowing the temperature of said solution to rise in accordance with the heat of absorption; withdrawing and passing the heated hydrogen halide-enriched solution from the extraction zone to a flashing zone; in the flashing zone utilizing the heat generated in the extraction zone to adiabatically flash the hydrogen halide-enriched solution and vaporizing the portion of the hydrogen halide absorbed in the extraction zone; separating substantially pure hydrogen halide vapors from the flashing zone; and recycling the remaining hydrogen halide solution which is cooled by flashing to the extraction zone at the concentration and temperature maintained therein.

3,356,750

DEHYDROGENATION PROCESS

Richard F. Bojanowski, Houston, and John W. Herndon, Pasadena, Tex., assignors to Petro-Tex Chemical Corporation, Houston, Tex., a corporation of Delaware

No Drawing. Filed Jan. 14, 1963, Ser. No. 251,044
11 Claims. (Cl. 260—656)

1. The method for preparing halogen-containing alkenes wherein the halogen is selected from the group consisting of chlorine and fluorine which comprises dehydrogenating in the vapor phase at a temperature above 400° C. a halogen-containing alkane containing 2–6 carbon atoms, 1–4 halogen atoms and at least two hydrogen atoms on adjacent carbon atoms wherein the halogen is selected from the group consisting of chlorine and fluorine with oxygen in a molar ratio of greater than about one-fourth mol of oxygen per mol of halogen-containing alkane, a halogen liberating material wherein the halogen is selected from the group consisting of iodine and bromine in an amount of between 0.001 and 0.1 mol of halogen per mol of halogen-containing alkane, said oxygen being present in a ratio greater than 1.25 mols of oxygen per atom of halogen selected from the group consisting of iodine and bromine, the partial pressure of said halogen-containing alkane being equivalent to less than about 15 inches mercury at a total pressure of one atmosphere in the presence of a material selected from the group consisting of metals of Groups I–A, II–A, III–B, IV–B, V–B, VI–B, VII–B, VIII, II–B, III–A, IV–A, V–A and salts, oxides and hydroxides thereof.

3,356,751

PREPARATION OF METHYLADAMANTANE AND DIMETHYLADAMANTANES

Abraham Schneider, Overbrook Hills, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

No Drawing. Filed Apr. 8, 1966, Ser. No. 541,097
14 Claims. (Cl. 260—666)

1. Process of preparing C_{11}–C_{12} methyl-substituted adamantanes having at least one nonbridgehead methyl substituent which comprises

(a) contacting a tricyclic naphthene charge of the C_{11}–C_{12} range having at least two of the rings joined to each other by 1,3 or 1,4 fusion at a temperature in the range of −10° to 100° C. with an $AlCl_3$-HCl catalyst, an $AlBr_3$-HBr catalyst or an HF-BF_3 catalyst to effect isomerization and produce methyl-substituted adamantane,
(b) stopping the isomerization at a stage where nonbridgehead methyl-substituted adamantane is the main isomerization product and, in the case of a C_{12} tricyclic naphthene charge, before substantial appearance of 1,3-dimethyladamantane, and
(c) recovering from the reaction mixture methyl-substituted adamantane having at least one nonbridgehead methyl substituent.

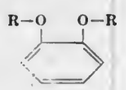
3,356,752

BUTADIENE TRIMERIZATION

Wellington E. Walker, Charleston, W. Va., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed May 18, 1965, Ser. No. 456,804
6 Claims. (Cl. 260—666)

1. In a process for producing a cyclododeca-1,5,9-triene by the trimerization of a conjugated diolefinic hydrocarbon in contact with, as a catalyst, a mixture of a titanium halide and an alkylaluminum halide, the improvement of effecting said trimerization in the presence of a 1,2-dialkoxybenzene of the formula:



wherein each R is lower alkyl, said dialkoxybenzene being present in an amount sufficient to reduce the amount of high polymer formed.

3,356,753

PRODUCTION IN PURE FORM OF COMPOUNDS OF THE CAROTENOID AND VITAMIN-A SERIES

Wilhelm Sarnecki, Ludwigshafen (Rhine), Germany, assignor to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed July 6, 1964, Ser. No. 380,656
Claims priority, application Germany, July 19, 1963, B 72,746
10 Claims. (Cl. 260—666)

1. A process for purifying water-insoluble or sparingly water-soluble compounds of the carotenoid and vitamin-A series which comprises treating one of the said compounds with a water-soluble surfactant and treating it with water and thereafter washing said compound with water.

3,356,754

PREPARATION OF LIQUID POLYMERS OF STYRENE AND BUTADIENE

Clinton F. Wofford, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Oct. 5, 1964, Ser. No. 401,654
The portion of the term of the patent subsequent to Dec. 27, 1983, has been disclaimed and dedicated to the Public
19 Claims. (Cl. 260—669)

1. A process for preparing liquid conjugated diene polymers which comprises contacting a monomeric material selected from the group consisting of (1) at least one conjugated diene and (2) a mixture of a conjugated diene and a vinyl-substituted aromatic hydrocarbon in which said vinyl group is attached to a nuclear carbon atom, with a catalyst which forms on mixing materials comprising (a) an organolithium compound having the formula $R(Li)_x$ wherein R is a hydrocarbon radical selected from the group consisting of aliphatic, cycloaliphatic and aromatic radicals and x is an integer from 1 to 4, inclusive, and (b) an organic compound selected from the group consisting of compounds having the following formulas:

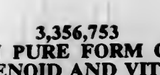
(1) R'M

(2) $R'(YM)_n$

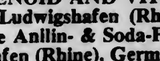
(3)



(4)

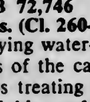


(5)

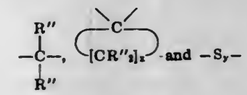


and

(6)



wherein R' is selected from the group consisting of aliphatic, cycloaliphatic and aromatic radicals, M is an alkali metal selected from the group consisting of potassium, rubidium and cesium, R'' is selected from the group consisting of hydrogen, and aliphatic, cyclophatic and aromatic radicals, Q is selected from the group consisting of



radicals where R'' is as defined above, x is an integer from

4 to 5, inclusive, and y is an integer from 1 to 3, inclusive, R''' is selected from the group consisting of aliphatic, cycloaliphatic and aromatic radicals, Y is selected from the group consisting of oxygen and sulfur, and *n* is an integer from 1 to 3, inclusive, in the presence of a diluent comprising at least 30 weight percent of an alkyl-substituted aromatic hydrocarbon.

3,356,755
SEPARATION PROCESS

Rodney D. Beckham, Bridgeton, Mo., and Charles H. Middlebrooks, Dickinson, Tex., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Sept. 26, 1966, Ser. No. 581,742

10 Claims. (Cl. 260—677)

1. A process for separating alkyl halides from unsaturated aliphatic hydrocarbons which comprises contacting in liquid phase a mixture of alkyl halides of 2 to 10 carbon atoms and unsaturated aliphatic hydrocarbons with an alkyl sulfoxide solvent, forming an extract and raffinate phase and thereafter separating said extract and raffinate phases, said alkyl halides being alkyl chlorides or alkyl bromides.

3,356,756
POLYMERIZATION PROCESS AND COBALT OXIDE ON CARBON CATALYST THEREFOR

Robert G. Schultz, Vinita Park, James M. Schuck, Webster Groves, and Morris R. Ort, St. Louis, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Sept. 23, 1963, Ser. No. 310,884

13 Claims. (Cl. 260—683.15)

1. A process for the polymerization of polymerizable olefin hydrocarbons which comprises contacting polymerizable olefin hydrocarbons with a catalyst consisting of cobalt oxide supported on activated carbon, said catalyst prepared by impregnating an ammoniated activated carbon support with a cobalt salt dissolved in ammonium hydroxide, said cobalt salt being decomposible to a cobalt oxide and being selected from the group consisting of cobalt carboxylate and cobalt carbonate, drying the resulting impregnated activated carbon support, and activating said impregnated activated carbon support by heating in an inert atmosphere at temperatures of from 200° C. to 550° C.

3,356,757
HYDROCARBON CONVERSION

James F. Roth and Andrew R. Schaefer, St. Louis, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Sept. 23, 1964, Ser. No. 398,778

14 Claims. (Cl. 260—683.3)

1. The process for the dehydrogenation of acyclic paraffin hydrocarbons of 6 to 30 carbon atoms which comprises contacting said acyclic paraffin hydrocarbons at an elevated temperature of 400 to 600° C. with a catalyst comprising approximately 2 to 20 percent by weight of molybdenum, as an oxide, deposited on an inert carrier, said catalyst having a surface area of greater than 100 square meters per gram.

3,356,758
SILOXANE-OXYALKYLENE BLOCK COPOLYMERS AND PROCESS THEREFOR

George M. Omietanski, Tonawanda, and Wallace G. Reid, Grand Island, N.Y., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Aug. 7, 1963, Ser. No. 300,644

13 Claims. (Cl. 260—824)

1. A composition of matter selected from the class consisting of (1) block copolymers having the formula:

$$R_3SiO(R_2SiO)_nSiR[(OC_kH_{2k})_mOR]_2$$

wherein R is a hydrocarbyl radical, *k* is an integer from 2 to 4 inclusive, *m* is a number of at least 2, and *n* is a number having a value of at least 2, and (2) block copolymers having the formula:

$$R_3SiO(R_2SiO)_nSiR[OC_kH_{2k})_mOR]_2$$

wherein R, *k*, *m* and *n* are defined above.

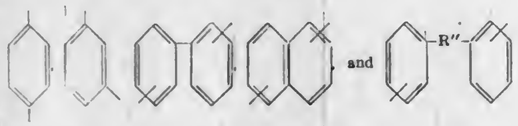
3,356,759
COMPOSITION COMPRISING A POLYPYROMELLITIMIDE AND A FLUOROCARBON RESIN

Clare W. Gerow, Buffalo, N.Y., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Continuation of application Ser. No. 245,652, Dec. 19, 1962. This application Nov. 29, 1966, Ser. No. 597,564

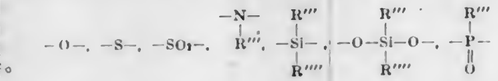
12 Claims. (Cl. 260—857)

1. A process which comprises mixing at least one diamine having the formula $H_2N—R'—NH_2$ wherein R' is selected from the group consisting of

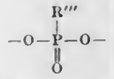


and

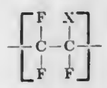
wherein R'' is selected from the group consisting of



and



wherein R''' and R'''' are each selected from the group consisting of alkyl and aryl, with at least one tetracarboxylic acid dianhydride in a solvent for at least one of said diamine and said dianhydride under conditions to form a polyamide-acid; adding, in an amount sufficient to provide 10 to 50 weight percent thereof, particles of a halocarbon resin having the recurring unit



wherein X is selected from the group consisting of chlorine and fluorine to form a shapeable polymeric composition having said particles dispersed uniformly therein; shaping said composition into a shaped article; and converting the polymer in said polymeric composition to polyimide.

3,356,760
RESINOUS MATERIAL CONTAINING AN AROMATIC POLYIMIDE, A FLUOROCARBON POLYMER AND A POLYAMIDE

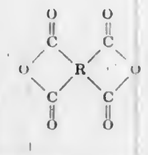
Attila Matray, Buffalo, N.Y., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Continuation of application Ser. No. 368,361, May 18, 1964. This application Mar. 16, 1967, Ser. No. 623,773

13 Claims. (Cl. 260—857)

1. A composition of matter comprising, as three essential components,

(1) 60–87.5 parts by weight of a polyamide-acid of a diamine of the formula $H_2N—R'—NH_2$ where R' is arylene and a tetracarboxylic acid dianhydride of the formula



where R is a tetravalent organic radical;

(2) 20–40 parts by weight of a halocarbon resin having the recurring unit



where X is selected from the group consisting of chlorine and fluorine; and

(3) 1–15 parts by weight of a polyamide selected from the group consisting of

(a) linear condensation polyamides of an aliphatic dibasic acid of 4–18 carbons and an alkylene diamine of 2–10 carbons; and

(b) aromatic polyamides having the recurring structural unit

wherein R_1 is selected from the group consisting of hydrogen and alkyl of 1–4 carbons and wherein Ar_1 and Ar_2 are each a divalent aromatic radical, the chain-extending bonds of each of these divalent aromatic radicals being other than ortho to one another.

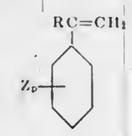
3,356,761
MELT PROCESSABLE POLYPHENYLENE ETHER AND PROCESS

Daniel W. Fox, Pittsfield, Mass., assignor to General Electric Company, a corporation of New York

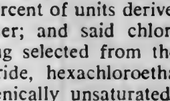
No Drawing. Filed Apr. 12, 1967, Ser. No. 630,196

26 Claims. (Cl. 260—874)

1. A melt processable, curable composition comprising a thermoplastic polyphenylene ether of high molecular weight and a liquid, vinyl unsaturated material having a general formula selected from the group consisting of



and



where R is a member selected from the group consisting of hydrogen and methyl; Z is a member selected from the group consisting of vinyl, hydrogen, halogen, alkyl and alkoxy; and *p* is a whole number equal to from 0 to 3, said vinyl unsaturated material constituting from 1 to 60%, by weight of the total composition.

3,356,762
VULCANIZABLE ETHYLENE COPOLYMER RUBBERS

Earl D. Holly, deceased, late of Midland, Mich., by Chemical Bank and Trust Co., administrator, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Nov. 15, 1965, Ser. No. 507,960

9 Claims. (Cl. 260—878)

1. A method for making a sulfur-curable non-cross-linked modified ethylene copolymer rubber from a starting ethylene copolymer rubber having less than about 10 percent relative crystallinity and less than about 0.3 mole of residual ethylenic double bonds per liter of copolymer rubber by intimately mixing one part of the ethylene copolymer rubber with from about 0.035 part to about 24 parts by weight of a chlorine-containing halohydrocarbon, wherein the halogen atoms have atomic numbers from 9 to 17, and effecting reaction between the ethylene copolymer rubber and the chlorine-containing halohydrocarbon by reactive free radical producing means at a temperature between about 120° C. and about 250° C. whereby there is obtained a modified ethylene copolymer rubber having less than about 4 percent by weight of chlorine; said starting copolymer rubber comprising (a) from about 20 to about 80 mole percent of units derived from ethylene, (b) from about 80 to about 20 mole percent of units derived from a terminally unsaturated mono-olefin having the formula

$$RCH=CH_2$$

where R is a C_1 to C_4 alkyl radical, and (c) from 0 to about 10 mole percent of units derived from a monovinyl aromatic monomer; and said chlorine-containing halohydrocarbon being selected from the class consisting of carbon tetrachloride, hexachloroethane and a halogen-substituted ethylenically unsaturated aliphatic hydrocarbon having at least one of two classes of chlorine substituents, Class A being a chlorine atom attached to an allylic carbon atom and Class B being at least two chlorine atoms attached to doubly bonded carbon atoms.

3,356,763
CONTINUOUS PROCESS FOR PRODUCING BLOCK COPOLYMERS OF DIENES AND VINYL AROMATIC HYDROCARBONS

Robert E. Dollinger, Bartlesville, Okla, and Robert L. Huxtable, Fort Smith, Ark., assignors to Phillips Petroleum Company, a corporation of Delaware

Filed Apr. 9, 1962, Ser. No. 186,178

12 Claims. (Cl. 260—880)

1. A continuous process for preparing a block copolymer which comprises continuously charging to a prereaction zone the following materials: (1) a conjugated diene selected from the group consisting of 1,3-butadiene, isoprene and piperylene, (2) a vinyl-substituted aromatic hydrocarbon, (3) an organolithium polymerization initiator, and (4) a hydrocarbon diluent selected from the group consisting of paraffinic, cycloparaffinic and aroma-

tic hydrocarbons, said prereaction zone being maintained at conditions to maintain said materials substantially completely in the liquid phase; withdrawing from said prereaction zone an actively polymerizing effluent containing polymer which is 10 to 75 weight percent of the originally charged monomers, unreacted monomer, and diluent; passing said effluent into one end of an elongated, tubular reaction zone; and continuously recovering from the downstream end of said latter zone a reaction mixture containing a block copolymer of said conjugated diene and said vinyl-substituted aromatic hydrocarbon.

3,356,764

OZONE-RESISTANT BLEND OF A DIENE POLYMER AND AN ETHYLENE-PROPYLENE RUBBER

Anthony V. Gentile, Waterbury, Conn., assignor to Uniroyal, Inc., a corporation of New Jersey

No Drawing. Filed Jan. 24, 1966, Ser. No. 522,363
10 Claims. (Cl. 260—889)

1. An ozone-resistant composition comprising a vulcanized mixture of

(1) 100 parts of a conjugated diene polymer rubber
(2) 5 to 50 parts of ethylene-propylene rubber, and
(3) 0.5 to 5 parts of a substance selected from the group consisting of poly(1,2-dihydro-2,2,4-trimethylquinoline) and 6-ethoxy-1,2-dihydro-2,2,4-trimethyl quinoline.

3,356,765

ISOTACTIC POLYPROPYLENE SHEETS CONTAINING ISOTACTIC POLY-1-BUTENE

Pompilio Musso and Giuseppe Guzzetta, Milan, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy, a corporation of Italy

No Drawing. Filed Sept. 20, 1963, Ser. No. 310,498
Claims priority, application Italy, Oct. 11, 1956, 14,865/56
2 Claims. (Cl. 260—897)

1. A thermoplastic sheet prepared from a blend of (1) polypropylene comprising at least 75% of linear, regular head-to-tail isotactic-crystalline macromolecules and (2) about 5% to 40% by weight of poly-1-butene comprising at least 75% of linear, regular head-to-tail isotactic-crystalline macromolecules, said sheet being thermo-resistant to temperatures ranging up to about 110° C., and having a high mechanical strength and an elastic modulus ranging from about 7,000 to 15,000 kg./cm.^{2}.

3,356,766

PRESSURE-SENSITIVE ADHESIVE COMPRISING ATACTIC POLYPROPYLENE

Richard E. Ware, Trainer, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

No Drawing. Filed May 5, 1965, Ser. No. 453,493
4 Claims. (Cl. 260—897)

1. A thermoplastic, pressure-sensitive hot melt adhesive composition consisting essentially of a homogeneous mixture of a major proportion of atactic polypropylene having a molecular weight of 15,000 to 60,000, and a minor proportion of a terpene resin having a molecular weight of about 1200.

3,356,767

DIMETHYL TRIPHENYL PHOSPHINIMINE PHOSPHATE

Rolf Appel, Bonn, Germany, assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia

No Drawing. Filed Dec. 13, 1963, Ser. No. 330,247
1 Claim. (Cl. 260—926)

Dimethyl triphenylphosphinimine phosphate.

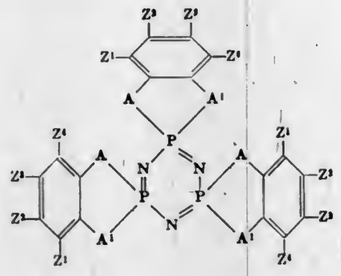
3,356,768

MOLECULAR INCLUSION ADDUCTS OF PHOSPHONITRILIC HALIDE TRIMER DERIVATIVES

Harry Rex Allcock, Darien, and Lester Aaron Siegel, Stamford, Conn., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed May 18, 1964, Ser. No. 368,383
9 Claims. (Cl. 260—927)

1. A molecular inclusion adduct of an inert organic liquid and a compound of the formula



wherein Z^1 through Z^4 each represent a member selected from the group consisting of hydrogen, lower alkyl, halogen, lower alkoxy, nitro and halogeno(lower)alkyl, and A and A^1 each represent a member selected from the group consisting of oxygen and sulfur.

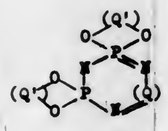
3,356,769

PHOSPHONITRILIC HALIDE DERIVATIVES AND ADDUCTS THEREOF

Harry Rex Allcock, Darien, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

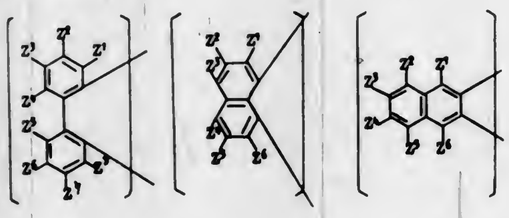
No Drawing. Filed July 13, 1964, Ser. No. 382,382
12 Claims. (Cl. 260—927)

1. The compound of the formula

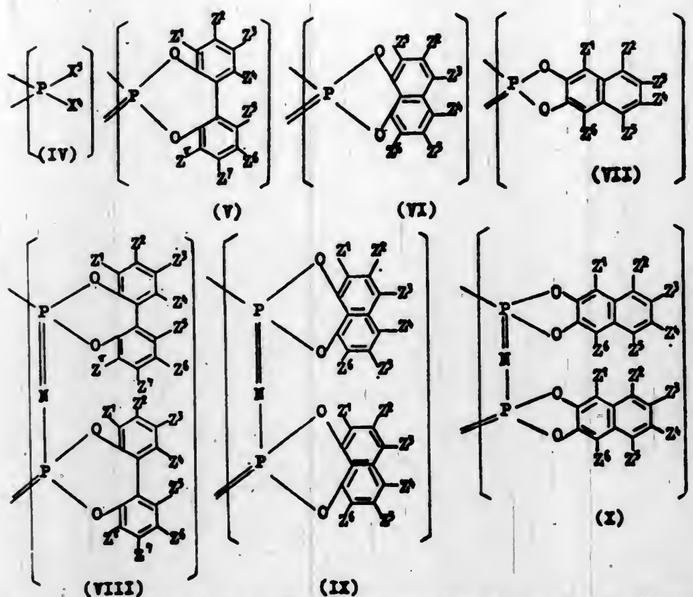


(III)

wherein Q' represents a member selected from the group consisting of



wherein Q represents a member selected from the group consisting of



(IV) (V) (VI) (VII) (VIII) (IX) (X)

wherein X^1 through X^8 each represent a member selected from the group consisting of chlorine and bromine; and wherein Z^1 through Z^8 each represent a member selected from the group consisting of hydrogen, lower alkyl, halogen, lower alkoxy, nitro, halogen(lower)alkyl, cyano and phenoxy.

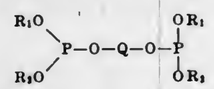
3,356,770

DI[DIHYDROCARBYLPHOSPHITO CYCLOHEXYL (PHENYL)]ALKYLIDENE

Millard S. Larrison, Livingston, N.J., assignor, by mesne assignments, to First National Bank of Morgantown, Morgantown, W. Va., and Small Business Administration, Richmond, Va.

No Drawing. Filed June 18, 1964, Ser. No. 376,202
4 Claims. (Cl. 260—930)

1. A compound having the formula



where R_1 and R_2 are selected from the group consisting of alkyl of 8–18 carbon atoms, aryl and haloaryl and at least two of R_1 and R_2 are alkyl and Q is the divalent residue of a member of the group consisting of a dihydric phenol and a hydrogenated dihydric phenol.

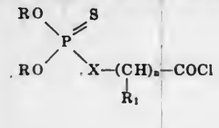
3,356,771

O,O - DIALKYLTHIONOPHOSPHORYL OR O,O-DIALKYLDITHIOPHOSPHORYL FATTY ACID CHLORIDES

Guenter Scheuerer and Heiner Dickhaeuser, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed Dec. 26, 1963, Ser. No. 333,723
Claims priority, application Germany, Jan. 5, 1963, B 70,230
9 Claims. (Cl. 260—941)

1. A chemical compound having the formula:



in which R denotes a lower alkyl radical, R_1 denotes a member selected from the group consisting of hydrogen and lower alkyl, X denotes a member selected from the group consisting of oxygen and sulfur and *n* denotes one of the whole numbers 1 to 5.

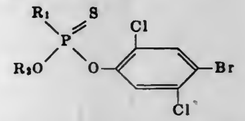
3,356,772

O-ALKYL-O-HALOPHENYL-ALKYL-THIOPHOSPHONATES

Wolfgang Buck, Richard Sehring, and Karl Zeile, Ingelheim (Rhine), Germany, assignors to C. H. Boehringer Sohn, Ingelheim am Rhine, Germany, a limited partnership of Germany

No Drawing. Filed Apr. 17, 1964, Ser. No. 360,769
Claims priority, application Germany, Apr. 29, 1963, B 71,701
5 Claims. (Cl. 260—961)

1. A compound of the formula



wherein R_1 and R_2 are each selected from the group consisting of acyclic hydrocarbons of 1 to 4 carbon atoms.

3,356,773

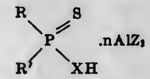
PROCESS FOR PREPARING PHOSPHINATES

William E. Bacon, Kent, and Norman A. Meinhardt, Cleveland, Ohio, assignors to The Lubrizol Corporation, Wickliffe, Ohio, a corporation of Ohio

No Drawing. Filed Jan. 28, 1964, Ser. No. 340,810
13 Claims. (Cl. 260—978)

1. A process for preparing phosphorus compositions comprising reacting at a temperature within the range from about 50° C. to about 200° C.

(a) a phosphorus compound having the formula



wherein X is selected from the class consisting of oxygen and sulfur; *n* is a number from 1 to 2; Z is a halogen; and R and R' are hydrocarbon or chlo-

rine- or bromine-substituted hydrocarbon radicals, with

(b) a reactive hydrogen-containing compound selected from the class consisting of amines, alcohols, mercaptans, phenols, and thiophenols.

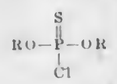
3,356,774

PROCESS FOR THE MANUFACTURE OF O,O-DIALKYLTHIONO-PHOSPHORIC ACID CHLORIDES

Hermann Niermann, Bruhl, near Cologne, Joseph Cremer, Hermulheim, near Cologne, and Heinz Harnisch, Lovenich, near Cologne, Germany, assignors to Knapsack-Griesheim Aktiengesellschaft, Knapsack, near Cologne, Germany, a corporation of Germany

No Drawing. Filed Aug. 27, 1964, Ser. No. 392,611
Claims priority, application Germany, Sept. 13, 1963, K 50,811; July 24, 1964, K 53,557
15 Claims. (Cl. 260—981)

1. A process for the manufacture of O,O-dialkylthionophosphoric acid chlorides having the general formula:



in which R stands for an alkyl radical having 1 to 6 carbon atoms, which comprises reacting a phosphorus pentasulfide suspension in an inert solvent at a temperature within the range of about 0 to 150° C. with chlorine and an alcohol having 1 to 6 carbon atoms by introducing a stream of chlorine into the said suspension and adding dropwise concurrently therewith the alcohol, allowing the chlorinating reaction to proceed to completion, expelling the said solvent from the resulting reaction mixture and isolating O,O-dialkylthionophosphoric acid chloride by distillation.

3,356,775

PURIFICATION OF TRIARYL PHOSPHATES

Robert S. Mitchell, Webster Groves, Mo., assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed July 31, 1963, Ser. No. 299,099
8 Claims. (Cl. 260—990)

1. In a process which comprises the preparation of triaryl phosphates by reacting a compound selected from the group consisting of hydroxyaryl and mixed hydroxyaryl compounds with phosphorous oxychloride in the presence of a metal halide catalyst to form a crude triaryl phosphate, the improvement which comprises contacting said phosphate with from about 1.0% to about 100% by weight of methanol based on the weight of the phosphate, at a temperature of from about 50° C. to about 150° C., cooling and filtering to recover the phosphate.

3,356,776

METHOD OF FABRICATING CERAMIC NUCLEAR FUEL PRODUCT

Albert B. Meservey, Oak Ridge, John D. Sease, Knoxville, and Robert B. Fitts, Oak Ridge, Tenn., assignors to the United States of America as represented by the United States Atomic Energy Commission

No Drawing. Filed Sept. 30, 1966, Ser. No. 584,065
10 Claims. (Cl. 264—.5)

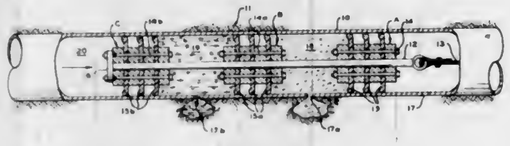
1. A method for producing a ceramic product of at least one actinide material and formed in a predetermined configuration, comprising the steps of admixing powdered actinide material with an aqueous solution containing sufficient anions to successively form a colloidal dispersant and a coagulated, readily settleable precipitate, concentrating the precipitate by removing therefrom a sufficient quantity of water to provide a material with a plastic consistency, wet forming the concentrated material into the predetermined configuration, removing substantially all the remaining water from the formed material, thereafter heating the formed material to a temperature sufficient to effect sintering thereof, and maintaining the temperature for a duration sufficient to provide the ceramic product.

3,356,777

METHOD AND MEANS FOR SEALING LEAKS IN BURIED CONDUITS

Herbert M. Barrett, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Aug. 10, 1964, Ser. No. 388,580
12 Claims. (Cl. 264—36)



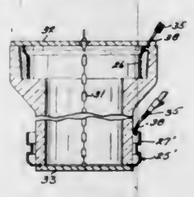
1. The method of sealing leaks in a buried conduit which comprises passing an aqueous slurry of diatomite, containing a dispersing agent for said diatomite, through said conduit under sufficient pressure to force a portion of said slurry out of said conduit at said leaks so as to form a fluid permeable mat at the locus of the leak; and then passing an aqueous emulsion of a bitumen through said conduit under sufficient pressure to force a portion of said emulsion into contact with the diatomite at said leaks whereby the bitumen of said emulsion seals said leaks.

3,356,778

METHODS OF MAKING SEALS FOR PIPE JOINTS

Richard H. Anderson, Dover, Ohio, assignor to The Robinson Clay Product Company, Akron, Ohio, a corporation of Maine

Original application Aug. 1, 1962, Ser. No. 213,939, now Patent No. 3,185,491, dated May 25, 1965. Divided and this application Nov. 23, 1964, Ser. No. 413,104
4 Claims. (Cl. 264—45)



1. A method of making a seal for pipe joints comprising the steps of (1) positioning a single unitary annular thin hard tough shell of plastic material in radial spaced relationship with one end of a pipe length for forming a seal for connection with other pipes, said shell extending the full axial length of the seal, (2) applying a pourable water resistant composition between said shell and its associated pipe end, and (3) solidifying and permanently bonding said composition to the shell and to the pipe end and thereby form a strong water resistant seal on said pipe end.

3,356,779

METHOD OF CURING ARTICLES MANUFACTURED FROM CEMENT AND ASBESTOS

Herbert C. Schulze, 3690 Highland Drive, Carlsbad, Calif. 92008

No Drawing. Filed June 4, 1965, Ser. No. 461,526
3 Claims. (Cl. 264—82)

1. The process of manufacturing an article from Portland cement, asbestos and silica, comprising:

mixing Portland cement, asbestos and silica with water;

pressure forming the resulting mixture into a shaped article;

placing said shaped article in a chamber;

introducing an atmosphere of carbon dioxide into said chamber;

leaving said shaped article within said chamber until the surfaces of said article are given an initial set thereby reducing the danger of handling said article until it is further cured;

removing said shaped and initially set article from said chamber;

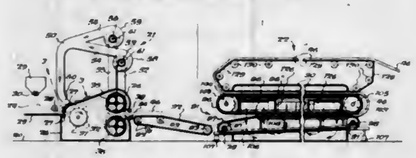
and thereafter placing said article in an autoclave and subjecting it to steam under pressure.

3,356,780

FABRIC MAKING METHOD AND APPARATUS

Thomas D. Cole, Lockport, N.Y., assignor, by mesne assignments, of fifty percent to Thomson and Schovee, Rochester, N.Y., a partnership, and fifty percent to Thomas D. Cole, Lockport, N.Y.

Filed Aug. 7, 1964, Ser. No. 389,513
17 Claims. (Cl. 264—91)



6. A method of forming a web of fibrous materials on a pair of closely spaced rotating foraminous screens mounted in a chamber which comprises:

(a) moving said fibrous material containing a dry, powdered resin to an entrance end and into said chamber containing said screens;

(b) creating a suction interiorly of said screens to draw the fibrous material and resin onto the screens; and

(c) projecting said fibrous material and said resin across said chamber by a flow of the air from adjacent the entrance end toward said screens, said flow of air and suction and the shape of the chamber being such that substantially homogeneous webs are formed on said screens, said chamber being under a higher differential in pressure than the pressure within the screens, the fibers being substantially dry and fluffy, the fibers and resin are light enough so that a turbulent action occurs in said chamber and at said screens to the end that the fibers and resin when in the webs are thoroughly intermingled and the fibers are laid in the web at random with a major portion of the fibers extending at angles to the surface of the web including a normal angle.

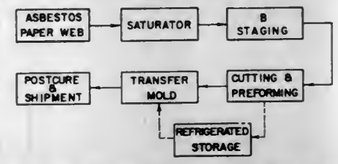
3,356,781

METHOD OF TRANSFER MOLDING

Chester J. Sulewski, Metuchen, and John G. Hedin, Somerville, N.J., assignors to Johns-Manville Corporation, New York, N.Y., a corporation of New York

Filed Oct. 3, 1963, Ser. No. 313,491
8 Claims. (Cl. 264—137)

1. A method for making plastic pipe fittings comprising the steps of supplying a continuous web of asbestos paper to a saturating step, saturating the web with a liquid resin composition containing a curable resin selected from the group consisting of polyester, epoxy, epoxy-novolac, phenolic resins, and mixtures thereof, a curing agent for the curable resin and a solvent, removing substantially all of the solvent by heating the resin to 150 to 350° F. such that the curing agent is able to react with the resin and partially cure the resin to a B-stage to insure fiber resin mobility and integral plastic flow during transfer forming a wound roll shaped form from said saturated web, introducing the roll form into a preheated receptacle, transferring the roll form to a mold cavity by exerting pressure thereon to cause the form to take the configuration of the mold, and heating the mold to advance the curable resin to an infusible solid state.

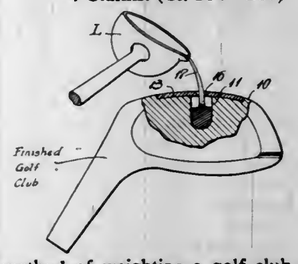


3,356,782

METHOD OF WEIGHTING A GOLF CLUB

James Whyte, South Hadley, Mass., assignor to A. G. Spalding & Bros., Inc., Chicopee, Mass., a corporation of Delaware

Filed Nov. 26, 1963, Ser. No. 325,894
4 Claims. (Cl. 264—267)



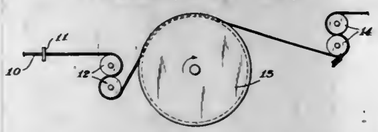
1. A method of weighting a golf club which has had all finishing operations performed thereon, said club including a club head having a cavity therein, said cavity being closed by an overlying member except for an aperture therein communicating with said cavity, said cavity being devoid of any weighting material therein, the steps of feeding a hardenable weighting material in fluid form through said aperture into said cavity in the head to provide the required weight in the head, closing said aperture and solidifying the weighting material.

3,356,783

PROCESS FOR PREPARING FILAMENTARY MICROTAPES OF LABYRINTHIAN CROSS SECTION

Fred A. Phillips, Coleman, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Feb. 4, 1966, Ser. No. 534,601
9 Claims. (Cl. 264—285)



1. A method for preparing filamentary microtapes of labyrinthian cross section comprising (1) the passage of a flat, flexible tape of an organic thermoplastic polymer

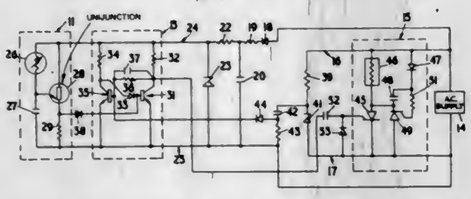
into a moving heated restricting means of narrower width than said tape while said tape is under substantially no longitudinal stress said restricting means moving in the direction of travel of said tape and at essentially the same peripheral speed as the linear speed of said tape so that the only shaping forces exerted on said tape are lateral forces, said tape being retained in said restricting means until said tape has attained the desired cross-sectional configuration, said heated restricting means being of different shape than the ultimate configuration of the produced filamentary microtape, said tape being passed into said heated restricting means in such a manner that the longitudinal axis of said tape is centered in said restricting means, and (2) removing the shaped tape from said restricting means, followed by (3) cooling the so-formed filamentary microtape.

ELECTRICAL

3,356,784
APPARATUS FOR VARYING AN ALTERNATING CURRENT FLOWING IN A LOAD TO CONTROL THE VALUE OF A PARAMETER SUCH AS THE TEMPERATURE OF A FURNACE

Michael Murray Bertioli, Lichfield, and Maurice James Wright, Birmingham, England, assignors to Joseph Lucas (Industries) Limited, Birmingham, England

Filed Mar. 2, 1965, Ser. No. 436,624
Claims priority, application Great Britain, Mar. 3, 1964, 8,875/64
12 Claims. (Cl. 13—24)



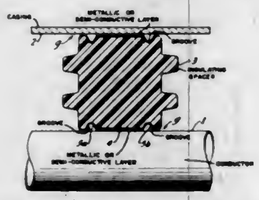
1. An A.C. control circuit for controlling the value of a parameter by varying the mean current flow in a load, comprising in combination an A.C. supply, switch means connected in series with said load across said A.C. supply, said switch means being reverse biased by said A.C. supply at the termination of each cycle thereof and thereby turned off, a pulse generator, means varying the frequency of said pulse generator in accordance with the value of said parameter, said pulse generator having a frequency which is greater than the frequency of the A.C. supply when the value of the parameter is below a predetermined value, but which decreases as the value of the parameter increases, a bistable circuit coupled to said A.C. supply and to said pulse generator, said bistable circuit having first and second stable states and being driven to said first state by pulses received from said pulse generator, said A.C. circuit driving the bistable circuit to its second state at the commencement of each cycle of the A.C. supply unless the bistable circuit is already in its second state, and means operable by the bistable circuit when driven to its second state for turning said switch means on.

3,356,785
ELECTRIC TRANSMISSION COAXIAL CABLES

Yasuhisa Yoshida, Nishinomiya, and Masakazu Suzuki, Osaka, Japan, assignors to Sumitomo Electric Industries, Ltd., Osaka, Japan, a company of Japan

Filed Dec. 29, 1964, Ser. No. 421,898
Claims priority, application Japan, May 27, 1964, 39/41,127
15 Claims. (Cl. 174—28)

1. A fluid insulated electric transmission coaxial cable having an inner conductor concentrically supported by insulating spacers in an outer conductor, inner and outer insulating support surfaces on said insulating spacers in substantially continuous surface contact with the adjacent surfaces of said conductors, characterized by at least one continuous groove in and along at least one of said insulating support surfaces such that each marginal edge surface of each grooved insulating support surface is provided with a continuous groove edge therealong, conductive material in each of said grooves and

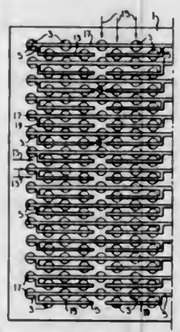


extending in surface engagement therewith from said continuous groove edge to reduce the potential gradient at the juncture of each of said marginal edge surfaces and its adjacent conductor surface.

3,356,786
MODULAR CIRCUIT BOARDS

John D. Helms, Dallas, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Oct. 7, 1964, Ser. No. 402,228
11 Claims. (Cl. 174—68.5)

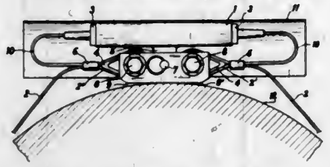


2. An intermediate circuit board comprising an insulating laminate, said laminate having an array of holes extending therethrough for the selective reception in at least some of the holes of discrete conductor pieces, said holes being disposed according to repetitive geometric groupings, and a number of duplicate patterns of conductive material attached to one face of the laminate and thereby insulated from one another, all of the holes of each grouping being bridged by a pattern for conductive attachment thereto of such conductor pieces as may be located in any of the holes bridged by said pattern, each of said groupings of holes comprising at least two adjacent rows of holes, the holes in said rows being in staggered relationship to one another, each of said patterns comprising a continuous strip bridging all the holes in one of the rows, said strip having branches each of which bridges at least one hole in an adjacent row.

3,356,787
ELECTRICAL INSTRUMENT CABLE-SUPPORTED APPARATUS

Anders F. Feyling, Cambridge, Mass., assignor to Geodyne Corporation, Waltham, Mass., a corporation of Massachusetts

Filed June 28, 1966, Ser. No. 561,104
6 Claims. (Cl. 174—70)

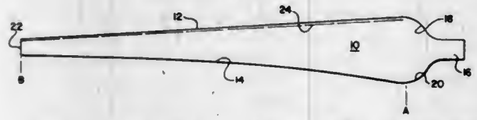


5. An electrical instrument cable-supported apparatus having, in combination, an instrument housing package provided with electrical connector means communicating with the interior of the housing, a mounting bracket to which the housing is secured and to opposite ends of which terminal portions of sections of a cable are mechanically connected, the bracket having an exposed outer bearing surface displaced from the said terminal portions, electrical conductor means comprising a substantially fixed loop connected between said electrical connector means and at least one of said terminal cable portions, the said outer bearing surface having a substantially flat portion adapted to bear against a drum about which the cable may be wound with the said cable sections assuming the strain between said terminal cable portions while preventing tension upon the said substantially fixed electrical conductor loop and its connection to the instrument housing, the mechanical connection of at least said one terminal cable portion to said bracket comprising eyelet means supported upon said bracket and about which said one cable portion is tightly wound back upon itself and secured to form a loop continuous with the first-mentioned loop.

3,356,788
STRESS RELIEF CONES FOR HIGH VOLTAGE, SHIELDED CONDUCTORS

Thomas W. Callahan, Massena, and Edward K. Duffy, Rome, N.Y., assignors to Aluminum Company of America, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Nov. 19, 1963, Ser. No. 324,783
4 Claims. (Cl. 174—73)

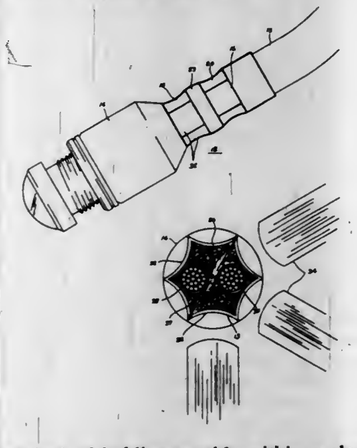


1. A prefabricated one-piece tapered pennant-shaped strip of insulating material for contiguous overlying insulative contacting convolute wrapping from a leading to a trailing end thereof on exposed insulation of a high voltage conductive ground shielded cable adjacent the terminated shielding thereof and axially away therefrom towards a terminal end of the cable to provide a substantially theoretically perfect radially built-up stress relief cone against breakdown potential between the exposed insulation and shielding, said one-piece pennant-shaped strip, in planar disposition, having a maximum transverse width axially between lesser transverse width leading and trailing ends thereof contiguously connected on each opposite side of a longitudinal axis of the strip by a smoothly blended oppositely converging contiguous major marginal edge trace, that portion of the contiguous length of one of the opposite major marginal edge traces of the strip connecting the trailing end with the maximum transverse width thereof, on the side of the longitudinal axis adjacent the cable shielding on convolute wrapping of the strip on the exposed insulation of the cable, conforming to the exponential function of the double logarithmic curve of the theoretically perfect stress relief cone established for the rated voltage capacity of the cable, and said strip having a guide line inwardly disposed from and extending along at least one major marginal edge trace thereof for visual guiding convolute substantial registration of the same marginal edge in successive overlying wraps of the strip.

3,356,789
BAND-LIKE CRIMP

John R. Van Patten, Waynesboro, Va., assignor to General Electric Company, a corporation of NewYork

Filed Aug. 11, 1965, Ser. No. 478,917
7 Claims. (Cl. 174—74)



1. A method of holding a cable within a close fitting sleeve, comprising inserting one end of said cable into said sleeve, crimping said sleeve into at least two pluralities of linear segments around the circumference thereof, said pluralities of linear segments being spaced from each other to permit stress relief therebetween, further crimping each of said linear segments into arcuate segments substantially equal in radius to the radius of said sleeve so that each segment presses in on said cable to inhibit movement of said cable with respect to said sleeve.

4. A crimp for holding a cable within a close fitting sleeve, comprising a plurality of circular bands of arcuate indentations in said sleeve, the ends of each of said arcuate indentations forming unaltered portions of the surface of said sleeve, each of the arcuate indentations in the wall of said sleeve being substantially a reversal of the original convex curve of said sleeve and bearing radially on said cable to prevent relative movement between said sleeve and said cable, said bands of arcuate indentations being spaced from each other to provide a pressure relief for said cable.

3,356,790
COAXIAL CABLE

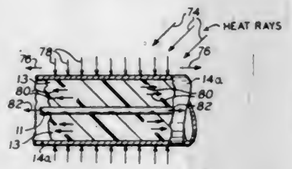
Fred F. Polizzano, Allendale, and Daniel E. Robinson, Metuchen, N.J., assignors to General Cable Corporation, New York, N.Y., a corporation of New Jersey

Filed Feb. 18, 1966, Ser. No. 528,495
12 Claims. (Cl. 174—102)

1. A coaxial cable comprising a center conductor, insulation surrounding the conductor, an outer metal sheath formed of a strip curved to surround the insulation and said sheath being of substantially uniform cross-sectional periphery throughout its length, the inside surface of the sheath being roughened and the sheath

maintaining some pressure on the insulation continuously along the length of the insulation so as to provide friction between the insulation and the sheath, the roughened surface having a coefficient of static friction between the sheath and the insulation that transmits the motion of longitudinal thermal expansion of the sheath to the insulation, the insulation being of sufficient shear strength with respect to the elasticity and cross section of the center conductor to transmit the motion of longitudinal expansion of the sheath to the center conductor to lengthen said conductor in accordance with changes in the length of the sheath when the sheath is heated to a higher temperature than the conductor.

10. The method of making a coaxial cable which comprises applying and bonding electrical insulation to



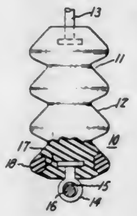
a center conductor, treating at least one surface of a metal strip to roughen the surface, applying the strip lengthwise to the insulation, forming the strip progressively around the insulation as a tube having an inside diameter greater than the outside diameter of the insulation, securing the opposite edges of the tube together as a longitudinal seam, pulling the tube through a sinking die that reduces the diameter of the tube to squeeze the insulation and exert some pressure on said insulation, the shear strength of the insulation being correlated with the elasticity and cross section of the center conductor, and the squeeze being correlated with the coefficient of static friction of the roughened surface on the insulation, to transmit thermal elongation of the sheath through the insulation to the center conductor.

3,356,791

ELECTRICAL INSULATOR WITH SERIALLY ARRANGED TRACKABLE AND RELATIVELY TRACK-RESISTANT BODY PORTIONS

Edward J. McGowan, Sunnyvale, Calif., assignor to General Electric Company, a corporation of New York

Filed Dec. 22, 1966, Ser. No. 604,023
7 Claims. (Cl. 174—209)



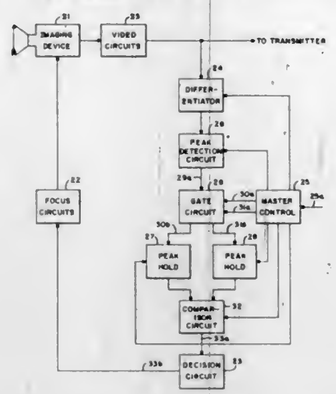
1. An electrical insulator comprising a trackable organic dielectric material, a relatively track-resistant organic dielectric material on at least one portion of the surface of the trackable organic material, the second material having a thickness in the direction of the potential gradient exceeding the scintillation distance, the second material characterized by depolymerization upon scintillation degradation without a substantial amount of carbonaceous residue, and both of the materials lying in series relation in the direction of the potential gradient.

3,356,792

AUTOMATIC ELECTRON BEAM FOCUSING SYSTEM

David L. Peters, East Northport, N.Y., assignor to Hazeltine Research, Inc., a corporation of Illinois

Filed June 2, 1964, Ser. No. 371,915
7 Claims. (Cl. 178—7.2)



1. In an adjustable focus imaging device wherein an interrogating beam is sequentially scanned over an image in order to derive electrical signals representative of said image, apparatus for automatically controlling the focusing of said interrogating beam comprising:

first means for providing as part of said image a representation of a reference object;

second means for developing a plurality of electrical signals individually representative of the scanning by said interrogating beam of the part of said image representative of the reference object at different focus adjustments of said interrogating beam;

comparison means for comparing at least two of said plurality of electrical signals developed at different focus adjustments of said interrogating beam according to a common characteristic of said signals;

and means responsive to said comparison means for determining which of said compared signals correspond to the more desired focus setting and for developing a signal to adjust said focus in the direction of the more desired setting;

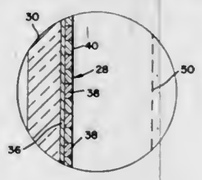
the system being so constructed and arranged so as to continuously compare electrical signals indicative of the focus settings and to readjust the focus according to said comparison until the desired focus is obtained.

3,356,793

STORAGE TUBE TARGET HAVING MOSAIC OF COPLANAR PHOTOCONDUCTIVE ELEMENTS AND DIELECTRIC ELEMENTS

Leon S. Yaggy, North Carlsbad, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed June 1, 1966, Ser. No. 554,519
2 Claims. (Cl. 178—7.85)



1. In a tube arrangement for storing an optically viewed image,

an evacuated envelope,

an electron gun at one end of the envelope,

a transparent viewing segment at the other end of the envelope,

said segment having a target on the inner surface thereof,

said target comprising a collector electrode portion uniformly distributed over the entire surface of said viewing segment,

said electrode portion being transparent,

a mosaic pattern of discrete photoconductive and insulative elements to form discrete islands arranged substantially in the same plane and distributed over the inner surface of said electrode portion when viewed from the gun,

said elements being electrically connected to the portion,

means to create an electron beam emanating from the gun and flooding the entire target with electrons,

and optical shutter means for momentarily exposing said viewing segment to an optical image concurrently with flooding the target with electrons and thereby create a stored charge pattern on the insulative elements,

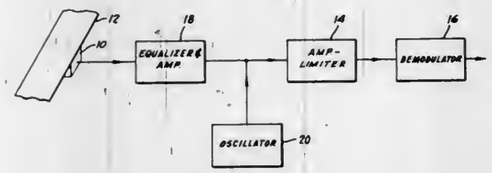
the charge on each discrete insulative element being directly related to the intensity of illumination of that portion of the viewed image optically impinged on the adjacent portion of the viewing segment.

3,356,794

DEVICE FOR REDUCING NOISE IN F.M. CARRIER RECORDING

Michael O. Felix, San Carlos, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California

Filed May 19, 1964, Ser. No. 368,515
3 Claims. (Cl. 179—100.2)



1. A circuit for reducing the effect of noise during the reproduction of information from a magnetically recorded frequency modulated wide-band signal comprising, means providing a separate signal of given frequency and having a first amplitude substantially greater than the level of the noise, means providing a reproduced frequency modulated wide-band signal having a second amplitude substantially greater than said first amplitude, which signal is subject to reduction in amplitude below said first amplitude, variable gain means coupled to both said signal providing means for amplifying said signals, said variable gain means being responsive to the amplitude of the signal applied thereto so that the amplification of said separate signal is increased when said frequency modulated signal falls below said first amplitude, and means coupled to the output of said variable gain means for producing information represented by the frequency of the signal applied thereto.

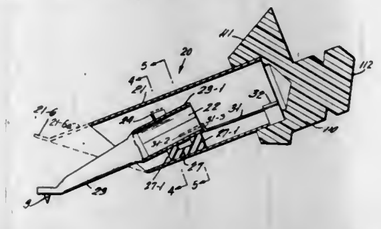
3,356,795

STEREOPHONIC MAGNETIC PHONOGRAPH PICKUP CARTRIDGE

Harry B. Shaper, East Hills, N.Y., assignor to Dyna-Empire, Inc., Garden City, N.Y., a corporation of New York

Filed Nov. 5, 1964, Ser. No. 409,143
13 Claims. (Cl. 179—100.41)

1. An armature-stylus assembly adapted to be removably mounted in a recess extending through a common gap defined by pole faces of first and second electromagnetic systems in a magnetic pickup cartridge; said assembly comprising an elongated sleeve, an elongated movable subassembly disposed within said sleeve, bearing means within said sleeve supporting said subassembly for angular vibration about first and second vibration axes; said subassembly including a stylus at one end thereof and an armature disposed remote from said one end; said stylus



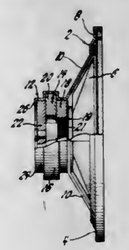
extending beyond the confines of said sleeve through a first end thereof and adapted to transmit vibrations to said armature; said stylus including a downwardly facing tip; said bearing means including an elastomer means; said bearing means also including stiff bearing means constructed of metal extending transverse to the longitudinal axis of said sleeve and inwardly from said sleeve into direct engagement with a rigid portion of said subassembly.

3,356,796

FIELD CASE ASSEMBLY FOR LOUDSPEAKER

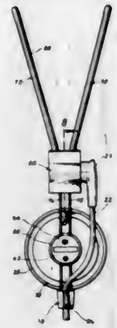
Shirl D. Wray, Kokomo, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Aug. 11, 1964, Ser. No. 388,760
3 Claims. (Cl. 179—115.5)



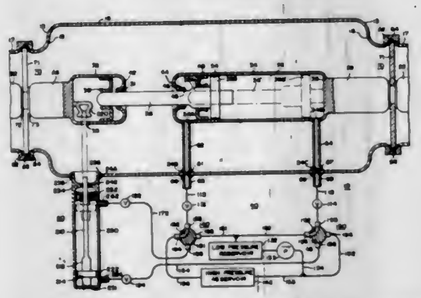
1. A transducer for converting electrical to mechanical waves comprising a permanent magnet assembly having an annular opening in one face, a vibratable diaphragm, a driving coil secured to the diaphragm and extending from one side thereof, a metallic supporting frame having a cylindrical portion of proper size for accommodating the permanent magnet assembly with one end open for the insertion thereof which is capable of being deformed around the end of the permanent magnet assembly to tightly clamp it in place without the use of any other means, said vibratable diaphragm being supported in the opposite end of the metallic supporting frame with the driving coil facing the permanent magnet assembly which has the annular opening in the side to accommodate said driving coil.

3,356,797
EARPHONE CONSTRUCTION
Kurt Konzelmann, Heilbronn-Bockingen, and Ernst Doege and Klaus Wischgoll, Heilbronn, Germany, assignors to Eugen Beyer Electrotechnische Fabrik, Heilbronn, Germany, a German firm
Filed Sept. 8, 1964, Ser. No. 394,737
Claims priority, application Germany, Sept. 21, 1963, B 73,602
18 Claims. (Cl. 179—156)



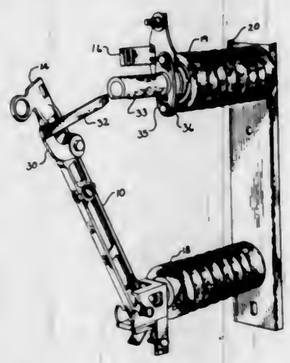
1. Headphone apparatus, comprising
a headphone earpiece including a pair of electrical terminals;
harness means adapted to mount said earpiece on the head of a user, said harness means including a pair of electrically-conductive mutually-insulated parallel bare slide rods upon which said earpiece is slidably mounted;
cable means including a pair of electrical conductors; and
circuit means including at least portions of the lengths of said conductive elements for electrically connecting said conductors with said earpiece terminals, respectively.

3,356,798
DISCONNECT SWITCH
John P. McKinnon, Monroeville, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 13, 1965, Ser. No. 513,429
7 Claims. (Cl. 200—48)



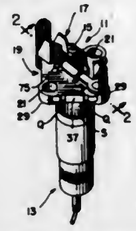
1. A disconnect switch comprising a generally hollow, cylindrical housing substantially filled with an electrically insulating gas under pressure, first and second conductors spaced axially within the housing, electrically insulating means for supporting the conductors within the housing and for closing off the gas space within the housing at the ends thereof, generally hollow, cylindrical corona shields attached to each of the conductors, the adjacent ends of the corona shields being spaced from one another and having axially aligned openings therein, first fixed contact means disposed within one of the corona shields and electrically connected to the associated conductor, additional fixed contact means disposed within the other corona shield, a switch blade having a piston formed integrally therewith near one end and disposed within the other corona shield, the switch blade being reciprocally movable to engage both the first fixed and the additional fixed contact means, and means operatively connected to the other corona shield for selectively applying electrically insulating gas under pressure to the opposite sides of the piston to actuate the switch blade between open and closed positions with respect to both the first and the additional fixed contact means.

3,356,799
ELECTRIC DISCONNECT SWITCH
Thomas B. Ortwig, Florissant, and Joseph L. Krawinkel, Jr., St. Louis, Mo., assignors to Kearney-National Inc., St. Louis, Mo., a corporation of Delaware
Filed Aug. 12, 1966, Ser. No. 572,054
6 Claims. (Cl. 200—48)



1. A separable type electrical disconnect switch comprising: a channel base adapted to be mounted on a control panel, or the like, and having means mounting spaced apart upper and lower insulators thereon; a blade having a hinged end and a contact end with said hinged end having means hingedly attached in current conductive relationship to a conductive part mounted on said lower insulator, and said contact end having means cooperating therewith to resiliently and removably maintain the contact end electrically engaged with a conductive part mounted on said upper insulator; said means hingedly attached to said lower insulator including a flattened shaft extending from the blade, and a yoke having C-shaped, aligned apertures forming an electrical conductor rigidly mounted on said lower insulator, with said shaft being releasably held in said aperture; means cooperating with said contact end having a first pair of switch means mounted on said upper insulator for selective engagement with the contact end of said blade, a second pair of switch means mounted within said upper insulator, and electrically connected with said first pair of switch means; a conductive stab pivotally mounted on, movable with and projecting from said blade toward said second pair of switch means for conductive engagement during engagement between said blade and said first pair of switch means, means for delaying disengagement of said stab from said second pair of switch means until after said blade has separated from said first pair of switch means; and insulating means embracing the path of said stab during movement thereof toward and away from said second pair of switch means.

3,356,800
ELECTRICAL JACK
James R. Bailey, Chicago, and Kurt Lutzenberger, Arlington Heights, Ill., assignors to Switchcraft, Inc., Chicago, Ill., a corporation of Illinois
Filed Dec. 29, 1964, Ser. No. 421,916
3 Claims. (Cl. 200—51.09)



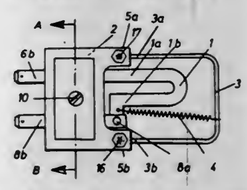
1. An electrical jack comprising a plate forming an insulating base having an embossment projecting from the plate on one side thereof, said embossment and plate having a channel therethrough for the removable reception of the stem of a plug, a stem engaging electrode of sheet metal having a medial mounting portion, secured on the side of the plate opposite from said embossment, and wing portions at the opposite sides of and extending normal to the mounting portion to form a pair of spaced mutually facing electrode blades resiliently supported on said mounting portion, opposite said channel, and yieldingly separable to engagingly receive the stem of a plug applied through said channel, a ferrule of electrical conducting material sheathing said embossment, on one side of the plate, in position to slidingly engage and electrically contact with the grounding skirt of a plug when inserted in the jack, and a connection lug extending from the ferrule to the opposite side of the plate for connection in an external ground circuit.

3,356,801
BREAK-GLASS STATION
Howard L. Caretto, Brooklyn, N.Y., assignor to The Reeve Electrical Co. Inc., Union, N.J., a corporation of New York
Filed Oct. 5, 1966, Ser. No. 584,502
2 Claims. (Cl. 200—61.08)



1. A break-glass station comprising the combination of:
an open front signal box,
a removable face plate closing the front of the box,
screw means removably securing said face plate in closing position over the front of the box,
said face plate having a generally central opening therethrough and provided with projecting lugs spaced apart horizontally to opposite sides of said opening,
said lugs having horizontally aligned openings therein,
the opening in one of said lugs extending entirely therethrough and being screw threaded,
the opening in the other lug extending only part way therethrough and with the open end of the same facing the through opening in the first mentioned lug,
a spring biased signal transmitting switch having a supporting neck portion extending through and secured in said opening in the face plate and having an operating toggle lever projecting out over the front of said face plate exposed to sight and manual operation,
said switch being mounted with the toggle lever of the same operating through a vertical arc and said switch being connected to transmit signals with said lever in a lower position and to not transmit signals with the lever in an upper position,
said switch being spring biased to the lower signal transmitting position of the toggle lever,
said vertical arc of toggle lever movement intersecting a center line connecting said openings in said lugs,
a breakable rod of frangible material extending through said through opening in the first mentioned lug into seated engagement in the closed end opening in the second mentioned lug,
said rod being thereby supported below the projecting toggle lever in the upwardly directed position of the same for holding said toggle lever restrained in the non-signalling position, ready to be released in the spring biased downward direction of signal transmitting movement of the lever on breakage of said restraining rod, and
a screw plug entered in the outer end of said screw threaded opening in back of said rod for confining said rod in the restraining position, and
having a key socket in the end of the same requiring the use of an authorized key for removing and replacing said screw plug for the purpose of replacing broken restraining rods.

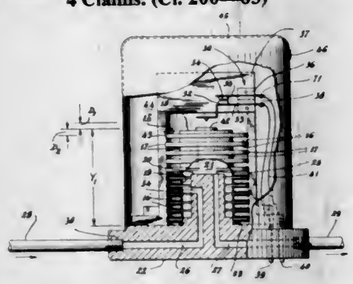
3,356,802
ELECTRIC SNAP-ACTION SWITCH
Hans Simon, Bruchhausener Strasse 5463, P.O. Box 2, Unkel (Rhine), Germany
Filed July 7, 1965, Ser. No. 470,116
Claims priority, application Germany, Oct. 7, 1964, S 91,997
9 Claims. (Cl. 200—67)



1. In an electrical snap-action switch, support means, an elongated snap member of substantially U-shaped configuration having a pair of elongated shanks one of which is fixed to said support means and the other of which is freely moveable with respect to said fixed shank, a stationary contact, a movable contact carried by said freely movable shank for movement with the latter into and out of engagement with said stationary contact, and spring means operatively connected to said freely movable shank for yieldably maintaining the latter either in a position where said movable contact engages said stationary contact or in a position where said movable contact is displaced from said stationary contact, said spring means moving through a dead-center position during displacement of said freely movable shank between said positions thereof for acting on said freely movable shank to snap the latter between said positions as said spring means passes through said dead-center position, lever means pivotally connected to said support means and operatively connected with said spring means for displacing the latter in either direction through said dead-center position to change said freely movable shank between said positions thereof, said lever means being turnable about a predetermined axis and said spring means being connected to

said freely movable shank at a location adjacent to said axis, and adjusting means carried by said support means for adjusting said axis in the direction of movement of said freely movable shank, said lever means having the configuration of a stirrup provided with a pair of substantially parallel legs pivotally engaging said support means, said legs of said stirrup being situated substantially in a plane which includes said fixed shank when said spring means is in said dead-center position thereof, and said adjusting means including a pair of elongated members to which said legs of said stirrup are pivotally connected, said elongated members extending substantially perpendicularly through said plane and each being longitudinally adjustable independenetly of the other, so that the legs of said stirrup can have their pivotal connections independently adjusted.

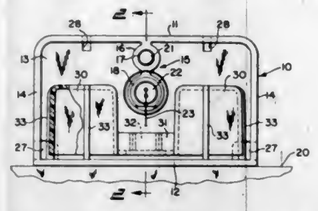
3,356,803
PRESSURE SWITCH HAVING MEANS FOR INCREASING THE STROKE OF A BELLOWS PRESSURE SENSING ELEMENT
Melvin W. Redmond, Jr., West Redding, Conn., assignor to The Perkin-Elmer Corporation, Norwalk, Conn., a corporation of New York
Filed Feb. 21, 1966, Ser. No. 528,910
4 Claims. (Cl. 200—83)



1. An analytical instrument, a pressure actuated switching device comprising:
a metal bellows having a flexible wall with inner and outer surfaces,
means including said inner wall surface defining a pressure chamber,
said bellows adapted to have a maximum stroke of length D_0 over a usable pressure range within the elastic limit of said bellows where $D_0=D_1+D_2$ and where $D_1=D_2$,
means for establishing a constant bias pressure P_1 independent of atmospheric variations on said outer surface of said bellows in a manner for causing an initial displacement of length D_2 of the bellows as a result of a differential pressure existing between said surfaces,
means including an inlet duct and an outlet duct for conveying a fluid in a continuous flow path under pressure through said pressure chamber, and
electrical switching means arranged for actuation by said bellows when the pressure within said chamber attains the value $2 \cdot P_1$.

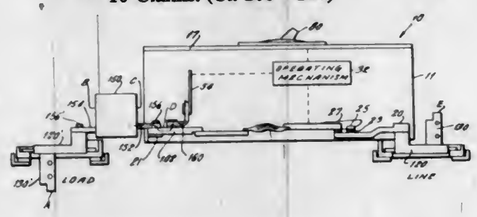
3,356,804
MAGNETICALLY OPERABLE FLOAT SWITCH
Richard L. Perl, Mansfield, Ohio, assignor to The Tappan Company, Mansfield, Ohio, a corporation of Ohio
Filed Feb. 25, 1966, Ser. No. 530,018
2 Claims. (Cl. 200—84)

1. A water fill control for automatic dishwashers, comprising a housing having top, bottom and side walls adapted to be mounted within a dishwasher tub adjacent the bottom thereof, said housing being provided with an upper air vent and a lower opening for free flow of water into and out of the housing with filling and draining of the tub, a magnetic switch fixed in an upper portion of the housing in sealed relation and adapted to control the supply of water to the tub, a float movable within the housing, said float being raised and lowered with corresponding change in the level of water in the housing and relative to said switch, and a permanent magnet carried



by said float, the magnet being effective to actuate the switch when raised to a predetermined height by the float, with the float having a center section at which the magnet is carried and hollow end sections of substantially greater height, the switch being located above said center section, and the float further provided with feet and ribs at its outer surfaces to preclude locking to the housing by fluid tension.

3,356,805
CIRCUIT BREAKER TRIP UNIT ASSEMBLY WITH IMPROVED THERMAL CHARACTERISTICS
Carl E. Gryctko, Haddon Heights, N.J., assignor to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed May 11, 1966, Ser. No. 549,207
10 Claims. (Cl. 200—116)

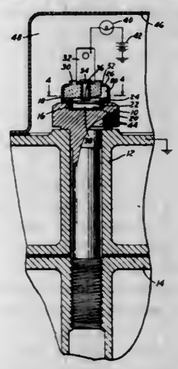


1. A circuit breaker device, comprising:
at least one pair of cooperating contacts, operating means connected to said contacts for moving said contacts between an engaged and disengaged condition, and a current responsive trip means operatively connected to said operating means for actuating said operating means and causing movement of said cooperating contacts to their disengaged condition responsive to an overload condition above a predetermined magnitude;
said trip means including a first and second sub-assembly, means interconnecting said sub-assemblies in a manner such that said second assembly is readily removable and replaceable with respect to said first sub-assembly while said first sub-assembly remains substantially intact;
said first sub-assembly including a thermally responsive means actuable by the duration and magnitude of heat flow presented thereto;
means for transmitting the actuation of said thermally responsive means to said operating means;
said second sub-assembly including a heater means, in the circuit path of current flow and characterized as increasing in temperature and generating heat in a manner operatively related to the magnitude of an overload condition;
said interconnecting means including a thermally conductive path between thermally responsive means of said first sub-assembly and the heater means of said second sub-assembly, with said heater means and thermally responsive means being located at longitudinally spaced, first and second ends, respectively, of said thermally conductive path;
said heater means being located in a region providing free access to the surrounding atmosphere;
the thermal characteristics of said heater means and thermally responsive means operatively interrelated such that under conditions of normal load, up to said predetermined magnitude, the heat generated within said heater means is principally dissipated to the surrounding atmosphere and the heat flow to said thermally responsive means is minimized, and under conditions of moderate overload, above said predetermined magnitude, said first end of said path is at a higher temperature than said second end of said path whereby the direction of temperature differential between said path ends establishes a heat flow path from said heater means to said thermally responsive means and a substantial portion of the heat generated by said heater means is presented to said thermally responsive means.

3,356,806
PROTECTORS FOR ELECTRIC CIRCUIT
Angelo Urani, St. Louis, Mo., assignor to McGraw-Edison Company, Elgin, Ill., a company of Delaware
Filed Oct. 11, 1965, Ser. No. 494,649
9 Claims. (Cl. 200—129)

9. A readily-openable holder for an electric fuse which comprises:
(a) a body portion that has a recess in one end thereof to releasably accommodate one end of an electric fuse,
(b) a terminal that is permanently secured to and carried by said body portion,
(c) a second body portion that has a recess in one end thereof to releasably accommodate the opposite end of said electric fuse,
(d) a second terminal that is permanently secured to and carried by said second body portion,
(e) said recess in the first said body portion communicating with the first said terminal,
(f) the first said terminal being fixedly held against movement relative to the first said body portion,
(g) a movable contact disposed within said recess in the first said body portion to receive one of the contacts of said electric fuse,
(h) a flexible conductor extending between said movable contact and the first said terminal to electrically connect said movable contact to the first said terminal while permitting said movable contact to move relative to the first said terminal, and
(i) a helical compression spring that biases said movable contact away from the first said terminal but that can yield to permit said movable contact to be moved toward said terminal,
(j) said flexible conductor generally having the form of a helix to enable said flexible conductor to have a substantial current-carrying capacity while being readily flexible,
(k) said helical compression spring and said flexible conductor yielding as the first said and said second body portions enclose and confine said electric fuse, and said flexible conductor thereafter permitting said helical compression spring to press said movable contact against said one contact of said electric fuse.

3,356,807
CYLINDER HEAD BOLT WITH TEMPERATURE AND CONTAMINANT INDICATOR
William E. Brown and Willard C. Shaw, Anderson, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 27, 1965, Ser. No. 490,481
1 Claim. (Cl. 200—138)

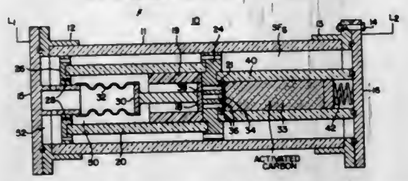


The combustion of a temperature sensitive switch and a cylinder head bolt for an internal combustion engine, said cylinder head bolt having a depression in the head thereof, said temperature sensitive switch comprising: a body of thermal conductive material including a cup-shaped portion carried in the depression of the bolt head, said body having a fixed contact passing through a portion thereof to an external terminal electrically connected to an indicating device; bimetallic element carried in direct thermal conductive relationship with said body portion, said bimetallic element having a portion situated apart from but in cross relationship to said fixed contact; insulating means including resilient mounting means disposed on either side thereof to operatively position said bimetallic element and said insulating means between a relatively fixed wall of said body and an inturned portion thereof, said insulating means and said body having aligned apertures adapted to permit the flow of fluids from the internal combustion engine into contact with said bimetallic element, said bimetallic element and a conductive fixed contact being closely separated so that electrically conductive contaminants carried in said fluids when situated between the fixed contact and the bimetallic element cause shorting thereacross to an indicating means; terminal means carried by said insulating member including a fixed contact in juxtaposition to said bimetallic element adapted to be electrically conductively engaged thereby upon deflection thereof in response to a temperature increase above predetermined limits in the internal combustion engine; and an electrical indicating means electrically engaging said terminal and being selectively grounded to said fixed contact and said bimetallic element when said bimetallic element assumes a deflected condition, said electrical indicating means thereby being energized in response to a fully deflected bimetallic element and a partially deflected bimetallic element and contaminants in the fluid passing between the bimetallic element and the fixed contact.

3,356,808
CIRCUIT-INTERRUPTING DEVICES HAVING PRESSURE-OPERATED CONTACTS

Thomas W. Dakin, Murrysville, Daniel Berg, Churchill Borough, Pittsburgh, and Donald G. Martin, Penn Township, Trafford, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Feb. 28, 1966, Ser. No. 530,513
11 Claims. (Cl. 200—140)

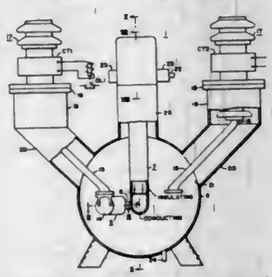


1. An enclosed circuit-interrupting unit including a relatively stationary contact and a cooperable pressure-operated movable contact, a mass of confined conducting material having the characteristic of desorbing an arc-extinguishing gas upon the passage of excess electrical current through the said mass, means connecting said mass in the electrical circuit passing through the circuit-interrupting unit, whereby pressure will be generated during the passage of excess current through the unit and effect opening of the movable contact, piston means associated with said pressure-operated movable contact, means defining a ballast chamber (**52**) behind the piston means, means defining a pressure chamber (**50**) about the separable contacts and in communication with said mass of conducting material, and relatively small gas-connecting means (**28**) pneumatically connecting the ballast chamber with the pressure chamber to thereby prevent ambient temperature changes from effecting opening of the contacts by the equalization of the slight increase of gas pressure built up in the pressure chamber.

3,356,809
MULTI-BREAK COMPRESSED-GAS CIRCUIT INTERRUPTERS WITH ROTATING GAS-CONDUCTING BRIDGING MEMBERS

Robert G. Colclaser, Jr., Franklin Township, Delmont, and Frank L. Reese, Wilkinsburg, Pa., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed June 8, 1964, Ser. No. 373,150
11 Claims. (Cl. 200—148)

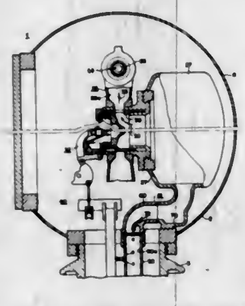


1. A compressed-gas dual-pressure circuit interrupter including a pair of gas-blast arc-extinguishing units, supporting means for supporting said pair of gas-blast arc-extinguishing units in spaced-apart relation, relatively stationary contact means associated with each of said gas-blast units, means defining a rotating conduit hub assembly, said rotating conduit hub assembly carrying a pair of serially-related movable tubular contacts for cooperating in a serial manner with the two relatively stationary contact means for establishing a pair of serially-related arcs, a source of high-pressure gas, means including said rotating conduit hub assembly for transmitting a flow of high-pressure gas from said high-pressure source radially outwardly through said pair of movable tubular contacts and toward the two serially-related established arcs to effect their extinction, and each arc-extinguishing unit including a confined chamber within which the outward expelled gas is stored for subsequent exhausting arc-extinguishing flow adjacent the respective arc.

3,356,810
CENTERING DEVICE FOR CONDUCTING LIQUEFIED ARC-EXTINGUISHING GAS TO A HIGH-PRESSURE RESERVOIR

Claus Kessler, Berlin-Dahlem, Germany, assignor to Siemens-Schuckertwerke Aktiengesellschaft, Erlangen, Germany, a corporation of Germany

Filed Mar. 31, 1965, Ser. No. 444,189
2 Claims. (Cl. 200—148)



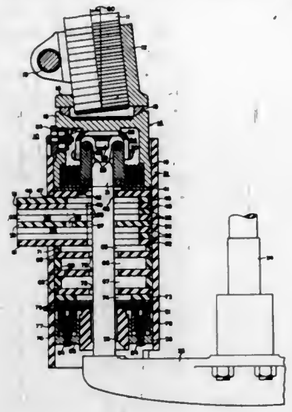
1. In a high-voltage compressed-gas type of circuit interrupter having separable contacts and means utilizing a high-pressure blast of gas to effect extinction of the arc established at said contacts, said interrupter further having a high-voltage high-pressure gas-reservoir chamber and a grounded high-pressure gas reservoir chamber with an interconnecting high-pressure insulating supply tube therebetween, the combination therewith of a centering-trough means for centering the flow of liquid condensate under low-ambient temperature conditions through said high-pressure insulating supply tube, whereby the deposition of entrained conducting particles in the condensate on the inner side walls of the insulating supply tube will be avoided, and thereby the hazard of voltage flashover eliminated.

3,356,811
OIL-TYPE CIRCUIT BREAKERS HAVING OUTER CONTINUOUS INSULATING SUPPORT TUBE AND INNER STACKED INSULATING PLATES PROVIDING LATERAL VENT OPENINGS

George B. Cushing, Penn Hills, and Frank L. Reese, Wilkinsburg, Pa., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed Jan. 15, 1965, Ser. No. 425,728
10 Claims. (Cl. 200—150)

1. In a circuit breaker, in combination, a terminal stud, a generally cylindrical metallic contact housing attached to the stud, relatively stationary contact members disposed within the metallic housing, an elongated movable contact member engaging the stationary contact members, an insulating cylindrical tube having its upper end overlapping the metallic contact housing, means extending through the wall of the tube into the metallic housing for attaching the tube to the housing, a metallic cylindrical supporting member disposed inside the bottom end of the tube, means extending through the wall of the tube into the metallic supporting member for retaining it in the tube, a plurality of insulating discoidal plates stacked within the tube between the bottom of the metallic contact housing and said metallic supporting member, means movably disposed in the metallic supporting member for resiliently raising said

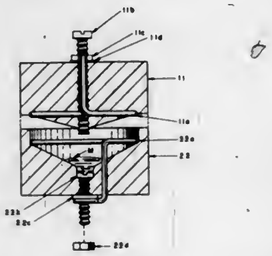


plates toward the housing, and said plates and supporting member having openings therein to provide a passageway through the plates for the movable contact member.

3,356,812
MERCURY TYPE ELECTRICAL SWITCH

Joseph Moschetta, 535 Dixie Drive, 15235, and Benjamin Moschetta, 1440 Abers Creek Road, 15239, both of Pittsburgh, Pa.

Filed Sept. 16, 1965, Ser. No. 487,657
2 Claims. (Cl. 200—152)

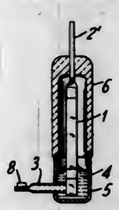


1. An electrical contacting device comprising a body in which a conical slot fully circumferential is formed by a male and female cone, apex of said female cone serving as a bowl for a moving electrical contact, said male and female cones having bases located in close proximity to one another to form a circumferential enclosure, said enclosure having two conducting rings spaced apart, and having terminations outside of the said body, where electrical connections can be made for circuit wiring, said conducting rings when engaged by said moving electrical conductor which will move from said bowl when said body is tilted in any direction and moved to a point where first of said rings is engaged by moving electrical conductor and any further tilting affording the second of said rings to be also engaged, this action causing an electrical circuit to exist because of the connections outside of said body and any further tilting toward the inverted position through globular direction will allow said circuit to be continued until and if position of said body is returned by globular action to such a point where said conducting rings are no longer engaged by said electrical moving conductor.

3,356,813
MERCURY SEALED CONTACT SWITCH

Takeo Shinohara and Hiroshi Maruyama, Tokyo, Japan, assignors to Nippon Electric Company, Limited, Tokyo, Japan, a corporation of Japan

Filed May 31, 1966, Ser. No. 553,791
Claims priority, application Japan, June 2, 1965, 40/32,200
3 Claims. (Cl. 200—152)

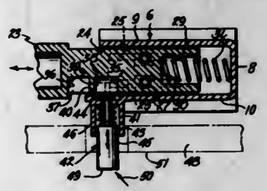


1. A mercury sealed contact switch comprising
a sealed hollow vessel having a longitudinal axis,
a pair of stationary reeds, a movable reed, and a metal pipe,
said vessel consisting of an upper portion of insulating material and a lower portion of metallic material and containing mercury in said lower portion and gas above said mercury,
and metal pipe being integrally attached to said lower portion in a direction substantially normal to said longitudinal axis with an end portion thereof disposed within said lower portion and serving to inject said mercury and gas into said vessel during manufacture,
said stationary reeds being arranged generally along said axis,
said stationary reeds further each being attached at an end portion thereof to said upper portion,
said movable reed also being disposed generally along said axis and fixed at an end portion thereof to said end portion of said pipe, and the free end portions of said stationary and movable reeds serving as contacts of said switch, whereby significant reduction in overall length is provided for a switch of given capacity.

3,356,814
TRIGGER LOCK ARRANGEMENT FOR POWER TOOLS

Alfred H. France, Jr., Baltimore County, Md., assignor to The Black and Decker Manufacturing Company, Towson, Md., a corporation of Maryland

Filed Oct. 24, 1965, Ser. No. 504,697
7 Claims. (Cl. 200—157)



1. In an electric tool having
a tool housing;
a switch carried by said housing;
a trigger to operate said switch, said trigger being movable to
a first position in which said switch is on, and
a second position in which said switch is off;
means normally biasing said trigger to said second position;
a lock pin having a knob portion and movable to
a depressed position in which said knob is flush with said tool housing, and

a released position in which said knob is exposed for manual movement to said depressed position;

said trigger having

a first recess aligned with said lock pin to receive said lock pin with said trigger in said first position;

shoulder means facing toward said first recess and arranged to engage said lock pin with said lock pin in said depressed position and said trigger in said first position;

the improvement comprising

a second recess aligned with said lock pin with said trigger in said second position;

said second recess having a depth, measured along the path of travel of said lock pin, at least as great as the length of the exposed portion of said lock pin to enable said lock pin to enter said recess when depressed so that the end of the lock pin is flush with the adjacent portion of said housing;

whereby damage to said trigger switch is prevented in the event of shock or impact on said pin caused by dropping or bumping said power tool with said trigger in said second position.

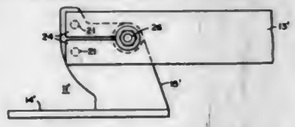
3,356,815

ELECTRIC KNIFE SWITCHES WITH SIMPLIFIED CONTACT PRESSURE ADJUSTMENTS

George Slviy, Monroeville, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Original application May 18, 1962, Ser. No. 195,838, now Patent No. 3,240,911, dated Mar. 15, 1966. Divided and this application Aug. 24, 1965, Ser. No. 482,070

4 Claims. (Cl. 200—162)



1. In an electrical switch, in combination, a hinge contact member having an upright portion, a break contact member having an upright portion spaced from the hinge member, two spaced, generally parallel blades disposed on opposite sides of the upright portions of the hinge member and the break member, said blades being composed of a material having a high electrical conductivity and mechanical stiffness, a stud having shoulders disposed between the blades for pivotally attaching the blades to the upright portion of the hinge member, each blade having contact fingers at one end extending beyond said stud with contact members secured to and disposed on the contact fingers, said contact members on the fingers having generally spherical surfaces engaging only one side of the upright portion of the hinge contact member away from the break contact member beyond the stud, and threaded means on the stud for drawing the blades against the shoulders on the stud to maintain contact pressure between the contact members on the fingers and the hinge contact member independently of the operation of the blades.

3,356,816

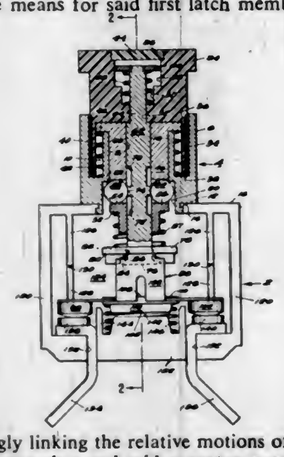
AUTOMATIC TRIP MANUAL RESET CIRCUIT BREAKER AND LATCH MECHANISM THEREFOR

David E. Clarke, Attleboro, Mass., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Mar. 1, 1966, Ser. No. 530,948

9 Claims. (Cl. 200—116)

1. A circuit breaker comprising a casing; a first electrical contact mounted in said casing; a contact arm movably mounted in said casing; a second contact carried by said contact arm and adapted to cooperate with the first contact to make and break an electrical circuit; spring means in said casing biasing said contact arm in a contact-opening direction; a thermally responsive member carried by said contact arm; a manually operable member movably mounted in said casing; spring means in said casing for biasing said manually operable member in a contact-opening direction; a first latch member movably mounted in said casing; spring means in said casing for biasing said first latch member in a contact-opening direction; an operator movably mounted in said casing and movable relative to said manually operable member, said operator including release means for said first latch member; spring



means yieldingly linking the relative motions of said manually operable member and said operator; a second latch member movably mounted with respect to said operator and releasably engaged by said thermally responsive member, said second latch member, upon disengagement, moving said operator to release said first latch member; spring means in said casing for biasing said second latch member in a contact-closing direction and for urging said operator in a contact-closing direction upon disengagement of said second latch member; said contact arm being adapted to move to a contact-open position upon disengagement of said thermally responsive member from said second latch member independently of the position of said manually operable member.

3,356,817

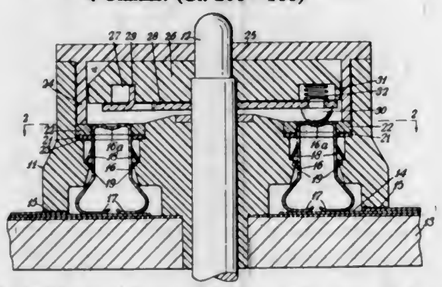
SWITCHES FOR USE WITH FLEXIBLE PRINTED CIRCUITS

Benjamin William Matthews, Birmingham, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England, a British company

Filed Oct. 25, 1966, Ser. No. 589,371

Claims priority, application Great Britain, Dec. 13, 1965, 52,777/65

4 Claims. (Cl. 200—166)



1. A switch comprising a flexible printed circuit having exposed conductive portions, a body means on said body gripping the flexible printed circuit to hold the flexible printed circuit firmly relative to said body, fixed contacts carried by the body and permanently engaging said exposed portions of the printed circuit, a rotor carried by the body, and movable contacts carried by the rotor engageable with the fixed contacts.

3,356,818

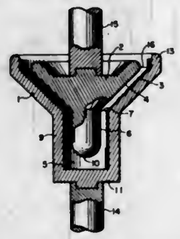
CONTACT ASSEMBLY FOR A VACUUM INTERRUPTER

Hiroyuki Sugawara, Hitachi-shi, Japan, assignor to Hitachi, Ltd., Tokyo-to, Japan

Filed May 17, 1966, Ser. No. 550,731

Claims priority, application Japan, May 17, 1965, 40/28,569

9 Claims. (Cl. 200—166)



9. A contact assembly for a vacuum interrupter, comprising:

a first electrode having a frusto-conical portion and a centrally located projecting portion, said frusto-conical portion defining a tapered contact face thereon, and

a second electrode having a funnel-shaped portion and a closed-ended sleeve portion extended from said funnel-shaped portion at the bottom thereof, said funnel-shaped portion defining a complementary tapered contact face to that of said frusto-conical portion of said first electrode, said frusto-conical portion and said funnel-shaped portion operatingly contacting one another at the contact faces, the width of the contact faces being sufficiently large to provide an initial self induced magnetic transferring force to an arc formed therebetween, and said closed-ended sleeve portion defining therein a hollow cavity which opens into the bottom of said funnel-shaped portion and operatingly encloses therein said projecting portion of said first electrode.

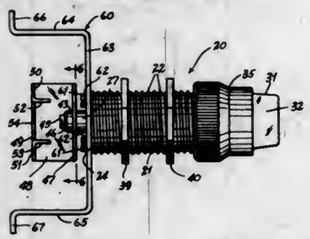
3,356,819

SWITCH OPERATOR AND BRACKET

Marshall G. Zavertnik, Manchester, John W. Buser, St. Louis, and Charles E. Williams, Rock Hill, Mo., assignors to Killark Electric Manufacturing Company, St. Louis, Mo., a corporation of Missouri

Filed May 4, 1966, Ser. No. 547,561

3 Claims. (Cl. 200—172)



1. A switch operator and bracket therefor comprising a switch operator body having external threads for extending through and being threaded within an opening in a wall separating a hazardous area from a non-hazardous area, a shaft extending through the body and adapted to move therein, an operating knob on one end of the shaft, a guard surrounding the knob and threaded onto the body, a switch operating carriage on the other end of the shaft, a switch supporting bracket attached to the aforesaid other end of the body and comprising spaced arms and opposing flanges, the flanges being adapted to have a switch mounting plate placed against it and fastened to it by screws, the flanges having rows of holes in them spaced to selectively align with holes in the switch mounting bracket with screws extending through the aligned holes, the carriage comprising a pair of spaced arms for engaging opposite sides of a switch toggle to operate the toggle in opposite directions upon rotation of the knob and shaft, the arms having opposing flanges perpendicular to the direction of movement of the carriage with rotation of the knob, and a spring biased ball mounted in the body and biased against the knob to provide frictional resistance to rotation of the knob.

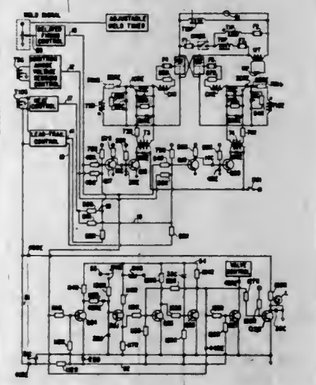
3,356,820

WELD OVERRIDE TIMER

George O'Neal, Jr., Detroit, Mich., assignor to Weltronic Company, Southfield, Mich., a corporation of Michigan

Filed Aug. 29, 1963, Ser. No. 305,314

14 Claims. (Cl. 219—114)



3. A control for a welder having a variable heating cycle interval comprising means to define said heating cycle interval, means to generate a first signal in response to the initiation of said heating cycle by said defining means, an override timer defining an interval which is variable with and exceeds said heating cycle interval through a range of cycle intervals, means initiating definition of an interval by said override timer in response to said first signal, means resetting the interval defined by said override timer in response to the termination of a heating cycle, and means to terminate said heating cycle upon expiration of the interval defined by said override timer.

3,356,821

ARC ELIMINATING BALANCING ELECTRODE HOLDERS

Robert B. Width, 251 Randolph Road, Rochester, Mich. 48063

Filed May 12, 1965, Ser. No. 455,103

1 Claim. (Cl. 219—120)

A welding electrode holder for mounting a plurality of electrodes, wherein the holder body is freely pivotally mounted to equalize contact and force between the electrodes and a workpiece and wherein a portion of the holder body is flexible in the location of its pivoting parts to allow bending the body into forced solid contact at

the pivoting parts to efficiently conduct welding current, comprising

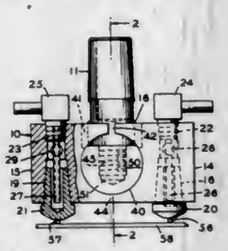
mounting means for securing the holder on a welding machine,

an arcuate fulcrum pivot member secured on said mounting means,

a balance beam body having opposite ends and a relieved central intermediate socket portion having arcuate side walls receiving said pivot member swingably inter-connecting said body and said pivot member with each other;

said relieved central intermediate portion interrupting said body between said opposite ends except for a thin flexible web inter-connecting said opposite ends;

said pivot member lying between said mounting means and said flexible web so that force imposed by said mounting means on said pivot member is transferred by said pivot member to said flexible web; and

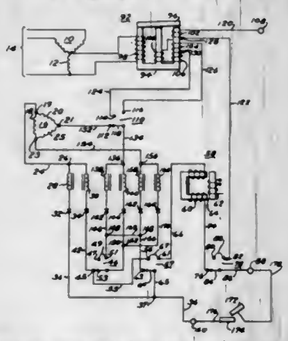


electrode attaching means on said opposite ends for securing electrodes on said body;

said pivot member and said socket portion being normally slightly spaced for free swinging movement;

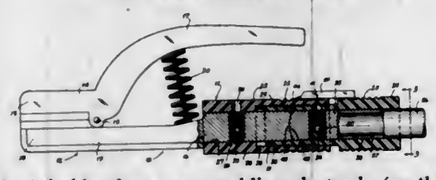
said welding electrode holder being so constructed that when a welding machine advances said holder toward a workpiece with advancing force the force is applied between said ends of said body so that the electrodes on said ends contact the workpiece and swing said body on said pivot member to locate the electrodes in balanced contact with the workpiece and then with further advancing force being applied between said opposite ends causing said flexible web to bend moving said body socket portion arcuate side walls toward and into solid forced unspaced contact with said arcuate pivot fulcrum member providing solid electrical connection between the normally spaced pivoting parts of the holder.

3,356,822
CONTROL SYSTEMS
Clarence Bennett, Creve Coeur, Mo., assignor to Sperry Rand Corporation, a corporation of Delaware
Continuation of application Ser. No. 169,313, Jan. 29, 1962. This application May 2, 1966, Ser. No. 554,242
14 Claims. (Cl. 219—131)



8. An electric welder that comprises an input which is connectable to a source of polyphase A.C., a polyphase transformer which has the primary winding thereof connected to said input, output terminals that are connectable to a welding load to supply power to said welding load, impedances that can be interposed between the secondary winding of said polyphase transformer and said output terminals to control the power supplied to the welding load by said output terminals, and contacts that are selectively connectable to cause said electric welder to operate as a D.C. welder or as an A.C. welder, said impedances being connectable by said contacts to form a polyphase bridge circuit whenever said electric welder is operated as a D.C. welder, said impedances being connectable in series by said contacts whenever said electric welder is operated as an A.C. welder.

3,356,823
ARC WELDING ELECTRODE HOLDER
John W. Waters, 155 W. Henfer, and Lewis G. Wallace, 10416 Ware St., both of New Orleans, La. 70123
Filed July 10, 1964, Ser. No. 381,794
3 Claims. (Cl. 219—138)

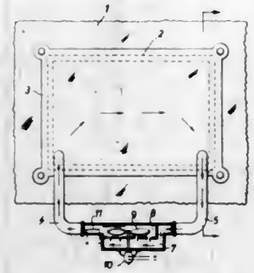


1. A holder for an arc welding electrode (or the like) comprising a pair of jaws for clamping the electrode, one of the jaws being of electrically conductive material and having an extension, an electrically insulating sleeve surrounding the extension, an electric cable, a second electrically insulating sleeve surrounding the electric cable, the two sleeves having complementary threads enabling them to be relatively rotated to adjust their relative positions in an axial direction, the conductive jaw extension having an end facing the electrical cable, and the electrical cable having an end facing the conductive jaw extension, the two said ends having complementary convex and concave surfaces adapted to be brought in contact upon relative rotation of the sleeves bringing them into closer axial proximity with one another, a lug attached to the outer surface of each sleeve, the lugs being of sufficient lengths as measured parallel to the axes of the sleeves to have portions in the same radial plane, the lugs being attached to the sleeves at positions which are circumferentially spaced from one another when the sleeves are relatively rotated to the positions which establish contact between the complementary end surfaces of the electrical cable and the jaw extension, the positions of attachment of the lugs causing them to contact one another upon rotation of the sleeves less than 360° relative to one another to positions at which the said contact is broken, whereby the lugs provide a positive stop for the sleeves when the said contact is broken and provide levers facilitating rotation of the sleeves, one of the lugs being removable to permit complete separation of the sleeves.

3,356,824
ELECTRIC HEATING MEANS TO REMOVE AND PREVENT FORMATION OF FROST AND MIST ON VEHICLE WINDSCREENS
Lino Rossetti, Via Cesare Battisti 17, Viareggio, Lucca, Italy
Filed Feb. 3, 1965, Ser. No. 430,143
Claims priority, application Italy, Feb. 18, 1964, 3,723/64; Aug. 5, 1964, 18,426/64
4 Claims. (Cl. 219—203)

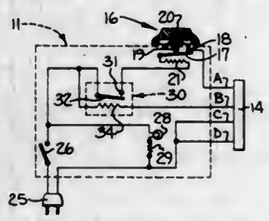
1. In a motor vehicle, a windscreen having an inner surface, a sheet of transparent material located adjacent and spaced from said inner surface of said windscreen,

elongated, endless sealing means extending between and engaging said transparent sheet and said windscreen at the inner surface of the latter for defining with said windscreen and transparent sheet a hollow, hermetically sealed space, electrical heating means adjacent said space, rotary fan means for directing air past and into engagement with said electrical heating means to be heated thereby, said fan means having an air outlet and an air inlet, and air-conducting tubular means connecting said space with said fan means for providing in said space a continuous flow of heated air which uniformly heats said space, said space having a pair of opposed lower corners and said air-conducting tubular means having a pair of tubes respectively having open end situated at said lower corners



and respectively passing through said transparent sheet and having said open ends located in said hollow space and directed toward said windscreen, one of said tubes having distant from said transparent sheet an end in communication with said air outlet of said fan means for directing heated air into said space to rise upwardly therein from the corner where said one tube is located and the other of said tubes having distant from said transparent sheet an end in communication with said outlet of said fan means for withdrawing air from said space at the other of said corners thereof to produce a downward flow of the air rising upwardly from said one tube and reflected in said space by said inner surface of said windscreen, to provide said uniform heating of said space.

3,356,825
ELECTRICALLY HEATED BEDCOVER AND PROTECTIVE CIRCUIT
Edwin R. Mills, Raleigh, and Ernest L. Elmore, Smithfield, N.C., assignors to Fieldcrest Mills, Inc., Spray, N.C., a corporation of Delaware
Filed July 18, 1966, Ser. No. 566,126
11 Claims. (Cl. 219—212)



1. An electrically heated bedcover protected against the continuance of an overheating condition comprising:

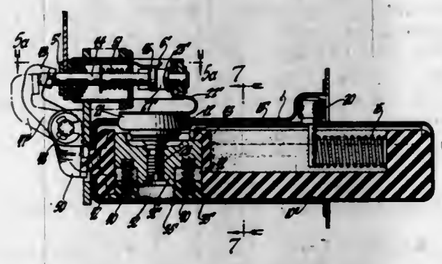
a blanket,

a first circuit including in series connection an electrical heating element in said blanket and a temperature responsive control device normally controlling the application of voltage thereto,

protective means for interrupting the application of voltage to said first circuit upon the occurrence of an overheating condition and including a stationary contact and an armature in series connection with said first circuit, said armature being movable between one position in engagement with said stationary contact so that voltage is applied to said first circuit under the control of said control device and another position out of the engagement with said stationary contact, and

a second circuit connected in parallel with said first circuit and including in series connection an armature position controlling circuit element and blanket temperature responsive means in said blanket electrically insulated from said heating element for reducing the current through said armature controlling element upon the occurrence of an overheating condition, said armature controlling element effecting movement of said armature from one of said positions to the other of said positions in response to variations in current flow therethrough.

3,356,826
CIGARETTE LIGHTER
Homer Vincent Krautwurst, Rochester, and Duane R. Crumb, Webster, N.Y., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed May 12, 1965, Ser. No. 455,104
3 Claims. (Cl. 219—267)

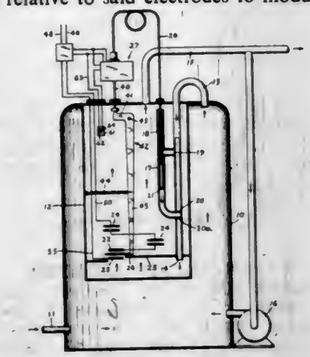


1. An electric cigarette lighter energizable in a stationary socket member having a current supply contact mounted thereon, said lighter comprising a removable plug member adapted for insertion into said socket member, said plug member having a laterally facing heating element electrically connectable to said supply contact upon insertion of the plug member into said socket member, means forming a lateral opening providing access to said element for engagement with a cigarette, a support laterally movable with respect to the plug member and carrying said element, guide means for said support accommodating movement of said element through said opening, spring means biasing said support in the direction to position said element outwardly of said opening, a longitudinally retractable cover for said opening movable between open and closed positions, said cover having a cam surface engageable with said support to move said support in the opposite direction against the force of said spring means upon movement of the cover to said closed position, and means for operating said cover including a cover spring biasing said cover to its closed position and a finger actuable projection on said cover for manually moving said cover to said open position against the force of said cover spring.

3,356,827
TEMPERATURE CONTROL SYSTEM FOR ELECTRODE TYPE WATER HEATER
Henry W. Angelery, 19 Gwynne Court, Closter, N.J. 07624
Filed Aug. 12, 1965, Ser. No. 479,147
7 Claims. (Cl. 219—286)

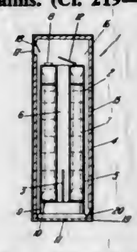
1. In a liquid heater having a receptacle for liquid, means for supplying liquid to said receptacle, means for withdrawing liquid from said receptacle and means for integrating the temperature of liquid supplied to said receptacle and liquid in said receptacle including a tem-

perature-responsive device; the combination therewith of at least one pair of spaced-apart electrodes in said receptacle for contact with liquid in said receptacle, means for supplying electrical current to said electrodes for flow through the liquid therebetween to heat said liquid, at least one insulating shutter member movable between and relative to said electrodes to modulate flow



of electrical current between said electrodes, a pivoted lever carrying said shutter, a bellows connected to said temperature-responsive device and expansible and contractible by said temperature-responsive device, and lever means movable by said bellows interposed between said bellows and said lever for moving said lever in response to expansion and contraction of said bellows.

3,356,828
ELECTRICALLY HEATED HEAT STORAGE APPARATUS
Raymond Francis Furness, 11 Wellington St., Invercargill, Otago, New Zealand
Filed Apr. 28, 1965, Ser. No. 451,475
Claims priority, application New Zealand, Apr. 30, 1964, 138,062
3 Claims. (Cl. 219—365)



1. A heat storage heater comprising a liquid-tight container; support means supporting said container relative to a supporting surface; a heat storage material contained in said liquid-tight container, said heat storage material consisting of a mixture of microcrystalline petroleum wax, polyethylene and between five and eight percent by weight of an aluminum powder; an electric heating element positioned to transfer heat to said heat storage material, said electric heating element having a capacity sufficient to effect fusion of said material and a heat dissipating means associated with said container to allow for utilization of the heat stored in said heat storage material.

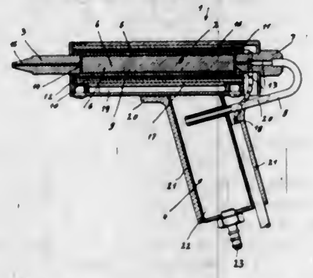
3,356,829
RADIANT HEATING DEVICE
Frank J. Brandenburg, 1926 Broad Rock Road, Richmond, Va. 23224
Filed Feb. 7, 1966, Ser. No. 525,719
6 Claims. (Cl. 219—365)

1. A space heating device comprising heat emitting means, a corrugated panel made of a heat radiating material conductively bonded to the heat emitting means, a completely non-metallic heat storing mastic bonded to said panel on one side thereof embedding the heat emitting means therein, a heat distribution grid embedded in



the mastic closely spaced from the panel, a mounting member, and spacing means supporting the panel on the mounting member establishing an air flow passage between the grid and the mounting member, said heat storing mastic being an asphaltic material.

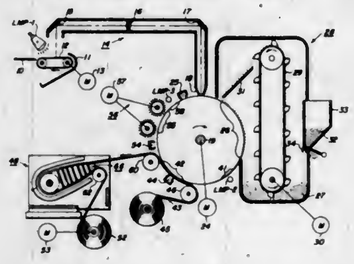
3,356,830
PROCESS AND APPARATUS FOR SOLDERING IN THE PRESENCE OF HYDROGEN GAS
Hermann Otto Schleer, Salzstrasse 7, Freiburg im Breisgau, and Kurt Bornschein, Freiburg im Breisgau, Germany; said Bornschein, assignor to said Schleer
Filed June 30, 1964, Ser. No. 379,231
Claims priority, application Germany, July 5, 1963, Sch 33,510
4 Claims. (Cl. 219—373)



1. A hand tool comprising an elongated metal core formed with a pair of substantially axial bores extending inwardly from opposed ends of said core and terminating respectively in inner bore ends distant from said ends of said core, said core being formed with a pair of transverse bores extending transversely through said core and communicating with said inner bore ends, respectively, and said core having an elongated threaded exterior surface extending between and terminating at outer open ends of said transverse bores; an elongated sleeve surrounding and engaging said core at its portion which extends between said transverse bores so that said sleeve defines with said threaded portion of said bore an elongated helical passage, said transverse bores communicating substantially with the ends of said passage, respectively, and said sleeve having end portions projecting beyond said transverse bores toward said ends of said core and fluid-tightly engaging the exterior surface thereof; an elongated tubular housing surrounding and spaced from said sleeve, said housing having end walls respectively formed with aligned bores through which said core projects so that the ends of said core

are located outside of and beyond said end walls of said housing, one of the projecting ends of said core forming a discharge nozzle; a hollow hand grip connected to and projecting from said housing and having distant from said housing a portion carrying means for placing the interior of said hollow hand grip in communication with a source of a gas which is to be heated; a tube communicating at one end with the interior of said grip adjacent to said housing and at its other end with the other of said axial bores so that gas introduced into said grip will flow through said tube and along said bores and helical passage to discharge from said nozzle; and heating means in said housing in the space between the latter and said sleeve for heating gas flowing along said helical passage.

3,356,831
XEROGRAPHIC FUSING APPARATUS
Paul G. Andrus, Powell, and John F. Byrne, Columbus, Ohio, and Frederick W. Hudson, West Henrietta, N.Y., assignors, by direct and mesne assignments, to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Dec. 23, 1964, Ser. No. 420,687
11 Claims. (Cl. 219—388)

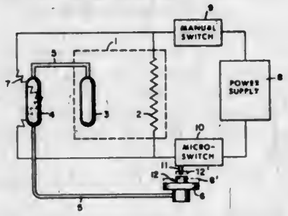


1. In a xerographic reproducing unit wherein powder images are loosely supported on a moving support surface, a heat fusing apparatus for fixing a powder image to said support surface, said heat fusing apparatus comprising in combination:

(a) heating means in thermal contact with the moving support surface to effect fusing of the powder image thereon, and

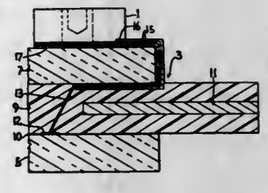
(b) a heat exchange unit including thermal transfer means supported in heat exchange relation between portions of the moving support surface approaching and past contact with said heating means to transfer heat from the latter to the former portions of said moving support surface to preheat the approaching support surface.

3,356,832
FLUID EXPANSION THERMOSTAT SYSTEM
Burre I. Kjellberg, Ballwin, Mo., assignor to Diatemp, Inc., St. Louis, Mo., a corporation of Missouri
Filed Jan. 12, 1965, Ser. No. 424,971
2 Claims. (Cl. 219—413)



1. In a thermostat system for an oven chamber of the type described, a power supply, a microswitch in series connection and controlling the flow of power from said power supply, a first heating element connected in parallel with said power supply, a temperature-sensing bulb in said oven chamber filled with expansible fluid to sense the heat output of said first heating element in said oven chamber, a booster bulb located outside said oven chamber and connected hydraulically in series with said first bulb and similarly filled with expansible fluid, an expansible diaphragm power element outside oven chamber and connected in series with both of said bulbs and expansible to actuate said microswitch, and a second heating element wound around said booster bulb and connected in parallel with said power supply.

3,356,833
LAMINATED WINDOW PANELS
Dee R. Orcutt, Natrona Heights, Pa., assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania
Original application Aug. 2, 1963, Ser. No. 299,582. Divided and this application Sept. 8, 1965, Ser. No. 485,699
3 Claims. (Cl. 219—522)

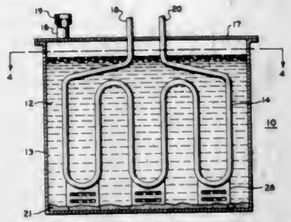


1. In an electrically heated, laminated window panel comprising an assembly of rigid, transparent sheets bonded together by a transparent plastic interlayer material, the transparent sheets and interlayer material comprising electrically non-conductive materials. an essentially transparent electroconductive circuit within said assembly, bus bars electrically connected to said electroconductive circuit and lead wire extending along a margin of said assembly and electrically connecting said bus bars to at least one terminal block mounted on an exterior surface of said assembly, the lead wire, bus bars, and electroconductive circuit being electrically connected to provide a potential difference across the electroconductive circuit when an external source of electrical energy is applied at the terminal block thereby causing the electroconductive circuit to perform as an electrical heater for the window panel, the improvement comprising a thermosetting resin impregnated fiberglass tape having a coefficient of thermal expansion of from 0.5 to 8.0 microinch/inch/° F., between —100° F. and 300° F. disposed about and enclosing said lead wire and disposed along the mounting surface of said terminal block and cured in intimate surface-to-surface contact with said lead wire and said mounting surface to provide good electrical, mechanical, and fluid penetration protection and to securely bond the surface mounted terminal block and lead wire to the panel structure.

3,356,834
PROCESS AND APPARATUS FOR STORING HEAT
Matthew Mekjean, Niagara Falls., N.Y., assignor to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York
Filed May 11, 1964, Ser. No. 366,471
4 Claims. (Cl. 219—530)

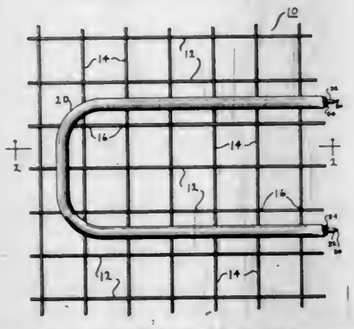
2. A reservoir comprising a heat storage medium of a substantially anhydrous alkali metal hydroxide and a nonreducing salt, an electric heating element immersed in

the medium and having resistor means to heat the medium, and a covering material of mild steel which contains less



than about 0.3 percent carbon, said material covering said resistor.

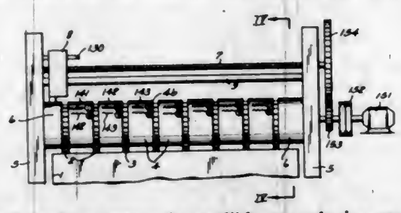
3,356,835
HEATING STRUCTURE
Lee M. Watson, South Bend, Ind., assignor to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed Oct. 8, 1964, Ser. No. 402,481
5 Claims. (Cl. 219—549)



1. A heating structure for embedding in pavement and the like, where the structure encounters water and moisture and which is subjected to abuse and strain during installation and use, said structure comprising a mesh of fiberglass material of open type construction having longitudinally and transversely arranged strands between which the paving material will readily pass, an electrical heating wire secured to said mesh in a sinuous path, said heating wire having an electric resistance wire, an inner insulating layer of plastic material on said wire, a braided wire forming a protective shield and an electric ground layer around said inner insulating layer extending substantially the full length thereof, and an outer insulating layer of thermoplastic material around said braided wire, said outer layer being relatively thick and embracing the strands engaged thereby and forming a bond therewith securing said heating wire to said mesh carrier.

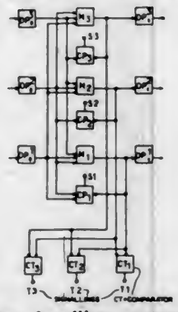
3,356,836
SPEECH CONTROLLED ANNOUNCING CALCULATOR
Walter H. Stenby, 98 Riverside Drive, New York, N.Y. 10024
Filed Aug. 24, 1965, Ser. No. 482,182
The portion of the term of the patent subsequent to Nov. 2, 1982, has been disclaimed
14 Claims. (Cl. 235—151)

1. A computer comprising input means responsive to spoken words; means for carrying out computing operations under the control of said input means; means for representing the results of computing operations; record carrier means having recorded intelligence and controlled by said last-mentioned means to place recorded intelligence representing results of computing operations in a read-out position; read-out means for reading out said recorded intelligence and controlled



by said read-out means for audibly reproducing recorded intelligence read-out in said read-out position.

3,356,837
BINARY DATA INFORMATION HANDLING SYSTEMS
Francois Henri Raymond, Saint-Germain-en-Laye, France, assignor to Societe d'Electronique et d'Automatisme, Courbevoie, Seine, France
Filed Jan. 7, 1964, Ser. No. 336,224
Claims priority, application France, Jan. 11, 1963, 921,152, Patent 1,353,029; Jan. 7, 1964, 959,560, Patent 85,070
8 Claims. (Cl. 235—153)

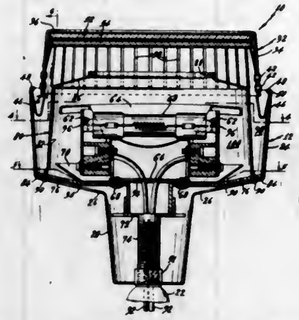


1. An information handling system for processing binary data items including at least first and second stages of triplicated operators and a majority voter gate circuit connecting the outputs of said first stage to the inputs of said second stage, and comparator means including at least two distinct logic members operatively connected to the outputs of said first stage for comparing the output signals from said operators to produce signals indicative of dissenting votes by one operator relative to the other operators of said stage which signals are also individually indicative of the operator producing said dissenting vote.

3,356,838
HIGH INTENSITY LIGHTING FIXTURE HAVING VENTILATION CHAMBERS
Mark Bramsen, Valley Stream, N.Y., assignor to Amplex Corporation, Carle Place, N.Y., a corporation of New York
Filed Apr. 26, 1965, Ser. No. 450,590
3 Claims. (Cl. 240—3)

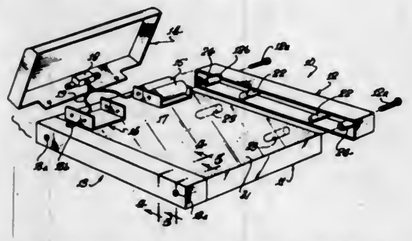
1. A floodlight comprising:
a housing having a body portion open at one end thereof and closed at the other end thereof;
a shield mounted within said housing and overlying the closed end of said body portion;
a chamber defined by said shield and said closed housing end;
means to mount a lamp tube and a reflector within said chamber;
means defining an aperture in said chamber through which light is radiated forwardly from the lamp out of the open end of said body portion;

means to vent said chamber;
a mounting plate on which said lamp tube mounting means and said reflector are mounted;
means interlocking said mounting plate and said shield;



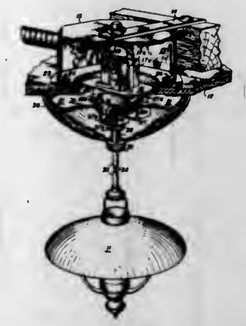
said interlocking means comprising bracket means operatively engaged with said mounting plate;
and apertured means defined in said shield;
said bracket means being engaged in said apertured means.

3,356,839
DIFFUSION-ILLUMINATED DRAWING BOARD
William A. Mehess, Panorama City, Calif., and Joseph C. Mineo, 6735 Shoup Ave., Canoga Park, Calif. 91303; said Mehess assignor to said Mineo
Filed July 26, 1965, Ser. No. 474,761
1 Claim. (Cl. 240—6.4)



A portable illuminated drawing board comprising:
a drawing board panel of clear transparent material except for the drawing surface, which is constructed to be translucent and diffusing for light transmitted through the clear interior of said panel;
means forming a reflective lower surface on the side of said panel opposite said drawing surface;
hollow socket housings attached to at least two opposite edges of said panel;
a plurality of light bulb sockets spaced along the interior of said socket housings;
light bulbs mounted in said sockets and received into bore holes into the adjacent edge walls of said panel to permit the transmission of light from said bulbs directly into the transparent interior of said panel;
battery holder means attached to a part of one surface of said panel, and battery means adapted to energize said bulbs mounted therein;
battery housing means received over said battery holders and batteries and extending into overlapping contact with parts of each of said socket housings;
switch means mounted in said battery housing and providing switch control from the exterior thereof; and
wiring between said battery means, said switch means, and said socket for the controlled operation of said bulbs, said wiring being concealed within said battery housing and passing therefrom through the interior of said socket housings to said sockets.

3,356,840
ELECTRIC LIGHT FIXTURE MOUNTING
David A. Cohen, 744 Foothill Drive, San Mateo, Calif. 94402
Filed Jan. 30, 1967, Ser. No. 612,384
5 Claims. (Cl. 240—78)



1. Apparatus for mounting an electrical fixture from an outlet box, comprising:
an adapter plate adapted to fit over said box;
a riser member secured to said adapter plate and disposed in said box;
an electrical receptacle secured to said riser member and recessed within said box;
a yoke member releasably engaging said adapter plate;
an electrical plug member for mating with said receptacle in said box, said plug member being disposed above said yoke member and being separable therefrom when said yoke member is disengaged from said adapter plate to permit connection and disconnection of said plug member in said receptacle;
said plug member being supported by said yoke member in at least a partially recessed position in said box when said yoke member is engaged with said adapter plate to maintain good electrical contact between said plug member and said receptacle;
means electrically connecting said plug member to the electrical fixture; and
fixture supporting means carried by said yoke member for supporting the electrical fixture when said yoke member is engaged with said adapter plate, said yoke member being releasable from said adapter plate to permit disconnection of said plug member from said receptacle and removal of said fixture.

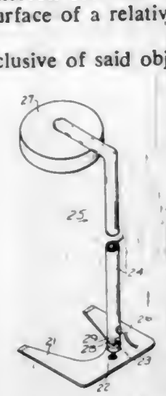
3,356,841
EXTERNALLY STABILIZED LIGHTING DEVICES
John J. Horan, 420 Quigley Ave., Willow Grove, Pa. 19090
Filed June 29, 1966, Ser. No. 561,450
16 Claims. (Cl. 240—81)

14. A positioning apparatus for an electric lamp comprising:
an elongated upwardly extending member having a base end and an upper end;
an illuminating device adapted to receive an electric lamp therewithin,
said illuminating device being attached to said upper end,
a footing therefor having a heel portion and a toe portion;
pivot means intermediate between said base end and said toe portion,
said footing having planar sole area thereunder adapted for resting on a flat floor,

at least the toe portion of said footing being substantially wafer-thin in height and having an upwardly facing surface thereon for receiving at least a part of the bottom surface of a relatively heavy extraneous object,

said apparatus, exclusive of said object, having a relatively high center of gravity resultant from the arranged mass of the parts thereof,

said center of gravity being outside the zone above said area within which its presence would afford erect equilibrium and stability against light overturning forces for said apparatus in the absence of said object.



3,356,842

LIGHTING FIXTURE

Peter J. Docimo, Los Angeles, Calif., assignor to Marvin Electric Manufacturing Co., Los Angeles, Calif., a corporation of California

Filed June 30, 1965, Ser. No. 468,405
2 Claims. (Cl. 240—147)



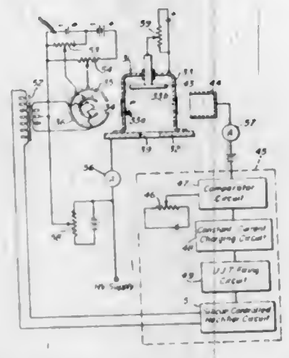
1. A lighting fixture face plate for use interchangeably with a recessed lighting fixture of a first type having a supporting framework having front, back and side portions each having a vertical wall and a horizontal flange extending outwardly therefrom, means attached to the rear of the horizontal flange of each side portion for horizontally positioning a hinge pin whereby a face plate may be hingedly attached thereto, means associated with the vertical walls of said side portions for attaching said framework to the walls of the housing in which it is mounted, and latch means mounted on the vertical wall of said front portion for making latching engagement with a face plate; and of a second type having a supporting framework fastened to the housing in which it is mounted and having a pair of brackets mounted on the sides thereof, said brackets having slots therein for receiving springs attached to a face plate whereby the face plate may be attached thereto, comprising: a sheet of metal having a centrally located opening formed therein, a continuous vertical wall formed integrally with said sheet and having front, back and side portions, said wall portions being positioned intermediate the edges of said sheet and the opening therein whereby an internal ledge is formed for supporting a sheet of light transmitting material, first and second blocks mounted on the rear corners of said metal sheet, said blocks having passageways therein for receiving said hinge pins, and a catch positioned adjacent the front portion of said wall for cooperating with said latch means whereby the face plate is removably received in said supporting framework of the first type, and a passageway formed in each of said side portions of said vertical walls for receiving spring mounting means whereby the face plate is adapted to be removably received in a supporting framework of the second type.

3,356,843

MASS SPECTROMETER ELECTRON BEAM ION SOURCE HAVING MEANS FOR FOCUSING THE ELECTRON BEAM

Peter E. McElligott, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

Filed Feb. 1, 1965, Ser. No. 429,325
1 Claim. (Cl. 250—41.9)



In an ionizing device wherein electrons are liberated from a straight longitudinally-extending filament to generate an ionizing electron beam by supplying electrical power to said filament, which electron beam is directed by focusing means into an adjacent enclosure to produce ionization of molecules contained therewithin, the improved focusing means comprising:

(a) an inner and an outer spaced concentrically-mounted electrically conducting cylindrically-shaped element,

(1) said elements each having a straight longitudinal slit through the wall thereof and being located with the filament mounted along the central axis of the smaller diameter inner element and having both slits of said elements facing the enclosure in register with each other and with said filament,

(b) first adjustable means connected to said inner element for applying electrical potential thereto to exert an electrostatic force on said filament and

(c) second adjustable means connected to said outer element for applying electrical potential thereto to exert an electrostatic force on said filament.

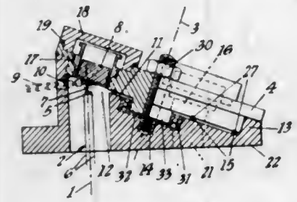
3,356,844

ROTATABLE SAMPLE CHANGER FOR AN ELECTRON PROBE MICROANALYZER HAVING MEANS FOR MAINTAINING A VACUUM IN THE ANALYSIS CHAMBER

Ivan Houbart, Chenee, Belgium, assignor to Centre National de Recherches Metallurgiques, Brussels, Belgium

Filed June 26, 1964, Ser. No. 378,182
Claims priority, application Belgium, July 2, 1963, 634,419
1 Claim. (Cl. 250—49.5)

A device for analysing samples by electronic bombardment comprising a body defining an enclosure provided with an orifice, said body having an outer flat surface surrounding said orifice, means for evacuating the enclosure to a vacuum of at least 10^{-5} mm. Hg, a source of bombarding electrons to excite characteristic radiations from a sample held in the orifice, a support mounted on said flat surface and completely covering said orifice, the support having at least three apertures and being rotatable about an axis normal to the flat surface, gasket means individually surrounding each aperture in said support and in sealing engagement with said flat surface to prevent ingress of air between the support and the flat surface to the orifice in all positions of the support to provide air tight sealing of the apertures, said gasket means being formed by a pair of concentric rings of sealing material having an annular space therebetween and connected by radial strips of sealing material dividing the annular space into mutually sealed substantially equal sectors in number equal to twice the number of apertures in said support, said gasket means being so arranged that each aperture opens wholly into a separate sector and the sectors are alternately with and without apertures opening thereinto,



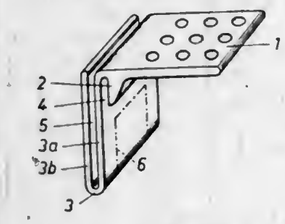
at least two conduits provided in said body and having open ends equally spaced with said orifice from and about the axis of rotation, the apertures in the support being also equally spaced from and about the axis of rotation so as to be brought successively into alignment with the orifice and the open ends of the conduits as the support is rotated about said axis of rotation, means for producing a vacuum of at least 10^{-5} mm. Hg in at least one of said conduits having its open end nearest said orifice, and means for selectively putting another one of said conduits into communication with the surrounding atmosphere, the support further comprising removable covers for tightly sealing each of the apertures, each of said covers being provided with a sample holder whereby a sample may be placed in position by fitting the cover to one of the apertures and rotating the support to a position wherein said one aperture is in communication with said one conduit and further rotating the support to align said one aperture with said orifice in the enclosure.

3,356,845

DENTAL X-RAY FILM HOLDER WITH PLURAL GROOVES OPENING IN OPPOSITE DIRECTIONS TO SUPPORT X-RAY FILMS

Gunnar Bergendal, Angbyhojden 42, Bromma, near Stockholm, Sweden

Filed Mar. 30, 1965, Ser. No. 444,004
5 Claims. (Cl. 250—70)



1. A holder for retaining a dental X-ray film in the desired position in the mouth of a patient comprising:

(a) a plate having first and second portions, said first portion being engageable between the teeth of the upper and lower jaws of the patient with said second portion disposed within the mouth of said patient;

(b) a channel-shaped flange having a pair of spa
resilient walls and a base portion connecting s
walls, one of said walls having an edge portion
posite said base connected to said second portion
said plate, said walls and base defining a first gro
therebetween, said groove opening in a first directi
said base, defining the bottom of said first groo
being spaced from said plate so that a dental X-
film clampingly retained by said resilient walls
said first groove occupies a position substanti
centralized with respect to the plane of said plate
effecting an examination of the crown of a tooth

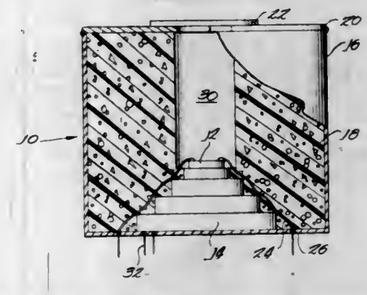
(c) a rib connected to the second portion of said pl
and spaced from said one wall of said flange c
nected to said plate, said rib and said one wall
fining a second groove; said second groove oper
in a second direction opposite that of said first gro
so that a dental X-ray film clampingly engaged
said second groove, may be employed for exam
tion of the root of a tooth.

3,356,846

INFRARED DETECTOR MOUNTED ON THERM ELECTRIC COOLING MEANS AND WITHIN CONTAINER OF INERT GAS

Robert Rupert, Wakefield, Mass., and Norman C. An son, Santa Barbara, Calif., assignors to Infrared In tries, Inc., Santa Barbara, Calif., a corporation Delaware

Filed Apr. 9, 1965, Ser. No. 446,912
3 Claims. (Cl. 250—83)



2. An infrared detector structure comprising a tainer, a cooling means positioned therein, an infr detector positioned on said cooling means with leads tending outside said container, a body of poured-in-p plastic foam enclosing said cooling means and said infr detector and having a transmitting orifice therein for detector for shielding said cooling means from the loading, a cover with an infrared energy transmi window therein in communication with said transmi orifice and an atmosphere of inert gas within said tainer.

3,356,847

X-RAY FILM EXPOSURE MEASURING SYST HAVING MEANS FOR TERMINATING EXPOSURE

Walter E. Splain, North Olmstead, Ohio, assigno Picker X-Ray Corporation, Waite Manufacturing sion, Inc., Cleveland, Ohio, a corporation of Ohio

Filed July 28, 1965, Ser. No. 475,604
16 Claims. (Cl. 250—95)

1. In an X-ray apparatus for providing X-rays an X-ray source to a subject to be X-rayed and to a positioned behind the subject, a system for properl posing the film, said system comprising:

(a) supply circuit means connecting the X-ray s to an energizing supply;

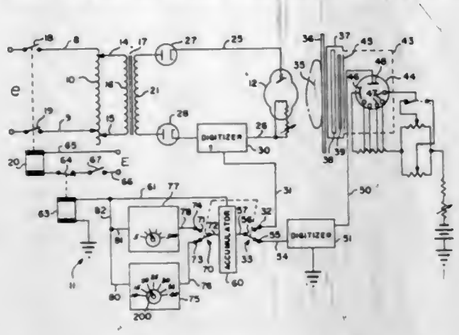
(b) X-ray responsive means disposed adjacent the

and providing an output indication of the quantity of X-rays impinging the film;

(c) integrating circuit means connected to the X-ray responsive means and integrating said output;

(d) digitizing circuit means connected to said integrating circuit means and forming a successive train of pulses from the integrated output;

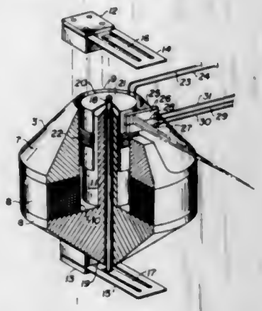
(e) pulse responsive means connected to said digitizing



means and providing an exposure termination signal when a predetermined plurality of pulses are produced by the digitizing circuit means; and,

(f) control means connected to said supply circuit means and to said pulse responsive means and disconnecting the X-ray source from the energizing supply in response to the exposure termination signal provided by the pulse responsive means.

3,356,848
ELECTRO-OPTICAL ERROR MEASURING SYSTEM FOR DETERMINING TARGET DISPLACEMENT
Hans Heyck, Phoenix, Md., assignor to Martin-Marietta Corporation, New York, N.Y., a corporation of Maryland
Filed Apr. 3, 1963, Ser. No. 270,359
19 Claims. (Cl. 250—203)



9. An electro-optical error measuring system for measuring the angular displacement between a target containing an intensity modulated radiating source of energy and a bore-sighted line of direction comprising:

(a) a housing including a magnet and formed to establish a magnetic field of flux across a space between two sections thereof;

(b) a support rod connected to said housing and extending through said space;

(c) a coil form journaled to said support rod within said space;

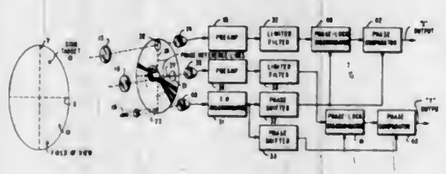
(d) a conducting coil wrapped on said coil form;

(e) at least one spring connected to said coil form to restrain said coil form in a neutral position rotationally with respect to said housing when substantially no current flows through said coil;

(f) a center-split photodetector mounted on said coil form, the center split thereof disposed parallel with respect to the axis of rotation of said coil form and aligned with said bore-sighted line of direction when said coil form is in its said neutral position with respect to said housing, so as to receive a light spot from said target thereon to generate a photodetector AC output signal in response thereto such that said output signal is at substantially a zero potential when said light spot produces an equal illumination of the two sections of said center-split photodetector and such that said electrical signal has a potential proportional to and in phase with the distance and direction, respectively, of the normal displacement of said light spot from said center split of said photodetector when said light spot produces an unequal illumination of said two sections of said center-split photodetector, there being an angular displacement between said target and said bore-sighted line of direction at such times proportional to and in phase with said normal displacement of said light spot from said center split of said photodetector; and

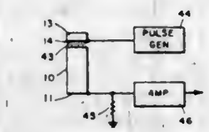
(g) demodulating means for ascertaining the phase of said photodetector AC output signal and for converting said photodetector output signal into a plus or a minus DC input signal to said conducting coil dependent upon the phase detected.

3,356,849
DETECTOR OF CODED SIGNALS USING PHASE-LOCK TECHNIQUES
Theodore R. Whitney, 5500 Fedwood Ave., Woodland Hills, Calif. 91364
Filed Aug. 21, 1964, Ser. No. 391,150
21 Claims. (Cl. 250—203)



10. An elector-optical tracker for locating an optical target within a field of view comprising: a rotating reticle with alternating opaque and transparent spokes extending radially from the center of rotation; optical means for focusing the field of view to form at least one image displaced from the center of rotation and confined to a fixed angular portion of the reticle; photocell means disposed adjacent the field of view image for responding to the light passing through the transparent portions of the rotating reticle, the width of said spokes varying in a coded pattern around the reticle to produce a coded output signal from the photocell means with a phase of repetition indicative of the angular position of the target image on the reticle within the field of view image; a controlled variable frequency signal generator for generating an estimate of the coded output signal from the photocell means in response to an applied control signal; means responsive to the coded output signal for generating a feedback signal indicative of the phase difference between the coded output signal and the estimate generated by the signal generator; and means for restricting the feedback signal to a set of values corresponding to the fixed angular portion of the reticle containing the field of view image and for applying the restricted feedback signal as the control signal to the signal generator for adjusting the frequency estimate of the coded output signal.

3,356,850
FREQUENCY-SENSITIVE AND PHOTO-SENSITIVE DEVICE
Brian Clifford Fleming-Williams, London, England, assignor to Sylvania Thorn Colour Television Laboratories Limited, London, England, a British company
Original application Jan. 26, 1961, Ser. No. 85,087, now Patent No. 3,254,266, dated May 1, 1966. Divided and this application Dec. 1, 1965, Ser. No. 535,618
Claims priority, application Great Britain, Feb. 5, 1960, 4,245/60
8 Claims. (Cl. 250—211)



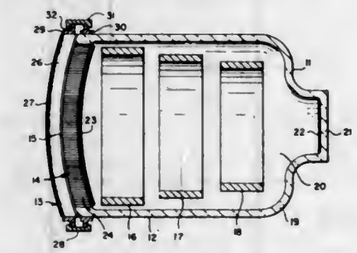
1. A frequency-sensitive photo-sensitive device comprising:

(a) a block of piezoelectric material, said block being divided by a plurality of slots formed therein into a plurality of individual piezoelectric bodies having different resonant frequencies, said slots extending partially into said block to form interconnecting piezoelectric bridges connecting adjacent piezoelectric bodies,

(b) a plurality of photoconductive layers, each of said layers being connected in physical contact with and in electrical series with one of said individual piezoelectric bodies, and

(c) means for applying a voltage across the electrical series combinations of said bodies and said layers, an individual layer conducting current when the corresponding piezoelectric body is caused to resonate, the amplitude of the current being dependent on the amount of light incident upon said layer.

3,356,851
IMAGE INTENSIFIER TUBE WITH SEPARABLE OPTICAL COUPLER
Roland W. Carlson, Euclid, Ohio, assignor to Picker X-Ray Corporation, Waite Manufacturing Division, Inc., Cleveland, Ohio, a corporation of Ohio
Filed Oct. 22, 1963, Ser. No. 317,879
10 Claims. (Cl. 250—213)



2. An image intensifier comprising:

(a) an image amplifier tube having an envelope with an input image window at one end and an output observation screen at the other end;

(b) said input window comprising a fiber optics bundle for conveying light photons in a parallel manner through the window;

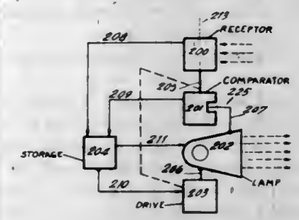
(c) a photo-cathode layer within said envelope on the inside surface of said window;

(d) a fluorescent layer outside said envelope and positioned adjacent the outside surface of the window for converting incident energy photons into light photons;

(e) a separable optical coupling medium optically coupling said fluorescent layer to said input window; and

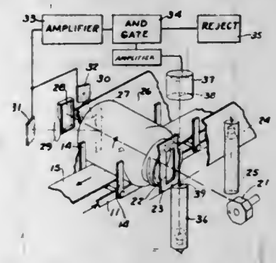
(f) separable means removably coupling said fluorescent layer to the window.

3,356,852
PHOTOELECTRIC HEADLIGHT ROTATOR RESPONSIVE TO ONCOMING HEADLIGHTS
Konrad Zuse, 21 Im Haselgrund, 6418 Hunfeld, Germany
Filed Aug. 20, 1964, Ser. No. 390,861
Claims priority, application Germany, Aug. 23, 1963, Z 10,313
13 Claims. (Cl. 250—214)



1. A lighting apparatus adapted for mounting on a motor vehicle for casting ahead thrown beams directed other than to a headlight of an approaching vehicle which comprises, a receptor photocell detecting device for deriving an electrical scanning signal indicative of the presence and angle of incidence of light from said approaching vehicle headlight, drive means for rotating said detecting device to scan successive angular sectors for detecting said approaching vehicle, a headlight mounted on an axis on said motor vehicle for casting an ahead illuminating beam, stepped means for rotatably driving said last named beam in angular steps about said axis, and a storage device for storing said scanning signals comprising means actuable upon the storage of a complete scanning signal for enabling said stepped driving means.

3,356,853
RADIATION SENSITIVE APPARATUS FOR INSPECTING THE BOTTOM WALL OF HOLLOW TRANSPARENT CONTAINERS
Hans R. Rottmann, Poughkeepsie, N.Y., assignor to Owens-Illinois Glass Company, a corporation of Ohio
Filed Jan. 4, 1965, Ser. No. 423,060
8 Claims. (Cl. 250—223)



8. An apparatus for inspecting the bottom wall of hollow open mouth transparent containers for defects which comprises

means for supporting and moving the container successively through an inspection station with their axes extending generally horizontally and the open mouths of the containers extending to one side,

means at said inspection station for directing a beam through the open mouth of a container as it passes

through said inspection station and focusing said beam in a spot in the bottom wall of the container,

a light trap adjacent the bottom wall of the container into which said light beam normally passes after passing through the bottom wall,

means for moving said spot along a diameter of said bottom wall,

means for rotating each said container about its axis as it is moved through said inspection station to cause said moving spot to scan said bottom wall,

a first mask adjacent the mouth of the container having a diametrically extending aperture through which said beam passes limiting the area through which the light beam passes,

a second mask having a diametrically extending aperture adjacent to the outer surface of the bottom wall of the container limiting the area which is being viewed by the hereinafter mentioned light sensitive means,

a plurality of light sensitive means positioned adjacent the outer surface of the bottom wall of the container with the lines of vision thereof passing through said apertures intersecting the bottom wall of the container and out of the normal path of said beam,

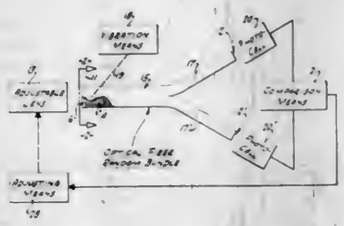
means for creating a signal in response to energization of said light sensitive means.

3,356,854

FOCUS INDICATING AND ADJUSTING DEVICE

William Humphrey, Berkeley, Calif., assignor, by mesne assignments, to Bell & Howell Company, Chicago, Ill., a corporation of Illinois

Filed June 25, 1964, Ser. No. 377,902
24 Claims. (Cl. 250—227)



13. Focusing indicating apparatus comprising adjustable lens means for variably focusing an object at a focal plane, a random bundle of optical fibers having one end disposed in viewing relation to said focal plane and bifurcated at the other end to define two groups of fibers of substantially equal number distributed such that of any sample of n adjacent fibers at the first end of the bundle

$$\frac{n}{2}\pm\frac{\sqrt{n}}{2}$$

of these fibers are disposed in one group while

$$\frac{n}{2}\mp\frac{\sqrt{n}}{2}$$

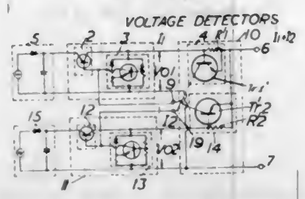
of these fibers are disposed in the other group, a pair of photocells respectively disposed in light receiving relation to said groups of fibers and electrically connected in opposition to generate an output signal which varies from a minimum to a maximum as the focus of said adjustable lens means is varied from a defocused to a focused position, and means for moving the first end of said bundle of fibers in said focal plane.

3,356,855

PARALLEL OPERATING VOLTAGE STABILIZED POWER SUPPLY ARRANGEMENT

Akira Suzuki and Norio Muto, Tokyo, Japan, assignors to Nippon Electric Company, Limited, Tokyo, Japan, a corporation of Japan

Filed Oct. 18, 1963, Ser. No. 317,229
Claims priority, application Japan, Nov. 8, 1962 37/50,362
6 Claims. (Cl. 307—53)



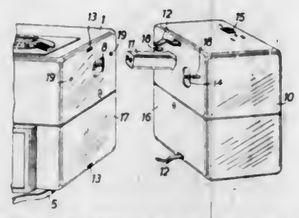
1. In a regulated power supply system comprising a plurality of separate power supply units each having a power source and a series-connected regulating transistor, a shunt-connected voltage divider and a control transistor connected to said voltage divider and said regulating transistor to provide voltage regulation of the respective unit; and connections for connecting said power supply units in parallel to a common load, an arrangement for assuring a proportional division of said load among said units, comprising a voltage dropping resistor in series in with said regulating transistor in each unit, a transistor having control electrodes connected across each said regulating resistor, and an output electrode connected to control the impedance of a regulating transistor in a different one of said units.

3,356,856

ASSEMBLIES INCLUDING AN ALTERNATING CURRENT DEVICE ATTACHMENT TO BE BATTERY-DRIVEN

Franz Jakob, Unterhaching, near Munich, and Johann Peter Simson, also known as Hans-Peter Simson, Tutzing, Germany, assignors to Agfa Aktiengesellschaft, Leverkusen, Germany

Filed Aug. 27, 1964, Ser. No. 392,468
Claims priority, application Germany, Aug. 31, 1963, A 43,954
9 Claims. (Cl. 307—64)



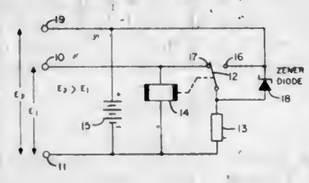
1. In an electrical assembly, in combination, an electronic flash device, said device requiring high voltage alternating current for its operation, and said device carrying a first electrical connecting means; an electrically conductive cable having one end adapted to be attached to a source of alternating current of predetermined high voltage such as a wall outlet, said cable having an opposite end adapted to be removably connected by said first connecting means to said device for placing the latter in communication with said source of alternating current; and an attachment including a battery and means for changing the direct current of low voltage of said battery to alternating current of said predetermined high voltage, said attachment including a second connecting means forming an output for said alterating current of predetermined high voltage and adapted to removably connect said attachment to said first connecting means when said cable is not connected thereto for operating said device with said attachment, said second connecting means connecting said attachment directly to said first connecting means and thus to said electrical device, and said attachment having a third connecting means identical with said first connecting means for removably connecting said opposite end of said cable to said attachment for charging the latter when said one end of said cable is connected to a source of alternating current.

3,356,857

APPARATUS FOR SWITCHING OVER OF A LOAD FROM ONE POWER SOURCE TO ANOTHER WITHOUT INTERRUPTION

Gunter Strasen, Sprendlingen, and Georg Gräber, Russelsheim, Germany, assignors to Varta Deutsche Edison-Akkumulatoren-Company Gesellschaft mit beschrankter Haftung, Frankfurt am Main, Germany

Filed July 8, 1965, Ser. No. 470,552
Claims priority, application Germany, July 11, 1964, V 26,347
1 Claim. (Cl. 307—66)



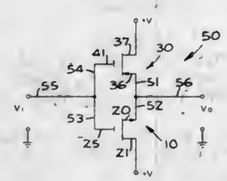
Apparatus for switching over a load from a primary power source to a battery without interruption of service to the load comprising: a primary source of DC power for normally supplying energy to a load; a DC battery having a potential somewhat greater than that of said primary source; a second source of DC power connected across said battery for charging said battery; a load; a single-pole, double-throw relay having its energizing coil connected across said primary source, the switch contacts of said relay being arranged so that when the coil is energized by said primary source said load is connected to said primary source and when the coil is deenergized said load is connected to said battery; and a Zener diode having a conducting breakdown voltage only slightly greater than the potential difference between said battery and said primary source connected between said battery and said load.

3,356,858

LOW STAND-BY POWER COMPLEMENTARY FIELD EFFECT CIRCUITRY

Frank M. Wanlass, Mountain View, Calif., assignor to Fairchild Camera and Instrument Corporation, Syosset, N.Y., a corporation of Delaware

Filed June 18, 1963, Ser. No. 288,786
3 Claims. (307—88.5)



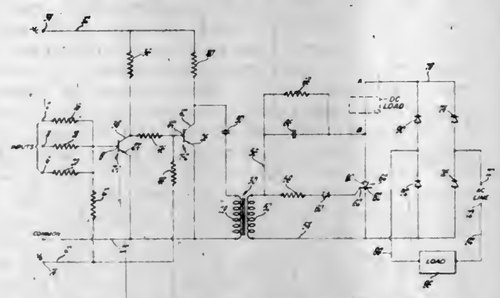
2. A circuit comprising a first insulated gate field-effect transistor having a substrate of one conductivity type, an insulating layer adjacent said substrate, a metal layer upon said insulating layer opposite said substrate, and a channel region adjacent said insulating layer having a conductivity type opposite said substrate upon application of a first predetermined bias voltage to said metal layer, thereby forming a PN junction between said substrate and said channel region, source and drain electrodes on opposite ends of said channel region, a second insulated gate field-effect transistor having a substrate of said opposite conductivity type, an insulating layer adjacent said substrate, a metal layer upon said insulating layer opposite said substrate, and a channel region adjacent said insulating layer having said one conductivity type upon application of a second predetermined bias voltage to said metal layer of polarity opposite to said first predetermined bias voltage, source and drain electrodes on opposite ends of said channel region, one of said source and drain electrodes of said first insulated gate field-effect transistor being coupled to one of said source and drain electrodes of said second insulated field-effect transistor, a means for applying a fixed bias voltage across the other of said source and drain electrodes of said first and second insulated field-effect transistors, and a means for applying a voltage signal of a single predetermined polarity to both of said metal layers of said first and second insulated gate field-effect transistors adapted to render said first insulated gate field-effect transistor conductive between its source and drain electrodes while rendering said second insulated gate field-effect transistor non-conductive between its source and drain electrodes, whereby said second non-conductive insulated gate field-effect transistor is employed as the active load for said first conductive insulated gate field-effect transistor.

3,356,859

SMALL SIGNAL OPERATED-CONTROL SYSTEM FOR ELECTRICAL LOADS

Douglas G. Wilson, Kokomo, and Thomas V. Cornell, Marion, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

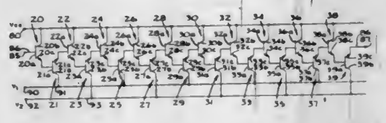
Filed June 27, 1963, Ser. No. 291,054
1 Claim. (Cl. 307—88.5)



A circuit for controlling the application of alternating current to a load in response to externally obtained input signals comprising: an input amplifier section including at least one transistor having a pair of output electrodes and a control electrode, biasing means connected to the control electrode for normally maintaining the transistor in a conductive state, and at least one input circuit connected to the control electrode of the transistor and responsive to an input signal to overcome the biasing means and render the transistor nonconductive; an output section including a rectifier bridge having two pairs of terminals, a source of AC current, an AC load, the source and the load being connected in series relation across one pair of terminals; a gating section including a transformer having primary and secondary windings, the primary winding being connected in parallel with the output electrodes of the transistor to reflect an impedance into the secondary winding related to the state of the transistor, an SCR having cathode, anode and control electrodes, the

anode and cathode electrodes being connected across the other pair of bridge terminals thereby to provide current paths from the source through the load in opposite directions but through the SCR in one direction, the secondary winding of the transformer being connected on one end to the SCR cathode, an RC network connected between the SCR anode and the other end of the secondary winding to provide a signal path shunting the SCR when a relatively low impedance is reflected into the secondary winding, and a unidirectionally conducting circuit connected between said other end of the secondary winding and the control electrode of the SCR to provide a signal path into the control electrode when a relatively high impedance is reflected into the secondary winding.

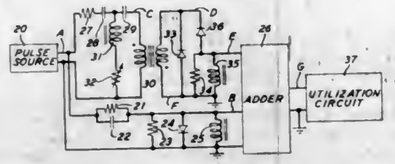
3,356,860
MEMORY DEVICE EMPLOYING PLURALITY OF MINORITY-CARRIER STORAGE EFFECT TRANSISTORS INTERPOSED BETWEEN PLURALITY OF TRANSISTORS FOR ELECTRICAL ISOLATION
Robert H. Norman, Los Altos, Calif., assignor to General Micro-Electronics Inc., a corporation of Delaware
Filed May 8, 1964, Ser. No. 365,913
5 Claims. (Cl. 307—88.5)



1. A memory device comprising a semiconductor body, said semiconductor body being formed with a plurality of semiconductor devices, means on said semiconductor body for connecting said semiconductor devices in cascade, each of said semiconductor devices being formed with a rectifying P–N storage junction for conducting and storing minority carriers, each of said semiconductor devices also being formed with a rectifying P–N coupling junction for conducting current therethrough for transmission to a succeeding semiconductor device, means for impressing a first synchronizing pulse signal on alternate ones of said semiconductor devices, means for impressing a second synchronizing pulse signal on the semiconductor devices interposed between said alternate semiconductor devices, said second synchronizing pulse signal being out of phase with said first synchronizing pulse signal, a plurality of emitter followers, one for each of said semiconductor devices, said semiconductor body being formed with said emitter followers, means on semiconductor body for connecting the output of each of said emitter followers to the rectifying P–N storage junction of its associated semiconductor device, means for impressing a signal to be stored on a leading one of said emitter followers, and means connected to a succeeding one of said semiconductor devices for conducting a stored output signal.

3,356,861
PASSIVE PULSE WIDTH DISCRIMINATOR UTILIZING STORAGE EFFECT OF DIODES
Emery Heber, West Orange, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed June 24, 1964, Ser. No. 377,769
5 Claims. (Cl. 307—88.5)

1. A discriminator comprising
first differentiating means for differentiating input pulses,
means connected to said first differentiating means for accumulating a predetermined charge in response to each of the output signals of said first differentiating means corresponding in time to the leading edges of said input pulses,
said accumulating means dissipating at least a portion of said charge as a function of time beginning at the termination of said first differentiating means output signal producing said charge and the remainder of said charge in response to the next said first differentiating means output signal corresponding in time to the trailing edge of an input pulse to produce an output pulse whose amplitude is directly related to said remaining charge,



second differentiating means for differentiating said input pulses, and
summing means connected to said accumulating means and said second differentiating means to produce an output whose amplitude is a function of said accumulating means and second differentiating means outputs.

3,356,862
HIGH SPEED CONTROLLED RECTIFIER
Edward J. Diebold, Palos Verdes Estates, and Yigal Yanai, Hollywood, Calif., assignors to International Rectifier Corporation, El Segundo, Calif., a corporation of California
Filed Dec. 2, 1964, Ser. No. 415,292
5 Claims. (Cl. 307—88.5)

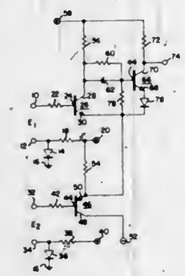


5. A high speed controlled rectifier comprising a wafer of semiconductor material having four layers of alternate conductivity types defining three series arranged junctions; a cathode electrode connected to the first of said layers; a plurality of gate electrodes connected to the second of said layers; and an anode electrode connected to the last of said layers; said plurality of gate electrodes being laterally disposed in close, spaced relation whereby a plurality of initial conducting plasmas are simultaneously produced in said wafer responsive to the injection of carriers from said gate electrodes; each of said plurality of gate electrodes comprising a spaced, small area contact extending through and spaced from both said first layer and said cathode electrode into said second layer.

3,356,863
VOLTAGE SENSING APPARATUS
Frederick F. Beck, Glendora, Calif., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed July 16, 1965, Ser. No. 472,564
6 Claims. (Cl. 307—88.5)

1. Switching apparatus of the class described comprising in combination:
first transistor means of a first polarity type having input means and first and second output means;
second transistor means of the first polarity type having input means and first and second output means;

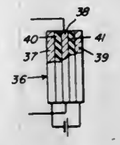
third transistor means of a second polarity type having input means and first and second output means;
first and second power supplying terminal means;
first, second, and third impedance means connected between said first power supplying means and said first output means of said first, second, and third transistor means respectively;
fourth impedance means connecting said first output means of said first transistor means to said input means of said second transistor means for supplying a signal thereto;
first means for supplying a reference level signal including first and second terminal means;
second means for supplying an input signal to be compared with the reference signal including first and second terminal means;
reference potential means;
first and second temperature compensating diode means connected between said reference potential means and said first terminal means of said first and second means respectively;
third means for connecting said second terminal means of said second means to said input means of said first transistor means to supply the input signal thereto;



fourth means for connecting said second terminal means of said first means to said input means of said third transistor means to supply the reference level signal thereto;
fifth means for connecting said second output means of said third transistor means to said second power supply means;
sixth means for connecting said second output means of said first transistor means to said second output means of said second transistor means and to said first output means of said third transistor means; and
apparatus output means connected to said first output means of said second transistor means for supplying a first output signal when the magnitude of said input signal is less than said reference signal and for supplying a second output signal when the magnitude of said input signal is greater than said reference signal.

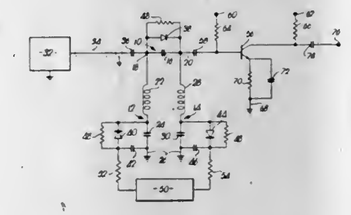
3,356,864
ELECTRON TUNNEL EMISSION DEVICES SYSTEMS
Ivar Giaever, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Application Sept. 18, 1963, Ser. No. 309,806, now Patent No. 3,259,759, dated July 5, 1966, which is a division of application Ser. No. 70,074, Nov. 17, 1960, now Patent No. 3,116,427, dated Dec. 31, 1963. Divided and this application Oct. 1, 1965, Ser. No. 492,141
9 Claims. (Cl. 307—88.5)

1. An electronic device comprising a laminated body, means for connecting the body in an electric circuit, and means for maintaining the laminated body at a temperature below 20° K., the said laminated body comprising a first conductor in the form of a metal film, a second conductor in the form of a metal film, a third conductor in the form of a film of a metal which is superconducting within a certain temperature range below 20° K., a first insulating layer separating the superconducting film from the first conductor, a second insulating layer separating



the superconducting film from the second conductor, the said insulating layers in the portions between the conductors being continuous and of thickness between two and 1000 Angstroms and pervious to electrons tunnelling through the insulating films in travel from one conductor to another.

3,356,865
CONTROLLABLE PHASE SHIFT CIRCUIT
George W. Woster, Mission, Kans., assignor to Wilcox Electric Company, Inc., Kansas City, Mo., a corporation of Kansas
Filed July 6, 1965, Ser. No. 469,391
10 Claims. (Cl. 307—88.5)

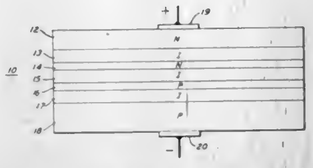


1. A controllable phase shift circuit for use with a relatively low impedance load, said circuit comprising:
first and second terminals for receiving an applied, time-varying voltage;
a third terminal adapted for coupling with said load;
a first impedance arm coupled in series between said first and third terminals;
a second impedance arm coupled with said first arm and said second terminal and presenting a current path in shunt relationship to said first and second terminals,
said arms having net reactances of opposite sign;
variable impedance means coupled with both of said arms; and
means coupled with said variable impedance means for operating the latter to vary the impedance thereof over a phase control range whereby, upon application of said voltage to said first and second terminals, the voltage appearing across said third and second terminals is shifted in phase with respect to the applied voltage in accordance with the impedance of said variable impedance means,
said operating means being operable to raise the impedance between said first arm and said second terminal while simultaneously lowering the impedance between said first and third terminals, whereby to prevent excessive current loading of said second arm.

3,356,866
APPARATUS EMPLOYING AVALANCHE TRANSIT TIME DIODE

Toshio Misawa, Murray Hill, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York

Filed Aug. 17, 1966, Ser. No. 572,994
5 Claims. (Cl. 307—88.5)

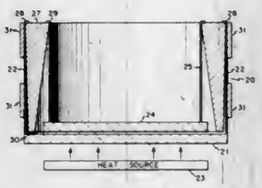


2. A semiconductive device adapted for providing a negative resistance comprising a semiconductive element having an NINIPIP resistivity profile and electrode connections to the two terminal zones, the intermediate zones being free of electrode connections.

3,356,867
THERMAL AND ELECTRICAL INSULATING MEANS

David M. Scruggs, Ann Arbor, Mich., assignor to The Bendix Corporation, Southfield, Mich., a corporation of Delaware

Filed Oct. 25, 1963, Ser. No. 318,986
1 Claim. (Cl. 310—4)



A thermionic converter wherein heat is applied to a cathode causing electron flow to an anode comprising

an anode,

a cathode substantially parallel to said anode with one side of said cathode being spaced closely to said anode,

the other side of said cathode being adapted to receive heat from a heat source,

first foil walls being attached at one end to the anode and having the free end of the foil walls extending in a direction away from the heat source so that it is in a relatively unheated area,

second foil walls being attached at one end to said cathode and having the free end of the second foil walls extending in a direction away from the heat source to said relatively unheated area,

electrical and thermal insulating means being between the first and second foil walls, said free ends in said relatively unheated area being sealed at a point in said relatively unheated area so that the seal is not subject to the intense heat of the source thereby minimizing seal requirements,

said foil walls being substantially thinner than said anode and cathode thereby conducting less heat and experiencing a lower heat loss and also being capable of substantial strain during thermal expansion of the materials of the converter thereby relieving stress on the seals and members of the converter,

said insulating means being of a relatively rigid material,

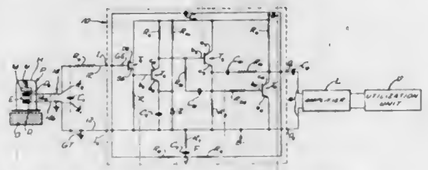
said insulating means extending towards but spaced a predetermined distance from said cathode when said cathode is at its operating temperatures,

said insulating means forming a physical contact with said cathode during lower temperatures thereby forming a physical support for said foil means, prolonging the life of said foil means.

3,356,868
MEASURING SYSTEM

Robert H. Cother, Fullerton, Calif., assignor to Endevco Corporation, Pasadena, Calif., a corporation of California

Continuation of application Ser. No. 298,125, July 29, 1963. This application Feb. 15, 1967, Ser. No. 616,408
6 Claims. (Cl. 310—8.4)



1. In a charge to voltage transducing system:

a piezoelectric transducer including a piezoelectric element and having an output at which a variable charge is generated to provide a source signal in accordance with the magnitude and sign of the displacement of one part of the piezoelectric element relative to another;

an amplifier having an input and an output and including an input stage connected to receive said source signal from said transducer output, said input stage comprising a field effect transistor having a grid element, a source element, and a drain element, said grid element being connected in said amplifier input for varying the magnitude of the signal appearing at said amplifier output in accordance with the variable charge generated by said piezoelectric transducer; and

a negative feedback circuit including a capacitor connected between said amplifier output and said amplifier input for rendering the impedance looking into said input primarily capacitive over a predetermined range of frequencies;

the input capacitance of said amplifier with such feedback being very large compared with the combined capacitance of said transducer and the connections thereof to said amplifier in said frequency range whereby the signal appearing at the output of said amplifier is substantially proportional to the quantity of charge appearing at the output of said transducer over said frequency range the time constant at the input of said amplifier formed by the resistance looking into said field effect transistor and the total effective capacitance connected thereto having a high value such that said voltage transducing system has a cutoff at a very low subaudio frequency and substantially uniform response at frequencies in a range above said low frequency and up to a very high frequency.

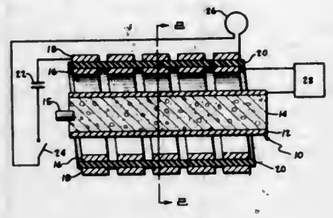
3,356,869
SINGLE PULSE POWER GENERATOR

John L. Hilton, Walnut Creek, and Morgan J. Morley, Berkeley, Calif., assignors, by mesne assignments, to Aerojet General Corporation, El Monte, Calif., a corporation of Ohio

Filed Nov. 15, 1963, Ser. No. 324,133
15 Claims. (Cl. 310—10)

13. An energy generation device comprising: a hollow cylindrical armature, a first inductor means concentrically

arranged about said armature in radially outwardly spaced relation thereto, second inductor means concentrically arranged about said first inductor means and electrically insulated therefrom, a source of electrical power connected to said second inductor means in an electrical circuit for establishing a magnetic field in the space between said first inductor means and said armature upon energiza-

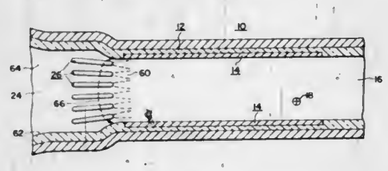


tion of said second inductor means, means for progressively expanding said armature into contact with said first inductor means along its length to successively shorten the effective electrical length of said first inductor means whereby the magnetic field established between said armature and said first inductor means is forced through said first inductor means.

3,356,870
CONTINUOUS REHEAT MAGNETOHYDRODYNAMIC GENERATING DUCT ARRANGEMENT

Stewart Way, Churchill, Pittsburgh, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Nov. 27, 1963, Ser. No. 326,612
5 Claims. (Cl. 310—11)

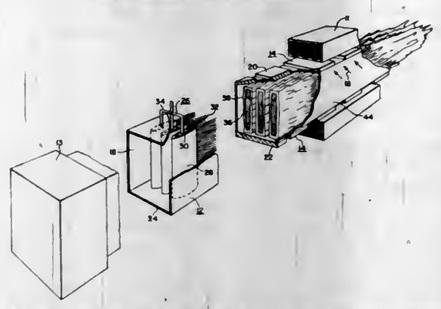


1. A continuous reheat magnetohydrodynamic generating duct arrangement comprising an elongated duct member having an elongated channel extending between electrode means disposed on laterally spaced walls thereof, said channel providing a flow path through which primary conductive fluid is transported from a combustion chamber and across which a magnetic field is established transversely of the interelectrode direction by suitable flux producing means, said primary conductive fluid having an excess of a combustion agent, and a plurality of struts disposed adjacent the inlet end of said channel, said struts extending transversely of the channel and being relatively thin as compared to their length, the struts also extending for a substantial distance in the direction of said flow path and having means at their downstream edges for injecting another combustion agent into said primary fluid for combustion with the first mentioned combustion agent, said struts spaced from each other in the interelectrode direction and supported to extend entirely across said duct channel in the direction of said magnetic field to inject said other combustion agent uniformly across the entire width of the channel substantially in the direction of the axis of the channel.

3,356,871
CONTINUOUS REHEAT MAGNETOHYDRODYNAMIC GENERATING DUCT ARRANGEMENT

Richard L. Hundstad, Forest Hills, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Nov. 27, 1963, Ser. No. 326,611
11 Claims. (Cl. 310—11)

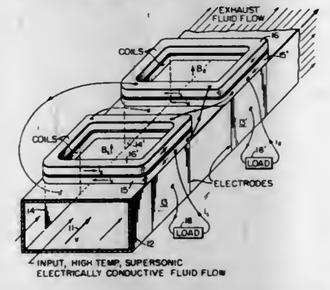


1. A continuous reheat magnetohydrodynamic generating duct arrangement comprising an elongated duct member having an elongated channel extending between electrode means disposed on laterally spaced walls thereof, said channel providing a flow path through which primary conductive fluid is transported from a combustion chamber and across which a magnetic field is established transversely of the interelectrode direction by suitable flux producing means, said primary conductive fluid having an excess of a combustion agent, and means for injecting another combustion agent nonhomogeneously into said primary fluid for combustion with the first mentioned combustion agent in at least one combustion zone which extends longitudinally along at least a substantial portion of said channel and substantially entirely across said channel in the interelectrode direction and generally in planes parallel to the direction of the electric field between the electrodes.

3,356,872
MAGNETOHYDRODYNAMIC A-C POWER GENERATOR

Herbert H. Woodson, Watertown, Mass., assignor to Massachusetts Institute of Technology, Cambridge, Mass., a corporation of Massachusetts

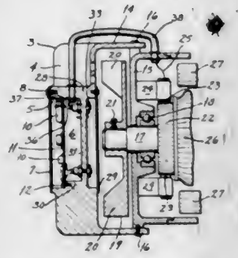
Filed Apr. 28, 1964, Ser. No. 363,080
13 Claims. (Cl. 310—11)



1. A conduction type magnetohydrodynamic generator employing a flowing electrically conductive fluid to generate alternating current comprising, a duct for carrying said fluid, a plurality of electrode pairs, each pair spaced from each other pair along said duct, each electrode of a pair being opposite each other on an axis in said duct and adapted to allow fluid to pass between and in contact with the electrodes, magnetic coupling means for providing a magnetic field through each electrode pair transverse to said flow and axis, said field having components

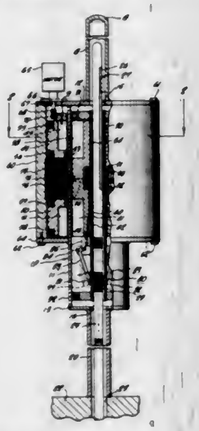
in-phase and 90° out-of-phase with the conduction current flowing between said electrode pair, each of said electrode pairs being conductively connected to said coupling means, said coupling means including means for inductively coupling said magnetic fields to each other to cause each field to assume a fixed phase relationship with respect to the other magnetic fields as determined by said coupling means, a plurality of loads, means for inductively connecting each load to a different magnetic field whereby a multiphase power output is obtained from said generator.

3,356,873
DC MOTOR WITH RECTIFIERS MOUNTED IN THE END BELL
Emil S. Tamm, Fort Smith, Ark., assignor to Baldor Electric Company, Fort Smith, Ark., a corporation of Missouri
Filed Nov. 12, 1965, Ser. No. 507,302
8 Claims. (Cl. 310—68)



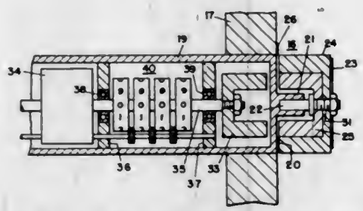
1. An electrical motor assembly for a direct current motor energized by rectified alternating current comprising, an end cover secured to one end of the electrical motor, an outwardly opening enclosure integral with said end cover, means for mounting the rectifying unit of the electrical motor to said end cover within said enclosure, and ventilating means provided in the motor assembly for attracting air for cooling the enclosure and rectifying unit.

3,356,874
ENCLOSED ROTOR DRIVE DEVICE
William Chiapparelli, Pasadena, and Robert Neil Jungles, La Habra, Calif., assignors to Royal Industries, Inc., Pasadena, Calif., a corporation of California
Filed Mar. 23, 1964, Ser. No. 353,827
8 Claims. (Cl. 310—83)



1. A drive apparatus, comprising:
(a) a casing including a cylindrical tube;
(b) a first cylindrical rotor section being rotatably mounted inside said cylindrical tube and having a plurality of salient poles adjacent said cylindrical tube;
(c) a second cylindrical rotor section being rotatably mounted inside said cylindrical tube, having a plurality of salient poles adjacent said cylindrical tube and being mounted for axial movement with respect to the first rotor section;
(d) a hollow-cylindrical armature rotatably mounted outside said cylindrical tube and extending around said cylindrical tube, said armature having a plurality of salient poles corresponding to the salient poles of the first and second rotor sections and being located adjacent said cylindrical tube;
(e) means for axially biasing the second rotor section to a first position;
(f) means for rotating the armature about said cylindrical tube;
(g) a selectively energizable electromagnetic coil at the armature for establishing a magnetic field through the armature, said cylindrical tube and the first and second rotor sections, to cause the first and second rotor sections to rotate with the armature and to move the second rotor section axially relative to the first rotor section to a second position;
(h) a rod inside the cylindrical casing, said rod having a helical thread and being secured against rotary movement;
(i) a rotatable nut structure located inside said cylindrical tube and driven by said first and second rotor sections, said nut structure being composed of a plurality of nut sections defining threads corresponding to the helical thread of said rod, and said nut sections being movable into engagement with the helical thread on said rod to impart axial movement on said rod, and movable out of engagement with the helical thread on said rod to release said rod; and
(j) means for moving said nut sections out of engagement with the helical thread on said rod in response to movement of the second rotor section to said first position, and for moving said nut sections into engagement with the helical thread on said rod in response to movement of the second rotor section to said second position.

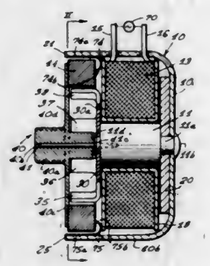
3,356.875
APPARATUS CONTROL MECHANISMS
Walter T. Weismann, Hackettstown, N.J., assignor to the United States of America as represented by the Secretary of the Army
Filed Apr. 3, 1964, Ser. No. 357,332
3 Claims. (Cl. 310—104)



1. A control system for presetting internal mechanisms in safe and like walled enclosures comprising in combination, an elongated cylindrical closed casing of non magnetic material adapted to be mounted in and extend at one end through a wall of an enclosure, an internal rotary control mechanism enclosed and protected by said casing and having a rotary control shaft extending longitudinally therefrom, rotary magnetic coupling means including a multipolar outer magnetic driver element and a corresponding multipolar inner magnetic driven element

mounted for rotation in coaxial relation on a common axis with the casing and said rotary control shaft, said magnetic driver and driven element being constructed to provide a high-torque multipath magnetic linkage therebetween and each comprising a plurality of equally-angularly-spaced extended magnetic poles of alternate North and South polarity at the tip ends thereof and integral magnetic structural means joining said poles in common at the base ends thereof, a detachably removable cylindrical outer control knob of non-magnetic material coaxial with and surrounding said outer driver element to apply rotary motion thereto and including a graduated dial for setting said mechanism, and means connecting the inner magnetic driven element with the rotary control shaft of said mechanism to drive said shaft to a preset position in response to corresponding movement and setting of said dial by said control knob.

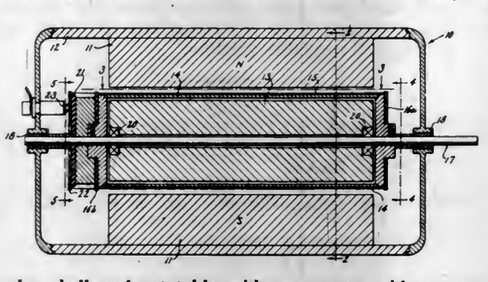
3,356,876
SYNCHRONOUS MOTOR
Richard A. Scholten, Chesterton, Ind., assignor to Indiana General Corporation, Valparaiso, Ind., a corporation of Indiana
Filed Apr. 5, 1960, Ser. No. 20,128
9 Claims. (Cl. 310—156)



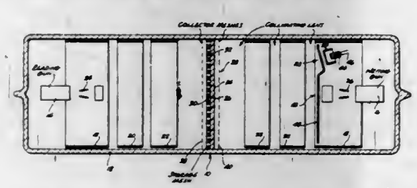
1. An electric motor comprising magnetic core means defining a magnetic circuit and having first and second series of magnetic pole portions arranged in circumferentially spaced relation about a longitudinal axis, said first series of circumferentially spaced pole portions being radially displaced from said second series of circumferentially spaced pole portions, electric winding means linking said magnetic circuit to generate a fluctuating magnetic flux therein, and a rotor of permanent magnet material mounted for rotation about said axis and having a series of radially displaced pre-magnetized pole portions extending in circumferentially spaced relationship adjacent each of said first and second series of pole portions, said pole portions of said core means and said rotor series of pole portions coacting to produce rotation of said rotor when said electrical winding means is energized to generate said fluctuating magnetic flux in said magnetic circuit.

3,356,877
ELECTROMECHANICAL ENERGY CONVERTER OF THE DOUBLE AIR GAP TYPE
Robert P. Burr, Huntington, N.Y., assignor to Circuit Research Company, Glen Cove, N.Y., a partnership of New York
Continuation of application Ser. No. 259,848, Feb. 20, 1963. This application Feb. 16, 1966, Ser. No. 533,762
10 Claims. (Cl. 310—266)

1. An electromechanical energy converter comprising: a support; means mounted on said support for developing a magnetic field; rotatable hollow armature means disposed in said magnetic field and comprising an annular shell having a winding in the form of a thin layer in the range of from one to four conductors thick, said winding having turns distributed substantially uniformly over said entire annular shell, said armature means including a shaft positioned on the axis of said annular shell and means supporting said shell at each axial end thereof and fixing said shell to said shaft; said field developing means including a low reluctance core mounted within said annular shell and rotatable with respect to said armature means and with respect to said support, said core and any parts fixed thereto being entirely within said armature means; and commutator means coupled with said armature winding for translating current with respect to said armature winding.



3,356,878
SIGNAL CONVERTING CATHODE RAY TUBE WITH CONTROLLABLE ERASURE
Leon S. Yaggy, North Carlsbad, and Nobuo J. Koda, Vista, Calif., assignors to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed Aug. 2, 1965, Ser. No. 476,237
3 Claims. (Cl. 313—68)



1. In an electronic storage tube for converting input electrical signals at one frequency into output electrical signals at another frequency.
the combination of an evacuated envelope,
a storage target within the envelope,
a pair of electron guns positioned in the envelope for forming electron beams to respectively scan opposed sides of the target at different frequencies,
the gun on one side of the target comprising a writing gun operative to scan the target at a first frequency and the gun on the opposed side of the target comprising a reading gun operative to scan the target at a different frequency,
said target comprising a metallic mesh electrode having a layer of dielectric material on one side thereof,
said material including electrically conductive regions of diffused electrically conductive metal in those areas of the dielectric material in substantially congruent overlying relationship and in direct contact with the metallic mesh segments whereby a mesh pattern is provided on opposed sides of the target facing the respective guns existent at substantially similar potential levels,
whereby the dielectric material on said one side of the target defines island areas of nonconductive dielectric material capable of acquiring charge patterns in response to the impingement of the electron beam created by the writing gun,
one of said beams being operative to charge aspects of said material in a positive direction,

collecting means to capture secondary electrons emitted from said material in response to impingement thereon of one of said beams and thereby provide an output signal responsive to the charge existent on said islands of dielectric material,

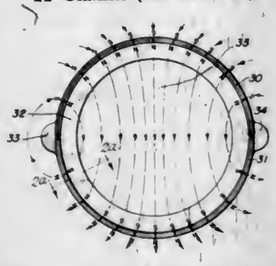
and another electron gun to form a flood electron beam for impingement on the target and to charge said material in a negative direction.

3,356,879

BEAM POSITIONING DEVICE FOR VARYING THE EFFECTIVE ORIGIN OF CATHODE-RAY TUBE ELECTRON BEAM

John L. Rennick, Elmwood Park, Ill., assignor to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware

Filed Aug. 14, 1963, Ser. No. 302,017
11 Claims. (Cl. 313—76)



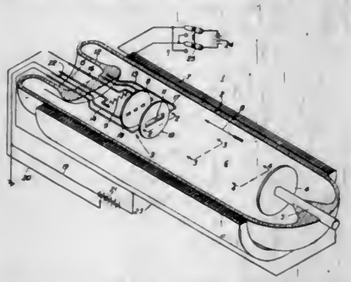
1. A beam positioning device for varying the effective point of origin of an electron beam of a cathode-ray tube, said device comprising ring magnet means having a central opening and a plurality of magnetic pole pairs of equal strengths and different widths equally circumferentially spaced about at least a portion of said opening and radially oriented to establish a predetermined flux pattern including flux components from one pole of a selected pole pair to the opposite pole of said selected pole pair as well as other flux components from said one pole across said central opening to a pole of another pole pair.

3,356,880

BRILLOUIN BEAM FORMING APPARATUS INCLUDING A CATHODE PROVIDING NON-UNIFORM ELECTRON DENSITY OVER THE BEAM CROSS SECTION

Harold F. Webster, Scotia, N.Y., assignor to General Electric Company, a corporation of New York

Original application Apr. 1, 1960, Ser. No. 19,397, now Patent No. 3,205,392, dated Sept. 7, 1965. Divided and this application Oct. 30, 1964, Ser. No. 418,575
1 Claim. (Cl. 313—86)



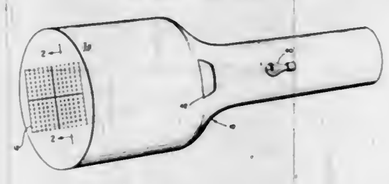
An apparatus for producing an electron beam having a uniform electron density and in which the individual electrons have a uniform angular velocity about an axis and a uniform translational velocity along the axis comprising a cathode, a surface of said cathode being coated with electron emission enhancing material, the concentration of said material being non-uniform to provide regions of relatively heavy concentration of material spaced by regions of lesser concentration of material, a collector electrode spaced from said cathode and an anode interposed between said cathode and collector, said anode having an aperture with a contour substantially the same as the outline of said emission enhacing material on said cathode, means applying a potential to said anode and to said collector positive with respect to said cathode and means for permeating the region between said cathode and said collector in a direct magnetic field.

3,356,881

CATHODE RAY TUBE WITH A PERFORATED ALUMINUM FILM GRATICULE OVERLYING THE ILLUMINESCENT LAYER

Leon S. Yaggy, North Carlsbad, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed Oct. 4, 1965, Ser. No. 492,800
7 Claims. (Cl. 313—92)



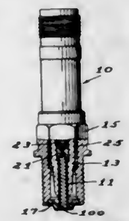
1. In a cathode ray tube, a transparent viewing element; a first film of material, illuminescent in response to an electron bombardment, coating the inner surface of the element; and a second film of electron transparent and light opaque material having openings therein defining a graticule pattern coating the first film of material.

3,356,882

SPARK PLUG HAVING THE CENTER ELECTRODE SHEATH WITH A NICKEL ALLOY

William J. Hallauer, Dearborn Heights, and Bill L. Potts, Grosse Pointe Woods, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed Oct. 21, 1965, Ser. No. 499,255
12 Claims. (Cl. 313—141)



9. A spark plug comprising a metal shell, a ground electrode secured to the base of said shell, an insulator surrounded and supported by said shell and having a centerbore therein, and a composite electrode inserted in said centerbore, supported and retained by said insulator and having a firing end in spaced relationship to said ground electrode to form a spark gap therebetween, said composite electrode comprising a rod having a metal core, a tubular metal sheath of substantially uniform diameter throughout its length encompassing said core for a substantial distance of its length, and, at said firing end, an essentially planar metal cap centrally abutting said core, peripherally welded to and abutting said sheath, and

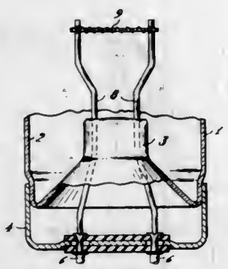
forming with said sheath an essentially gas-tight seal, the cap-abutting end of said core terminating in a flat surface, said core having a higher heat conductivity than said sheath and said cap, said sheath and said cap having a substantially greater resistance to erosion and corrosion than said core.

3,356,883

FLORESCENT LAMP HAVING ELECTRODES COMPRISING A TUBULAR BRAID AND AN ADDITIONAL WIRE COILED ABOUT THE SAME SPACE

Richard A. Menelly, Danvers, and Theodore J. Pricenski, Ipswich, Mass., assignors to Sylvania Electric Products Inc., a corporation of Delaware

Filed Dec. 21, 1964, Ser. No. 419,946
4 Claims. (Cl. 313—211)



1. A rapid start fluorescent lamp for use with a supply of low voltage heating current and of high voltage arc current comprising an envelope containing an ionizable fill material, spaced electrode structures, and conductors connected to each said structure for connection to said supply to apply heating current through each structure and high voltage current across said structures thereby to support an alternating electron discharge arc and an ion counterflow therebetween, wherein each said electrode structure comprises,

a tubular braid of a plurality of conductive strands braided about a tubular space, said strands having a resistance relatively slowly heated by said low voltage current to optimum operating temperature,

and at least one additional conductive strand of lower resistance than said braid coiled about said space coextensively with the braid and electrically connected in parallel with the braid so as to be heated relatively rapidly by said low voltage current to electron emissive state thereby to protect said braid from ion bombardment during the relatively slow heating thereof.

3,356,884

ELECTRODE STARTING ARRANGEMENT HAVING A COILED HEATING ELEMENT CONNECTED TO THE RETROVERTED PORTION OF THE ELECTRODE

Walter J. Decker. North Bergen, and Hugh D. Fraser, West Caldwell, N.J., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed June 30, 1964, Ser. No. 379,110
6 Claims. (Cl. 313—212)



1. An arc-discharge device comprising:

(a) an elongated radiation-transmitting envelope having a seal at each end and containing a predetermined amount of discharge-sustaining filling, and an electrode consisting essentially of tungsten and operatively positioned within said envelope proximate each said envelope seal, one of said electrodes comprising:

(1) a relative fine wire coiled tungsten member having a barrel portion with legs extending from each end thereof, and two solid elongated tungsten members,

(2) each of said solid elongated members having one end portion embedded in the proximate seal of said envelope with the other end portion of each of said solid elongated members tightly fitting into the legs of said coiled member,

(3) one of said solid elongated members being longer than the other of said solid elongated members and extending toward said other electrode, the extending extremity of said one solid elongated member retroverted generally toward but spaced from the proximate seal of said envelope with the portion of said one electrode which projects furthest toward said other electrode formed as a curved solid tungsten member having one of said legs forming a tightly fitting tungsten coil thereabout, and

(4) said barrel portion positioned intermediate said retroverted portion of said one solid elongated member and the proximate seal of said envelope; and

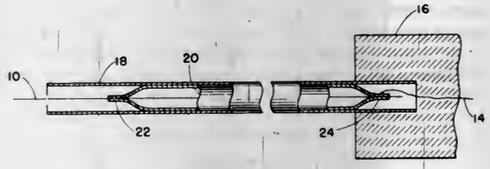
(b) lead-in conductors sealed through said envelope seals and individually electrically connected to said solid elongated members and said other electrode.

3,356,885

SMALL PLASMA PROBE

Albert F. Beck, Independence, Ohio, assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed July 1, 1965, Ser. No. 469,012
5 Claims. (Cl. 313—271)



1. A probe for measuring the properties of ionized gases comprising,

an elongated collector adapted to be electrically connected to a variable potential source,

a support mounting said collector for insertion into the ionized gases,

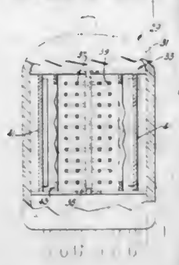
a hollow shield extending outward from said support for preventing the deposition of a conductive coating on said support adjacent said collector,

a liner in engagement with the inner surface of said shield for mounting said collector therein, one end of said collector extending outward from said liner away from said support through said shield so that a portion of said one end of said collector extends outward from said shield into said ionized gases, said one end of said collector being spaced from said inner surface of said shield.

3,356,886
VARIABLE SPACED ELECTRODE FOR ELECTRON DISCHARGE DEVICE

William A. Allgaier and Cyril Droppa, Emporium, Pa., assignors to Sylvania Electric Products Inc., a corporation of Delaware

Filed Feb. 8, 1965, Ser. No. 430,797
11 Claims. (Cl. 313—294)



1. An electron discharge device comprising:
an envelope containing at least one electron emitting cathode, an electron receiving anode, and an electrode therebetween, said electrode being formed to provide a nonuniform spacing, said nonuniform spacing extending between the electrode and said cathode and between the electrode and said anode.

3,356,887
FE CATHODE REDESIGN

Frederick C. W. Heil, Portland, and Eugene E. Martin and Noel A. Martin, McMinnville, Oreg., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Army

Filed July 30, 1965, Ser. No. 476,216
2 Claims. (Cl. 313—309)

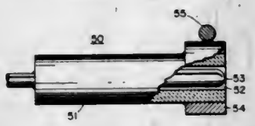


1. A field emission cathode comprising: an elongated, cylindrical metallic rod, a slit in said rod along the greater portion of its length, and a conical taper on the end of said rod which is not separated by said slit, the conical end of said rod terminating in a slightly rounded tip from which electrons are emitted when said rod is subjected to an applied electric field.

3,356,888
TWO-ELECTRODE SPARK GAP WITH INTERPOSED INSULATOR

Kenneth J. Germeshausen, Weston, and John L. Turner, Needham, Mass., assignors to EG & G, Inc., a corporation of Massachusetts

Original application Dec. 27, 1960, Ser. No. 78,587. Divided and this application June 24, 1964, Ser. No. 394,093
7 Claims. (Cl. 313—325)

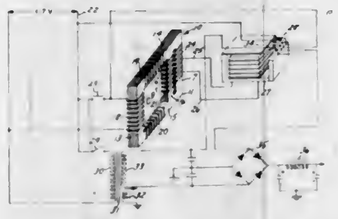


1. A spark gap comprising, in combination:
a first electrode;
a second electrode spaced from said first electrode;
an electrically-insulative member sealed to said first electrode and spaced from said second electrode a distance greater than the mean-free-path of the ions and electrons in the gas therebetween; and
means for connecting a source of electrical energy across said first and second electrodes.

3,356,889
COLOR TELEVISION DEGAUSSING MEANS HAVING A THERMOMAGNETIC CORE SURROUNDING THE FACE OF THE CATHODE RAY TUBE

George G. Merkl, New Milford, N.J., and George B. Pearson, Douglaston, N.Y., assignors of twenty-five percent to Arthur L. Harrow, New York, N.Y.

Filed Apr. 28, 1966, Ser. No. 546,074
5 Claims. (Cl. 315—8)

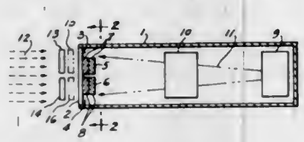


1. A television degaussing means comprising magnetic means surrounding the face of a cathode ray tube, said magnetic means including a core formed of material exhibiting thermomagnetic properties, at least one coil surrounding said core, an alternating current source powering said coil, and means for progressively heating said core to proportionally diminish the magnetic flux output with increase in temperature.

3,356,890
SIMULTANEOUS SCAN OF TWO PHOTOCONDUCTIVE TARGETS WITH FLAT BEAM

Masaji Mochizuki, Sapporo, Hokkaido, and Yukio Saito, Warabi, Saitama, Japan, assignors to Sankyo Company Ltd., Toyko, Japan, a corporation of Japan

Filed July 7, 1964, Ser. No. 380,831
Claims priority, application Japan, July 10, 1963, 38/36,558
2 Claims. (Cl. 315—21)

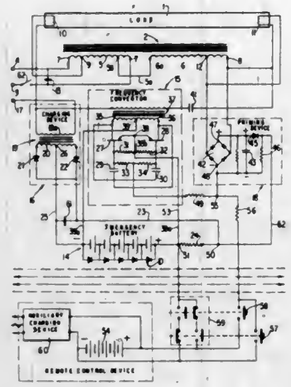


2. A photoelectric transducer adapted for use in a spectroscopic photometer, which comprises a vacuum envelope having a window to receive radiations from an external source, two signal plates of optically transparent electro-conductive material disposed within said envelope and facing said window, layers of photoconductive material superposed on the surfaces of said signal plates which face away from said window, electron beam-generating and scanning means also disposed in said envelope at the side of said signal plates having said layers of photoconductive material thereon for scanning said layers simultaneously each with a fan-shaped electron beam of slit-like cross-section which extends substantially across one dimension of the area thereof and including means operative to deflect said electron beam in directions at right angles to the longitudinal axis of said slit-like cross-section thereby to cause the substantially simultaneous sweeping of the entire areas of said layers.

3,356,891
AUTOMATIC SUBSTITUTION OF A STANDBY POWER SOURCE RENDERED OPERATIVE ONLY WHEN THE LAMPS ARE CONNECTED

Pierre Godard, Livry-Gargan, France, assignor to Societe des Accumulateurs Fixes et de Traction (Societe Anonyme), Romainville-Saint-Denis, Seine, France, a French company

Filed May 24, 1966, Ser. No. 552,616
Claims priority, application France, June 2, 1965, 19,295
18 Claims. (Cl. 315—86)



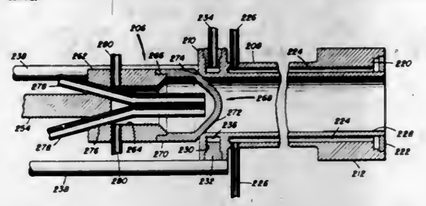
7. An emergency installation for use in conjunction with the mains of a power plant to supply power to an appliance in the event of power failure of the plant comprising a storage battery source of emergency power, a charging circuit for said source connected to said mains, a high frequency converter connected to said source of emergency power for supplying high frequency therefrom to said appliance only in the event of power failure, a priming device interconnected with said converter to high frequency supplying condition to the appliance only in the event that the latter is in operative condition at the time of power failure to maintain the operative condition of said appliance from said battery source of emergency power, said converter including a flip-flop oscillating circuit that is normally blocked by a reverse polarizing voltage, said priming device serving to activate said converter oscillating circuit by a second polarizing voltage, and said appliance including a circuit having taps, and a rectifier in said priming device connected to said taps to provide said last-named polarizing voltage.

3,356,892
ARC PLASMA GENERATOR STARTING METHOD UTILIZING A DISPLACEABLE VALVE COMMUNICATING WITH ATMOSPHERE

Edgar A. Bunt, Kensington, Lloyd O. Kauffmann, Jr., Baltimore, Herman L. Olsen, Derwood, and Spencer D. Raezer, Rockville, Md., assignors to the United States of America as represented by the Secretary of the Navy

Original application Jan. 10, 1963, Ser. No. 250,722. Divided and this application Jan. 21, 1966, Ser. No. 535,626
4 Claims. (Cl. 315—111)

1. A method for starting an arc plasma generator, comprising the successive steps of
placing the interior of said generator in communication with the atmosphere,
initiating a flow of gas into said generator at a mass flow rate equal to the normal operating value thereof,
striking an arc between the electrodes of said generator, and

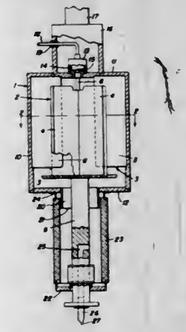


closing off the interior of said generator from the atmosphere after said arc has been struck.

3,356,893
HIGH POWER VACUUM DISCHARGE DEVICE HAVING A PAIR OF INTERLEAVED MULTI-VANED ARCING ELECTRODES

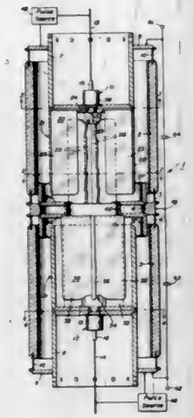
James M. Lafferty, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

Filed Mar. 21, 1966, Ser. No. 535,948
15 Claims. (Cl. 315—111)



1. A vacuum gap discharge device comprising:
(a) an hermetically sealed envelope evacuated to a pressure of 10^{-5} mm. of Hg or less and including a portion fabricated from a high voltage dielectric;
(b) a first primary arc electrode assembly supported within said envelope and including a first plurality of thin substantially planar vanes projecting therefrom and being substantially perpendicular to a transverse plane through said envelope;
(c) a second primary arc-electrode assembly supported within said envelope and including a second plurality of thin substantially planar vanes projecting therefrom and being substantially perpendicular to said transverse plane through said envelope;
(d) the vanes of said first primary arc-electrode assembly and the vanes of said second primary arc-electrode assembly being interleaved alternately between one another so as to define a plurality of electrically-parallel gaps between said first and second primary arc-electrode assemblies to cause electrical breakdown between said primary arc-electrode assemblies to occur simultaneously at a multiplicity of points whereby the formation of high current density anode spots is avoided;
(e) means for connecting said primary arc-electrode assemblies in circuit with a high power electric line; and
(f) means for producing at a preselected time a copious quantity of electron-ion plasma within said electrically-parallel gaps to establish a plurality of electrically-parallel current arcs within said envelope whereby said device carrys a high power load without destructive melting of said electrodes.

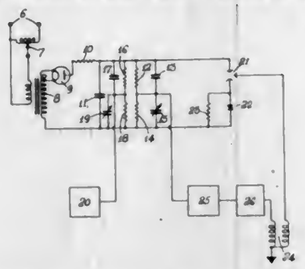
3,356,894
MULTIPLE STAGE CASCADED TRIGGERED VACUUM GAP DEVICES
James M. Lafferty, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed Oct. 14, 1966, Ser. No. 586,751
5 Claims. (Cl. 315—111)



1. A multi-stage high voltage triggered vacuum gap device comprising:
(a) an hermetically sealed envelope evacuated to a pressure of 10^{-5} mm. of mercury or less and including at least one portion constructed of a high voltage insulator to separate different sections thereof from one another electrically
(b) a plurality of stages of vacuum gaps arranged in series along a common longitudinal axis within said envelope, each of said stages containing a pair of primary arc-electrode assemblies defining therebetween a primary breakdown gap
(c) means interconnecting one of the primary electrode assemblies of each stage to a primary electrode assembly of an adjacent stage to place the primary gaps of adjacent stages electrically in series circuit relationship;
(d) arc transfer means for facilitating the passage of an electron-ion plasma generated by arcing in one of said stages into the primary gap in an adjacent stage to cause electrical breakdown thereof,
(e) a pair of trigger electrode assemblies closely disposed to the primary breakdown gap of one of said stages at either end of said series array to cause initial breakdown thereof,
(f) means for connecting a load to voltage in circuit with said device, and
(g) means for applying a triggering signal to said trigger assemblies to cause operation of said device.

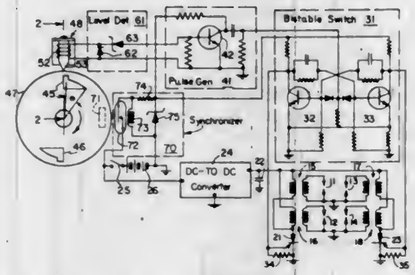
3,356,895
SPECTRO-CHEMICAL ANALYSIS APPARATUS SUPPLYING SUBSTANTIALLY THE SAME ENERGY TO THE GAP FOR ALL WAVEFORMS
Lutz Krauss and Wolfgang W. Schroeder, Pretoria, Transvaal, Republic of South Africa, assignors to South African Inventions Development Corporation, Pretoria, Transvaal, Republic of South Africa
Filed Dec. 30, 1964, Ser. No. 422,279
Claims priority, application Republic of South Africa, Jan. 6, 1964, 63/5,544
4 Claims. (Cl. 315—199)

1. For use with a source of power having varying characteristics supplying voltage waveforms which differ at least in the slope of their respective leading edges; apparatus for spectro-chemical analysis comprising first means defining an analytical gap, second means for controlling the initiation of a spark in said analytical gap, energy storage means coupled to said source and adapted for supplying energy to said gap, trigger means coupled to said second means to trigger a spark in said analytical gap, sensing means to actuate said trigger means upon sensing a predetermined voltage magnitude, said sensing and trigger means at least partly causing a determinable



delay between the sensing of said voltage magnitude and the triggering of a corresponding spark which delay affects the energy accumulated by said energy storage means in accordance with the particular slopes of the voltage waveforms supplied, and delay compensation means to compensate for said delay and responsive to said waveforms to advance the operation of said sensing means by said determinable delay whereby the energy supplied to said gap is substantially the same for all waveforms.

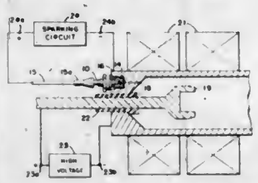
3,356,896
ELECTRONIC DEVICE
Charles L. Shano, Morton Grove, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Dec. 16, 1964, Ser. No. 418,690
11 Claims. (Cl. 315—209)



1. An ignition system for an internal combustion engine, including in combination, ignition means responsive to trigger pulses applied thereto to produce sparks for igniting fuel in the internal combustion engine, pulse means coupled to said ignition means for supplying trigger pulses thereto in synchronism with the internal combustion engine, said pulse means comprising a rotatable member synchronized with the internal combustion engine and having a flux varying element thereon, said pulse means further comprising a magnetic pick-up disposed adjacent the path of travel of said flux varying element and having an inductance coil for producing a voltage in response to changing flux in said magnetic pick-up when said flux varying element passes by, said flux varying element having a first shaped portion to provide a gap between it and said magnetic pick-up as it passes by said magnetic pick-up which changes at a predetermined rate for a given rate of rotation, said flux varying element further having a second shaped portion integral with the

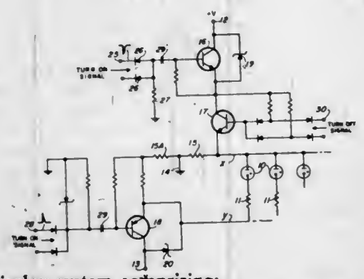
first shaped portion which changes the gap at a rate substantially greater than said predetermined rate, said flux varying element producing a voltage in said inductance coil which rises to a given level at a rotational position of said rotatable member which varies in accordance with the speed of rotation of said rotatable member, level detector means, and electronic distributing means coupled to said ignition means, said level detector means coupling said inductance coil to said electronic distributing means and being responsive to a voltage produced by said inductance coil at the given level to produce a trigger pulse for said ignition means.

3,356,897
ARC PLASMA GENERATOR WITH STARTER
Thomas A. Barr, Jr., Robert F. Mayo, and Thomas G. Roberts, Huntsville, Ala., assignors to the United States of America as represented by the Secretary of the Army
Filed Jan. 18, 1965, Ser. No. 426,453
2 Claims. (Cl. 315—238)



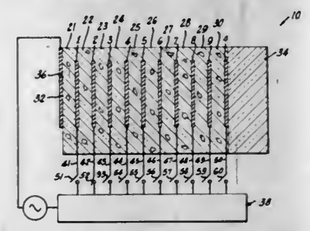
1. An arc plasma generator having a housing with a first space therein; a centrally disposed electrode penetrating said space, but insulated from said housing; a first high voltage source having a first ground terminal, connected to said housing and a first high voltage terminal, connected to said electrode, a starting device having an outer electrode with a second space therewithin, and an inner electrode penetrating said second space, but insulated from said outer electrode; said other electrode connected to said housing, with a passageway between said spaces; a second high voltage source having a second ground terminal, connected to said housing and a second high voltage terminal, connected to said inner electrode.

3,356,898
XY GLOW LAMP DISPLAY WITH SWITCH FROM IGNITING TO HOLDING VOLTAGE
Paul K. Dano, El Paso, Tex., assignor to the United States of America as represented by the Secretary of the Navy
Filed Nov. 19, 1964, Ser. No. 412,577
2 Claims. (Cl. 315—297)



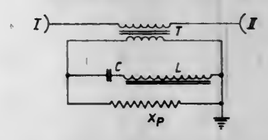
1. A display system comprising;
a two-dimensional array of glow lamps orderly arrayed in parallel rows and columns, each lamp having a first and a second terminal, having a predetermined ignition voltage 2V, between said terminals, and having a lower hold voltage,
a voltage source with one terminal of positive voltage, +V, and a second terminal of negative voltage, −V
a first group of bus bars, each bar of said first group being connected with said first terminal of each of the glow lamps in one row of said array of lamps,
a second group of bus bars, each bar of said second group being connected with said second terminal of each of the glow lamps in one column of said array of lamps,
one group of switches connected between one terminal of said source and, respectively, each of the bus bars of said first group,
a second group of switches connected between the other terminal of said source and, respectively, each of the bus bars of said second group,
means for simultaneously closing the circuits of any two switches in different switch groups to apply said 2V ignition voltage to a selected one of said lamps, and
a constant voltage device connected across the switches of one group for establishing said lower hold voltage when the associated switch is open circuited.

3,356,899
DISPLAY DEVICE
Elmer O. Stone, Seneca Falls, N.Y., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed Apr. 2, 1965, Ser. No. 445,008
5 Claims. (Cl. 315—320)



1. A device for displaying illuminable, intelligence conveying, stacked symbols in a common plane, said device comprising: N substantially transparent, stacked electrodes each formed to provide one of said symbols and N layers of an electroluminescent phosphor embedded dielectric material alternating in serial array with said symbolically formed electrodes and a transparent common electrode formed on the outermost one of said electroluminescent layers whereby individual electroluminescent lamps are formed between said common electrode and each of said symbolically formed electrodes and means for selectively energizing said lamps one at a time.

3,356,900
SHORT-CIRCUIT CURRENT LIMITER FOR COUPLED POWER SYSTEMS
Bernhard Kalkner, Bad Homburg vor der Hohe, Germany, assignor to Licentia Patent-Verwaltungs-G.m.b.H., Frankfurt am Main, Germany
Filed Jan. 4, 1965, Ser. No. 422,977
Claims priority, application Germany, Jan. 4, 1964, L 46,719
8 Claims. (Cl. 317—20)



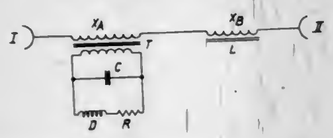
1. An arrangement for limiting overload currents in a line between two alternating current nets which normally

operate at a given frequency, said arrangement comprising a series-circuit of inductive reactance means and capacitative reactance means which, during normal operation, have approximately the same value thereby to offer substantially no impedance to a current through said line, said inductive reactance means comprising a coil and a saturatable iron core which, when the current through said line goes above a predetermined value, is saturated thereby to become a means for rendering the resonant frequency of said series-circuit substantially different from said given frequency and hence for detuning said series-circuit, whereby the resulting total impedance is substantially incurred, thereby effectively to limit the current through said line.

3,356,901
SHORT-CIRCUIT CURRENT LIMITER FOR COUPLED POWER SYSTEMS

Werner Krämer, Darmstadt, Friedrich Hämmerling, Konigstein, Taunus, and Bernhard Kalkner, Bad Homburg vor der Hohe, Germany, assignors to Licentia Patent-Verwaltungs-G.m.b.H., Frankfurt am Main, Germany

Filed Jan. 4, 1965, Ser. No. 423,239
Claims priority, application Germany, Feb. 3, 1964, L 46,947
6 Claims. (Cl. 317—20)



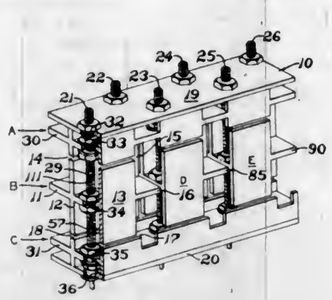
1. An arrangement for limiting overload currents in a line between two alternating current nets which normally operate at a given frequency, said arrangement comprising a series-circuit tuned to have a resonant frequency approximately equal to said given frequency and composed of inductive reactance means and capacitative reactance means which, during normal operation, have approximately the same value thereby to offer substantially no impedance to a current through said line, said capacitative reactance means comprising a capacitor and a shunt path connected in parallel with said capacitor, said shunt path comprising an ohmic resistance and a closed core saturable choke, said saturable choke going saturated above a predetermined current value through said line, said capacitative reactance means thus having a current dependency which, above said predetermined current value, substantially changes the reactance of said capacitative reactance means thereby to detune said series-circuit so as substantially to increase the resulting total impedance, thereby effectively to limit the current through said line.

3,356,902
MOUNTING CHASSIS FOR ELECTRICAL COMPONENTS

Ernest R. Blaikie, Northfield Center, Ohio, assignor to Lear Siegler Inc., Santa Monica, Calif., a corporation of Delaware

Filed Oct. 20, 1966, Ser. No. 588,118
6 Claims. (Cl. 317—100)

1. An apparatus for mounting electrical components comprising electrically conductive component receiving means, electrically conductive structural spacing means, electrically conductive connecting means for connecting said spacing means to and between selected ones of said component receiving means, and electrically nonconductive connecting means for connecting said spacing means to and between others of said component receiving means, whereby said component receiving means are maintained in spaced relationship and formed together in an integral structural unit with selected ones of said component receiving means electrically interconnected through

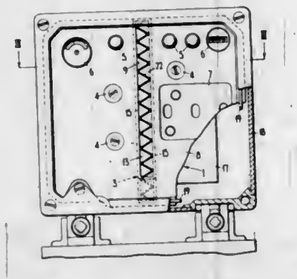


said spacing means and others of said component receiving means electrically insulated from each other and from said spacing means.

3,356,903
AIR-COOLED ELECTRICAL APPARATUS

George Henry Arnold, Havant, England, assignor to The General Electric Company Limited, London, England, a British company

Filed Nov. 9, 1966, Ser. No. 594,310
Claims priority, application Great Britain, Nov. 10, 1965, 47,769/65
3 Claims. (Cl. 317—100)

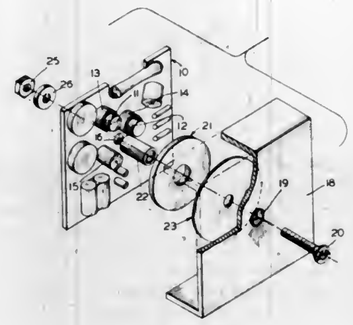


1. An electrical apparatus comprising: a plurality of electrical components; an integral structure on which said components are mounted comprising: a first generally planar part which constitutes the front panel of the apparatus and; a second generally planar part of heat conducting material which extends generally perpendicular to said first part and is hollow so as to provide a duct which at one end is in register with an opening in the first part; a hollow casing which at one end is hermetically sealed to the front panel and at the other end is hermetically sealed to the end of the duct remote from the front panel, thereby to form a hermetically sealed compartment through which said hollow part of said structure extends; and means for mounting at least some of said components in said sealed compartment in good thermal contact with said hollow part of said structure; and at least one electric fan which is mounted on said hollow part of the structure at the end of the duct remote from the panel, and which in operation causes air drawn from the surrounding atmosphere to pass through said duct and said opening in the front panel and be discharged to the atmosphere, the air passing through said duct carrying away heat from said components mounted in good thermal contact with said hollow part of said structure.

3,356,904
HEAT DISSIPATING ARRANGEMENT FOR ELECTRICAL COMPONENTS

William A. Yonkers, Mountain Lakes, N.J., assignor to RLF Industries, Inc., Boonton, N.J., a corporation of New Jersey

Filed Dec. 7, 1966, Ser. No. 599,859
5 Claims. (Cl. 317—100)

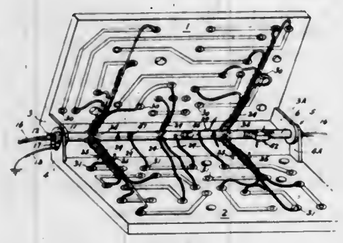


1. Apparatus comprising,
(a) a generally rectangular circuit board carrying a plurality of spaced heat generating components enclosed within individual cases,
(b) a U-shaped metal housing member having legs spanning opposite ends of the circuit board,
(c) a flat heat transfer member, and
(d) fastening means securing the said circuit board to the housing member with the said heat transfer member clamped between the said cases and the base portion of said housing member.

3,356,905
AXIAL CONDUCTOR LOCATOR

Joseph C. Linn, Westwood, N.J., assignor to The Bendix Corporation, a corporation of Delaware

Filed Nov. 29, 1966, Ser. No. 597,782
11 Claims. (Cl. 317—101)

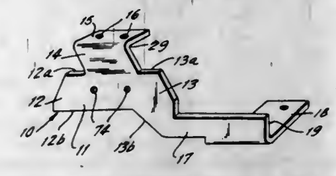


1. A circuit board apparatus of a type including a plurality of boards of a dielectric material having conductive strips of an electrical network provided thereon; wherein the improvement comprises each of said boards having shoulder hinges of said dielectric material projecting from and formed integral with the boards, an elongated support shaft hinge, said support shaft hinge extending through the shoulder hinges, conductors electrically interconnecting the conductive strips on said boards, and tie clamp means for attaching the conductors to the support shaft hinge.

3,356,906
CONNECTION FOR BUS BAR PANEL BOARD

Raymond Lamb, Weston, Ontario, and Albert Graham, Toronto, Ontario, Canada, assignors to I-T-E Circuit Breaker (Canada) Limited, Weston, Ontario, Canada, a limited-liability company of Canada

Filed Nov. 3, 1965, Ser. No. 506,164
10 Claims. (Cl. 317—118)

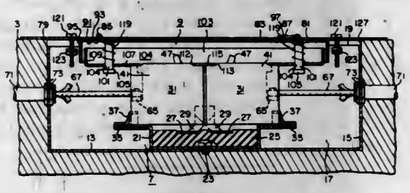


1. A connector for electrically connecting a circuit breaker to a bus bar; said connector comprising
a central portion having a plurality of sides;
a first connecting means on said central portion for receiving a plug-in circuit breaker; said first connecting means comprising a first blade on a side of said central portion;
a second connecting means for receiving a bolt-on circuit breaker; a support for said second connecting means supporting said second connecting means away from a side of said central portion; said second connecting means comprising a platform; at least one aperture in said platform for receiving bolts;
a connector strap device connected to said central portion for connecting said central portion to a bus bar;
said first connecting means being between said platform and said connector strap device in such manner that said first connecting means is closer to a bus bar to which said connector is adapted to be connected than said platform;
said first and said second connecting means being positioned and adapted to be connected with a plug-in and a bolt-on circuit breaker from the same side of said connector.

3,356,907
PANELBOARD STRUCTURE WITH ADJUSTABLE SHIELD

James J. Bragulat, Newtown, Conn., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

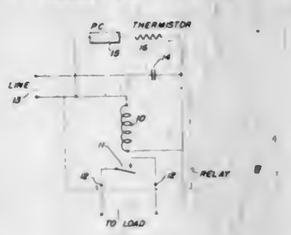
Filed June 28, 1965, Ser. No. 467,246
2 Claims. (Cl. 317—120)



1. A panelboard structure comprising an enclosure, said enclosure comprising a receptacle structure and a cover structure, circuit-interrupting means mounted in said receptacle structure, said circuit-interrupting means comprising a plurality of circuit breakers, each of said circuit breakers comprising an insulating housing a pair of contacts within the housing and an operating handle extending from the front of the housing which handle is manually operable to open and close the contacts, said receptacle structure having a receptacle-opening, said cover structure comprising a trim structure, a door supported on said trim structure for pivotal movement to open and closed positions, a plurality of supporting posts

supported on the inner side of said trim structure, a shield member supported on said supporting posts opposite said door for movement toward and away from said trim structure and door, spring means on said posts biasing said shield member away from said door, means drawing said cover structure toward said receptacle to move said trim structure to a fixed mounted position, said spring means biasing said shield member into engagement with the insulating housings of a plurality of said circuit breakers, said shield member having opening means therein receiving said handles to permit manual operation of said circuit breakers, said cover structure and said circuit breakers forming a pocket under said door separate from the main internal part of said receptacle structure, said trim structure and said shield member comprising overlapping parts forming overlapping wall means around the perimeter of said pocket, and said shield member preventing removal of said circuit breakers from said receptacle structure whereby live parts of said panelboard structure are inaccessible when said cover structure is in said fixed mounted position.

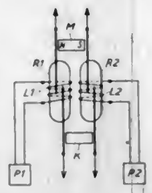
3,356,908
RELAY SYSTEM
Irving L. Mitchell, Rockville Centre, and Sidney S. Pressman, Brooklyn, N.Y., assignors to Ebert Electronics Corporation, Queens Village, N.Y., a corporation of New York
Filed Nov. 6, 1959, Ser. No. 851,352
17 Claims. (Cl. 317—124)



1. A relay system operative from an A.C. source of power, comprising a relay coil, operating contacts operable only in response to a predetermined minimum voltage across said relay coil, a capacitive reactance connected in a series circuit with said relay coil and with said A.C. source of power, said relay coil having inductive reactance at least approximately numerically equal to said capacitive reactance at the frequency of said AC source of power, said series circuit having a Q of greater than unity, whereby the voltage across said relay coil is greater than the voltage of said A.C. source of power, and variable impedance means connected in shunt to one of said capacitive reactance and said relay coil for controllably modifying said Q to a value below unity, said last means comprising a variable impedance including a photo-conductive cell.

3,356,909
COINCIDENT PULSE OPERATED SWITCHING MEANS
Karl Polasek, Hagersten, Sweden, assignor to Telefonaktiebolaget L M Ericsson, Stockholm, Sweden, a corporation of Sweden
Filed Dec. 29, 1964, Ser. No. 421,960
Claims priority, application Sweden, Feb. 18, 1964, 1,941/64
4 Claims. (Cl. 317—137)

1. Electromagnetically operated switching means comprising at least two contact sets, each of said contact sets including two contact springs of magnetically conductible material, at least one permanent magnet, means for maintaining said contact sets and said permanent magnet in a series magnetic circuit which has an inconsiderable non-magnetic gap when the contact springs of each contact set are in contact, a first winding means inductively coupled to one of said contact sets, a second winding means inductively coupled to the other of said contact sets, a first source of current pulses connected to said first winding means, and a second source of current pulses con-



nected to said second winding means, said winding means being phased with respect to each other and said permanent magnet having a strength such that current pulses received by said winding means coincidently from their associated current pulse sources cause each of said contact sets to close and remain closed after the occurrence of said current pulses and all of said contact sets opening when at least one of said contact sets is opened.

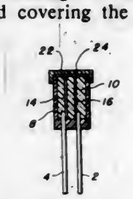
3,356,910
INTEGRATED POWER CONTROLLED SOLENOID
Clayton D. Bushnell, Northridge, Calif., assignor to Whittaker Corporation, Los Angeles, Calif., a corporation of California
Filed Feb. 19, 1965, Ser. No. 433,936
4 Claims. (Cl. 317—148.5)

1. In a solenoid control in which a coil wound on a core produces a magnetic flux to attract an armature when a switch is closed to connect the coil in a series circuit with a voltage source and a resistor, the improvement which resides in connecting the output terminals of a switching transistor across said resistor and controlling the on-off condition of said transistor in accordance with changes in magnetic conditions in said core, said resistor being of sufficiently large magnitude to limit flow of current to said coil to a safe value during sustained closure of said switch.

3,356,911
MINIATURE CAPACITOR WITH ELECTRODES AND DIELECTRIC SEALS
John Galvagni, Bennington, Vt., assignor to Tansitor Electronics, Inc., Bennington, Vt., a corporation of Vermont
Filed May 29, 1964, Ser. No. 371,226
18 Claims. (Cl. 317—230)

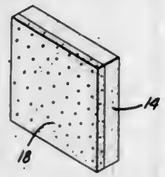
1. A capacitor comprising a solid insulative body and at least one electrode including an elongate metal pin from about 0.005 to 0.030 inch diameter embedded therein, said pin having an end surface of film-forming metal substantially flush with a first surface of said insulative body and a first terminal exposed at a second surface thereof,

an anodic oxide dielectric film formed on said end surface, a conductive coating on said first surface of the insulative body and covering the dielectric film, a sec-



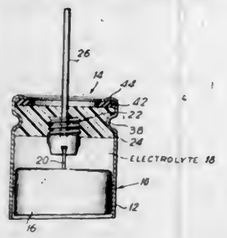
ond terminal in electrical contact with said conductive coating, and an insulative covering sealing the conductive coating.

3,356,912
POROUS ELECTRODE
John R. Rairden III, Albany, and Ellis W. Blood, Ballston Lake, N.Y., assignors to General Electric Company, a corporation of New York
Filed Oct. 16, 1964, Ser. No. 404,288
3 Claims. (Cl. 317—235)



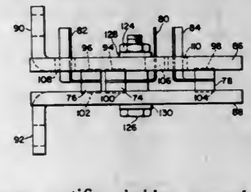
1. An electrolytic device comprising a container, an electrolyte situated within said container, a self-supporting porous body of high melting point metal at least partially submerged within said electrolyte, said metal forming said porous body having a melting temperature of at least 1200° C. and said porous body being the plasma arc spray deposited product of said metal deposited at a distance from 6 to 18 inches, and an electrical lead connected to said porous body to permit external electrical connection to said porous body.

3,356,913
ELECTROLYTIC CAPACITOR WITH COMPRESSION STRESSED SEAL CAP
Charles F. Earley, Manville, R.I., assignor to Cornell-Dubilier Electric Corporation, Newark, N.J., a corporation of Delaware
Filed June 4, 1965, Ser. No. 461,474
7 Claims. (Cl. 317—230)



1. In an electrolytic capacitor comprising a wound capacitor section including at least one lead-in tab of valve metal, an open ended container for said wound section, said wound section being positioned in said container, and an electrolyte fill in said container, the combination with said section and said container of an end seal for retaining said electrolyte fill in said container, said end seal including a disc of resilient insulating material, said disc having inner and outer faces directed toward the interior and exterior of said container respectively, means defining a recess on the interior face of said disc, a stud-like member of valve metal having a body portion force-fit in said recess to provide a liquid tight seal therebetween, said stud-like member having a slotted head portion at one end and a lead wire receiving pocket at the other end, said slotted head portion extending above the inner face of said disc, a flexible lead-wire, means electrically and mechanically connecting said lead wire to said wire-receiving pocket of said stud-like member, said lead wire extending through said disc of insulating material beyond the exterior face thereof, said lead-in tab having a portion positioned within the slotted head portion of said stud-like member and being secured thereto by the forceful closing of said slot upon the tab, whereby said capacitor is provided with a flexible external lead wire for connecting of said capacitor and said lead wire is protected from the electrolyte fill in said container.

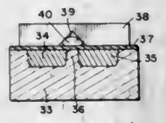
3,356,914
INTEGRATED SEMICONDUCTOR RECTIFIER ASSEMBLY
Ronald C. Whigham, Greensburg, and Frank V. Marcinko, South Union Township, Fayette County, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 3, 1963, Ser. No. 277,949
1 Claim. (Cl. 317—234)



A three-phase rectifier bridge assembly comprising:
first and second electrically conductive heat sink members each having a terminal thereon adapted for connection to a direct current circuit,
first means mechanically securing said first and second heat sink members in predetermined spaced, insulated relation,
one of said first and second heat sink members having at least first, second and third openings therein,
first, second and third rectifier doubler assemblies each having first and second electrical contacts at opposite ends thereof and an electrical lead, each rectifier doubler assembly having first and second semiconductor rectifier junctions each having an anode and cathode electrode, the anode electrode of one of said rectifier junctions and the cathode electrode of the other of said rectifier junctions being connected to said electrical lead, the remaining cathode and anode electrodes of said first and second rectifier junctions being connected to said first and second electrical contacts, respectively, the electrical lead of each of said rectifier doubler assemblies extending outwardly therefrom for a predetermined distance and being bent at substantially a right angle in a predetermined direction relative to the orientation of said first and second rectifier junctions,
said first, second and third rectifier doubler assemblies being disposed between said spaced first and second heat sink members, with the electrical contact of each of said first, second and third rectifier doubler assemblies being electrically connected to one of said first and second heat sink members, and the second electrical contact of each of said first, second and third rectifier doubler assemblies being electrically connected to the remaining of said heat sink members,

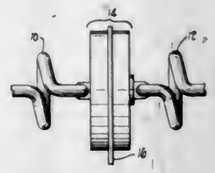
said rectifier doubler assemblies being oriented with respect to said first and second heat sink members such that their electrical leads extend through the first, second and third openings of said one heat sink member, respectively, said electrical leads being adapted for connection to an alternating current circuit.

3,356,915
MECHANICAL AND THERMOELECTRIC TRANSDUCERS
Daniel I. Pomerantz, Lexington, Mass., assignor to P. R. Mallory & Co. Inc., Indianapolis, Ind., a corporation of Delaware
Filed Apr. 1, 1966, Ser. No. 539,547
16 Claims. (Cl. 317—235)



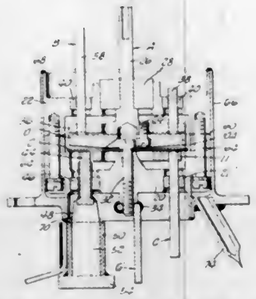
1. A transducer comprising: a field-effect transistor having a source electrode and drain electrode separated by a channel, an insulating layer covering said source and drain electrodes and said channel, and a gate electrode disposed over said channel and separated therefrom by said insulating layer; means for applying a predetermined potential to said gate electrode; and means for moving said gate electrode with respect to said channel so as to control the conduction characteristics of said field-effect transistor.

3,356,916
FEED-THROUGH CAPACITOR
Robert James Scott, Parma, Ohio, assignor to Bird Electronic Corporation, Solon, Ohio, a corporation of Ohio
Filed Apr. 27, 1966, Ser. No. 545,596
9 Claims. (Cl. 317—242)



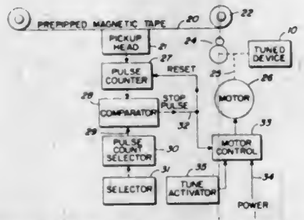
1. A feed-through type capacitor comprising:
a metallic sheet member having an aperture therein;
a relatively flat electrode having conductors extending from opposite sides thereof;
dielectric means including a dielectric member having a body portion with a recess therein, an end wall and a hollow portion extending substantially perpendicularly from said end wall, said hollow portion extending through said aperture and receiving one of said conductors for locating said electrode relative to said sheet member, said dielectric means including a layer of dielectric material between said electrode and said sheet member; and
means for mounting said electrode on said sheet member with said conductors on opposite sides of said sheet member.

3,356,917
DYNAMIC CAPACITOR HAVING A PERIPHERALLY DRIVEN ELEMENT AND SYSTEM INCORPORATING THE SAME
Carmi S. Goldstein, Los Angeles, Calif., assignor to Kinelogic Corporation, a corporation of California
Filed July 16, 1965, Ser. No. 472,643
10 Claims. (Cl. 317—245)



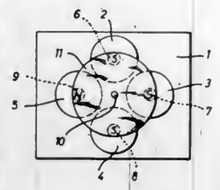
1. A dynamic capacitor comprising a first stationary element, a second stationary element, a third element in the form of a diaphragm between said first and second elements, said third element being in the form of a flexible metallic disk stationarily supported at its center means cooperating with the peripheral portion of said disk and vibrating such peripheral portion at its inherent mechanical resonant frequency to achieve a corresponding variation in capacitance between one of said stationary elements and the vibrating diaphragm.

3,356,918
TAPE CONTROLLED POSITIONING AND TUNING SYSTEM
Winston F. Williams, Cedar Rapids, Iowa, assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa
Filed July 23, 1964, Ser. No. 384,610
13 Claims. (Cl. 318—18)



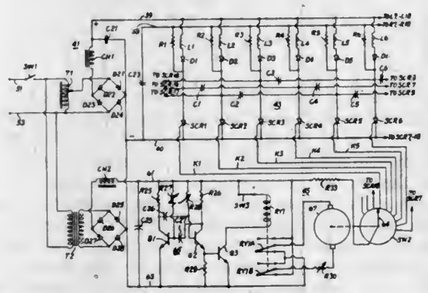
1. Means for selectively rotating a shaft to a plurality of preselected positions comprising a drive motor connected to said shaft, a magnetic tape and transducing means associated therewith, means for driving said tape with respect to said transducing means as a function of said shaft position, said tape having recorded thereon a plurality of magnetic impulses disposed longitudinally along said tape, pulse counting means receiving the output of said transducing means, comparator means receiving the output of said counting means, count selecting means connected to said comparator means, said comparator means producing an output in response to a preselected one of said magnetic impulses being applied to said counting means, and motor control means connected to and responsive to an output from said comparator means to de-energize said motor in response to a preselected one of said plurality of magnetic impulses being applied to said pulse counting means.

3,356,919
TRANSISTOR CIRCUIT FOR THE OPERATION OF ELECTRONIC CLOCKS
Robert Walter Reich, Merzhauserstr. 143, Freiburg im Breisgau, Germany
Filed June 8, 1964, Ser. No. 373,294
Claims priority, application Germany, Dec. 9, 1963, R 36,751
6 Claims. (Cl. 318—128)



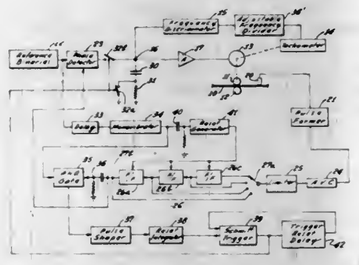
1. An electronic device for maintaining mechanical oscillations comprising; a mechanical oscillator member having a null position and having a swing of less than 360° on each side of the null position and being adapted to be biased toward said null position, a plurality of magnets on said member spaced circumferentially thereof, a plurality of stationary exciter coils adjacent said member positioned for respective registration with said magnets in the null position of said member so that movement of the member through its null position will induce voltages in said exciter coils, a driver coil, a magnet element on said member which registers with said driver coil in the null position of said member so a pulse of current to said driver coil will exert an impelling force on said member via said magnet element; a transistor said exciter coils being connected to supply a voltage pulse in the base emitter circuit of said transistor; a battery, said battery and driver coil being serially connected in the emitter-collector circuit of said transistor, one of said magnets and magnet element being poled in one direction and the others thereof being poled in the opposite direction, said exciter coils being so connected in series that the respective voltage pulses induced therein by their respective magnets passing thereby will be in additive relation in the base-emitter circuit of the transistor only as the member passes through its null position.

3,356,920
ELECTROMAGNETIC APPARATUS INCLUDING SEMICONDUCTOR SWITCHING MEANS FOR SIMULTANEOUSLY ENERGIZING A PLURALITY OF STATOR WINDINGS
Charles T. Button, Dayton, Ohio, assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Jan. 13, 1965, Ser. No. 425,265
16 Claims. (Cl. 318—138)



1. Electromagnetic apparatus comprising: a stator including a multiplicity of windings, said windings being distributed around said stator, one from the others; a multiplicity of semiconductor current switching devices respectively interconnected with said windings for controlling current flow therethrough; a rotor mounted for rotation concentrically relative to the stator; pilot triggering means for sequentially energizing said switching devices independently of the speed of rotation of said rotor; and means responsive to the energization of each switching device for deenergizing a previously energized switching device separated from the switching device being energized by more than one device in the sequence of energization whereby a plurality of stator windings are energized simultaneously and a rotating magnetic field is produced by said stator for applying torque to said rotor.

3,356,921
MOTOR CONTROL CIRCUIT WITH COMPENSATION FOR DROPOUT OF CONTROL SIGNALS
Robert S. Bradford, Tarzana, and Paul D. Leeke, Ventura, Calif., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn.
Filed Apr. 24, 1964, Ser. No. 362,281
22 Claims. (Cl. 318—318)

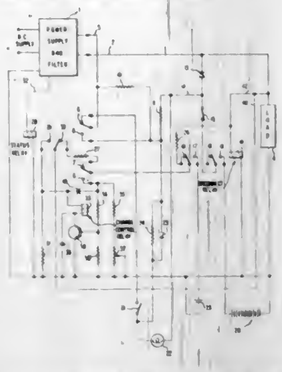


1. In a control system for the speed and position control of a data storage tape, there being a track with synchronizing signals on said tape, which system further includes a feedback-controlled motor driving the tape, there being a control terminal whose potential determines the momentary speed and phase of the motor, the combination comprising:
means responsive to the synchronization signals stored on said tape;
a source of reference signals;
means including delay means connected to said source of reference signals and producing a train of control pulses, each control pulse having a width corresponding to a range of tolerance of position control;
coincidence means responsive to coincidence between a pulse of said train of pulses and an output of said synchronization-signal responsive means; and
means connected to said coincidence means for producing a signal upon a lack of coincidence.

3,356,922
AUTOMATIC BATTERY CHARGING CIRCUIT
Samuel A. Johnston, Fontana, Wis., assignor to Amphenol Corporation, Broadview, Ill., a corporation of Delaware
Filed Apr. 8, 1965, Ser. No. 446,520
18 Claims. (Cl. 320—6)

1. In an electrical system for employing rechargeable batteries:
first circuit means connectible with a main battery,
second circuit means connectible with a timing battery,
third circuit means operative on discharge current in the first circuit means to supply therefrom charging current in the second circuit means,
fourth circuit means operative to supply charging cur-

rent in the first circuit means and to draw discharge current in the second circuit means,



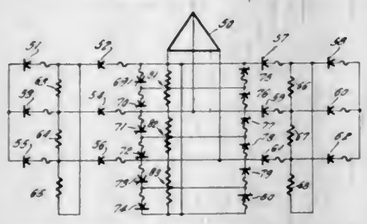
and means responsive at a predetermined level of declining voltage on the second circuit means to terminate operation of the fourth circuit means.

3,356,923

SHUNT CONNECTED THYRISTOR FOR CONTROL CIRCUIT

Isadore K. Dortort, Philadelphia, Pa., assignor to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Dec. 24, 1964, Ser. No. 421,009
5 Claims. (Cl. 321—5)



5. In combination; a three-phase A-C transformer; a first and second diode for each of said phases having first and second terminals; said first terminals of said first and second diodes connected to each of said phases of said transformer with a polarity to conduct during the positive and negative phases respectively of their said respective phase, said second terminals of said first and second diodes being connected to respective positive and negative bus bars, a respective thyristor connected in parallel with each of said diodes, and a control circuit means for rendering said thyristors conductive in their forward current carrying direction; said forward current carrying direction of said thyristors being opposite to the forward current carrying direction of their said respective diodes; said control circuit means rendering said thyristors conductive in their said forward current carrying direction at a time prior to normal forward current conduction by their said respective diode; whereby said transformer is short circuited during the intervals of forward current conduction by said thyristors until forward current conduction by their said respective diodes.

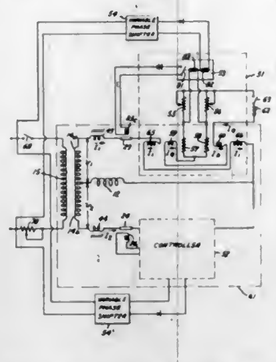
3,356,924

CRYOGENIC PUMPED RECTIFIER SYSTEMS

Theodor A. Buchhold, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

Filed May 2, 1967, Ser. No. 642,625
7 Claims. (Cl. 321—8)

1. A flux pumping arrangement including in combination a superconducting inductance, a superconducting lossless source of varying electric potential, alternate lossless superconducting paths for operatively coupling said superconducting lossless source of varying electric potential in electric circuit relationship with said superconducting inductance, switching means operatively connected in each of said alternate superconducting paths for alternately switching said superconducting source of varying electric potential in and out of electric circuit relationship with



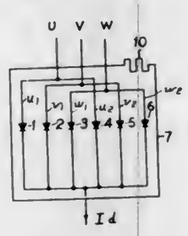
said superconducting inductance through alternate ones of the superconducting paths in desired phase relation with the varying electric potential supplied from said superconducting source, and control circuit means operatively coupled to said source of varying electric potential, each of said superconducting paths, and each of said switching means for effectively controlling the operation of said switching means in desired phase relation with respect to the varying electric potential.

3,356,925

DEVICE FOR EQUALIZING ALTERNATING CURRENTS FLOWING IN DIFFERENT CONDUCTORS

Armand Brandt, Lucerne, and Werner Faust, Nussbaumen, Switzerland, assignors to Aktiengesellschaft Brown, Boveri & Cie, Baden, Switzerland, a joint-stock company

Filed July 6, 1964, Ser. No. 380,525
Claims priority, application Switzerland, July 16, 1963, 8,879/63
7 Claims. (Cl. 321—11)



1. In a high power rectifier system which comprises a plurality of conductors connected electrically in parallel for each phase of the alternating current supply source to be rectified and a rectifier unit connected to each conductor, the improvement which is characterized by the provision of a single auxiliary closed conductor loop which is conductively isolated from said electrically parallel conductors but inductively related thereto, said single auxiliary loop being common to all of said electrically parallel conductors feeding the entire rectifier system and which by virtue of the short-circuit current flowing therein serves to equalize the flow of alternating currents in said electrically parallel conductors.

3,356,926

VOLTAGE DOUBLER RECTIFIER WITH CONSTANT VOLTAGE AND VARIABLE OUTPUT VOLTAGE

Floyd B. Mason, Garland, and Charles C. Huey, Richardson, Tex., assignors to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa

Filed Feb. 2, 1966, Ser. No. 524,545
9 Claims. (Cl. 321—15)



1. A voltage doubler rectifier circuitry comprising an input transformer having a primary winding to which is applied a source of alternating current supply voltage and a secondary winding, means for alternately connecting to ground that one of the respective ends of said secondary winding which is at positive potential during successive half cycles of said input signal, a voltage doubling network connected to one end of said secondary winding, said doubling network comprising first, second and third serially interconnected and like-polarized diodes connected between the connected one of said secondary winding ends and a first output terminal, a first capacitor shunting the serially interconnection of said first and second diodes, a second capacitor having one terminal thereof connected to the junction between said first and second diodes and the second terminal thereof connected respectively to opposite electrodes of fourth and fifth diodes, the cathode electrode of said fourth diode being connected to a positive source of the direct current voltage referenced to ground, means for applying a predetermined portion of said positive direct current voltage to the anode electrode of said fifth diode and a third capacitor and first load impedance each connected between said first output terminal and ground, whereby the voltage developed across said first load impedance has a magnitude equal to twice that of the voltage induced in said transformer secondary winding less the difference between said direct current source magnitude and said predetermined portion thereof as applied to said fourth and fifth diodes respectively.

3,356,927

REGULATED POWER SUPPLY CIRCUIT

Benjamin Barron, Malba, N.Y., assignor to Lear Siegler, Inc., Long Island City, N.Y., a corporation of Delaware

Filed June 11, 1964, Ser. No. 374,422
6 Claims. (Cl. 321—18)

1. Apparatus operating from a source of alternating current for producing a regulated direct current output voltage of a predetermined magnitude comprising:

means for converting the alternating current into direct current,

an inductor electrically coupled to said converting means for storing the direct current,

output means electrically coupled to said inductor on which said regulated direct current voltage is produced,

relatively fast acting first regulating circuit means electrically coupled to said output means comprising:

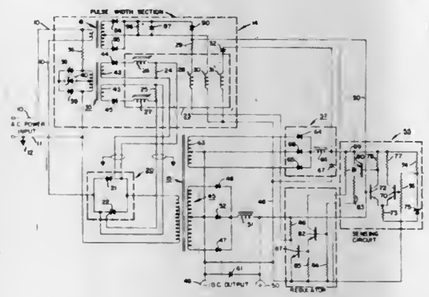
(a) means for establishing a signal corresponding to the predetermined magnitude of the output voltage,

(b) means for sensing the magnitude of the voltage at said output means,

(c) means for comparing the signal corresponding to the predetermined magnitude output voltage and the voltage sensed at the output means and producing a control signal when the latter exceeds the former,

(d) means electrically coupled to the output means and responsive to the control signal for shunting current from the output means to decrease the output voltage,

a silicon-controlled rectifier switching means having a variable conduction time connected between the alternating current source and the converting means,



relatively slow acting second circuit means for controlling the conduction time of the switching means comprising:

magnetic amplifier means electrically coupled to the control means of said switching means for controlling the conduction time of the switching means in accordance with the conduction of said magnetic amplifier means,

and first control winding means receiving coupled to the control means of said the current passing through said current shunting means for controlling the conduction time of the magnetic amplifier means thereby controlling the average voltage applied to the inductor from the voltage converting means.

3,356,928

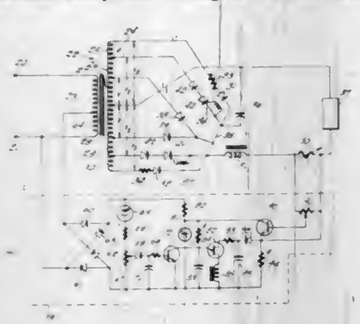
REGULATED RECTIFIER FOR WELDING POWER SUPPLIES

Frank W. Parrish, El Segundo, Calif., assignor to International Rectifier Corporation, El Segundo, Calif., a corporation of California

Filed Feb. 15, 1965, Ser. No. 432,483
4 Claims. (Cl. 321—18)

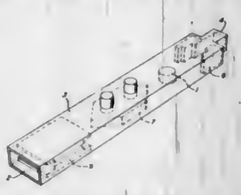
1. A rectifier system for supply power to a D-C load from an A-C source; said rectifier system comprising a first and second rectifier subsystem; said first rectifier subsystem including rectifier diode means having a given current rating substantially equal to the lowest load current to be carried by said load and having a given output voltage; said second rectifier subsystem including controlled rectifier means having an output voltage adjustable from said given output voltage of said rectifier diode means to a voltage output substantially higher than said given output voltage; said first and second rectifier subsystems each having input A-C terminals and output D-C terminals; said input A-C terminals each connected

to said A-C source; said output D-C terminals being connected in parallel with one another and across said load; and control means connected to said controlled rectifier means for adjustably switching additional output voltage from said second rectifier subsystem in place of said first rectifier subsystem to adjustably control the current through said load; and a third rectifier subsystem; said third rectifier subsystem having a current rating lower



than said given current rating of said first rectifier subsystem and an output voltage higher than said output voltage of said second rectifier subsystem; said third rectifier subsystem having input A-C terminals and output D-C terminals; said input A-C terminals connected to said A-C source; said output D-C terminals connected in parallel with said output D-C terminals of said first and second rectifier subsystems.

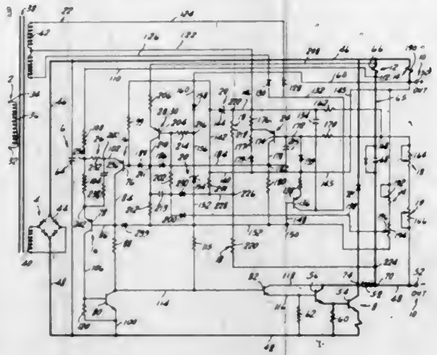
3,356,929
MICROWAVE DEVICES UTILIZING Eu-Fe GARNET CONTAINING Ga
Roy C. Le Craw and Herbert Matthews, Madison, and Joseph P. Remelka, Warren Township, Somerset County, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed July 1, 1964, Ser. No. 379,586
7 Claims. (Cl. 321—69)



6. A microwave component having a g value of at least four (4) and comprising at least one waveguide and a gyromagnetic garnet body of a composition comprising $Eu_3Ga_xFe_{5-x}O_{12}$, in which x equals from 0.8 to 1.8.

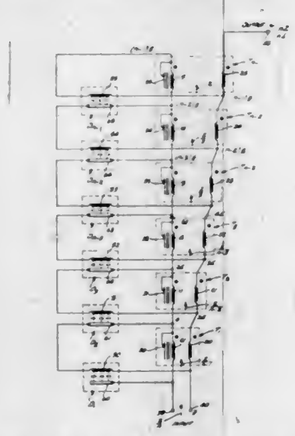
3,356,930
FLIP-FLIP CONTROLLED SWITCHING REGULATOR WITH VOLTAGE, CURRENT AND POWER LIMITING FEATURES AND WITH FILTER CIRCUIT LOAD CHANGE SENSOR
Peter J. Lupoli, Hamden, and Johannes Schaefer, Wilton, Conn., assignors to Technipower Incorporated, South Norwalk, Conn., a corporation of Connecticut
Filed Apr. 2, 1965, Ser. No. 445,056
27 Claims. (Cl. 323—20)

19. A regulator system comprising input terminals, output terminals, and first and second lines connecting said input terminals and said output terminals respectively, a switching transistor operatively connected to at least one of said lines, first means for sensing the voltage across said output terminals, second means for sensing the current at said output terminals, control means operatively connected to said switching transistor to control the switching thereof, and acuating means operatively connecting said first and second sensing means to said control means and effective to normally actuate said control means in accordance with the sensing of said first means and to actuate said control means in accordance with the sensing of said second means when the current at said output terminals exceeds a predetermined value,



said control means comprises a pair of transistors connected to one another in a flip-flop circuit, a predetermined bias normally causing a change in status of said flip-flop circuit, said first and second sensing means being operatively connected to said flip-flop circuit to supply said bias, and means operatively connected to said flip-flop circuit, sensitive to a change in status of said circuit and effective upon such change in status to condition said circuit, for a limited period of time, to require a bias greater than said predetermined bias to cause a change in status thereof.

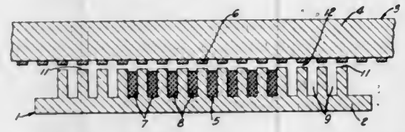
3,356,931
HIGH VOLTAGE TRANSFORMER
William R. Welty, Fullerton, and Leo W. Wilson, Huntington Beach, Calif., assignors to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed Nov. 19, 1965, Ser. No. 508,734
7 Claims. (Cl. 323—48)



1. A high voltage transformer apparatus for generating an output voltage that is n times the amplitude of input voltage wherein n is no less than 3, said apparatus comprising first, second, third . . . $(n-3)$, $(n-2)$ and

$(n-1)$ transformers of predetermined delay and each possessing primary and secondary windings mutually coupled with individual cores, each of said primary and secondary windings having first and second terminals, the direction of polarity between respective first and second terminals being consistent and the respective turns ratio of said primary and secondary windings being substantially unity; means for connecting said first terminals of said primary and secondary windings of said first, second and third . . . $(n-2)$ transformers to said second terminals of said primary and secondary windings of said second, third . . . $(n-1)$ transformers, respectively; means for maintaining said second terminal of said primary winding of said first transformer at a reference potential level; and means connecting said respective second terminals of said secondary windings of said first, second, third . . . $(n-2)$, and $(n-1)$ transformers to said respective first terminals of said primary windings thereof whereby a voltage relative to said reference potential level applied to said second terminal of said secondary winding of said first transformer is transformed to n times its amplitude at said first terminal of said secondary winding of said $(n-1)$ transformer.

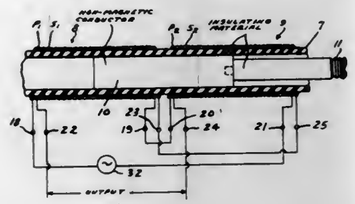
3,356,932
POSITION MEASURING TRANSFORMER HAVING COIL WINDING FOR SALIENT POLES
Clair L. Farrand, Bronxville, N.Y., assignor to Inductosyn Corporation, Carson City, Nev., a corporation of Nevada
Filed Mar. 31, 1964, Ser. No. 356,210
3 Claims. (Cl. 323—51)



1. A position measuring transformer comprising first and second relatively movable inductively related transformer members each having a winding separated by an air gap, each of said windings comprising a plurality of conductors disposed side by side and connected in series for opposite directions of current flow in adjacent conductors, the winding of said first member having a certain uniform spacing, the winding of said second member comprising a plurality of windings displaced from each other by a fraction of said spacing to form a plurality of phases in which the voltages are induced in the same time phase but displaced in space phase, the winding of said second member having a support having a series of slots and salient poles extending transversely of the direction of relative movement of said members, each phase of the winding of said second member comprising a plurality of coils each surrounding one of said salient poles with the sides of each coil in the respective slots at the opposite sides of the salient pole, said salient poles having faces forming one side of the air gap between said transformer members.

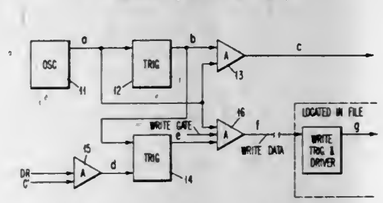
3,356,933
DISPLACEMENT SENSOR COMPRISING DIFFERENTIAL TRANSFORMER WITH NONMAGNETIC CORE
Clifford O. Stettler, Chicago, Ill., assignor to the United States of America as represented by the Secretary of the Air Force
Filed Oct. 27, 1964, Ser. No. 406,949
1 Claim. (Cl. 323—51)

A displacement sensor for use under conditions of high temperature and nuclear radiation comprising: two parts capable of relative motion along a straight line; a tube of a ceramic material mounted on one of said parts with its axis parallel to said line of motion; a first primary winding and a first secondary winding bifilarly wound on said tube; a second primary winding and a second secondary winding bifilarly wound on said tube adjacent to said first windings; a core within said tube movable in either direction from a null position in which the length of core within said first windings equals the length within said second windings, said core being made of a con-



ductive nonmagnetic material; a mechanical connection of insulating material between said core and the other part of said sensor whereby relative movement of said parts moves said core relative to said windings; means connecting said primary windings in series aiding relationship; means for energizing said primary windings with alternating current; a pair of output terminals; means connecting said secondary windings in phase opposition between said output terminals.

3,356,934
DOUBLE FREQUENCY RECORDING SYSTEM
Martin O. Halfhill and Harold C. Stephens, San Jose, Calif., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Nov. 20, 1964, Ser. No. 412,776
7 Claims. (Cl. 328—63)



1. A binary recording system for producing a recording waveform having a flux reversal at the beginning of every clock interval and an additional flux reversal at the midpoint of each clock interval having a second binary value, including

means for generating a pulse train in which a pulse occurs at the beginning and at the midpoint of every clock interval, and

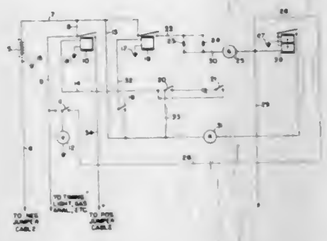
means responsive to data of a first binary value for blocking pulses from the pulse train which occur at the midpoint of clock intervals having the first binary value.

3,356,935
AUTOMOTIVE ELECTRICAL SYSTEM TESTER AND ANALYZER
George Wayne Morgan, 705 SE. 2nd Ave., Delray Beach, Fla. 33444
Filed Feb. 18, 1964, Ser. No. 345,663
8 Claims. (Cl. 324—16)

1. An electrical system tester and analyzer for an internal combustion engine electrical system comprising:

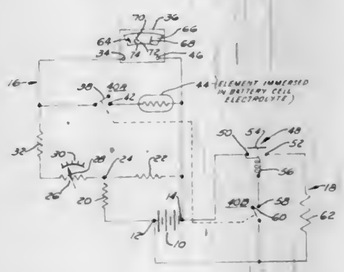
(a) an electrical power source of the same type normally employed in the system,

(b) a first conductor having one end connected to the negative terminal of said power source and another end for connection to the normally negative terminal of the electrical system of an internal combustion engine,
(c) a second conductor having one end connected to the positive terminal of said power source and another end for connection to the normally positive terminal of the electrical system of an internal combustion engine,
(d) a first relay having its switching contacts connected in series with said second conductor,
(e) a test lead conductor having one end connected to the positive terminal of said power source and



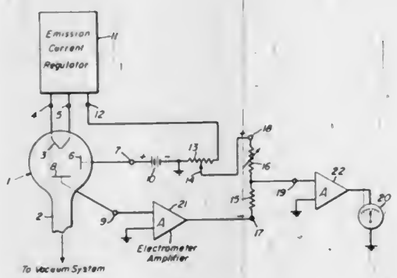
another end for connection to selected points of the electrical system,
(f) test instruments electrically connected in said test lead conductor,
(g) a second relay having its switching contacts connected in series with said test lead conductor,
(h) means including said power source for energizing said relays during a testing operation to thereby close their respective switching contacts,
(i) said test instruments including an amperage measuring device and a voltage measuring device,
(j) a reverse current relay connected to said test lead conductor to sense the current flow therethrough,
(k) a by-pass conductor electrically connected in parallel with said voltage measuring device,
(l) said by-pass conductor electrically connected in series with the switching contacts of said reverse current relay.

3,356,936
METHOD AND MEANS FOR TOTAL BATTERY VOLTAGE TESTING
Leonard S. Smith, Minneapolis, Minn., assignor, by mesne assignments, to Litton Precision Products, Inc., Beverly Hills, Calif., a corporation of Delaware
Filed Feb. 12, 1964, Ser. No. 344,344
8 Claims. (Cl. 324—29.5)



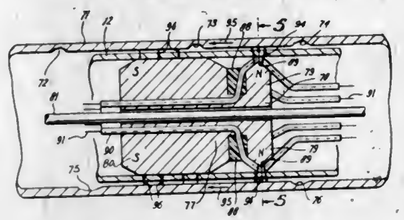
1. The improved method for detecting faulty storage batteries at various states of charge by measuring total battery voltage comprising the steps of connecting a no-load, high resistance, low current circuit including a selectively variable resistance in series with a voltmeter across the terminals of the battery under test; selectively adjusting said variable resistance to obtain a predetermined reading on the voltmeter; the adjusted position of said variable resistance indicating the relative state of charge of the battery under test; closing a switch to connect a load of predetermined magnitude to the battery under test, connecting a temperature sensitive element, located in the electrolyte of one cell of the battery under test, in parallel with said voltmeter while said load is connected to the battery under test to automatically compensate the voltmeter reading for battery temperature; and causing the voltmeter reading to drop no more than a predetermined amount if the battery under test is good and to drop an amount greater than said predetermined amount if said battery is faulty, said predetermined amount being dependent upon the size of the battery being tested.

3,356,937
NULL-BALANCED COMPENSATION SYSTEM FOR ION GAUGE WITH EMISSION CURRENT INSTABILITIES
Robert L. Watters, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed Sept. 28, 1964, Ser. No. 399,540
7 Claims. (Cl. 324—33)



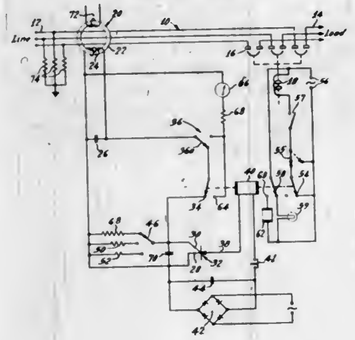
1. An ion gauge system comprising:
(a) gas ionizing means disposed within a low pressure gas-filled enclosure and having externally energizable electrical elements inside said enclosure including a thermionic electron-emissive cathode, an electron-collecting anode, and an ion-collecting electrode, said cathode providing emission of electrons at a rate subject to uncontrollable variations that correspondingly effect uncontrollable variations in the rate at which ions are produced within said enclosure and are collected at said ion-collecting electrode;
(b) a subtraction network having two input means coupled to said ion-collecting electrode and said electron-collecting anode, respectively, providing a difference signal of magnitude proportional to the difference in absolute magnitude between an electric signal proportional to the rate at which ions are collected at said ion-collecting electrode and a compensating signal corresponding in magnitude to the rate at which electrons are collected at said anode; and
(c) indicator means coupled to said subtraction network providing an indication of the magnitude of said difference signal, said indicator means including a direct current amplifier effecting expanded scale indication.

3,356,938
APPARATUS AND METHOD FOR MAGNETICALLY DETECTING DEFECTS IN FERROMAGNETIC MEMBERS BY MEASURING CHANGES IN RELUCTANCE PATHS CAUSED THEREBY
Fenton M. Wood, Sugarland, Tex., assignor, by mesne assignments, to American Machine & Foundry Company, New York, N.Y., a corporation of New Jersey
Filed Aug. 29, 1963, Ser. No. 305,496
21 Claims. (Cl. 324—37)



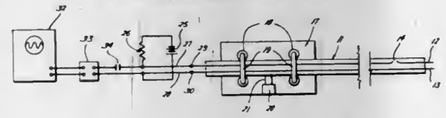
1. In a method of testing a ferromagnetic tubular member for defects comprising the steps of:
establishing a magnetic field in a portion of said tubular member and in a fixed magnet disposed closely adjacent thereto, said field having
a first group of radial flux lines passing between said tubular member and one pole of said magnet and forming a first radial flux path, and
a second group of flux lines passing between the other pole of said magnet and said tubular member and forming a second radial flux path,
causing relative movement between said tubular member and said magnet in a direction generally transverse to said radial flux paths,
recording on an elongate magnetic medium variations in the reluctance of said first radial flux path during said relative movement as indications of defects in said tubular member said elongate magnetic medium passing through a portion of said magnet during said recording.

3,356,939
GROUND LEAKAGE DETECTION APPARATUS FOR UNGROUNDED SYSTEMS INCLUDING TOROIDAL CORE DETECTOR MEANS
Robert A. Stevenson, Granby, Quebec, Canada, assignor to Federal Pacific Electric Company, a corporation of Delaware
Filed Mar. 25, 1964, Ser. No. 354,730
3 Claims. (Cl. 324—51)



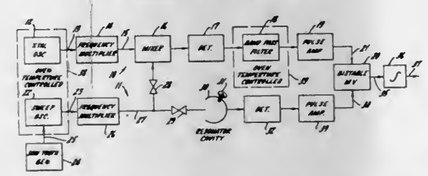
2. A ground-fault detector, comprising means for monitoring ground-fault current including a transformer having a secondary winding, fault-responsive means connected to said secondary winding and including switching means responsive to a predetermined level of current in said secondary winding, a relay connected to said switching means, fault-signalling means controlled by said relay, and an energizing source of current connected to said relay and said switching means, said energizing source including means providing a hold-in level of voltage for said relay under steady-state conditions and pull-in voltage under no-load conditions, and a storage capacitor across said supply proportioned to provide a pull-in current pulse for said relay upon operation of said switching means.

3,356,940
METHOD AND APPARATUS FOR LOCATING A BROKEN CONDUCTOR IN A CABLE BY VIBRATING A SECTION OF THE CABLE
George E. La Frentz, Houston, Tex., assignor to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas
Filed May 5, 1966, Ser. No. 547,994
10 Claims. (Cl. 324—52)



1. The method of locating a break in a conductor in a cable having at least two conductors, comprising the steps of:
connecting the conductors to form an electrical circuit;
applying a voltage to the circuit;
moving the cable axially relative to vibration means while vibrating a section of the cable with such vibration means to vary the spacing between the conductors at the point of vibration, thereby producing variations in an electrical parameter of the circuit;
monitoring said variations in said electrical parameter during the relative movement; and
detecting a change in the monitored variations as an indication of the location of a break.

3,356,941
ABSOLUTE MICROWAVE REFRACTOMETER
Paul W. Everman, Indianapolis, Ind., assignor to the United States of America as represented by the Secretary of the Navy
Filed Jan. 8, 1965, Ser. No. 424,447
9 Claims. (Cl. 324—58.5)



1. An absolute microwave refractometer comprising:
an oscillator for generating oscillations of a stable frequency;
a sweep oscillator for generating oscillations repeatedly sweeping over a predetermined range;
mixing means coupled to said oscillator and sweep oscillator producing a mixed frequency in one channel;
a sampling resonator cavity in the atmosphere and coupled to said sweep oscillator to produce an output in a second channel when said cavity resonates;
a detector and a narrow bandpass filter in series in said one channel coupled to said mixer to produce an output pulse whenever said stable frequency and said

sweep frequency beat in a predetermined mixed frequency;

a detector coupled to said cavity in said channel to detect said resonated frequency; and

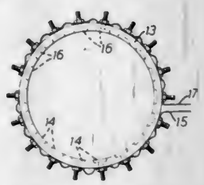
means coupled to said one and second channels to produce a voltage representative of the time interval of occurrence of a pulse from said second channel with respect to a corresponding pulse in said one channel whereby a change in frequency produced by the atmosphere can be measured and calibrated.

3,356,942

FLUID DUCT AND ELECTRODE ASSEMBLY

Leonard Myer Bennett, Rodborough, Stroud, England, assignor to Mawdsley's Limited, Dursley, England

Filed July 15, 1963, Ser. No. 295,053
Claims priority, application Great Britain, July 21, 1962, 28,153/62
4 Claims. (Cl. 324—65)



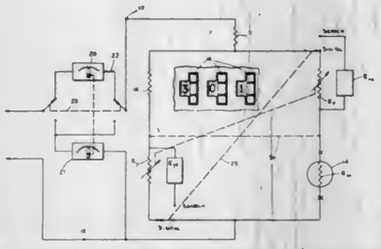
1. A fluid duct and electrode assembly, comprising a duct of tubular form with an internal electrical insulating surface, two symmetrically opposed and elongated electrodes mounted at said surface for electrical contact with fluid flow along the duct each electrode comprising a plurality of separate and discrete studs arranged in a row and electrically interconnected, and external electrical connections to said electrodes, the longitudinal axis of each electrode being skewed with respect to the longitudinal axis of the duct and the length of each electrode spanning a section of the length of the duct.

3,356,943

METHOD AND APPARATUS FOR MEASURING VOLTAGE AND CURRENT

David S. Wise, Cleveland, Ohio, assignor to Western Reserve Electronics, Inc., Cleveland, Ohio, a corporation of Ohio

Filed Oct. 3, 1962, Ser. No. 228,186
17 Claims. (Cl. 324—98)



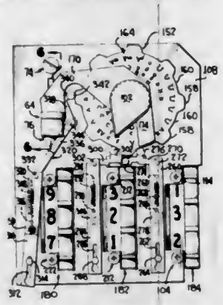
1. A voltage and current measuring instrument having first and second terminals to be inserted in shunt with a voltage to be measured and in series with a current to be measured, a circuit connected between said terminals and comprising a first fixed resistance and a first variable resistance connected to the first terminal, a second variable resistance and an indicator having a fixed resistance connected to the second terminal, said second variable resistance being connected to the other end of the first fixed resistance and said indicator being connected to the other end of the first variable resistance, said variable resistances being mechanically coupled together and operated by a single control and are a plurality of discrete fixed resistances and are arithmetic progression of values one of which is the inverse of the arithmetic progression of values of the other variable resistance.

3,356,944

DECIMAL AND RANGE INDICATING MEANS FOR ELECTRICAL MEASURING APPARATUS

Donald B. Coon, Warrensville Heights, Ohio, assignor to Western Reserve Electronics Inc., Cleveland, Ohio, a corporation of Ohio

Filed Nov. 23, 1964, Ser. No. 413,218
12 Claims. (Cl. 324—98)



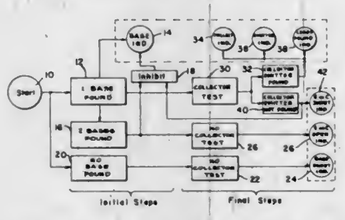
1. Electrical measuring apparatus including support means, a plurality of manually operable digital switch means independently movably supported by said support means, digit indicating means associated with each of said switch means, said switch means being in alignment with one another such that the digit indicating means associated therewith provides an in-line visible readout, decimal indicating mechanism including a plurality of movable portions, there being at least one movable portion associated with each of said digit indicating means, each of said movable portions having indicating means thereon for indicating the position of the decimal point with respect to said digit indicating means, means guiding said movable portions of the decimal indicating mechanism with respect to said digit indicating means, and control means operatively connected with said movable portions for controlling the position of the movable portions so as to properly indicate the position of the decimal point with respect to the digit indicating means.

3,356,945

METHOD AND APPARATUS FOR TESTING A TRANSISTOR AND SELECTING AND IDENTIFYING THE UNKNOWN LEADS THEREOF

Thomas J. Ryan, Buckingham, and Irvine P. Stapp, Pitcairn, Pa., assignors to American Electronic Laboratories, Inc., Colmar, Pa., a corporation of Pennsylvania

Filed Apr. 17, 1962, Ser. No. 188,079
34 Claims. (Cl. 324—158)



1. The method for selecting the base lead of an operative transistor with unknown leads which comprises:

(a) connecting together a selected two of the three leads of a transistor and applying to the combination a voltage of predetermined sense between the connected and unconnected leads of said transistor,

(b) determining whether as a result there is a current through the transistor between the leads to which said voltage is applied,

(c) performing the steps (a) and (b) for the connections of the pairs of leads of the transistor for the remaining two combinations of said leads after disconnecting the previously connected leads with said voltage applied in the same said predetermined sense between the connected and unconnected leads of said transistor,

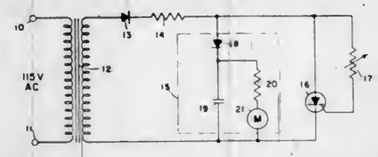
(d) and designating as the base lead of said transistor the unconnected lead of the combination of leads which has a result in step (b) substantially different from the results of the remaining two combinations of said leads.

3,356,946

GATE SENSITIVITY METERS FOR SILICON CONTROLLED RECTIFIERS OR THE LIKE

Hans R. Camenzind, Lexington, Mass., assignor to P. R. Mallory & Co. Inc., Indianapolis, Ind., a corporation of Delaware

Filed Mar. 23, 1966, Ser. No. 536,928
8 Claims. (Cl. 324—158)



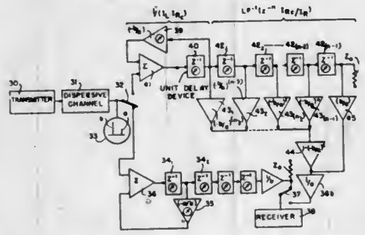
1. A meter for measuring the gate sensitivity of a semiconductive device of the type having an anode electrode, a cathode electrode, and a gate electrode for controlling conduction from said anode electrode to said cathode electrode, said meter comprising: an AC voltage source; first circuit means for connecting said voltage source to an anode electrode of a device to be tested; second circuit means for connecting a cathode electrode of said device to be tested to said voltage source; third circuit means for connecting said anode electrode to a gate electrode of said device to be tested, said third circuit means including an adjustable means for varying the current applied to said gate electrode; and a peak reading voltmeter connected between the anode and the cathode of said device to be tested for establishing the peak anode voltage.

3,356,947

WAVE-SIGNAL DISPERSION CORRECTING NETWORK

Michael J. Di Toro, Massapequa, N.Y., assignor to Cardion Electronics, Inc., a corporation of Delaware

Filed Dec. 23, 1963, Ser. No. 332,492
6 Claims. (Cl. 325—42)



1. In a wave-signal translating channel including a link subject to undesired noise and to signal dispersion and multipath distortion effective to convert an input delta-function signal into a dispersed wave form extending substantially beyond the reciprocal of twice the baseband width of the link, thereby giving rise to intersymbol interference in the output signal thereof, and in which the transfer function of the link has one or more zeros in the right-hand p-plane, a correction network for substantially reducing said noise and intersymbol interference comprising:

(a) an input circuit for supplying a signal translated by said link;

(b) an output circuit;

(c) and a wave-signal correction transmission line coupling said input circuit and said output circuit having a predetermined time delay and including two portions coupled in cascade, a first of said portions having a transfer function represented by the expression $(1/\phi_1)$ and the second of said portions having a transfer function corresponding to that of a filter matched to the impulse response of a network having a transfer function represented by the expression:

$$(\bar{S}_{m_{td}m_r}/\phi_2)_m$$

where

$$\bar{S}_{m_{td}m_r}=$$

the spectral density function, being the Fourier Transform of the corresponding correlation function

$$R_{m_{td}m_r}$$

in which the argument $p=j\omega$ is replaced by $-p$

m_{td}=ideal desired signal output

m_r=received signal

ϕ_1=factor function having zeros and poles only in the left-hand p-plane

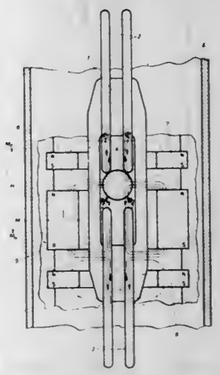
ϕ_2=factor function having zeros only in the right-hand p-plane.

3,356,948

ELECTRICAL SWITCHING UNIT, CONTROLLED THROUGH PERMANENT MAGNETS WITH A REED CONTACT, HAVING A FREELY MOVABLE ARMATURE

Andreas Zerfass, Stuttgart-Stammheim, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

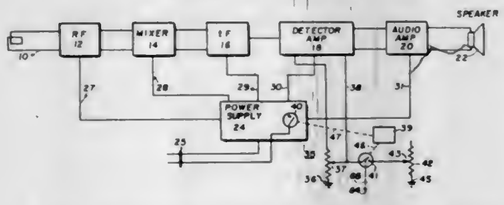
Filed July 6, 1966, Ser. No. 563,186
Claims priority, application Germany, July 30, 1965, St 24,201
3 Claims. (Cl. 335—153)



1. An electric switching unit comprising a pair of reed contacts,

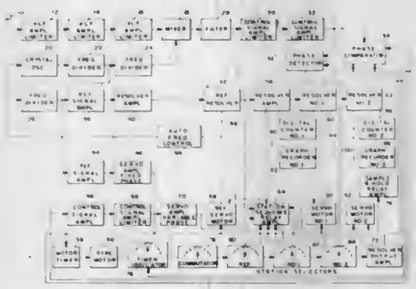
a freely borne armature capable of closing an electric circuit through said reed contacts,
an annular permanent magnet producing flux, a first part of said flux linking with said reed contacts and said freely borne armature to enable said annular magnet to move said armature into and out of contact with said reed contacts, a second part of said flux linking with said reed contacts and said freely borne armature tending to oppose motion of said armature out of contact with said reed contacts, and
a pair of permanent magnets magnetically coupled to said annular permanent magnet,
said pair of permanent magnets providing additional flux compensating for the second part of said flux and thus providing improved performance during periods when the armature switches out of contact with the reed contacts.

3,356,949
BY-PASS VOLUME CONTROL CIRCUIT FOR CLOCK RADIOS
Ellis R. Jones, Jr., Chicago, Ill., assignor of one-half to Ellis R. Jones, Cave Creek, Ariz., and Carl Schulz, Wilmette, Ill.
Filed Apr. 13, 1964, Ser. No. 359,204
8 Claims. (Cl. 325—396)



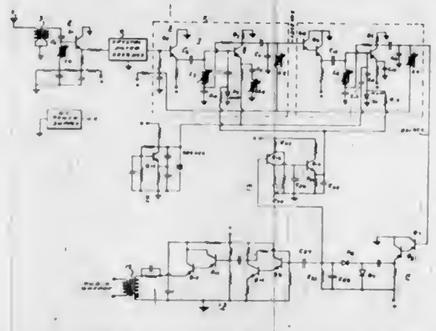
1. An automatically controlled radio receiver including:
volume control means;
clock means including a switch coupled to said volume control means; and
resistance means coupled in parallel with said volume control means by said switch whereby the operation of said clock means disconnects said volume control means from said resistance means.

3,356,950
PHASE COMPARISON RADIO RECEIVER
Warren H. Flarity, La Jolla, Calif., assignor to The Ryan Aeronautical Co., San Diego, Calif.
Filed Jan. 14, 1964, Ser. No. 337,590
15 Claims. (Cl. 325—420)



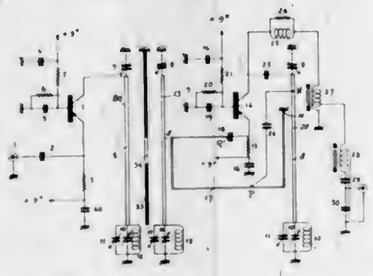
1. In a radio receiver, the combination comprising:
single frequency generating means for generating a beat signal at one frequency and a reference signal at another frequency;
means for receiving and amplifying a plurality of successively received, sequential input signals having the same frequency and different relative phases;
means for heterodyning said beat signal with said successive input signals and producing successive, sequential control signals therefrom having the same frequency as said reference signal; and
means for measuring the phase difference between one of said control signals and certain others of said successive, sequential control signals.

3,356,951
TRANSISTORIZED AMPLIFIER USING AN EMITTER FOLLOWER, A RESONANT CIRCUIT, AND A MIXER CONNECTED IN CASCADE
David S. Willard, High Rolls, N. Mex., assignor to the United States of America as represented by the Secretary of the Air Force
Filed Aug. 13, 1964, Ser. No. 389,507
7 Claims. (Cl. 325—434)



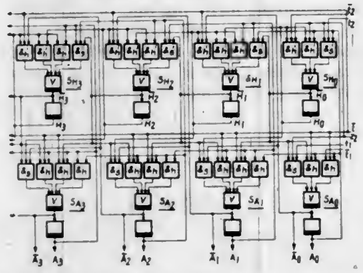
1. An amplifying network for modulated radio frequency waves, said network having an input and an output and comprising a power amplifier having no voltage gain, a passive resonant circuit capable of producing voltage gain and a frequency changer connected in cascade in the order named between the input and the output, said resonant circuit being tuned to the frequency of the incoming wave to said network.

3,356,952
STABILIZED MIXER OSCILLATOR FOR WIDE BAND TELEVISION RECEIVER
Alexandre Sev, Paris, France, assignor to CSF-Compagnie Generale de Telegraphie Sans Fil, a corporation of France
Filed Jan. 23, 1964, Ser. No. 339,655
Claims priority, application France, Jan. 25, 1963, 922,699
4 Claims. (Cl. 325—459)



1. A tuner comprising: a mixer oscillator transistor having an emitter circuit and a collector circuit; said collector circuit comprising a resonant line; means for magnetically coupling said emitter circuit to said line; and a capacitor for capacitively coupling said emitter circuit to said line.

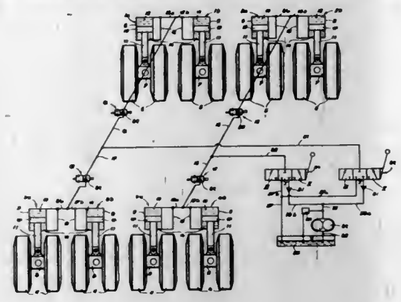
3,356,953
BIDIRECTIONAL STATIC COUNTER CONTROLLED BY COUNTING SIGNALS AND AUXILIARY COUNTING SIGNALS
Dieter Petzold, Berlin-Neukolln, Germany, assignor to Licentia Patent-Verwaltungs-G.m.b.H., Frankfurt am Main, Germany
Filed Apr. 5, 1965, Ser. No. 445,533
Claims priority, application Germany, Apr. 3, 1964, L 47,479
15 Claims. (Cl. 328—44)



1. A static counter for counting forward or backward and controlled by counting signals and auxiliary counting signals which do not change their state simultaneously, said counter comprising, in combination:
(a) plurality of binary counter stages each incorporating a main store and an auxiliary store which put out signals A and H, respectively, each store having input stage means; and
(b) means interconnecting each i^{th} (i=1, 2, 3, . . .) counter stage with the $(i-1)^{th}$ counter stage for causing the output signal H produced by the auxiliary store of each counter stage to change its state in the middle of the output signal A produced by the main store of the respective counter stage and in the middle of the time interval between this output signal A of said main store and the subsequent output signal A of said main store, and for causing the signals which produce the outputs of each main store and auxiliary store and which are put out by the input stage means of the respective main and auxiliary stores, to overlap each other.

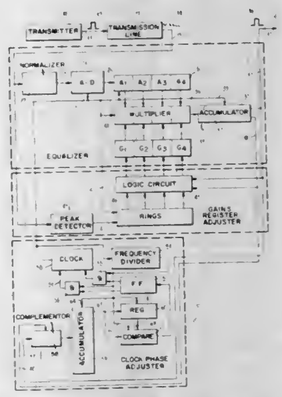
3,356,954
WHEEL SUSPENSION SYSTEM FOR ROAD VEHICLES AND CROSS-COUNTRY VEHICLES
Heinrich Georg Gottschalk, Bullach, near Nurnberg, Germany, assignor to Karl Heinz Schmidt, Vorra, Kreis, Hersbruck, Germany
Filed Dec. 9, 1964, Ser. No. 417,150
11 Claims. (Cl. 280—6)

1. A wheel suspension system for vehicles having a chassis, at least two front and two rear wheels, axles for the wheels, and a suspension element for each wheel, each suspension element including a cylinder, a piston movable therein and a piston rod having a substantial diameter with respect to the diameter of the piston provided with an end projecting from the cylinder, the space between the piston and one end of the cylinder being of greater volume than the space surrounding the piston rod and the opposite end of the cylinder, said cylinders always being filled with fluid, means connecting the projecting end of each piston rod to the respective wheel axle, means connecting each cylinder to the chassis, a first conduit leading from the space of greater volume of a cylinder for a front wheel to the space of greater volume of a cylinder for a rear wheel, a second conduit leading from the space of lesser volume of a front wheel to the space of lesser volume of a cylinder for a rear wheel, a branch conduit for each cylinder between said first and second conduits, valve means for each said branch conduit operable to control the flow between the greater and lesser spaces of each cylinder via said first, second and branch conduits, a



pressure fluid source, a fluid container, additional conduits connecting said first and second conduits to said pressure fluid source and fluid container, respectively, further valve means for said additional conduits for controlling fluid flow through said conduits, and driver actuated cutoff valve means arranged in said first and second conduits for controlling the fluid flow through said first and second conduits.

3,356,955
DIGITAL AUTOMATIC TIME DOMAIN EQUALIZER
William S. Mohn, Boston, Mass., and Larry L. Stickler, Wappingers Falls, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed May 22, 1964, Ser. No. 369,400
13 Claims. (Cl. 328—164)



1. A device for reducing inter symbol interference in a digital data transmission system comprising:
a register having a plurality of stages and responsive to a clock signal to store an input in a first of said stages and to operate each other stage to receive the contents of the preceding stage;
means for supplying to said register first stage a digital input representing the amplitude of an input waveform;
means for supplying clock signals to said amplitude storing register in substantially a predetermined

phase relationship to clock times on the input waveform whereby said register is given at each clock time a sequence of values simultaneously representing the amplitude of a plurality of points on the input waveform and said values are advanced through the register during transmission of data on the system;

a gains register having a plurality of stages corresponding to the stages of said amplitude register; and

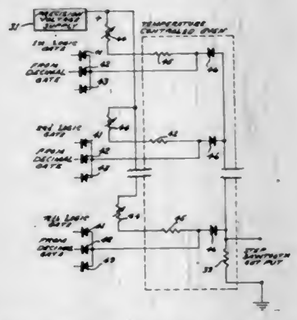
means connected to be responsive to the contents of each amplitude register stage during each clock time and to the corresponding stage of said gains register to form a single point of an output waveform that is a function of the points on the input waveform represented by said amplitude register and the values stored in the corresponding stage of said gains register.

3,356,956

DECIMAL COUNTER AND LOGIC GATE CONTROLLED STEP SAWTOOTH GENERATOR

David S. Willard, High Rolls, N. Mex., assignor to the United States of America as represented by the Secretary of the Air Force

Filed June 7, 1965, Ser. No. 462,149
4 Claims. (Cl. 328—181)



1. In a step sawtooth generator, a decimal counter controlled logic gate circuit comprising:

(a) a plurality of diode circuits, each circuit having a first, second and third diode, in parallel arrangement, the first diode of each circuit being connected to the units output of said decimal counter, the second diode of each circuit being connected to the tens output of said decimal counter, and the third diode of each circuit being connected to the hundreds output of said decimal counter;

(b) an output load resistor;

(c) a supply voltage source connected to the diode circuits and the output load resistor for transferring various quantities of current to the output load resistor or the diode circuits dependent upon the bias of the diodes determined by decimal counter; and

(d) a plurality of voltage regulating resistors, each interposed between the supply voltage source and one each of the diode circuits.

3,356,957

HYBRID AMPLIFIER

Donald H. Wheeler, China Lake, Calif., assignor to the United States of America as represented by the Secretary of the Navy

Filed Oct. 26, 1964, Ser. No. 406,629
9 Claims. (Cl. 330—3)

1. A hybrid amplifier system for conversion of a variable input DC signal to a train of regularly repetitive unidirectional pulses, said system comprising, in combination:

(a) a magnetic amplifier having an input winding for application thereto of said input signal, a bias winding energized by a predetermined fixed value of direct current, and a pair of gate windings;

(b) a first pair of diodes;

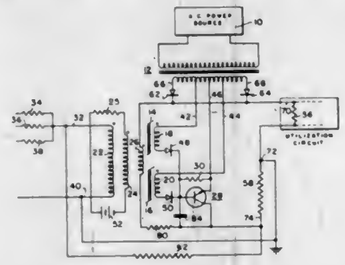
(c) a second pair of diodes;

(d) a transistor having base, emitter and collector electrodes;

(e) first and second output resistors;

(f) AC power means for providing a first pair of oppositely-phased sinusoidal voltages of predetermined first magnitude, and a second pair of oppositely-phased sinusoidal voltages in synchronism with said first pair of voltages and of predetermined second magnitude;

(g) one of said pair of gate windings being connected in a series circuit including one of said first pair of diodes, and the base and emitter electrodes of said transistor, and energized by one of said first pair of voltages, and the other of said pair of gate windings being similarly connected in a series circuit including



the other of said first pair of diodes, and the base and emitter electrodes of said transistor, and energized by the other of said first pair of voltages, to effect gating of said transistor to an ON condition beginning at an instant, during each half-cycle of said first pair of voltages, varying in accordance with the magnitude of said input signal;

(h) said second pair of oppositely-phased voltages being applied to said second pair of diodes in a manner to provide an unfiltered full-wave-rectified voltage;

(i) said collector and emitter electrodes of said transistor being connected in a series circuit including said first and second output resistors, and energized by said full-wave-rectified voltage, said first and second output resistors having a junction point; and

(j) said first and second output resistors serving as load resistors across which are developed a pair of distinct trains of pulses which are polarity-opposed relative to said junction point, and each said train of pulses being characterized by an average value proportional to the magnitude of said input signal.

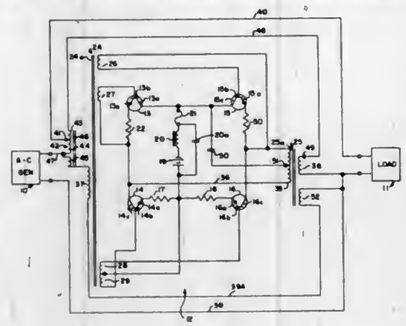
3,356,958

POWER BOOSTER INCLUDING A POWER AMPLIFIER FEEDBACK CIRCUIT

Neil A. Kammiller, North Olmsted, and Henry M. Huge, Bay Village, Ohio, assignors to Lorain Products Corporation, a corporation of Ohio

Filed July 26, 1963, Ser. No. 297,743
13 Claims. (Cl. 330—26)

7. In a power increaser circuit for use with an A-C power source and load, in combination, an amplifier having input and output transformers each provided with primary and secondary winding means, a negative feedback winding on said output transformer, current coordinating means including first and second load proportioning windings and voltage developing means responsive thereto, means for connecting one side of said source, one end of said negative feedback winding, one end of the secondary of said output transformer and one side of the load in common, means for connecting the other end of said negative feedback winding to one end of the primary winding of said input transformer; means for connecting the other end of said primary winding of said input transformer to one end of said voltage developing means;



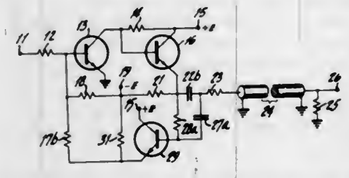
means for connecting the other end of said voltage developing means, one end of said first load proportioning winding and the other side of the source in common; means for connecting the other end of said first load proportioning winding, one end of said second load proportioning winding and the other side of the load in common, and means for connecting the other end of said second load proportioning winding to the other end of said output winding.

3,356,959

WIDE BAND TRANSISTOR VIDEO SIGNAL AMPLIFIER

Benjamin S. Vilkomerson, Camden, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed May 13, 1965, Ser. No. 455,502
6 Claims. (Cl. 330—28)



1. A video signal amplifier having substantially equal response for all video signal frequencies for driving a transmission line having an input terminal for conveying said video signal to utilization apparatus, comprising in combination:

a pair of transistors having input and output electrodes and a common input-output electrode;

said transistors being interconnected so that signals derived from said output electrode are of opposite phase to signals applied to said input electrode;

means for impressing upon the input electrode of said transistor pair a video signal having a relatively wide range of frequency components;

an output coupling capacitor having an input terminal connected to said transistor pair output electrode and an output terminal coupled to said transmission line;

a negative feedback circuit between the output and input electrodes of said transistor pair;

said circuit including a feedback transistor having input and output electrodes;

DC and AC means respectively coupling the output electrode of said transistor pair and the output terminal of said coupling capacitor to said feedback transistor input electrode; and

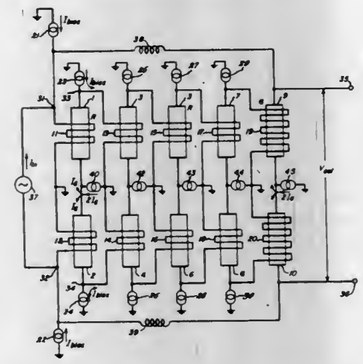
means coupling said feedback transistor output electrode to said transistor pair input electrode.

3,356,960

SUPERCONDUCTING AMPLIFIER

Harold H. Edwards, Schenectady, and Vernon L. Newhouse, Scotia, N.Y., assignors to General Electric Company, a corporation of New York

Filed Oct. 17, 1963, Ser. No. 316,918
7 Claims. (Cl. 330—61)



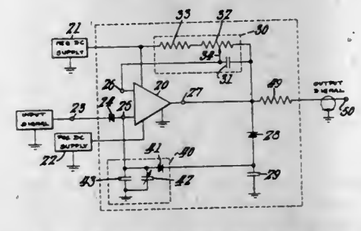
1. A superconducting amplifier comprising a plurality of cryotron stages, a first of said stages being an input stage and each of said stages including a pair of cryotrons, each cryotron including a gate and a control grid wherein the said gates are connected in series in each stage, means coupling grids of each successive stage in series across the pair of cryotron gates of the previous stage, current generating means coupled to the control grid of each of said cryotrons for biasing the gate of each of said cryotrons to a region where resistance of said gate varies linearly with control grid current, and a pair of inductances for coupling low frequency output signals of said amplifier as obtained across a pair of said cryotron gates to cryotron control grids of a prior stage in said amplifier in order to suppress low frequency noise and thereby maintain said amplifier in its high gain region.

3,356,961

VOLTAGE STRETCH CIRCUIT

Joseph W. Sedlmeyer, Las Vegas, Nev., assignor, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission

Filed Oct. 9, 1964, Ser. No. 402,969
1 Claim. (Cl. 330—69)



A circuit for stretching in time and amplitude of a signal pulse of short time duration, said circuit comprising: a difference amplifier with first and second input terminals and an output terminal, said difference am-

plifier being designed to amplify the difference in voltages applied to said first and second input terminals;

circuit input impedance comprising circuit input capacitance connected between said first terminal and ground and a high resistance connected from said first terminal through said difference amplifier to ground, having a long RC time constant, for prestretching in time the amplitude of said signal pulse of short time duration when it is applied between said first input terminal and ground;

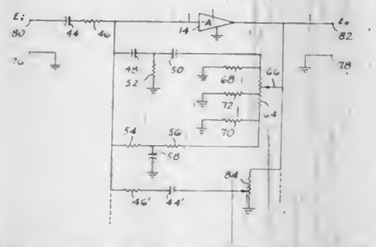
a stretch capacitor and a diode connected in series between said output terminal and ground, said diode having one terminal connected to said output terminal of said difference amplifier and said stretch capacitor having one plate connected to ground, said diode being so poled that when said signal pulse is first applied to said first terminal of said difference amplifier and no voltage is applied to the second terminal thereof, said difference amplifier amplifies said voltage and charges said stretch capacitor to a voltage having an amplitude at least equal to the voltage amplitude of said signal pulse;

a generative feedback circuit connected between said stretch capacitor and said input circuit capacitance and adapted to charge said circuit input capacitance from said stretch capacitor when said input capacitance commences to discharge through said input resistance to ground, thereby maintaining said signal pulse on said first terminal of said difference amplifier substantially constant; and

a degenerative feedback circuit connected between said output terminal and said second terminal of said difference amplifier, adapted to apply the voltage on said output terminal to said second terminal, and having circuit means to improve the stability of said difference amplifier and limit the gain of said difference amplifier to unity,

whereupon said difference amplifier amplifies the difference in voltages on its first and second input terminals producing an output sufficient to maintain the voltage amplitude on said stretch capacitor substantially equal to the voltage amplitude of said signal pulse.

3,356,962
FREQUENCY SELECTIVE AMPLIFIER-OSCILLATOR HAVING MULTIPLE FEEDBACK PATHS
Merle L. Morgan, Portland, Oreg., assignor to Electro Scientific Industries, Inc., Portland, Oreg., a corporation of Oregon
Filed Apr. 10, 1964, Ser. No. 358,836
4 Claims. (Cl. 330—103)



1. A frequency selective amplifier of the feedback type having means for selecting a response curve, the amplifier comprising

(a) a basic amplifier,

(b) an input signal path connected to the input of the basic amplifier for transmitting an input signal to the input of the basic amplifier,

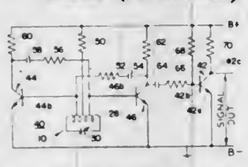
(c) a pair of feedback signal paths connected between the output and the input of the basic amplifier for transmitting the output signal back to the input of the basic amplifier,

(d) signal modifying means in a least one of the feedback paths providing relative phase shifts in the feedback paths which differ from each other by substantially 180° at all frequencies in the tuning range,

(e) signal modifying means in the input signal path providing magnitude characteristics relative to the magnitude characteristics of the signal modifying means in the feedback paths over an extended frequency range above and below the frequency of tuning such that the ratio between the magnitude characteristics of the input path and those of each of the pair of feedback paths provides a pair of intersecting curves having the desired shapes for the high and low frequency asymptotes, respectively, of the selected response curve, and

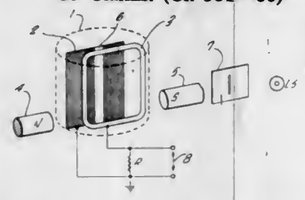
(f) signal level adjusting means in at least one of the feedback paths operable to place the intersection of said curves at the frequency and magnitude level for the selected response curve.

3,356,963
FUSED QUARTZ MOTION SENSITIVE TRANSDUCER
Willard E. Buck, P.O. Box 418, Saratoga, Calif. 95070
Filed June 23, 1966, Ser. No. 559,786
7 Claims. (Cl. 331—65)



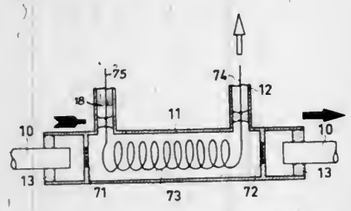
1. A motion sensitive transducer system comprising in combination, a balanced push-pull oscillator having two sections including a control electrode and an output electrode connected in cross-coupled configuration with the control electrode of one section being connected to the output electrode of the other section and a variable LC motion responsive transducer means connected between said control and said output electrodes, and wherein the cross-coupling includes therein a part of the central portion of the inductance forming the transducer means, wherein the capacitor of the transducer means comprises a fixed capacitor plate supported on fused quartz mounts and a movable capacitor plate supported in spaced parallel relation to the fixed plate on movable pressure-responsive bellows constructed of fused quartz and the inductance of the transducer means is supported on a fused quartz coil form.

3,356,964
RADIANT ENERGY CONTROLLED OSCILLATOR
Jan Forman, 10548 Eastborne Ave., Los Angeles, Calif. 90024
Filed Nov. 2, 1964, Ser. No. 408,053
13 Claims. (Cl. 331—66)



1. An oscillator for generating an alternating output signal comprising a cathode having an electron emissive surface sensitive to incident radiant energy, an anode positioned in front of the cathode electron emissive surface, means for enclosing the anode and cathode in a vacuum region, means for directing radiant energy in an elongated pattern on the electron emissive surface of the cathode to provide an energy discontinuity on the cathode surface, means for producing a magnetic field extending in a direction transverse to the elongated direction of the energy discontinuity, and means including an output load impedance connected between the anode and the cathode across which the oscillating output signal is generated.

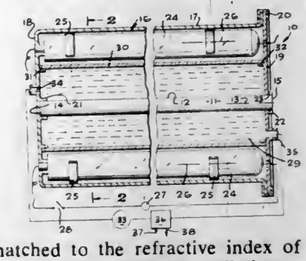
3,356,965
BEAM-PLASMA MICROWAVE NOISE GENERATORS
Nils Bertil Agdur, Vilano vag 23, Danderyd, Sweden, and Ulf Erik Ternström, Kallangsvagen 85, Lidingo, Sweden
Filed Mar. 12, 1965, Ser. No. 439,159
Claims priority, application Sweden, Mar. 23, 1964, 3,587/64; Jan. 28, 1965, 1,110/65
18 Claims. (Cl. 331—78)



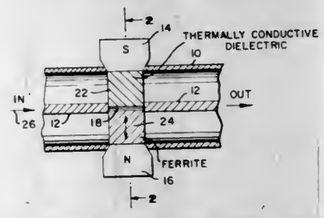
1. A discharge device for generating strong noise signals having an upper noise frequency f_s comprising a discharge chamber, an ionizable gas in said discharge chamber, said gas having an internal gas pressure of at least 10^{-4} mm. Hg and at most 10^{-2} mm. Hg, one anode electrode and at least one cathode electrode in said discharge chamber, said anode electrode being displaced from said cathode electrode, means connected to said anode electrode and said cathode electrode for establishing an electric field in the discharge volume between said anode electrode and said cathode electrode whereby a plasma of gas molecules, ions and electrons is created in said discharge volume, said plasma having a plasma frequency f_p, means for generating a static magnetic field in said discharge chamber, said magnetic field having a component substantially parallel to the direction from one of said electrodes to the other of said electrodes whereby electrons in said plasma move in spiral paths along the field lines of said magnetic field with a cyclotron frequency f_c and collide with gas molecules, and an output circuit operatively adjacent to the region of the plasma for radiatively receiving the dynamic electromagnetic fields of noise energy generated in said plasma, the strength of said magnetic field and the density of said plasma being such that $f_c > f_s$ and $f_p > f_s$.

3,356,966
LASER COOLER APPARATUS
Wendell S. Miller, Los Angeles, Calif., assignor to American Optical Corporation, Southbridge, Mass., a corporation of Delaware
Continuation of application Ser. No. 166,136, Jan. 15, 1962. This application July 12, 1965, Ser. No. 484,778
6 Claims. (Cl. 331—94.5)

1. The combination comprising an elongated lasering element adapted to be stimulated by radiation at a predetermined stimulating frequency and adapted to emit radiation at a predetermined lasering emission frequency, means for defining a specific mode of coherent radiation emission at said emission frequency from said lasering element, said mode being directed longitudinally of said element, stimulating means for supplying radiation at said stimulating frequency to said element, and a substance positioned only laterally of and directly adjacent said lasering element in the path of stray fluorescence radiation therefrom and having a refractive index approximately matched to the refractive index of said lasering element, for said fluorescent radiation said substance being selectively absorbent of said fluorescent radiation, and transparent to at least a spectral portion of said stimulating radiation.



3,356,967
MICROWAVE LIMITER COMPRISING A THIN CONDUCTOR IN THE TRANSMISSION MEANS LOCATED IN PROXIMITY TO FERRITE MATERIAL
William M. Honig, 6801 Bay Parkway, Brooklyn, N.Y. 11204
Filed Apr. 15, 1965, Ser. No. 448,499
4 Claims. (Cl. 333—17)



1. A broad band microwave limiter, comprising radio frequency transmission means, a ferrite material in said transmission means, a thin conductor in said transmission means located in proximity to said ferrite material, the diameter of said thin conductor being between 5 and 100 millionths of an inch, means for producing a magnetic field in said ferrite, said thin conductor being located with respect to said ferrite material such that when the RF power transmitted through said transmission means exceeds a pre-determined limit, the magnetic field produced by said thin conductor launches spin waves in said ferrite material thereby limiting the transfer of said power to a pre-determined level, and thermal means for conducting the heat generated in said thin conductor therefrom.

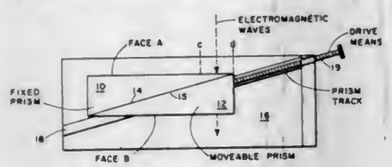
3,356,968
MILLIMETER PHASE SHIFTER AND ATTENUATOR
James W. Battles, Riverside, and Delbert E. Crane, Norco, Calif., assignors to the United States of America as represented by the Secretary of the Navy
Filed Sept. 29, 1965, Ser. No. 491,465
4 Claims. (Cl. 333—30)

1. A device for changing the phase of a collimated beam of millimeter electromagnetic waves, comprising:

(a) a pair of identical wedge-shaped prisms of very low loss dielectric material that is transparent to millimeter electromagnetic waves,

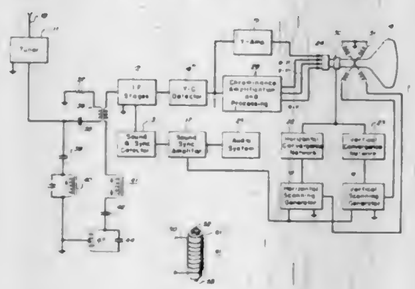
(b) said prisms having their respective inclined surfaces placed together in contact with each other such that the prisms form a rectangular block,

(c) a respective outer surface of each of said prisms forming opposite parallel rectangular outer faces of said rectangular block and being matched to free space,
(d) said prisms being mounted such that the prisms while remaining in constant contact with each other can be moved with respect to each other along their plane of contact while said respective outer surfaces always remain parallel to each other,
(e) means for moving at least one of the prisms in an opposite direction with respect to the other for changing the normal distance and thus the thickness of the dielectric material between said opposite parallel rectangular faces,



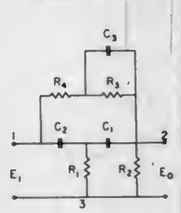
(f) the phase shift of a collimated beam of millimeter electromagnetic waves incident normal to said outer faces, said outer faces being matched to free space, and passing through said pair of prisms being varied by moving one said prism with respect to the other to change the path length that the beam must pass through between said opposite outer faces matched to free space which always remain normal to said beam, thus changing the phase thereof without any bending of the beam and without deviation of the path direction and position of the beam at any time.

3,356,969
WAVE-SIGNAL TRANSLATING APPARATUS
Adam W. Przybyszewski, Niles, Ill., assignor to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware
Filed Nov. 14, 1962, Ser. No. 237,615
5 Claims. (Cl. 333—76)



1. A signal translating trap network for use in a television receiver which receives a selected one of a plurality of transmitted television signals each having associated with it both sound and video components, said network comprising:
a capacitive device;
an inductance coil coupled to said capacitive device to resonate therewith and constitute a trap for signals corresponding in frequency to the resonant frequency of said trap;
a first tuning core supported in coaxial alignment with and movable longitudinally of said coil for tuning said trap to the sound component of the transmitted television signal adjacent said selected one of said transmitted television signals, said first core being constructed of a material which effects substantially equal proportional variations in the inductance and equivalent resistance of said coil to maintain the Q of said coil substantially constant with changes in coupling of said first core with the field of said coil;
and a second tuning core likewise supported in coaxial alignment with and movable longitudinally of said coil independently of said first core for varying the amount of attenuation of said trap, said second core being constructed of a material which predominantly effects variations in the Q of said coil with changes in coupling of said second core with the field of said coil.

3,356,970
SEVEN ELEMENT ONE-REACTANCE KIND NETWORKS WITH TWO ZEROS, TWO POLES
Charles F. White, Oxon Hill, Md.
(6810 Bock Road SE., Washington, D.C. 20022)
Filed Feb. 28, 1964, Ser. No. 348,911
13 Claims. (Cl. 333—76)



1. A seven-element one-reactance-kind insertion-loss network having element magnitudes proportioned to provide a transfer function,

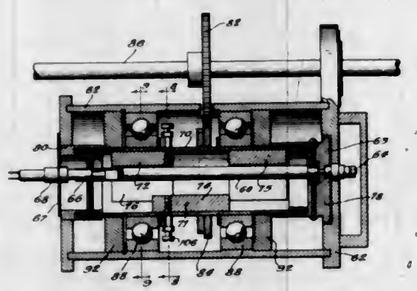
$$\frac{E_o}{E_i}=\frac{s^2+as+b}{s^2+cs+d}$$

where

$$d/h<\frac{d-b}{h-a}<c-h$$

and where $s=\sigma+jw$, the Laplace transform variable, E_i is the input voltage, E_o is the output voltage, a, b, c and d are positive non-zero constants, and h is a positive, non-zero parameter.

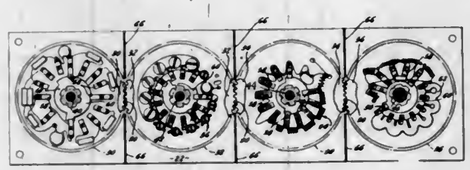
3,356,971
TUNED CIRCUIT
John J. Pakan, Oak Park, Ill., assignor to A.R.F. Products, River Forest, Ill., a corporation of Illinois
Filed Nov. 14, 1951, Ser. No. 256,303
23 Claims. (Cl. 333—82)



1. An electrical tuned circuit comprising a transmission line of fixed length including a first electrically conducting element with an elongated cavity therein and a second electrically conducting element rotatably mounted within the cavity, rotation of one of the elements with

respect to the other element increasing the capacity per unit length between the elements in one portion of the transmission line and decreasing the capacity per unit length between the elements in another portion of the transmission line, thereby simultaneously changing the characteristic impedance in opposite directions in different portions of the transmission line, and non-dissipative termination means disposed at the ends of the transmission line.

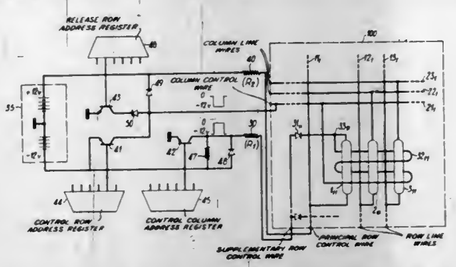
3,356,972
TELEVISION RECEIVING SET TUNING MECHANISM
Harold F. Rieth, Santa Monica, Calif., assignor to Packard-Bell Electronics Corporation, Los Angeles, Calif., a corporation of California
Filed Mar. 26, 1965, Ser. No. 442,924
15 Claims. (Cl. 334—49)



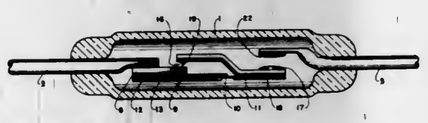
1. A tuning mechanism for a television receiver constructed to receive a plurality of channels of TV broadcast signals and having an antenna, a picture tube, and electronic circuitry foh converting the TV signals received on the antenna into an input to operate the picture tube, including:
a plurality of rotatable circular wafers adjacent to one another in coplanar relationship, the wafers being made from a material having properties of providing electrical insulation;
circuit elements mounted on the wafers for tuning the electronic circuitry of the television receiver to a specific one of the plurality of channels to obtain the passage into the television receiver of the signals received on the antenna for the specific channel;
intermeshing gears on the peripheries of the wafers to obtain a synchronous rotation of the different wafers in the plurality;
means for obtaining electrical contact between the circuit elements on each wafer and the electronic circuitry of the television receiver in accordance with the rotary position of the wafer; and
means for rotating one of the wafers in the plurality to obtain a synchronous rotation of the other wafers.

3,356,973
REED RELAY SWITCHING NETWORKS
Michel M. Rouzier, 15 Chemin de la Sabliere, Vauhallan 78, France, and Henri P. Marnat, Chaperon Vert, 4th Ave., Gentilly 94, France
Filed July 12, 1966, Ser. No. 564,575
Claims priority, application France, July 17, 1965, 25,037
2 Claims. (Cl. 335—112)

1. A switching network comprising matrices having rows including line-wires, a principal control wire and a supplementary control wire, columns including line-wires and a control wire, and cross-points each formed by line reed relays respectively connected between a row line-wire and a column line-wire, a control reed relay and a common energizing and holding winding for said reed relays, said control reed relay and common winding being serially connected between said principal row control wire and said column control wire and the point of junction of said control reed relay and common winding being connected to said supplementary row control wire, means for selectively applying between said supplementary row control wires and said column control wires energizing signals for energizing the winding and operating the relays of a crosspoint and means for selectively applying between said principal row control wires and said column control wires holding signals for energizing the winding of said crosspoint through its operated control reed relay.



3,356,974
REED SWITCH HAVING AN ATMOSPHERE TO PREVENT STICKING OF THE POLE PIECES THEREIN
Richard A. Funke, Milwaukee, Wis., assignor to Allen-Bradley Company, Milwaukee, Wis., a corporation of Wisconsin
Filed Mar. 2, 1967, Ser. No. 619,982
9 Claims. (Cl. 335—154)

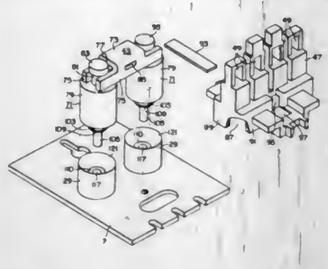


1. In a sealed switch,
(a) contact means forming a contact gap,
(b) magnetic pole means forming a magnetic gap distinct from said contact gap to which at least one said contact means responds for switch operation,
(c) an atmosphere confined to the area of and around said switch by sealing means thereabout, and
(d) said atmosphere comprising a portion which alone permits sticking between said magnetic pole means at said magnetic gap and a gaseous constituent which prevents said sticking.

3,356,975
ELECTRIC CONTROL DEVICE
Henry A. Rider, Jr., Westminster, Calif., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 15, 1966, Ser. No. 534,456
8 Claims. (Cl. 335—160)

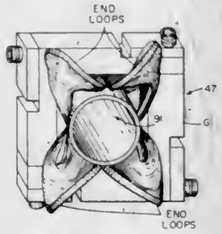
1. An electric control device comprising a stationary contact, a movable contact, an electromagnet comprising a stationary magnetic structure and a movable magnetic structure, means operatively connecting said movable contact with said movable magnetic structure, means operable to move said movable magnetic structure toward and away from said stationary magnetic structure to operate said contacts between opened and closed positions, one of said magnetic structures comprising a pair of spaced magnetic leg parts and a magnetic connecting part connecting said spaced magnetic leg parts, the magnetic

circuit of said electromagnet extending through said spaced magnetic leg parts and said magnetic connecting part, and said spaced magnetic leg parts being movable



relative to said magnetic connecting part and relative to each other to permit alignment of said magnetic leg parts with said stationary magnetic structure during operation of said control device.

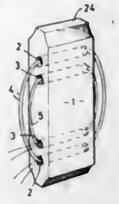
3,356,976
QUADRUPOLE MAGNET
William B. Sampson, Bellport, and Richard B. Britton, Setauket, N.Y., and P. Gerald Kruger, Champaign, Ill., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed Nov. 10, 1965, Ser. No. 507,256
10 Claims. (Cl. 335—216)



1. A quadrupole magnet, comprising means consisting of a system of flat sided rectangular cross-section conducting sheets forming interior angles of 90° defining a parallelepiped shaped aperture in which the conducting sheets comprise coils of electrically conducting ribbons arranged in a plurality of layers in parallel planes at right angles to the major dimension of their respective rectangular cross-section current sheets, said ribbons having a uniform, rectangular cross-section, longitudinally extending superconductor forming major and minor surfaces and correspondingly shaped, spaced apart, normal resistance conductors in direct electrical contact therewith and forming opposite ends.

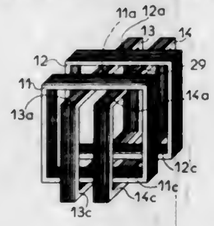
3,356,977
APPARATUS FOR MEASURING OR INDICATING PHYSICAL QUANTITIES
Olof W. Ohlsson, Jonkoping, Sweden, assignor to Industrilaboratoriet Aktiebolag, Jonkoping, Sweden
Filed June 17, 1965, Ser. No. 464,730
Claims priority, application Sweden, June 23, 1964, 7,611/64
5 Claims. (Cl. 336—20)

1. Apparatus for measuring physical quantities utilizing the magnetostriction effect, said apparatus comprising a body of ferromagnetic material to be subjected to mechanical stresses, at least one magnetizing winding surrounding a portion of the body and at least one measuring winding arranged so that a portion of the magnetic flux induced in said body by the magnetizing winding links the measuring winding, the winding planes of the magnetizing and measuring windings being so disposed as to



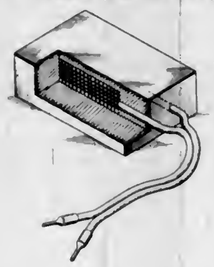
substantially coincide, one of said windings surrounding a portion of the material of the body located inside the other of said windings.

3,356,978
HIGH VOLTAGE REACTANCE ASSEMBLY INCLUDING PAIRS OF INTERLINKED LAMINATED FRAME MEMBERS
Georges Mugnier, Boucher, and Efraim Rubinowicz, Aix-Les-Bains, France, assignors to Compagnie Generale D'Electricite, Paris, France, a corporation of France
Filed July 15, 1965, Ser. No. 472,113
Claims priority, application France, July 16, 1964, 981,901
24 Claims. (Cl. 336—84)



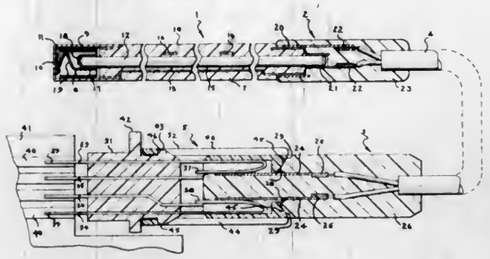
23. In a high voltage reactance assembly
a first pair of spaced, parallel substantially rectangular laminated frames,
a second pair of spaced, parallel substantially rectangular laminated frames interlinked in the manner of a chain with said first pair of frames and disposed transversely with respect thereto, and
high voltage reactance means disposed within said first and second pairs of frames.

3,356,979
MOISTURE SENSITIVE RESISTOR
George J. Bouyoucos, 706 N. Hagadorn, East Lansing, Mich. 48823
Filed Feb. 28, 1966, Ser. No. 530,385
5 Claims. (Cl. 338—35)



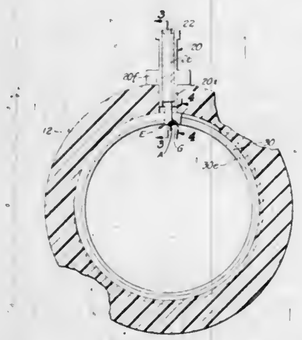
1. An improved moisture sensitive electrical resistor for use with electrical resistance measuring devices for measuring the moisture content of gases, said resistor comprising an electrode system imbedded within a plaster block made from an unaridized gypsum cement.

3,356,980
TEMPERATURE-SENSING DEVICE
Lincoln Edwin Roberts, Harrisburg, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed Jan. 5, 1965, Ser. No. 423,500
5 Claims. (Cl. 338—28)



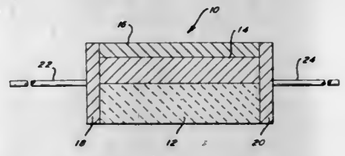
1. A temperature-sensing device comprising a dielectric body member, an inner conductor in said body and having an exposed portion, an outer conductor radially spaced by the dielectric from the inner conductor and having an exposed portion, a replaceable conductive cap member mounted in frictional engagement with the body member and the exposed portion of the outer conductor and having a surface space from the end of the body, contact means frictionally mounted in contact with the exposed portion of the inner conductor, spring means integral with the contact means, and a sensing element having a substantial temperature coefficient of resistance mounted in said cap between said surface and spring means and urged into electrical contact with the said surface means by the biasing force of the spring means.

3,356,981
RESISTOR WITH A TUBULAR TERMINAL
Robert L. Jones, Riverside, Calif., assignor to Bourns Inc., a corporation of California
Filed June 30, 1965, Ser. No. 468,402
11 Claims. (Cl. 338—276)



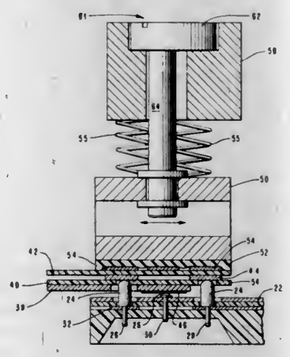
1. In a resistor, a resistance element comprising an elongate core and an elongate coating of resistive composition adhering to the core:
support means, supporting the said core and coating in a definite position;
a terminal member supported in spaced relation to said resistance element by said support means said terminal member having a conductor-receptive recess; and
a slender electric conductor extending around and in electrical contact with a short extent of said coacting of resistive composition, said conductor being tensioned and forming a tensioned bight or bend extending around said core and in said bight compressively engaging said short extent of said coating, and end portions of said conductor being secured in recess in said terminal member and conductively connected with said terminal member and said conductor being under tension adjacent said bight, whereby said conductor is maintained in firm compressive electrical contact with said coating and provides an extremely low-resistance electrical end connection to said resistive coating and forms an electrical end for said element.

3,356,982
METAL FILM RESISTOR FOR LOW RANGE AND LINEAR TEMPERATURE COEFFICIENT
Benjamin Solow, North Hollywood, Calif., assignor to Angstrohm Precision Incorporated, North Hollywood, Calif., a corporation of California
Filed Apr. 13, 1964, Ser. No. 359,081
4 Claims. (Cl. 338—308)



3. A metal film electrical resistor comprising a base of electrical insulating material, a film of gold-chromium alloy resistance material on said base, said alloy including from about 97.6% to about 98.4% gold by weight of alloy and from about 1.6% to about 2.4% chromium by weight of alloy; and a thin metal film consisting essentially of chromium metal vacuum deposited on said alloy resistance material.

3,356,983
TRANSMISSION LINE CABLE CONNECTOR
Dwight O. Johnson, Jr., San Jose, Calif., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Oct. 11, 1965, Ser. No. 494,496
6 Claims. (Cl. 339—14)



1. An electrical stripline connector comprising:
first, second and third members which are substantially

rigid, said first and second members having facing portions;

spring means joining the second and third members together in a resilient connection;

means for coupling the first and third members together to force the facing portions of the first and second members together with said spring means;

first stripline means attached at one end to one of said facing portions, said first stripline means having, in layers, a ground plane, a series of stripline signal conductors, and an intermediate nonconducting layer;

second stripline means attached at one end to the other of said facing portions so that end portions of the first and second stripline means overlap and are held together, said second stripline means having in layers a ground plane, a series of stripline signal conductors and an intermediate nonconducting layer;

electrically conductive protuberances extending from the conductors and the ground plane of the first stripline means in the overlapped end portion of said first stripline means; and

substantially flat electrically conductive contact areas attached to each of the conductors and the ground plane of the second stripline means in the overlapped end portion of said first stripline means, said contact areas each being abutted against one of said protuberances to make an electrical connection between the first and second stripline means.

3,356,984
ELECTRIC LAMP MOUNTING

Luke Thorington, Berkley Heights, and Donald G. Trutner, Chatham, N.J., assignors to Duro-Test Corporation, North Bergen, N.J., a corporation of New York

Filed Jan. 12, 1965, Ser. No. 424,908
16 Claims. (Cl. 339—72)

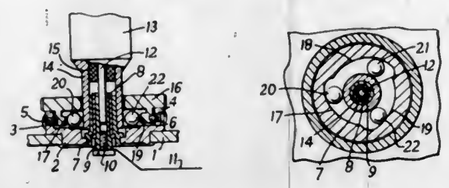


1. An electric lamp having an envelope and a two part base, said base comprising a shell secured to said envelope and having a male abutment member, a separable threaded sleeve surrounding said shell, said sleeve having an opening at the bottom thereof through which an electrical contact member of the lamp protrudes when the two parts are assembled and said sleeve having a female abutment member engaged by said male abutment member whereby said lamp may be threadedly mounted in a socket and may be disengaged from the socket and engaged with the socket by axial movement.

3,356,985
PHOTOGRAPHIC CAMERA

Horst Strehle and Gunter Schmatze, Dresden, Germany, assignors to Veb Pentacon Dresden Kamera- und Kinowerke, Dresden, Germany

Filed Sept. 30, 1965, Ser. No. 491,750
3 Claims. (Cl. 339—91)



1. In a photographic camera having a housing and an electric flash firing circuit arranged therein, the provision of a socket for receiving a plug formed with a cylindrical outer contact and a pin contact coaxial with said cylindrical contact, said socket comprising:

(a) an annular support member fitting at one end thereof in an aperture in said housing, said support member having a cylindrical wall,

(b) a first tubular contact element extending coaxially with said support member within the cylindrical wall,

(c) an insulating sleeve coaxially arranged within said first tubular contact element,

(d) a second tubular contact element rigidly mounted within said sleeve and coaxial therewith,

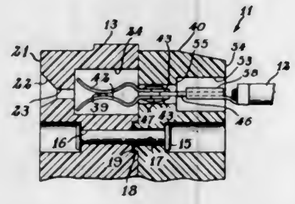
(e) a rotatable annular clamping ring having an annular portion forming together with said first contact element an annular opening for receiving the cylindrical contact of the plug and having a sleeve portion located within the cylindrical wall of the support member, the inner surface of said sleeve having at least one curved surface the axis of curvature which is eccentric of the axis of the support member, and

(f) a roller body located between each curved surface and the first tubular contact element and having a diameter larger than the radial dimension of said annular opening to ensure retention of the rolling body, whereby on rotation of the clamping ring the curved surface causes a radial force to be exerted against the surface of the cylindrical contact of the plug by way of the rolling body.

3,356,986
TERMINAL BLOCKS AND CONNECTORS THEREFOR

Hans Ege, Chicago, Ill., assignor to Underwriters Safety Device Co., Chicago, Ill., a corporation of Illinois

Original application June 26, 1962, Ser. No. 205,455, now Patent No. 3,237,148, dated Feb. 22, 1966. Divided and this application Jan. 5, 1966, Ser. No. 518,858
5 Claims. (Cl. 339—193)

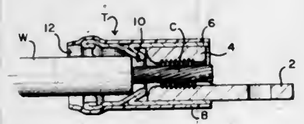


1. A combination blade and lead connector for use in a terminal block, said connector comprising a pair of elongate resilient bowed spring fingers with integral flat base portions interconnected through a longitudinally extending web portion, said spring fingers and base portions being folded one upon the other with said base portions clamping therebetween an end portion of a flat lead connector tab, said lead end portion including opposite side projecting shoulder means with at least one thereof being slotted and receiving therein said web portion to prevent substantial lateral relative movement between said spring fingers and tab.

3,356,987
INSULATION SUPPORT AND WIRE GUIDE FOR AN ELECTRICAL CONNECTOR

James Francis Gillespie, Palmyra, Pa., assignor to AMP Incorporated, Harrisburg, Pa.

Filed Aug. 10, 1966, Ser. No. 571,562
5 Claims. (Cl. 339—223)

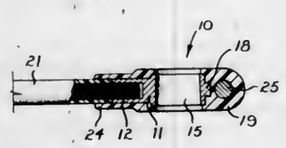


1. In an electrical connector, the combination comprising a wire barrel adapted to receive a wire conductor, a sleeve fitted to and extending beyond the mouth end of said barrel to support a wire where it joins said barrel, an annular projection in said sleeve, said projection having a forward edge disposed adjacent the opposite end of the barrel to position said sleeve onto said barrel and a rearward transitional slope defining funnel means together and point all strands of said conductor towards the center of said projection and guide said conductor into said barrel, said projection having an inside diameter slightly larger than the inside diameter of said barrel, said projection having a double wall section to strengthen said funnel.

3,356,988
BATTERY TERMINAL CLAMP

Richard B. Gall, Camden, South Australia, Australia, assignor to Camelec Limited, Camden, South Australia, Australia

Filed Dec. 22, 1965, Ser. No. 515,700
Claims priority, application Australia, Dec. 29, 1964, 53,386/64
2 Claims. (Cl. 339—230)

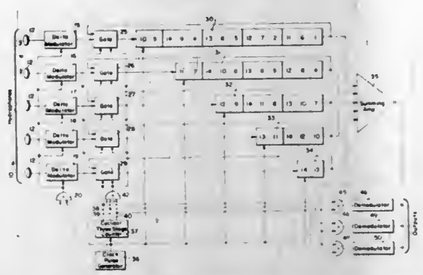


1. A battery terminal clamp comprising a contact member with cable attachment means, the contact member having an inner contact surface of lead and being of size and shape complementary to the size and shape of the outer surface of a battery post, the contact member also having a projection extending outwardly therefrom, the side walls of the projection sloping inwardly towards the base thereof thereby forming a "dove-tail" cross-sectional shape, and an outer casing of organic plastics material firmly engaging the outer surface of the contact member and interlocking with the "dove-tail" shape thereof, the casing having a plastic memory and restraining the contact member against permanent deformation.

3,356,989
ANALOG BEAM FORMING APPARATUS

Samuel W. Autrey, Fullerton, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed July 19, 1966, Ser. No. 567,327
8 Claims. (Cl. 340—6)



1. An apparatus for forming a predetermined number of analog beams from signals received from a plurality of transducer elements disposed in a linear array, said apparatus comprising means coupled to each of said plurality of transducer elements for converting said signals therefrom into a series of pulse trains of binary 1's and 0's as determined by whether the amplitude of said signals is increasing or decreasing, the clock rate thereof being substantially higher than the highest frequency of said signals from said transducer elements; a corresponding plurality of delay-line time-compressors of progressively changing length differing by one basic delay unit, said delay-line time-compressors corresponding to successive transducer elements of said linear array and being responsive to said pulse trains of binary 1's and 0's therefrom and said basic delay unit being directly proportional to the spacing of said transducer elements and inversely proportional to said predetermined number of analog beams; means for successively summing the output from said delay-line time-compressors at a rate equal to said predetermined number of analog beams per each basic delay unit thereby to provide a resultant pulse train; means responsive to said resultant pulse train for cyclically isolating resultant pulses therefrom corresponding to individual analog beams; and means for demodulating said isolated resultant pulses thereby to produce an output signal for each of said predetermined number of analog beams.

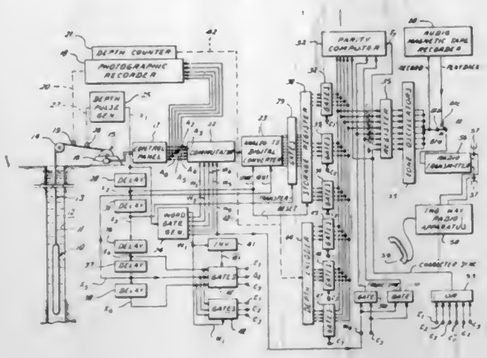
3,356,990
WELL LOGGING TELEMETRY SYSTEM INCLUDING DEPTH SYNCHRONIZING A REMOTE RECORDER AND ERROR DETECTION OF THE TRANSMITTED DATA

William J. Sloughter, Houston, Tex., assignor, by mesne assignments, to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas

Filed Sept. 23, 1965, Ser. No. 489,643
11 Claims. (Cl. 340—18)

1. A well logging system for making well logging measurements in a borehole drilled into the earth at a remote well site location and producing a record of these measurements at a central location located a considerable distance from the well site location comprising: logging means adapted for movement through the earth borehole for measuring subsurface phenomena and providing measurement signals indicative thereof; means responsive to longitudinal movement of the logging means through the borehole for producing depth signals indicative of such movement; means responsive to both the measurement signals and the depth signals for producing pulse type coded signals having characteristics indicative of both the measurement and depth signals; means for transmitting the pulse type coded signals to the central location; recorder means

located at the central location for recording signals on a recording medium; means located at the central location and responsive to the transmitted pulse type coded signals for supplying to the recorder means for recording on the recording medium, signals indicative of the measurement



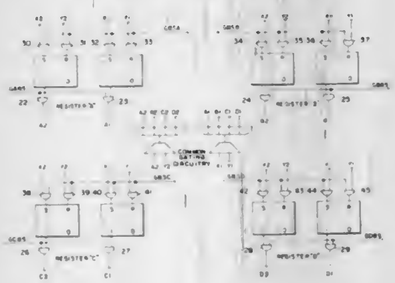
signal characteristics of the pulse type coded signals; and means responsive to the depth signal characteristics of the pulse type coded signals for advancing the recording medium of the recorder means as a function of the movement of the logging means through the borehole.

3,356,991

PLURAL REGISTERS HAVING COMMON GATING FOR DATA TRANSFER

Karl C. Wehr, Ellicott City, Md., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army

Filed Feb. 28, 1964, Ser. No. 348,922
1 Claim. (Cl. 340—147)



A gating circuit for moving information from one register to another comprising in combination a plurality of registers, which are more than two in number, each having an input circuit and an output circuit; a common gating circuit having an input circuit and an output circuit; a plurality of first AND gates each having a first input and an output separately connecting the output circuit of each register to the input circuit of said common gating circuitry a plurality of second AND gates each having a first input and an output separately connecting the input circuit of each register to the output circuit of the common gating circuitry; and separate means connected to a second input of each of the AND gates whereby information may be moved from any one register to another.

3,356,992

OPTICAL DETECTION AND COMPARISON APPARATUS FOR CURRENCY CHANGING MACHINE

James F. Ptacek, Independence, Jerry W. Howard, Kansas City, Elmer Bradley Offutt, Independence, and Robert E. Patterson, Kansas City, Mo., assignors to The Vendo Company, Kansas City, Mo., a corporation of Missouri

Filed Nov. 4, 1963, Ser. No. 321,263
7 Claims. (Cl. 340—149)



1. Apparatus for testing a document in which portions thereof each have a characteristic response to radiant energy incident thereon to determine if the document is genuine or of a particular class, said apparatus including:

means for producing and directing radiant energy onto each of said portions respectively of the document;

means disposed to receive the radiant energy directed to each portion after incidence thereof with the corresponding portion;

detecting means operably associated with said receiving means and responsive to the energy received thereby for producing first electrical signals, each having an amplitude of a magnitude dependent upon the intensity of said received energy from a corresponding portion;

means coupled with said detecting means and responsive to said first signals for adjusting the amplitudes of at least certain of said first signals to provide all of the first signals with amplitudes which, if the document is genuine or of said class, are substantially equal;

means for generating a second electrical signal having an amplitude which varies in one direction over a range of values including possible magnitudes of said first signals;

comparator means operably coupled with said generating means and said adjusting means and responsive to the first signals therefrom and said second signal for producing third electrical signals, each of the latter having a predetermined duration and occurring in time when the amplitude of said second signal and the amplitude of a corresponding first signal from the adjusting means are substantially equal; and

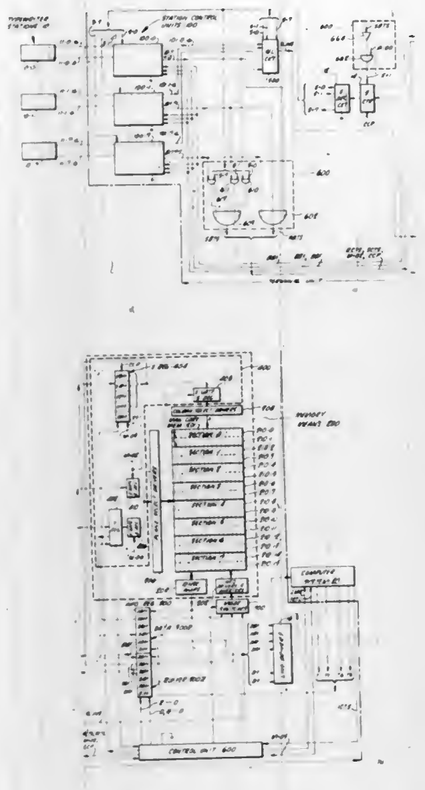
output means operably coupled with said comparator means and responsive to said third signals for producing an output signal when said third signals occur in an overlapping time relationship, whereby the output signal is produced if said portions of the document have said characteristic responses indicating that the document is genuine or of said class.

3,356,993

MEMORY SYSTEM

Richard S. Sharp, Sierra Madre, Calif., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Filed July 31, 1964, Ser. No. 386,552
33 Claims. (Cl. 340—172.5)



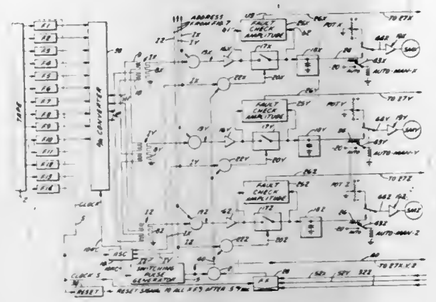
1. In a storage system for arranging and accumulating a series of digital bits comprising: memory means having a plurality of addressable memory locations, the memory means comprising 1 through n memory cells for each memory location and arranged for reading out and writing the content of an addressed memory location in parallel; means for receiving an input signal comprising a series of n digital bits and causing same to be written bit by bit in memory cell 1 of an addressed memory location; means for repeatedly addressing a memory location for repeatedly causing the reading and writing therein; temporary information storage means; and means coupled between the memory means and the information storage means for transferring the signal content of memory cells 1 through $n-1$ which is read out of the addressed location to be the temporary storage means and back, the coupling means having for the flow of signals parallel input and parallel output paths from the memory means to the temporary storage means which are displaced with respect to each other causing the signal content read out of an addressed memory location to be rewritten in the same memory location displaced a prefixed number of memory cells from which the same is read and thereby accumulate the input signals in the addressed memory location.

3,356,994

POSITIONING NUMERICAL CONTROL DEVICE FOR MACHINE TOOLS AND SIMILAR EQUIPMENTS

Joseph Elbling, Ivrea, Italy, assignor to Ing. C. Olivetti & C., S.p.A., Ivrea, Italy, a corporation of Italy

Filed Oct. 2, 1964, Ser. No. 400,987
Claims priority, application Italy, Oct. 7, 1963, 20,853/63; Mar. 12, 1964, 23,899/64; Apr. 7, 1964, 7,519/64
14 Claims. (Cl. 340—172.5)



1. In a programmed control system for controlling a machine-tool in at least two directions of movement in dependence on recorded digital program data which comprises in respect to each said direction a sequence of digital numbers in binary notation representing a succession of instantaneous positions spaced along the relevant directions, means for reading said recorded sequence of numbers, a digital-analogue converter having an input from an oscillator controlled by a clock pulse signal on said program for each sequence of said numbers, said converter having a control input having a relay for each digit of the number as read, said converter having elements in circuit with said oscillator, said elements being under control of said relays and providing a supply of sine and cosine values of an angle corresponding to the binary number as read, a position sensing device, a servo-motor for the relevant direction and a memory condenser feeding said servo-motor, said position sensing device having an input of said supply and an error signal output, said oscillator and hence said output having a number of oscillations, said output being an input to a switch having an output leading to said memory condenser for said servo-motor, and means for deriving switching impulses operating said switch to transmit said error signal to said condenser.

3,356,995

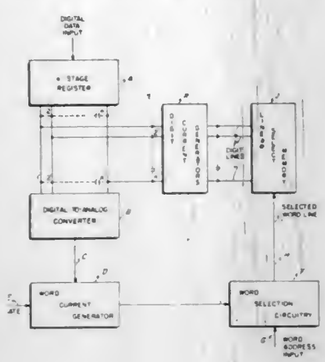
INFORMATION HANDLING APPARATUS

Robert R. Leonard, Dover, Edward G. Fassino, Natick, and James F. Beatty, Westwood, Mass., assignors to Honeywell Inc., a corporation of Delaware

Filed Dec. 29, 1964, Ser. No. 421,921
11 Claims. (Cl. 340—172.5)

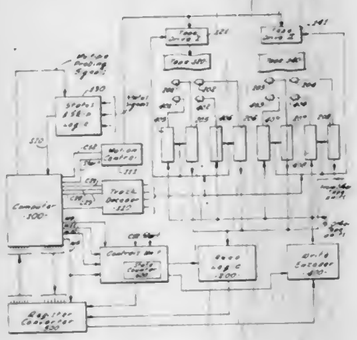
1. In combination, digital-to-analog signal conversion apparatus, means coupling binary information to be stored in said memory system to said conversion apparatus, said conversion apparatus being adapted to form at its output a signal whose amplitude is a function of said binary information, a word-organized magnetic core memory having a plurality of word windings each of which link a number of cores in said memory, each of the cores linked by a common word winding being further linked by a different one of a plurality of digit windings, means for

applying said binary information to said digit windings, and means for coupling the output signal from said signal



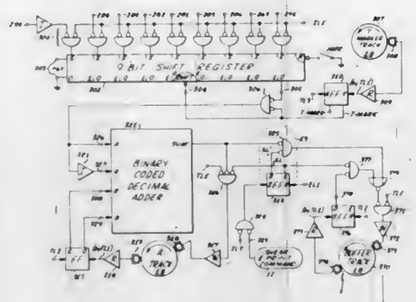
conversion apparatus to a selected one of said plurality of word windings.

3,356,996
DATA TRANSFER SYSTEM
Paul Niquette, Palos Verdes Estates, and Charles E. Wallace, Playa Del Rey, Calif., assignors to Scientific Data Systems, Inc., Santa Monica, Calif., a corporation of Delaware
Filed Jan. 7, 1965, Ser. No. 423,998
55 Claims. (Cl. 340—172.5)



1. A data transfer system for controlling recording data on a tape which data are provided by a computer, and for controlling feeding of data to the computer after reading of such data from the tape, comprising:
program control means defining a plurality of different operational states whereby a first sequence of states defines a tape reading routine and a second sequence of states defines a tape recording routine;
a plurality of bistable stages operating as serial to parallel converter in one of said states during said tape reading routine and operating as parallel to serial converter in another one of said states during said tape recording routine;
and means for interconnecting said bistable stages to operate as counter in at least one state that is common to said reading and said recording routines and to provide for operational delay within either routine.

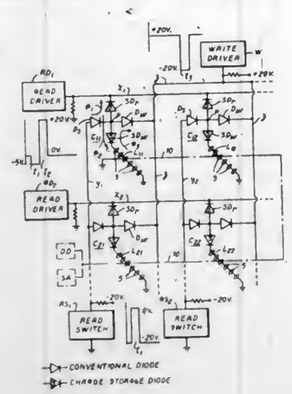
3,356,997
PRINT-OUT CONTROL SYSTEMS
Charles H. Propster, Jr., San Jose, Calif., assignor to General Electric Company, a corporation of New York
Continuation of application Ser. No. 204,698, June 25, 1962, which is a division of application Ser. No. 849,002, Oct. 27, 1959, now Patent No. 3,093,730, dated June 11, 1963. This application June 21, 1966, Ser. No. 559,342
10 Claims. (Cl. 340—172.5)



1. In a system for storing a plurality of data items in a corresponding plurality of memory locations accessible in a predetermined order, apparatus for transferring the data items in sequence from the memory locations to a utilization means in the inverse order comprising: reading means for periodically scanning the memory locations in the predetermined order, counter means for storing a count, means for modifying the count in said counter means by a predetermined quantity for each memory location scanned by said reading means, transfer means responsive to a predetermined count in said counter means for transferring to the utilization means the data item in the memory location having a predetermined relationship with said reading means, and means responsive to the predetermined count in said counter means for causing the count in said counter means to equal the predetermined quantity, whereby said transfer means causes the data item in the next preceding memory location to be transferred to the utilization means during a subsequent periodic scanning of the memory locations by said reading means.

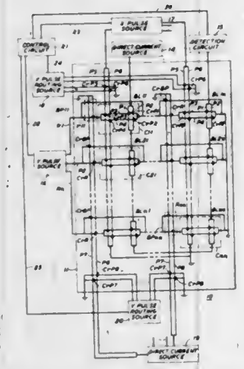
3,356,998
MEMORY CIRCUIT USING CHARGE STORAGE DIODES
Melvin M. Kaufman, Levittown, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Mar. 5, 1964, Ser. No. 349,716
12 Claims. (Cl. 340—173)

6. In a memory array,
a plurality of row selection conductors and a plurality of column selection conductors,
a common write bus,
a plurality of word line circuits each associated with a crossover of a row selection conductor and a column selection conductor, each of said circuits including a selection diode connected from a column selection conductor to a junction point, a read charge storage diode connected from said junction point to a row selection conductor, a write charge storage diode connected from said junction point to a memory word line, and a write impedance connected from said junction point to said common write bus,
selection means to energize any one row selection conductor and any one column selection conductor to select one of said word line circuits,
read means to subsequently energize said one row selection conductor to cause a read current through the selected word line in one direction, and



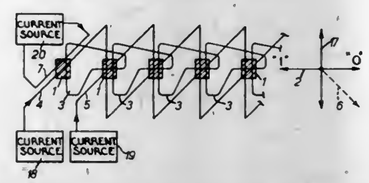
write means to subsequently energize said write bus to cause a write current through the selected word line in the opposite direction.

3,356,999
CRYOGENIC MEMORY CIRCUIT
Umberto F. Gianola, Florham Park, and Fred B. Hagedorn, Berkeley Heights, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 21, 1964, Ser. No. 420,032
6 Claims. (Cl. 340—173.1)



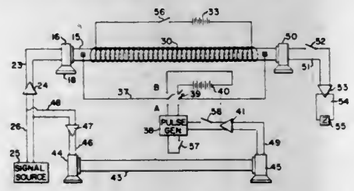
4. A coincident-current superconducing memory comprising a plurality of superconducting path-pairs arranged generally in rows and columns, first and second parths of said path-pairs including first and second cryotrons, respectively, means for selectively establishing a first current in said first path of each of said path-pairs, means including a plurality of row conductors each connected to said first and second cryotrons of the path-pairs of a corresponding row, a plurality of bypass means each connected electrically in parallel with a row conductor at each path-pair therealong, each of said bypasses including a third cryotron, each of said row conductors also including therein a single fourth cryotron at each path-pair, means for applying a second current to a selected one of said row conductors, and control means for selectively driving resistive said third or said fourth cryotron simultaneously with said second current for selectively routing said second current to said bypasses and said path-pairs along a selected row conductor.

3,357,000
THIN FILM INFORMATION TRANSFER DEVICES
Andrew Charles Tickle, Stevenage, England, assignor to International Computers and Tabulators Limited
Filed Mar. 25, 1964, Ser. No. 354,533
Claims priority, application Great Britain, Apr. 5, 1963, 13,626/63
6 Claims. (Cl. 340—174)



1. Information storage and transfer apparatus, including a pair of first and second information storage bistable elements each comprising an area of anisotropic magnetic thin film with mutually perpendicular easy and hard axes of magnetisation, each area being switchable by domain rotation between a set state in which the magnetisation is aligned in one direction along the easy axis and an unset state in which the magnetisation is aligned in the opposite direction along the easy axis, said set state representing a stored information item of predetermined binary significance, first magnetic field generating means to apply simultaneously a temporary unsetting magnetic field to said first element and a temporary setting magnetic field, aligned substantially in said one direction along the easy axis, to said second element, and linking means linking said first and second elements and effective, when said first element is switched from the set state to the unset state, to apply to said second element a magnetic field which is substantially aligned with the hard axis and which is effective in combination with said temporary setting field to switch said second element to the set state, whereby an information item of said predetermined binary significance is transferred from said first element to said second element.

3,357,001
STORING AND RECALLING SIGNALS
Noyes D. Smith, Jr., and William L. Roever, Bellaire, Tex., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
Original application Dec. 7, 1961, Ser. No. 157,796, now Patent No. 3,320,596, dated May 16, 1967. Divided and this application Sept. 24, 1965, Ser. No. 490,006
9 Claims. (Cl. 340—174)



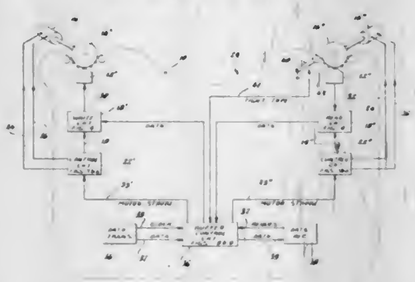
1. The method of storing and recalling a signal having an amplitude which varies irregularly with time, which comprises the steps of
(a) storing said signal as remanent stresses and magnetizations in an elongate body by
(1) magnetically polarizing an elongate body of a magnetostrictive material;
(2) transducing said electrical signal into corresponding mechanical movements and applying the resulting movements as mechanical signal stresses to said polarized body;

(3) propagating corresponding acoustic signal waves along the length of said polarized body; and

(4) establishing a series of remanent stresses and magnetizations along the length of said body corresponding to said signal waves within the body by applying to said body simultaneously to points along the length thereof of a short magnetizing pulse having a magnetic vector orthogonal to the vector of said magnetic polarization during the said propagation of the signal waves; and

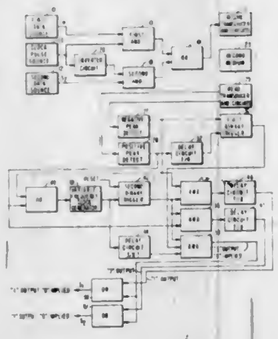
(b) subsequently recalling the stored signal by applying a short magnetizing pulse simultaneously to said points along the length of the body, thereby initiating a series of acoustic waves within the body in accordance with the remanent stresses, transducing said waves at a fixed point of said body into electrical pulses, and reconstituting the signal by amplifying the resulting pulses.

3,357,002
MAGNETIC TAPE INFORMATION STORAGE AND RETRIEVAL SYSTEM
William Reid Smith-Vaniz, Darien, and Harvey R. Sherman, Stamford, Conn., assignors to Whitek, Inc., a corporation of Connecticut
Filed Mar. 18, 1964, Ser. No. 352,918
10 Claims. (Cl. 340—174.1)



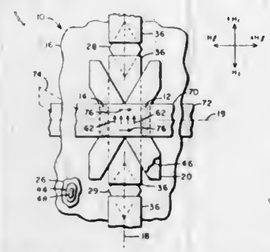
1. A buffer store system comprising, in combination:
(A) a data transmitter randomly transmitting information characters in parallel bit fashion,
(B) a data receiver randomly requesting information characters;
(C) a sprocketed magnetic tape having a series of precisely located and uniformly spaced bit positions arranged transversely and extending lengthwise thereof;
(D) an asynchronous magnetic tape recorder, comprising
(1) electromagnetic transducing means extending transversely of said magnetic tape,
(2) intermittently actuated means for translating said tape in discrete and uniform lengthwise steps to present successive transverse arrays of bit positions to said transducing means,
(3) a write circuit electrically connected to said transducing means for selectively energizing said transducing means so as to record in parallel bit fashion on said magnetic tape the information characters received from said data transmitter, and
(4) a control circuit for conditioning said write circuit to operate in the record mode and for actuating said translating means in response to the receipt of an information character from said transmitter;
(E) an asynchronous magnetic tape reproducer positioned from said magnetic tape recorder in the direction of tape translation, said reproducer comprising
(1) electromagnetic transducing means extending transversely of said magnetic tape and operating to read information characters recorded by said recorder,
(2) intermittently actuated means for translating said tape in discrete and uniform steps to present successive transverse arrays of bit positions to said transducing means,
(3) a read circuit electrically connected to said transducing means for processing information characters read from said tape by said transducing means, and
(4) a control circuit for conditioning said read circuit to operate in the read mode and for actuating said translating means in response to an information character request; and,
(F) a buffer control circuit operating to signal said recorder control circuit to initiate a recording cycle on receipt of each information character from said data transmitter and to signal said reproducer control circuit to initiate a read cycle on receipt of a request from said data receiver for information characters, said buffer control circuit comprising
(1) means responding to a condition of tight tape between said recorder and reproducer to initiate a succession of recording cycles by said recorder so as to generate a leader of said tape having a length at least equal to the physical distance between said recorder and reproducer
(a) said leader having recorded thereon leader characters which are distinctive from information characters, and
(2) means for outputting only information characters to said data receiver.

3,357,003
SINGLE CHANNEL QUATERNARY MAGNETIC RECORDING SYSTEM
Steven J. MacArthur, San Jose, Calif., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Dec. 28, 1964, Ser. No. 421,177
24 Claims. (Cl. 340—174.1)



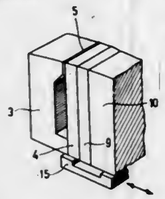
4. The method of recording digital data at a selected data rate on a single record track of a magnetic medium comprising the steps of establishing a succession of data points that are regularly spaced in time, establishing a succession of regularly spaced transition points, each transition point having a fixed time of occurrence within the data interval defined by a pair of successive data points, establishing a magnetization condition at the data points representing either (1) steady state magnetization of either polarity or (2) a sharp transition of either polarity direction between the steady state conditions, thus to provide a quaternary code, and selectively introducing transitions at the transition points in accordance with the succeeding magnetization condition at the next data point.

3,357,004
MATED THIN FILM MEMORY ELEMENT
Robert J. Bergman, St. Paul, and Leroy A. Prohofsky, Minneapolis, Minn., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Oct. 23, 1965, Ser. No. 502,820
5 Claims. (Cl. 340—174)



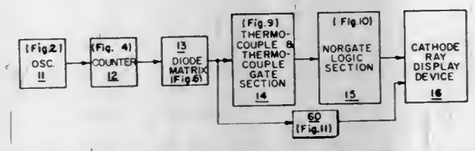
1. A magnetizable memory element comprising:
a substrate member;
a first layer of magnetizable material;
said first film layer having an active body portion that has inactive end portions extending therefrom;
a second layer of magnetizable material having substantially similar magnetic characteristics and planar contours as said first layer and superposed said first layer;
a first conductive strip sandwiched between and enveloped by said first and second layers only in the area of said body portions;
said first and second layers having superposed sides extending beyond the edges of said first conductive strip for forming a substantially-closed flux path in a circumferential direction about said enveloped first conductive strip only in the area of said body portions.

3,357,005
MULTIPLE MAGNETIC HEAD ASSEMBLY
Jan Albert Geurst and George Ludwig Walther, Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company Inc., New York, N.Y., a corporation of Delaware
Filed Feb. 18, 1965, Ser. No. 433,685
Claims priority, application Netherlands, Feb. 29, 1964, 64—2,501
3 Claims. (Cl. 340—174.1)



1. A device for reducing or eliminating the relative influence of the parts of a multiple magnetic head for recording and reproducing one or more parallel records on a carrier provided with magnetisable material, said head consisting of at least two interconnected magnetic circuits, one for recording and one for reproducing, lying one after the other and consisting each of at least two portions of sintered, oxidic, ferromagnetic material, there being provided between said two portions a useful gap filled out with non-magnetisable material, said non-magnetisable material bonding the two portions to each other, at least one plate of sintered, oxidic, ferromagnetic material arranged between the magnetic circuits, a plate of electrically conducting, non-magnetisable material arranged between each individual magnetic circuit and a plate of sintered, oxidic, ferromagnetic material, and means for imparting to the plate of sintered, oxidic, ferromagnetic material a magnetic potential which is substantially equal to that portion of the recording circuit which is located on the outer side of the head.

3,357,006
ELECTRONIC MEANS FOR REPETITIVELY DISPLAYING ANALOG SIGNALS UPON A DISPLAY DEVICE
Walter R. Wisniefski, Paterson, N.J., assignor to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware
Filed Sept. 8, 1964, Ser. No. 394,844
3 Claims. (Cl. 340—183)

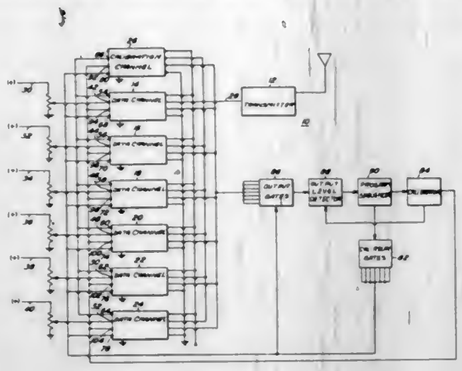


1. Electronic solid-state switching means for monitoring and displaying data from a plurality of remote locations comprising oscillator means for generating pulses at a constant predetermined repetition rate; electronic multistage counter means being stepped by said oscillator means; diode matrix means having a plurality of input means coupled to said counter means and having a plurality of output lines; said diode matrix means further comprising a plurality of diode means selectively coupled between its input means and its output terminals for sequentially placing only one output line in the binary ONE state at any given instant with the remaining output lines being at the binary ZERO state; a plurality of analog sensing means; display means; a plurality of gating means each having an output terminal being connected to an associated analog sensing means which normally shunts the output of its associated analog sensing means to ground; each gating means having a control terminal controlled by an associated output line of said diode matrix means for sequentially removing the shunt to ground for coupling its associated analog sensing means to said display means under control of said diode matrix means; said display means being coupled to said diode matrix means for synchronization by said diode matrix means; said display means being an oscilloscope for displaying the output of each analog sensing means in a repetitive manner.

3,357,007
TELEMETRY SYSTEM WITH CALIBRATION SIGNAL CHANNEL FOR TRANSMITTING DATA CONCURRENTLY WITH THE TESTING OF DATA CHANNELS
James W. Wike, Philadelphia, Pa., and Charles R. Daws, Marina Del Rey, Calif., assignors to Sonex, Inc., Philadelphia, Pa., a corporation of Pennsylvania
Filed Mar. 16, 1965, Ser. No. 440,214
15 Claims. (Cl. 340—183)

1. A telemetry system comprising a plurality of communication channels, a plurality of signal input means each associated with a respective one of said communication channels, a calibration channel, calibration signal generating means, cyclic switching means for sequentially

switching one of said signal input means from one of said communication channels to said calibration channel at



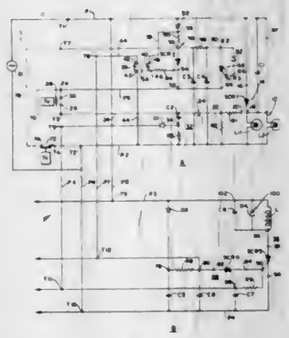
the same time as said calibration signal generating means is connected to said one communication channel.

3,357,008

AUTOMATIC ALARM ANNUNCIATOR CIRCUITS

Robert R. Walsh, Wilmington, Del., assignor to All American Engineering Company, Wilmington, Del., a corporation of Delaware

Filed Mar. 17, 1964, Ser. No. 352,516
30 Claims. (Cl. 340—213.1)



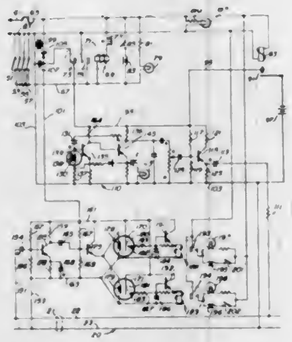
1. In an alarm annunciator circuit including a power source, visual alarm means, and audible alarm means, means actuating said alarm means from an initial state to another in response to a predetermined condition comprising transducer means monitoring said condition, relaxation oscillator means selectively connected with said power source and actuated by said transducer means, first semiconductor switch means, periodically triggered by said relaxation oscillator means, connected with said source and said alarm means comprising intermittent energizing means for said visual alarm means, pulse generating means energized by said relaxation oscillator means, trigger means interconnected with and actuated by said pulse generating means, second semiconductor switch means for said audible alarm means interconnected with and actuated by said trigger means, and acknowledge means selectively deenergizing said audible alarm means and constraining said first semiconductor switch means to continuously energize said visual alarm means including means deactuating said trigger means and said relaxation oscillator means; wherein said relaxation oscillator means includes rectifier means connected with one side of said source, resistance means in series therewith, a silicon controlled rectifier having anode, cathode and gate terminals, said anode terminal being coupled with said resistance means, a load resistor connected in series with said cathode terminal and the other side of said source, said cathode terminal being further coupled with said semiconductor switch means, capacitance means connected from said anode terminal to the said other side of said source, and a Zener diode connected between said anode terminal and said gate terminal.

3,357,009

CONDITION-RESPONSIVE SYSTEM FOR IMPRESSING DISTINCTIVE FREQUENCY ALARM TONE ON TRANSMISSION LINE

Maurice Rusnak, Chicago, William Miller, Skokie, and Peter Miller, Chicago, Ill.; said Rusnak assignor to Peter Miller and William Miller, Chicago, Ill.

Filed Dec. 14, 1964, Ser. No. 418,115
5 Claims. (Cl. 340—216)



1. Alarm apparatus for installation at a premises to be protected and for generating an alarm signal indicative of disturbance at a point on said premises which comprises, a plurality of switch means for respective installation at like plural points in said premises, the switch means of said plurality having a first conductive state and a second, non-conductive state, first and second lead lines adapted for connection to a source of alternating electric power, alarm indicating means, the switch means of said plurality being connected in common from said first lead line to said second lead line by way of said alarm indicating means to energize said indicating means upon shifting of one switch means of said plurailty between said states, a source of direct current biasing potential, first relay means, means operatively biased by said direct current source and operable for generating an electrical signal of frequency distinctive to said apparatus, said first relay means being connected in series circuit with said first and second lines for operation upon connection of said lines to a source of alternating current, and said generating means being responsive to a direct current signal applied thereto for generating said electrical signal at a distinctive frequency, means for applying a direct current signal to said generating means in response to the shifting of a switch means of said plurality between said conduction states and means for applying said distinctive frequency signal to a transmission line, whereby disturbance at a protected point on said premises results in an alarm signal thereat and transmission of a distinctive frequency alarm signal therefrom.

3,357,010

INFORMATION DISPLAY AND STORAGE MEANS EMPLOYING MULTI-APERTURE TRANSFLUXORS

Joseph Patrick Sweeney, Harrisburg, Pa., assignor to AMP Incorporated, Harrisburg, Pa.

Filed Apr. 28, 1964, Ser. No. 363,164
3 Claims. (Cl. 340—324)



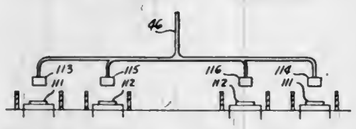
1. In a device for providing a visual presentation of stored intelligence, a plurality of multi-aperture magnetic cores of square loop magnetic material, each including a major aperture, a minor input aperture and a minor output aperture, a drive circuit for said cores, including a drive source to supply pulses of sufficient energy to set or clear said cores, a plurality of switches, each connected in parallel to said source and in series to a separate drive lead linking a plurality of cores through the major aperture thereof and through the minor input aperture thereof in a sense to set said several cores into a state of magnetization wherein approximately half of the flux of the core is oriented in one direction and approximately half of the flux in said core is oriented in an opposite direction relative to closed flux paths surrounding said major aperture, the said switches and associated drive leads linking different ones of said cores to form different patterns of set conditions in said plurality of cores, an output winding linking the minor output aperture of each core and connected to an indicating device and a further drive winding linking said minor output aperture to apply a drive thereto operable to energize said output winding and an indicating device continuously when a core is set but not when a core is cleared, and means to clear those of the plurality of cores not set by a given switch.

3,357,011

SYSTEM FOR AUTOMATICALLY DERIVING CODED SIGNALS FROM A METEOROLOGICAL STATION

Jorge Suarez Diaz, Mexico City, Mexico, assignor to Comision de Telecomunicaciones y Meteorologia, Mexico City, Mexico, a Mexican Government institution

Filed July 29, 1964, Ser. No. 385,981
20 Claims. (Cl. 340—347)



20. In a shaft rotation to coded signal converter of the type which comprises a readout activating element and a code bearing disc having segments thereon which are relatively rotatable and normally spaced apart, and means for displacing said disc and element into operative signal deriving relationship, the improvement further comprising:

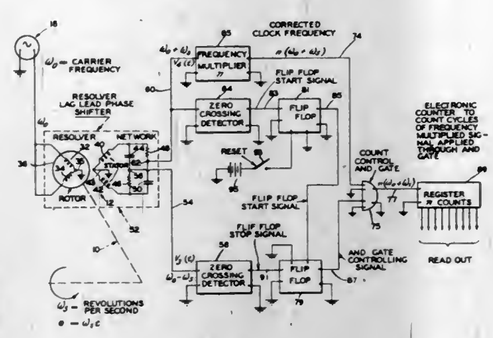
means for coupling said switch activating means with only one of said segments when said disc and readout activating element are in operative relation.

3,357,012

VELOCITY CORRECTED RESOLVER ENCODING SYSTEM

James E. Brook, Maywood, N.J., assignor to The Bendix Corporation, Teterboro, N.J., a corporation of Delaware

Filed Sept. 21, 1964, Ser. No. 397,743
11 Claims. (Cl. 340—347)



1. The combination comprising a transducer, means for providing a sinusoidal carrier wave of constant angular velocity for energizing said transducer, first and second outputs for said transducer, a shaft angularly movable for adjusting said transducer, said shaft being movable at a constant angular velocity, said transducer including first means operative by said shaft to superimpose the angular velocity of the shaft upon the angular velocity of said sinusoidal carrier wave, and second means operatively connected to said first means for effecting at said first output a first side band sinusoidal signal wave of a frequency equivalent to a sum of the shaft velocity and carrier wave velocity and at said second output a second side band sinusoidal signal wave of a frequency equivalent to a difference between the shaft velocity and the carrier wave velocity, means operatively connected to said first output to multiply the frequency of said first side band signal wave by an integer so as to provide a sinusoidal output count signal wave, a first zero crossing detector operatively connected to the first output, a second zero crossing detector operatively connected to the second output, a gate to control the count signal wave, an electronic register to count cycles of the count signal wave, means operatively connecting said first and second zero crossing detectors to said control gate so as to render one of said zero crossing detectors effective to actuate said gate so as to apply the count signal wave to said register upon one of said side band signal waves passing through zero, and the other of said zero crossing detectors effective to actuate said gate so as to terminate the application of the count signal wave to said register upon the other of said side band signal waves passing through zero and thereby terminate the counting of the cycles of the count signal wave by said register.

3,357,013

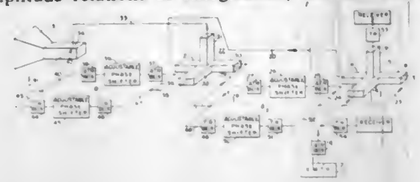
SYSTEM FOR ARBITRARY ANTENNA POLARIZATION CONTROL

Gerald E. Hart, Naval Research Laboratory, Washington, D.C. 20390

Filed Feb. 26, 1954, Ser. No. 412,964
7 Claims. (Cl. 343—5)

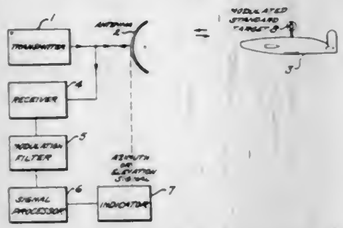
1. Apparatus for transmitting any type of polarized electromagnetic waves comprising means for dividing a signal into two equal signal components of like time phase, a hybrid junction including a first and second pair of symmetrical terminal points, a first and second transmission means for conducting each said signal component

to a terminal of said first pair of symmetrical terminals, said first transmission means including phase displacement means, two antennas capable of producing a resultant electromagnetic wave dependent on the time phase and amplitude relations of energization, and first and second



connecting means for connecting each of said second pair of symmetrical terminals to one of said antennas, said first connecting means including a phase displacement means for varying the time phase between said signal components to any predetermined value.

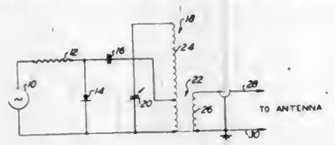
3,357,014
STANDARD TARGET RADAR
David Atlas, Newton, Mass.
Filed Nov. 29, 1965, Ser. No. 510,472
9 Claims. (Cl. 343—10)



1. A radiant energy system for determining the direction and range of an object comprising positioning on said object a standard target having a predetermined cross-section being modulated, means including a transmitter and associated scanning antennas for directing radiant energy towards said object, means to receive return echoes from said object, said return echoes including a modulation content solely representative of said standard target, means to filter the return echoes to pass only the modulated signals, means to measure the intensity of said modulated signals to provide the range of said object, and means to measure the azimuth of maximum intensity of said modulated signals to provide the direction of said object.

3,357,015
METHOD AND DEVICE FOR THE LOCATION OF OBJECTS
Gunter Wichmann, Heidelberg, Pfaffengrund, Germany, assignor to Eltro G.m.b.H. & Co., Heidelberg, Germany
Filed July 29, 1965, Ser. No. 475,826
Claims priority, application Germany, Aug. 12, 1964, E 27,593
1 Claim. (Cl. 343—16)

Apparatus comprising transmission antenna means including ringing means adapted to generate a resonant signal, control means to shock said ringing means to cause said antenna means to transmit a signal of relatively short duration for reflection by an object which is to be detected, a plurality of fixed receiving antennae to receive the reflected signal whereby the relative position of said object can be determined by the difference in time of reception at the respective receiving antenna, said control including a tunnel diode circuit adapted for transmitting square wave pulses of relatively short duration to said ringing means, said antenna means including an exponential strip conductor antenna with two sec-





tions, said tunnel diode being coupled between said sections, and a source of power coupled to and switched by said diode.

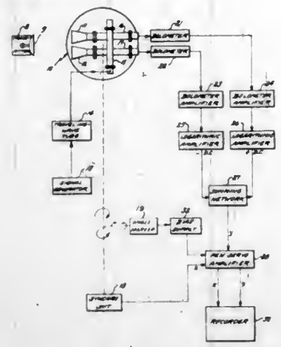
3,357,016
SECONDARY-RADAR RESPONSE SIMULATOR
Georges Peronneau, La Celle Saint Cloud, Serge Mikailoff, Paris, Félix Floret, Ste. Genevieve des Bois, and Paul L. Roman, Rueil-Malmaison, France, assignors to Societe Nouvelle d'Electronique et de la Radio-Industrie, Paris, France, a corporation of France
Filed Feb. 10, 1966, Ser. No. 526,437
Claims priority, application France, Feb. 10, 1965, 5,033, Patent 1,455,060
17 Claims. (Cl. 343—17.7)

1. A secondary-radar response simulator comprising:
a source of recurrent command pulses representing azimuth and range of a simulated target during consecutive major time periods representative of successive sweeps of a simulated radar antenna;
responder means connected to receive said command pulses, said responder means including a plurality of selectively presettable code storers and circuit means for the selective triggering of any one of said code storers in response to an incoming command pulse to generate a code signal conforming to the setting of the respective code storer;
and mode-selector means connected to said circuit means for controlling the selection of any one of said code storers.

3,357,017
SYSTEM FOR OBTAINING DIFFERENCE CURVES OF STACKED BEAM ANTENNAS
Albert B. Jewell, Glen Burnie, Md., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Air Force
Filed Sept. 2, 1966, Ser. No. 577,099
4 Claims. (Cl. 343—17.7)

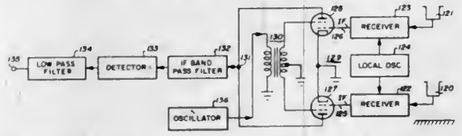
1. A system for plotting difference curves of a stacked beam antenna in rotation with each antenna having a pair of radiation elements, the system comprising:
(a) a pair of broadband bolometers, one each connected to each radiation element;

(b) a pair of amplifiers having logarithmic outputs, one each connected to each broadband bolometer with one having a positive D.C. output and the other having a negative D.C. output;



(c) means for summing the outputs of the amplifiers;
(d) means for detecting antenna rotational position;
(e) and an antenna pattern recorder fed by the outputs of the summing means and the rotational position detecting means.

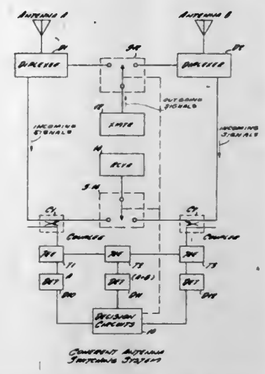
3,357,018
MODE-AVERAGING DIVERSITY COMBINING RECEPTION SYSTEM FOR HIGH-FREQUENCY RADIO WAVES
Oswald G. Villard, Jr., Woodside, Calif., assignor, by mesne assignments, to Itek Corporation, Lexington, Mass., a corporation Delaware
Filed Nov. 6, 1964, Ser. No. 409,502
17 Claims. (Cl. 343—100)



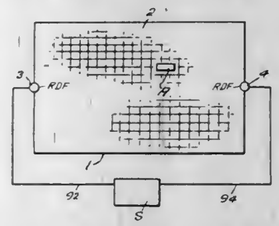
4. The method of minimizing selective fading, due to the plural mode reception of a modulated carrier wave from a distant transmitter, in a radio receiver system having a first and a second pair of crossed polarization sensitive antenna elements spaced apart to provide an effective directional antenna pattern providing alternating nulls and lobes, and a common output detector circuit, said method comprising the steps of:
rotating the plane of polarization of the crossed antenna elements continuously and cyclically, in synchronism, at a rate which is higher than the highest audio signal modulated upon the carrier wave; and
simultaneously sweeping the null of the antenna pattern cyclically and continuously through the great circle plane, containing the receiver system and the distant transmitter, at a rate which is higher than the highest audio signal modulated upon the carrier wave.

3,357,019
SWITCHING SYSTEM TO MAINTAIN COHERENT TRANSMISSION FROM ALTERNATE ANTENNAS
Edwin C. Gatz, New Haven, Ind., assignor to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Maryland
Filed Feb. 1, 1965, Ser. No. 429,515
4 Claims. (Cl. 343—100)

1. An antenna switching system comprising:
means, including a plurality of antennas for receiving input signals and for providing output signals proportional to the received input signals;
means for deriving additional signals proportional to the vector sums of pairs of the output signals;
a decision circuit responsive to said output signals and to the additional signals for determining which antenna is currently suited to serve as the transmitting antenna and to provide a control signal in accordance with the determination;
a source for a signal to be transmitted; and
switching means responsive to said control signal to route the signal to be transmitted to the selected antenna.



3,357,020
METHOD AND APPARATUS FOR LOCATING AND VISUALLY INDICATING THE POSITION OF A VEHICLE
William M. Slifer, Jr., 8723 1st Ave., Silver Spring, Md. 20910
Filed Apr. 4, 1966, Ser. No. 539,715
2 Claims. (Cl. 343—100)



1. An apparatus for locating and visually indicating the position of a vehicle in a pre-selected area comprising; a pair of radio direction finder stations disposed in the perimeter of said pre-selected area in spaced relation to each other, a mobile radio receiver and an associated mobile transmitter which are adapted to be mounted on said vehicle; and a radio transmitter and an indicating mechanism which are located at a central station; said mobile transmitter being normally de-energized and operative when energized to generate and emit electromagnetic wave pulses; said mobile receiver being adjusted to receive electromagnetic code pulses which are broadcast by said station transmitter at a predetermined frequency; interconnecting means between said mobile transmitter and said mobile receiver through which the energization of said mobile transmitter is effected by said mobile receiver upon the receipt of said electromagnetic code pulses by said mobile receiver; said indicating mechanism comprising a map of said pre-selected area, a pair of pivots located in the outline of said map in accordance with the location of said radio direction finder stations in the perimeter

of said pre-selected area, a pair of pointers one of which is mounted on each of said pivots for arcuate movement over the face of said map, and a pair of electromagnetic actuators by which said pointers are actuated in accordance with current supplied to said actuators, one of which is connected to each of said pointers; pick-up means at each of said radio direction finder stations which are operative to directively receive the said electromagnetic wave pulses emitted by said mobile transmitter; a circuit which includes a current source, one of said actuators, and the pick-up means at one of said radio beacon stations; a second circuit which includes a current source, the other of said pair of actuators, and the pick-up means at the other of said radio direction finder stations; each of said pick-up means being operative to increase or decrease the flow of current to its associated actuator in accordance with the direction in which electromagnetic wave pulses are received by it from said mobile transmitter and thereby cause the pointer connected to said associated actuator to point in the same direction in which said wave pulses are received; and the intersection of said pointers over said map visually indicating the location of said vehicle in said pre-selected area.

3,357,021
POLARIZATION CHARACTERISTICS MEASURING SYSTEM

Philip J. Allen, 8000 Marion St., North Forestville, Md. 20028

Filed May 31, 1966, Ser. No. 553,972
10 Claims. (Cl. 343—100)



6. A system for receiving a polarized wave of frequency f_0 comprising:

a rotatable linearly polarized antenna for receiving said polarized wave while rotating at a frequency f_3,

frequency translating means for receiving a portion of said polarized wave of frequency f_0 and for translating it to a signal of frequency f_4,

a mixer for receiving sideband signals f_1 and f_2 which are proportional in amplitude and phase to the polarization components of said received wave and wherein the signals f_1 and f_2 are each shifted an amount f_3 from the carrier frequency f_0, said f_1 and f_2 signals being mixed with said f_4 signals to derive beat frequencies f_5 and f_6 which are proportional in amplitude and phase to the f_1 and f_2 signals, respectively,

an amplifier coupled to said mixer for amplifying f_5 and f_6, and

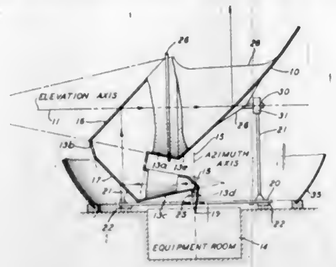
filter means for separating f_5 and f_6.

3,357,022
FOLDED HORN-REFLECTOR ANTENNA STRUCTURE

Adolph J. Giger, Murray Hill, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Dec. 5, 1963, Ser. No. 328,291
9 Claims. (Cl. 343—762)

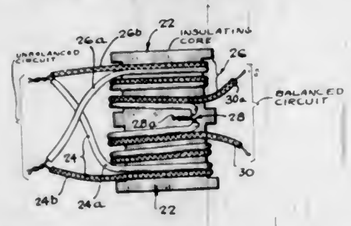
1. A scanning antenna system which comprises, a paraboloidal reflector, means for supporting said reflector for independent rotation about an elevation axis and about an azimuth axis, and a plurality of sections of a waveguide feed horn coupled together and to said reflector for effectively folding said horn to bring the focus of said reflector and the apex of said horn to coincidence substantially on said azimuth axis.



3,357,023
BALUN SUITABLE FOR USE THROUGHOUT THE ULTRA HIGH FREQUENCY TELEVISION BANDS

Dale L. Hemmle, Burlington, Iowa, assignor to Winegard Company, Burlington, Iowa, a corporation of Iowa

Filed Sept. 9, 1964, Ser. No. 395,116
6 Claims. (Cl. 343—821)



1. A balun suitable for use throughout the ultra high frequency television bands comprising, in combination:

an insulating non-magnetic core member having a longitudinal axis and winding portions spaced along said axis;

a pair of first and second closely spaced insulated conductors wound about said core member at one of said winding portions in one winding sense and spiralling along the axis towards the other winding portion;

a pair of third and fourth closely spaced insulated conductors wound about said core member at the other of said winding portions in the same winding sense to said first and second conductors and spiralling along the axis towards the one winding portion, said windings being so disposed as to define inboard ends on one side of said core member and outboard ends on the opposite side of said core member;

a pair of balanced line terminals disposed on said one side of said core adjacent said winding portions, respectively;

means electrically connecting said second and third conductors adjacent said balanced line terminals;

means connecting said first and forth conductors, respectively, to said balanced line terminals;

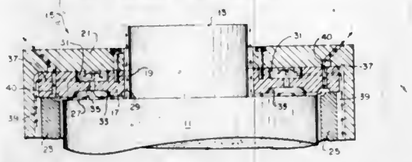
a pair of unbalanced line terminals disposed on said opposite side of said core adjacent said winding portions, respectively;

and means connecting the other end of the first and third conductors to one of said unbalanced line terminals and the second and fourth conductors to the other of said unbalanced line terminals.

3,357,024
METHOD OF RECORDING A GAS FLOW PATTERN

James E. Webb, Administrator of the National Aeronautics and Space Administration, with respect to an Invention of Trevor T. Mordecai, Madison, Ala.

Filed Jan. 20, 1966, Ser. No. 521,999
8 Claims. (Cl. 346—1)



1. A method of recording a flow pattern of gas moving in a narrow space comprising:

(a) applying a film of liquid to a surface over which gas is to flow while moving in said narrow space;

(b) moving gas in said space whereby the movement of said gas forms a pattern in said liquid film;

(c) making a color photograph of said surface with the patterned liquid film thereon.

3,357,025
SUBSURFACE FLOWMETER

Louis A. Carlton, Elvis Rich, and Beldon A. Peters, Houston, Tex., assignors to Esso Production Research Company, a corporation of Delaware

Filed Jan. 21, 1966, Ser. No. 522,156
15 Claims. (Cl. 346—33)

1. Flowmeter apparatus suspendible in a well on a nonconductor wireline for recording the rate and direction of fluid flowing in a well bore comprising:

an elongated housing vertically extending when arranged in said well and adapted to be turned upside down and having spaced-apart ports for permitting well fluids to flow through said housing and including a rotometer section, a fluid flow recording section, and an intermediate section therebetween adapted to be separately turned upside down;

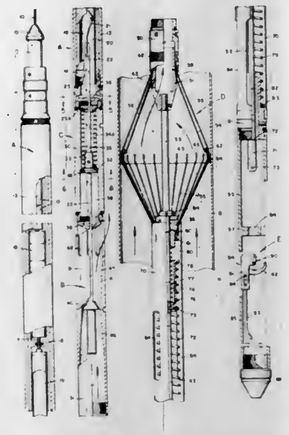
the interior wall of said rotometer section being double-tapered inwardly to define two variable cross-sectional area portions thereof, the smallest cross-sectional area being located between said two portions;

a float arranged in said rotometer section longitudinally movable in response to the flow of well fluids through said housing;

a shaft connected to said float and movable therewith;

recording means arranged in said flow recording section;

a stylus mounted on said shaft and movable therewith



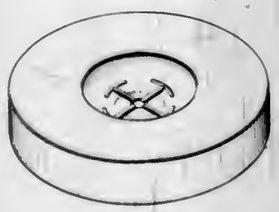
adapted to record longitudinal movement of said shaft on said recording means; and

said intermediate section comprising a cylinder having a shoulder formed on the inner wall thereof defining thereby a smaller diameter portion and a larger diameter portion thereof, a movable plate member arranged in the larger diameter portion of said intermediate section, biasing means surrounding said shaft and connected to said plate member adapted to bias plate member into engagement with said shoulder and stop means affixed to said shaft on one side of said plate member adapted to limit movement of said shaft in one longitudinal direction.

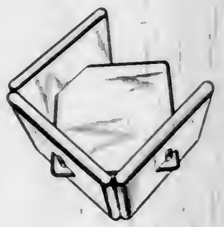
DESIGNS

DECEMBER 5, 1967

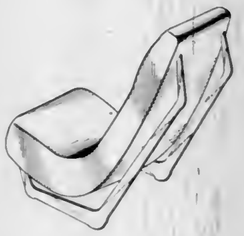
209,444
FLOATING SOAP TRAY
Harry S. Dearling New York, N.Y., assignor to Hyman Eventoff, doing business as Bathbee Company, Long Island City, N.Y.
Filed Sept. 29, 1966, Ser. No. 4,095
Term of patent 14 years
(Cl. D4—3)



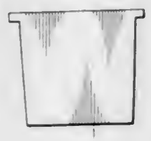
209,445
CHAIR
Glora Novak, New York, N.Y., assignor to Judith Novak, New York, N.Y.
Filed Jan. 20, 1966, Ser. No. 700
Term of patent 7 years
(Cl. D15—1)

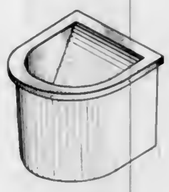


209,446
CHAIR
Maurice André Victor Delieuvin, 11 Rue Vernier, Paris 17, France
Filed July 7, 1966, Ser. No. 2,963
Claims priority, application France Jan. 13, 1966
Term of patent 14 years
(Cl. D15—11)

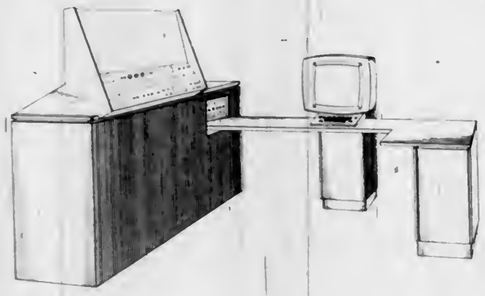


209,447
SAMPLE CONTAINER FOR LABORATORY TESTING APPARATUS
James F. Grimshaw, Rochester, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Filed June 27, 1966, Ser. No. 2,826
Term of patent 14 years
(Cl. D16—1)

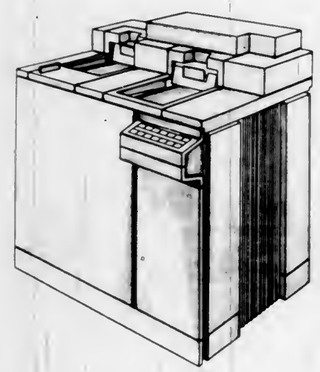




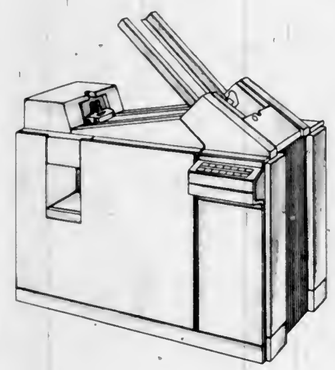
209,448
DATA PROCESSING CONSOLE
Walter S. McCormick, Jr., Poughkeepsie, William S. Sheppley, Jr., Rinebeck, and Joseph F. Talerico, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Nov. 14, 1966, Ser. No. 4,631
Term of patent 14 years
(Cl. D26—5)



209,449
CARD PUNCHING MACHINE
Ettore Sottsass, Jr., Milan, Italy, assignor to Societe Industrielle Bull-General Electric (Societe Anonyme), Paris, France
Filed Feb. 13, 1967, Ser. No. 5,777
Claims priority, application France Oct. 12, 1966
Term of patent 14 years
(Cl. D26—5)



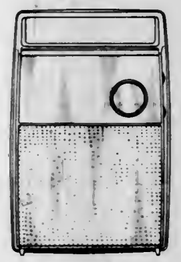
209,450
CARD READER
Ettore Sottsass, Jr., Milan, Italy, assignor to Societe Industrielle Bull-General Electric (Societe Anonyme), Paris, France
Filed Feb. 13, 1967, Ser. No. 5,779
Claims priority, application France Oct. 12, 1966
Term of patent 14 years
(Cl. D26—5)



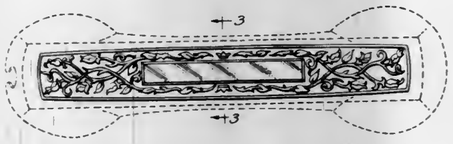
209,451
PENDANT CONTROL SWITCH HANDLE
Reginald A. Bates, Syracuse, N.Y., assignor to Pass & Seymour, Inc., Syracuse, N.Y., a corporation of New York
Filed May 23, 1966, Ser. No. 2,388
Term of patent 14 years
(Cl. D26—13)



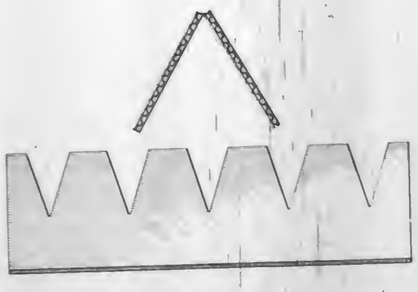
209,452
PORTABLE TAPE PLAYER HOUSING OR SIMILAR ARTICLE
Robert S. Schreibel, Tokyo, Japan, assignor to Playtape, Inc., New York, N.Y., a corporation of New York
Filed July 19, 1966, Ser. No. 3,130
Term of patent 14 years
(Cl. D26—14)



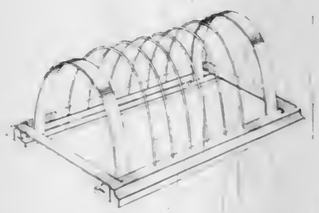
209,453
COVER FOR TELEPHONE HAND SET
James L. Hvale, River Forest, Ill., assignor to Swiss Harmony, Inc., Chicago, Ill., a corporation of Illinois
Filed May 23, 1967, Ser. No. 7,236
Term of patent 3½ years
(Cl. D26—14)



209,454
COMBUSTION SUPPORTING KINDLING
Peter K. Church, P.O. Box 234,
Cascade, Colo. 80809
Filed May 5, 1965, Ser. No. 85,125
Term of patent 14 years
(Cl. D32—1)



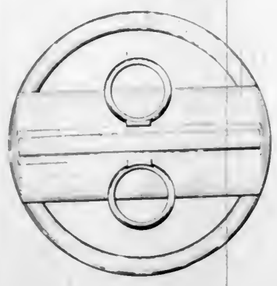
209,455
PHONOGRAPH RECORD HOLDER OR THE LIKE
Daniel C. Clark, 1949 Las Tunas Road,
Santa Barbara, Calif. 93103
Filed June 6, 1966, Ser. No. 2,582
Term of patent 14 years
(Cl. D33—10)



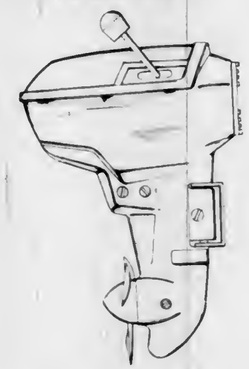
209,456
DIVER
Nicholas Tsarnas, 6910 Ave. U,
Brooklyn, N.Y. 11234
Filed June 14, 1966, Ser. No. 2,672
Term of patent 14 years
(Cl. D34—4)



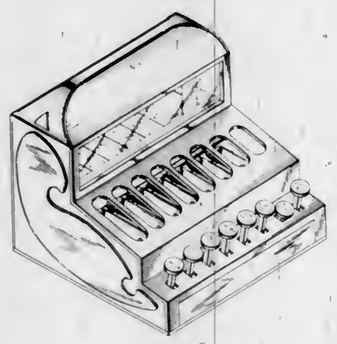
209,457
FLOATING GAME GOAL
Robert W. Wathen, Wortman Road,
Evansville, Ind. 47711
Filed Jan. 30, 1967, Ser. No. 5,604
Term of patent 14 years
(Cl. D34—5)



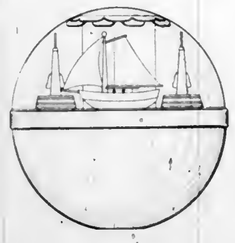
209,458
TOY OUTBOARD MOTOR
Viktor Schreckengost, Cleveland Heights, Ohio, assignor to The Murray Ohio Manufacturing Co., Nashville, Tenn., a corporation of Ohio
Filed June 22, 1966, Ser. No. 2,782
Term of patent 14 years
(Cl. D34—15)



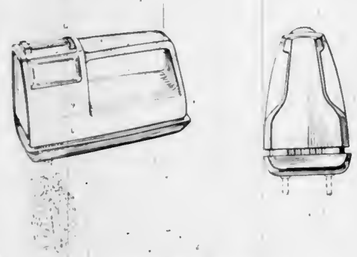
209,459
MUSICAL TOY
James W. Palmer, Erie, Pa., assignor to Louis Marx & Co., Inc., New York, N.Y., a corporation of New York
Filed Feb. 27, 1967, Ser. No. 5,947
Term of patent 7 years
(Cl. D34—15)



209,460
BALL TOY
Robert K. Ostrander, Jr., East Aurora, N.Y., assignor to Fisher-Price Toys, Inc., East Aurora, N.Y., a corporation of New York
Filed Feb. 28, 1967, Ser. No. 5,979
Term of patent 14 years
(Cl. D34—15)



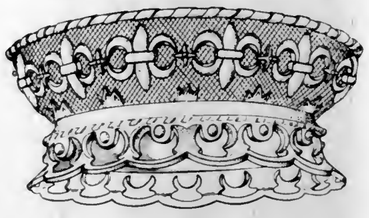
209,461
FOOD MIXER
Roy W. Clough, Chicago, Ill., assignor to Sears, Roebuck and Co., Chicago, Ill., a corporation of New York
Filed Feb. 16, 1967, Ser. No. 5,841
Term of patent 7 years
(Cl. D44—1)



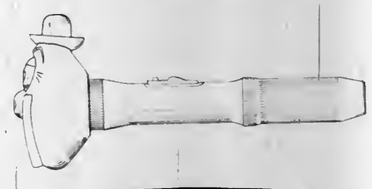
209,462
SUGAR BOWL OR SIMILAR ARTICLE
Frank J. Benes, Lancaster, Ohio, assignor to Anchor Hocking Glass Corporation, Lancaster, Ohio, a corporation of Delaware
Original design application Jan. 5, 1966, Ser. No. 468, now Patent No. 207,786, dated May 30, 1967. Divided and this application Dec. 5, 1966, Ser. No. 5,362
Term of patent 14 years
(Cl. D44—15)



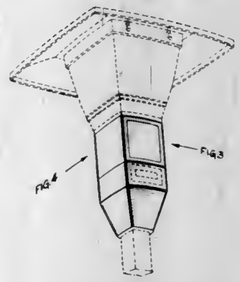
209,463
CEILING-MOUNTED LIGHT FIXTURE
Andrew L. Chako, Lancaster, Calif., assignor to Eagle Manufacturing Co., Industry, Calif., a corporation of California
Filed Oct. 21, 1966, Ser. No. 4,378
Term of patent 14 years
(Cl. D48—7)



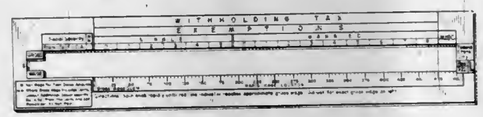
209,464
FLASHLIGHT
Harold E. Bortz, 321 Hutchinson Road,
Englewood, N.J. 07631
Filed June 12, 1967, Ser. No. 7,428
Term of patent 7 years
(Cl. D48—24)



209,465
BASE FOR POST TOP OUTDOOR LUMINAIRES
Bernard R. Stockwell, Sunbury, Ohio, assignor to Holophane Company, Inc., New York, N.Y., a corporation of Delaware
Filed Nov. 9, 1966, Ser. No. 4,591
Term of patent 14 years
(Cl. D48—31)



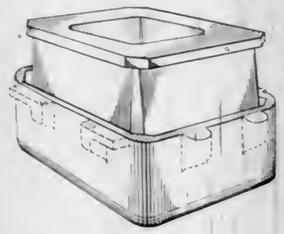
209,466
PAYROLL COMPUTER FACEPLATE
Walter Schaffer, 202—19 45th Drive,
Bayside, N.Y. 11361
Filed Jan. 26, 1967, Ser. No. 5,574
Term of patent 14 years
(Cl. D52—6)



209,467
SHOWER CURTAIN HOOK
James A. King, Orleans, Mass., assignor to Ames Shower Curtain Co., Inc., New York, N.Y., a corporation of New York
Filed Apr. 27, 1967, Ser. No. 6,855
Term of patent 14 years
(Cl. 54—1)



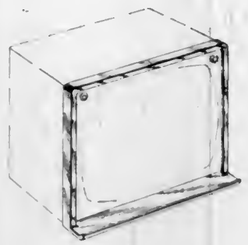
209,468
HOT TOP CASING
Fred Eastwood, Fairview Park, John Harry Brindle, Lakewood, and John Gardner, Cleveland, Ohio (all of P.O. Box 8728, Cleveland, Ohio 44135)
Filed July 20, 1965, Ser. No. 86,222
Term of patent 14 years
(Cl. D54—8)



209,469
FORK OR SIMILAR ARTICLE
James Russell Price, Esmond, R.I., assignor to Gorham Corporation, Providence, R.I.
Filed Feb. 17, 1967, Ser. No. 5,860
Term of patent 14 years
(Cl. D54—12)



209,470
PENCIL RACK ATTACHMENT FOR A TELEVISION CABINET OR SIMILAR ARTICLE
Charles D. Greenwald, 120 E. 81st St., New York, N.Y. 10028
Filed May 16, 1966, Ser. No. 2,315
Term of patent 14 years
(Cl. D56—4)



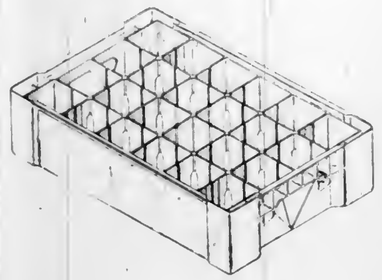
209,471
PAIR OF SPECTACLES
Robert H. Ramp, Pittsford, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Filed Jan. 3, 1967, Ser. No. 5,286
Term of patent 14 years
(Cl. D57—1)



209,472
PAIR OF SUN GLASSES
Jean R. Simon, Brighton, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York
Filed June 21, 1967, Ser. No. 7,535
Term of patent 14 years
(Cl. D57—1)



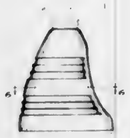
209,473
CASE FOR BEVERAGE CONTAINERS
James H. Versteeg, Middlesex, and Louis H. Peters, Somerville, N.J., assignors to Union Carbide Corporation, a corporation of New York
Filed Dec. 28, 1965, Ser. No. 350
Term of patent 14 years
(Cl. D58—5)



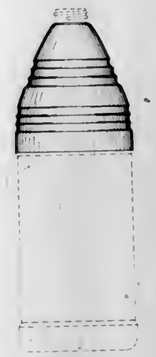
209,474
BOTTLE
Walter Stern, New Rochelle, N.Y., assignor to The Drackett Company, Cincinnati, Ohio, a corporation of Delaware
Filed Dec. 30, 1966, Ser. No. 5,248
Term of patent 14 years
(Cl. D58—6)



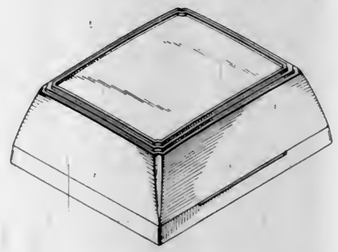
209,475
BOTTLE
Bertrand N. Trombley, Bloomfield Hills, and Richard C. Cross, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed June 13, 1966, Ser. No. 2,668
Term of patent 14 years
(Cl. D58—8)



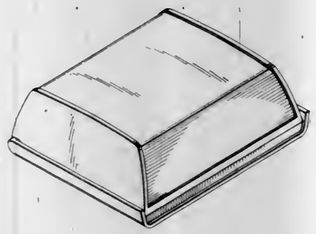
209,476
BOTTLE
Bertrand N. Trombley, Bloomfield Hills, and Richard C. Cross, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Original design application June 13, 1966, Ser. No. 2,668. Divided and this application Jan. 3, 1967, Ser. No. 5,284
Term of patent 14 years
(Cl. D58—8)



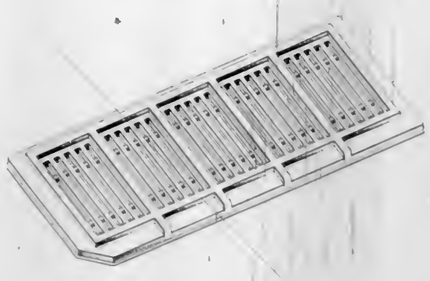
209,477
DISPLAY BOX
Samuel Braun, Rye, N.Y., assignor to B.C.N. Design Products, Inc., Amityville, Long Island, N.Y., a corporation of New York
Filed Jan. 9, 1967, Ser. No. 5,346
Term of patent 14 years
(Cl. D58—12.7)



209,478
DISPLAY BOX
Samuel Braun, Rye, N.Y., assignor to B.C.N. Design Products, Inc., Amityville, N.Y., a corporation of New York
Filed Jan. 9, 1967, Ser. No. 5,347
Term of patent 14 years
(Cl. D58—12.7)



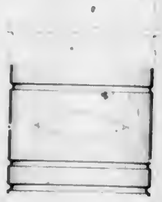
209,479
PACKAGING TRAY FOR SMALL CYLINDRICAL ARTICLES OR THE LIKE
Willard G. Cutler, Holyoke, Mass., assignor to The Electric Game Company, Holyoke, Mass., a corporation of Massachusetts
Filed May 23, 1966, Ser. No. 2,399
Term of patent 14 years
(Cl. D58—13)



209,480
CAN
Sydney J. Wallace, Stamford, Conn., assignor to American Can Company, New York, N.Y., a corporation of New Jersey
Filed June 27, 1966, Ser. No. 2,837
Term of patent 14 years
(Cl. D58—17)



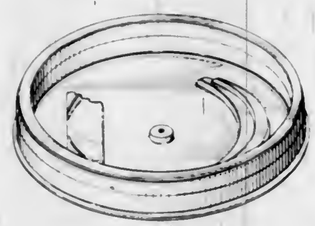
209,481
CONTAINER FOR OIL PRODUCTS OR THE LIKE
Richard C. Cross, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Original design application Feb. 2, 1966, Ser. No. 892. Divided and this application Dec. 21, 1966, Ser. No. 5,142
Term of patent 14 years
(Cl. D58—17)



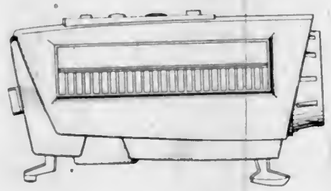
209,482
COMBINED JAR AND CLOSURE
Androus D. Noyes, Bronx, N.Y., assignor to General Foods Corporation, White Plains, N.Y., a corporation of Delaware
Filed May 5, 1966, Ser. No. 2,175
Term of patent 14 years
(Cl. D58—25)



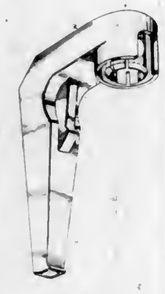
209,483
CLOSURE FOR AN INSULATED BEVERAGE CONTAINER OR THE LIKE
Alan I. W. Frank, Pittsburgh, Pa., assignor to The Alan I. W. Frank Corporation, O'Hara Township, Allegheny County, Pa., a corporation of Pennsylvania
Filed Dec. 12, 1966, Ser. No. 4,995
Term of patent 14 years
(Cl. D58—26)



209,484
MOTION PICTURE PROJECTOR
Tor Harry Petterson, San Pedro, Calif., assignor to Technicolor Corporation, Hollywood, Calif., a corporation of California
Filed Jan. 4, 1967, Ser. No. 5,311
Term of patent 14 years
(Cl. D61—1)



209,485
HOLDER FOR SPRAY CANS OR THE LIKE
Arthur Müller, Kalkbreitestrasse 40, Zurich, Switzerland
Filed Mar. 10, 1967, Ser. No. 6,160
Term of patent 14 years
(Cl. D62—2)



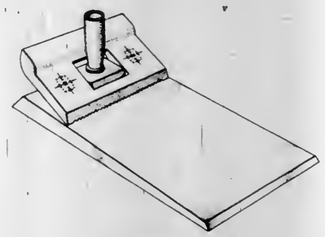
209,486
SHEET OF DISPLAY LETTERS FOR FORMING SIGNS OR THE LIKE
Richard W. Conner, 20 Cedar St., Millville, N.J. 08332
Filed Apr. 14, 1967, Ser. No. 6,699
Term of patent 14 years
(Cl. D64—12)



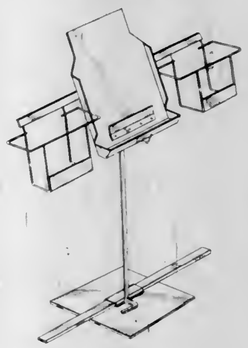
209,487
CANDLE
Lucius M. Crumrine, Jr., Burlingame, Calif., assignor to Bluegate Candle Company, Montara, Calif., a corporation of California
Filed July 5, 1966, Ser. No. 2,944
Term of patent 14 years
(Cl. D73—1)



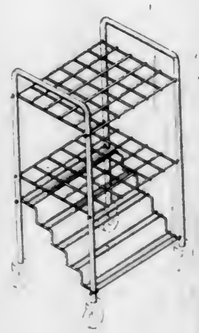
209,488
COMBINED CLIP BOARD AND PEN HOLDER OR THE LIKE
Noboru Wakai, Tokyo-to, Japan, assignor to Dai Nihon Bungu Kabushiki Kaisha, (also trading as the Japan Stationery Co., Ltd.), Tokyo, Japan, a corporation of Japan
Filed Sept. 13, 1966, Ser. No. 3,849
Term of patent 14 years
(Cl. D74—2)



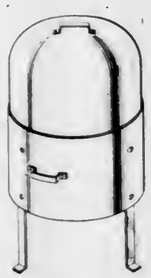
209,489
DISPLAY STAND
Max O. Cullen, 439 Clinton Place, River Forest, Ill. 60305
Filed Dec. 29, 1966, Ser. No. 5,220
Term of patent 3½ years
(Cl. D80—9)



209,490
COMBINATION STORAGE AND DISPLAY RACK OR THE LIKE
Kenneth William Baxter, Los Angeles, Calif.
(920 Airway, Glendale, Calif. 91201)
Filed Aug. 1, 1966, Ser. No. 3,278
Term of patent 14 years
(Cl. D80—10)



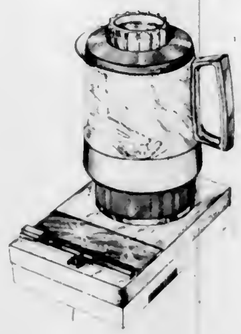
209,491
COMBINATION ROASTER AND BROILER
Benjamin C. Kostial, Houston, Tex., assignor to Texas National Manufacturing & Sales Company, Houston, Tex., a corporation of Texas
Filed Nov. 21, 1966, Ser. No. 4,761
Term of patent 14 years
(Cl. D81—10)



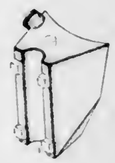
209,492
CHARCOAL GRILL
Myron M. Levin, Lincolnwood, Ill.
(4315 N. Lincoln Ave., Chicago, Ill. 60618)
Filed Feb. 28, 1967, Ser. No. 5,986
Term of patent 14 years
(Cl. D81—10)



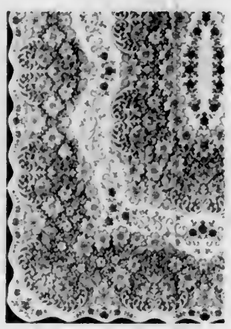
209,493
BLENDER
Robert C. Le Sueur, River Forest, Ronald W. Guttenberg, Hinsdale, and Marlan H. Polhemus, Chicago, Ill., assignors to Scovill Manufacturing Company, Waterbury, Conn., a corporation of Connecticut
Filed Apr. 18, 1967, Ser. No. 6,743
Term of patent 14 years
(Cl. D89—1)



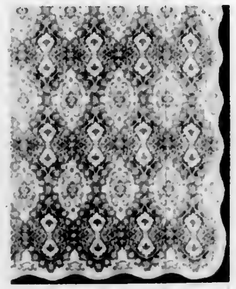
209,494
OIL TANK FOR MOTORCYCLE
Kenneth H. Watkins, Los Angeles, Calif.
(16053 Vanowen St., Van Nuys, Calif. 91406)
Filed Aug. 12, 1966, Ser. No. 3,450
Term of patent 14 years
(Cl. D90—8)



209,495
TABLECLOTH
Thomas William Binns, Huntingdon Valley, Pa., assignor to Quaker Lace Company, Philadelphia, Pa.
Filed Apr. 7, 1967, Ser. No. 6,565
Term of patent 14 years
(Cl. D92—26)



209,496
TABLECLOTH
Richard A. Fees, Ardsley, Pa., assignor to Quaker Lace Company, Philadelphia, Pa.
Filed Apr. 7, 1967, Ser. No. 6,566
Term of patent 7 years
(Cl. D92—26)



209,497
SAFETY POSTER
George Nelson, New York, N.Y., assignor to Howard Miller Clock Company, Zeeland, Mich., a corporation of Michigan
Filed July 7, 1966, Ser. No. 2,968
Term of patent 14 years
(Cl. D96—12)



LIST OF REISSUE PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 5TH DAY OF DECEMBER, 1967

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

Casco Products Corp.: *See*—
Horwitt, Laurence G. Re. 26,316.
Continental Can Co., Inc.: *See*—
Miller, William L. Re. 26,320.
Curtis, John C., and T. A. Parssinen, to Joy Mfg. Co. Dual rotation for rock drills. Re. 26,321, 12–5–67, Cl. 173—96.
Greenfield, Charles. Process and apparatus for dehydrating waste solids concentrates. Re. 26,317, 12–5–67, Cl. 159—17.
Horwitt, Laurence G., to Casco Products Corp. Electric cigar lighter. Re. 26,316, 12–5–67, Cl. 219—265.
Interlake Steel Corp.: *See*—
Rhea, Donald W. Re. 26,315.
Joy Mfg. Co.: *See*—
Curtis, John C., and Parssinen. Re. 26,321.
Miller, William L., to Continental Can Co., Inc. Non-spill vented closure for hot cups. Re. 26,320, 12–5–67, Cl. 220—44.
Parssinen, Toimi A.: *See*—
Curtis, John C., and Parssinen. Re. 26,321.
Polytop Corp.: *See*—
Wilson, Woodrow S. Re. 26,318.
Rhea, Donald W., to Interlake Steel Corp. Strapping machine control. Re. 26,315, 12–5–67, Cl. 100—4.
Sun Oil Co.: *See*—
Tamplen, Jack W. Re. 26,319.
Tamplen, Jack W., to Sun Oil Co. Flow control devices for flow conductors. Re. 26,319, 12–5–67, Cl. 166—115.
Wilson, Woodrow S., to Polytop Corp. Closure. Re. 26,318, 12–5–67, Cl. 222—512.

LIST OF PLANT PATENTEES

Lewis, Helen H.: *See*—
Lewis, Hubert B. and H. H. 2,782.
Lewis, Hubert B. Azalea plant. 2,781, 12–5–67, Cl. 56.
Lewis, Hubert B. and H. H. Azalea plant. 2,782, 12–5–67, Cl. 57.

LIST OF DESIGN PATENTEES

American Can Co.: *See*—
Wallace, Sydney J. 209,480.
Ames Shower Curtain Co., Inc.: *See*—.
King, James A. 209,467.
Anchor Hocking Glass Corp.: *See*—
Benes, Frank J. 209,462.
B.C.N. Design Products, Inc.: *See*—
Braun, Samuel. 209,477.
Braun, Samuel. 209,478.
Bates, Reginald A., to Pass & Seymour, Inc. Pendant control switch handle. 209,451, 12–5–67, Cl. D26—13.
Bausch & Lomb Inc.: *See*—
Grimshaw, James F. 209,447.
Ramp, Robert H. 209,471.
Simon, Jean R. 209,472.
Baxter, Kenneth W. Combination storage and display rack or the like. 209,490, 12–5–67, Cl. D80—10.
Benes, Frank J., to Anchor Hocking Glass Corp. Sugar bowl or similar article. 209,462, 12–5–67, Cl. D44—15.
Binns, Thomas W., to Quaker Lace Co. Tablecloth. 209,495, 12–5–67, Cl. D92—26.
Bluegate Candle Co.: *See*—
Crumrine, Lucius M., Jr. 209,487.
Bortz, Harold E. Flashlight. 209,464, 12–5–67, Cl. D48—24.
Braun, Samuel, to B.C.N. Design Products, Inc. Display box. 209,477, 12–5–67, Cl. D58—12.7.
Braun, Samuel, to B.C.N. Design Products, Inc. Display box. 209,478, 12–5–67, Cl. D58—12.7.
Brindle, John H.: *See*—
Eastwood, Fred, Brindle, and Gardner. 209,468.
Chako, Andrew L., to Eagle Mfg. Co. Ceiling-mounted light fixture. 209,463, 12–5–67, Cl. D48—7.
Church, Peter K. Combustion supporting kindling. 209,454, 12–5–67, Cl. D32—1.
Clark, Daniel C. Phonograph record holder or the like. 209,455, 12–5–67, Cl. D3—10.
Clough, Roy W., to Sears, Roebuck and Co. Food mixer. 209,461, 12–5–67, Cl. D44—1.
Conner, Richard W. Sheet of display letters for forming signs or the like. 209,486, 12–5–67, Cl. D64—12.
Cross, Richard C., to The Dow Chemical Co. Container for oil products or the like. 209,481, 12–5–67, Cl. D58—17.
Cross, Richard C.: *See*—
Trombley, Bertrand N., and Cross. 209,475.
Trombley, Bertrand N., and Cross. 209,476.
Crumrine, Lucius M., Jr., to Bluegate Candle Co. Candle. 209,487, 12–5–67, Cl. D73—1.
Cullen, Max O. Display stand. 209,489, 12–5–67, Cl. D80—9.
Cutler, Willard G., to The Electric Game Co. Packaging tray for small cylindrical articles or the like. 209,479, 12–5–67, Cl. D58—13.
Dai Nihon Bungu Kabushiki Kaisha (a/t/a the Japan Stationery Co., Ltd.): *See*—
Wakai, Noboru. 209,488.
Dearling, Harry S., to Hyman Eventoff, d/b/a Bathbee Co. Floating soap tray. 209,444, 12–5–67, Cl. D4—3.
Delleuvin, Maurice A. V. Chair. 209,446, 12–5–67, Cl. D15—11.
Dow Chemical Co., The: *See*—
Cross, Richard C. 209,481.
Trombley, Bertrand N., and Cross. 209,475.
Trombley, Bertrand N., and Cross. 209,476.
Drackett Co., The: *See*—
Stern, Walter. 209,474.
Eagle Mfg. Co.: *See*—
Chako, Andrew L. 209,463.
Eastwood, Fred, J. H. Brindle, and J. Gardner. Hot top casing. 209,468, 12–5–67, Cl. D54—8.
Electric Game Co., The: *See*—
Cutler, Willard G. 209,479.
Fees, Richard A., to Quaker Lace Co. Tablecloth. 209,496, 12–5–67, Cl. D92—26.
Fisher-Price Toys, Inc.: *See*—
Ostrander, Robert K., Jr. 209,460.
Frank, Alan I. W., to The Alan I. W. Frank Corp. Closure for an insulated beverage container or the like. 209,483, 12–5–67, Cl. D58—26.
Frank, Alan I. W., Corp., The: *See*—
Frank, Alan I. W. 209,483.
Gardner, John: *See*—
Eastwood, Fred, Brindle, and Gardner. 209,468.
General Foods Corp.: *See*—
Noyes, Androus D. 209,482.
Gorham Corp.: *See*—
Price, James R. 209,469.
Greenwald, Charles D. Pencil rack attachment for a television cabinet or similar article. 209,470, 12–5–67, Cl. D56—4.
Grimshaw, James F., to Bausch & Lomb Inc. Sample container for laboratory testing apparatus. 209,447, 12–5–67, Cl. D16—1.
Guttenberg, Ronald W.: *See*—
Le Sueur, Robert C., Guttenberg, and Polhemus. 209,493.
Holophane Co., Inc.: *See*—
Stockwell, Bernard R. 209,465.
Hvale, James L., to Swiss Harmony, Inc. Cover for telephone hand set. 209,453, 12–5–67, Cl. D26—14.
Hyman Eventoff, d/b/a Bathbee Co.: *See*—
Dearling, Harry S. 209,444.
International Business Machines Corp.: *See*—
McCormick, Walter S., Jr., Sheppley, and Talerico. 209,448.
King, James A., to Ames Shower Curtain Co., Inc. Shower curtain hook. 209,467, 12–5–67, Cl. D54—1.
Kostial, Benjamin C., to Texas National Mfg. & Sales Co. Combination roaster and broiler. 209,491, 12–5–67, Cl. D81—10.
Le Sueur, Robert C., R. W. Guttenberg, and M. H. Polhemus, to Scovill Mfg. Co. Blender. 209,493, 12–5–67, Cl. D89—1.
Levin, Myron M. Charcoal grill. 209,492, 12–5–67, Cl. D81—10.
Marx, Louis & Co., Inc.: *See*—
Palmer, James W. 209,459.
McCormick, Walter S., Jr., W. S. Sheppley, Jr., and J. F. Talerico, to International Business Machines Corp. Data processing console. 209,448, 12–5–67, Cl. D26—5.
Miller, Howard Clock Co.: *See*—
Nelson, George. 209,497.
Müller, Arthur. Holder for spray cans or the like. 209,485, 12–5–67, Cl. D62—2.
Murray Ohio Mfg. Co., The: *See*—
Schreckengost, Viktor. 209,458.
Nelson, George, to Howard Miller Clock Co. Safety poster. 209,497, 12–5–67, Cl. D96—12.

Novak, Glora, to J. Novak. Chair. 209,445, 12–5–67, Cl. D15—1.
Novak, Judith: *See*—
Novak, Glora. 209,445.
Noyes, Androus D., to General Foods Corp. Combined jar and closure. 209,482, 12–5–67, Cl. D58—25.
Ostrander, Robert K., Jr., to Fisher-Price Toys, Inc. Ball toy. 209,460, 12–5–67, Cl. D34—15.
Palmer, James W., to Louis Marx & Co., Inc. Musical toy. 209,459, 12–5–67, Cl. D34—15.
Pass & Seymour, Inc.: *See*—
Bates, Reginald A. 209,451.
Peters, Louis H.: *See*—
Versteeg, James H., and Peters. 209,473.
Petterson, Tor H., to Technicolor Corp. Motion picture projector. 209,484, 12–5–67, Cl. D61—1.
Playtape, Inc.: *See*—
Schreibel, Robert S. 209,452.
Polhemus, Marlan H.: *See*—
Le Sueur, Robert C., Guttenberg, and Polhemus. 209,493.
Price, James R., to Gorham Corp. Fork or similar article. 209,469, 12–5–67, Cl. D54—12.
Quaker Lace Co.: *See*—
Binns, Thomas W. 209,495.
Fees, Richard A. 209,496.
Ramp, Robert H., to Bausch & Lomb Inc. Pair of spectacles. 209,471, 12–5–67, Cl. D57—1.
Schaffer, Walter. Payroll computer faceplate. 209,466, 12–5–67, Cl. D52—6.
Schreckengost, Viktor, to The Murray Ohio Mfg. Co. Toy outboard motor. 209,458, 12–5–67, Cl. D34—15.
Schreibel, Robert S., to Playtape, Inc. Portable tape player housing or similar article. 209,452, 12–5–67, Cl. D26—14.
Scovill Mfg. Co.: *See*—
Le Sueur, Robert C., Guttenberg, and Polhemus. 209,493.
Sears, Roebuck and Co.: *See*—
Clough, Roy W. 209,461.
Sheppley, William S., Jr.: *See*—
McCormick, Walter S., Jr., Sheppley, and Talerico. 209,448.
Simon, Jean R., to Bausch & Lomb Inc. Pair of sun glasses. 209,472, 12–5–67, Cl. D57—1.
Societe Industrielle Bull-General Electric: *See*—
Sottsass, Ettore, Jr. 209,449.
Sottsass, Ettore, Jr. 209,450.
Sottsass, Ettore, Jr., to Societe Industrielle Bull-General Electric. Card punching machine. 209,449, 12–5–67, Cl. D26—5.
Sottsass, Ettore, Jr., to Societe Industrielle Bull-General Electric. Card reader. 209,450, 12–5–67, Cl. D26—5.
Stern, Walter, to The Drackett Co. Bottle. 209,474, 12–5–67, Cl. D58—6.
Stockwell, Bernard R., to Holophane Co., Inc. Base for post top outdoor luminaires. 209,465, 12–5–67, Cl. D48—31.
Swiss Harmony, Inc.: *See*—
Hvale, James L. 209,453.
Talerico, Joseph F.: *See*—
McCormick, Walter S., Jr., Sheppley, and Talerico. 209,448.
Technicolor Corp.: *See*—
Petterson, Tor H. 209,484.
Texas National Mfg. & Sales Co.: *See*—
Kostial, Benjamin C. 209,491.
Trombley, Bertrand N., and R. C. Cross, to The Dow Chemical Co. Bottle. 209,475, 12–5–67, Cl. D58—8.
Trombley, Bertrand N., and R. C. Cross, to The Dow Chemical Co. Bottle. 209,476, 12–5–67, Cl. D58—8.
Tsarnas, Nicholas. Diver. 209,456, 12–5–67, Cl. D34—4.
Union Carbide Corp.: *See*—
Versteeg, James H., and Peters. 209,473.
Versteeg, James H., and L. H. Peters, to Union Carbide Corp. Case for beverage containers. 209,473, 12–5–67, Cl. D58—5.
Wakai, Noboru, to Dai Nihon Bungu Kabushiki Kaisha (a/t/a The Japan Stationery Co., Ltd.). Combined clip board and pen holder or the like. 209,488, 12–5–67, Cl. D74—2.
Wallace, Sydney J., to American Can Co. Can. 209,480, 12–5–67, Cl. D58—17.
Wathen, Robert W. Floating game goal. 209,457, 12–5–67, Cl. D34—5.
Watkins, Kenneth H. Oil tank for motorcycle. 209,494, 12–5–67, Cl. D90—8.

LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 5TH DAY OF DECEMBER, 1967

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

ACF Industries, Inc.: *See*—
Rollins, Dallas W. 3,356,043.
AMP, Inc.: *See*—
Gillespie, James F. 3,356,987.
Roberts, Lincoln E. 3,356,980.
Sweeney, Joseph P. 3,357,010.
A.R.F. Products: *See*—
Pakan, John J. 3,356,971.
Abacus Engineering Ltd.: *See*—
Pratt, John W. 3,355,847.
Abler, Roger L., and J. R. Anderson, to Minnesota Mining and Mfg. Co. Universal sponge mop head. 3,355,844, 12–5–67, Cl. 51—400.
Abplanalp, Robert H. Ejector dispenser and fitment for puncture of hermetically sealed product container. 3,356,262, 12–5–67, Cl. 222—82.
Abraham, Allen D.: *See*—
Shelton, Stephen M., Poole, and Abraham. 3,356,491.
Accorsi, Frank J., to North American Aviation, Inc. Aircraft propulsion system. 3,356,152, 12–5–67, Cl. 170—135.74.
Achorn, George S.: *See*—
Rudner, Bernard, and Achorn. 3,356,670.
Ackermann, Karl, to Societe Des Accumulateurs Fixes et de Traction. Production of electrodes for alkaline storage batteries wherein active material is at least partially formed from the metals in said grid. 3,356,534, 12–5–67, Cl. 136—6.
Adams, Phillip N., to Mueller-Co. Method of making a pipe clamp device. 3,355,794, 12–5–67, Cl. 29—479.
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Bailey, Richard L., to United States of America, Air Force. Pipe or tube coupling device. 3,356,391, 12-5-67, Cl. 285—89.

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Simpson, Donald C., and Ballots. 3,356,009.

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Barr, Thomas A., Jr., R. F. Mayo, and T. G. Roberts, to United States of America, Army. Arc plasma generator with starter. 3,356,897, 12-5-67, Cl. 315—238.

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Bayes, Ronald C., and D. H. Sands, to The Ruberoid Co. Ltd., and Chemidus Plastics Ltd. Guttering. 3,355,895, 12-5-67, Cl. 61—14.

Beam, Paul E., Jr., to General Motors Corp. Closed loop heat exchanger for a gas turbine engine. 3,355,883, 12-5-67, Cl. 60—39.51.

Beaman, Alden G., R. Duschinsky, and W. P. Tautz, to Hoffmann-La Roche, Inc. 2-nitrobenzimidazoles. 3,356,685, 12-5-67, Cl. 260—309.2.

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Beard, Colin C., and A. D. Cross, to Syntex Corp. 1α,2α- and 6α,7α-dihalomethylene androstenes. 3,356,677, 12-5-67, Cl. 260—239.55.

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Beck, Albert F., to United States of America, National Aeronautics and Space Administration. Small plasma probe. 3,356,885, 12-5-67, Cl. 313—271.

Beck, Frederick F., to Honeywell Inc. Voltage sensing apparatus. 3,356,863, 12-5-67, Cl. 307—88.5.

Becker, Hans-Dieter, to General Electric Co. 2-[P-(phenylsulfonyl)phenyl]-1,3-indanedione and its tautomer. 3,356,732, 12-5-67, Cl. 260—590.

Becker, Walter W., to United States of America, Atomic Energy Commission. Glove port for dry box. 3,356,254, 12-5-67, Cl. 220—85.

Beckham, Rodney D., and C. H. Middlebrooks, to Monsanto Co. Separation process. 3,356,755, 12-5-67, Cl. 260—677.

Behney, Charles A. Ultrasonic energy coupling. 3,356,086, 12-5-67, Cl. 128—24.

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Beliaev, Karl I. G., to Aktiebolaget Atomenergi. Nuclear reactor pressure vessel and method of constructing same. 3,356,588, 12-5-67, Cl. 176—87.

Beljaev, Anatoly N., and I. S. Shilov. Apparatus for drying and hardening welding electrode coatings. 3,356,354, 12-5-67, Cl. 266—5.

Bell, Francis R., and I. P. Arthur, to United States of America, Atomic Energy Commission. Method and apparatus for containing radioactive fluid. 3,356,580, 12-5-67, Cl. 176—37.

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Berhold, Edwin D., and R. C. Kinsell, to The Garrett Corp. Air conditioning system with means for preventing the formation of ice. 3,355,905, 12-5-67, Cl. 62—150.

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Berry, Clyde A., to Pilot Research Corp. Boarding form for ladies' stockings. 3,356,272, 12-5-67, Cl. 223—75.

Berry, William B. Casing interliner with anchoring means. 3,356,144, 12-5-67, Cl. 166—208.

Berthmann, Adolf, C. Franze, and P. Lingens, to Dynamit Nobel A.G. Water-in-oil explosive emulsion containing nitro compound and solid explosive adjuvant. 3,356,547, 12-5-67, Cl. 149—51.

Berthmann, Adolf, and P. Lingens, to Dynamit Nobel Aktiengesellschaft. Safety mining explosive composition of nitric acid ester of a polyhydric alcohol and the ternary mixture of ammonium chloride, alkali metal nitrate, and alkaline earth metal carbonate. 3,356,548, 12-5-67, Cl. 149—66.

Bertioli, Michael M., and M. J. Wright, to Joseph Lucas (Industries) Ltd. Apparatus for varying an alternating current flowing in a load to control the value of a parameter such as the temperature of a furnace. 3,356,784, 12-5-67, Cl. 13—24.

Bertram, Leroy W. Self-locking heat-insulating female screw. 3,356,401, 12-5-67, Cl. 287—189.36.

Beswick, Paul R. Rotary motion intermitter. 3,355,956, 12-5-67, Cl. 74—84.

Betz, Donald A. Mount for photographs or the like. 3,355,828, 12-5-67, Cl. 40—152.1.

Beyard, Roger L., H. W. Johnson, and D. W. Erickson, to Lake Shore, Inc. Magnetic brake. 3,356,191, 12-5-67, Cl. 188—171.

Bidgood, William H. Trolley. 3,356,184, 12-5-67, Cl. 187—9.

Biello, Stephen J., and C. R. Marshall, to Sealol, Inc. Check valve. 3,356,103, 12-5-67, Cl. 137—515.5.

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Birk, Rudolf, to Agfa-Gevaert Aktiengesellschaft. Sealing means for rotary drum heat exchanger. 3,355,817, 12-5-67, Cl. 34—124.

Birmann, Rudolph. Turbocompressor system. 3,355,878, 12-5-67, Cl. 60—13.

Birmingham, Henry P., to United States of America, Navy. Collimated aircraft landing assist system. 3,355,941, 12-5-67, Cl. 73—178.

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Bitting, Franklin E.: *See*—
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Blaikie, Ernest R., to Lear Siegler, Inc. Mounting chassis for electrical components. 3,356,902, 12-5-67, Cl. 317—100.

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Short, Joe T. 3,356,049.

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Chambran, Jacques, to Pechiney Compagnie de Produits Chimiques et Electrometallurgiques. Metal ingots. 3,356,465, 12–5–67, Cl. 29—187.

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Suzuki, Shigeto. 3,356,593.

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Civrný, Ladislav, J. Havel, Z. Havránek, V. Pilecky, L. Svoboda, and V. Žestkov, to Vyzkumny Ustav Bavlnarsky. Yarn controlling apparatus. 3,355,868, 12–5–67, Cl. 57—58.95.

Clark, Gaylord J. Rotary brush construction. 3,355,758, 12–5–67, Cl. 15—181.

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Colclaser, Robert G., Jr., and F. L. Reese, to Westinghouse Electric Corp. Multi-break compressed-gas circuit interrupters with rotating gas-conducting bridging members. 3,356,809, 12–5–67, Cl. 200—148.

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Eisenmann, John L., and S. S. Alexander, to Ionics, Inc. Reinforced ion-exchange membranes. 3,356,607, 12–5–67, Cl. 204—301.

Elbling, Joseph, to Ing. C. Olivetti & C., S.p.A. Positioning numerical control device for machine tools and similar equipments. 3,356,994, 12–5–67, Cl. 340—172.5.

Electric Reduction Co. of Canada, Ltd.: *See*—
Tafler, George E. 3,356,447.

Electrical Fittings Corp.: *See*—
Goldsobel, Norman. 3,356,247.

Electro Scientific Industries, Inc.: *See*—
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Ellenburg, George W., to Westinghouse Electric Corp. Material working method and apparatus. 3,355,920, 12–5–67, Cl. 72—83.

Ellis, Charles D., and i. W. Hughes, to Battelle Memorial Institute. Smoking devices. 3,356,094, 12–5–67, Cl. 131—266.

Elmore, Ernest L.: *See*—
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Elsenheimer, Charles W. Locking slider for slide fasteners. 3,355,778, 12–5–67, Cl. 24—205.14.

Eltro G.m.b.H. & Co.: *See*—
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Elwood, Albert A., and R. I. Carlson. Crystal temperature and pressure transducer. 3,355,949, 12–5–67, Cl. 73—345.

Emele, Otto, to Seitz-Werke G.m.b.H. Arrangement for automatically displacing plates and frames, especially in filter presses. 3,356,217, 12–5–67, Cl. 210—143.

Emerson Electric Co.: *See*—
Janik, Anton J. 3,355,972.
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Cimerol, Joseph J., Clarke, and Denton. 3,356,728.

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Klein, Erich E., and Schwarz. 3,355,826.

Erickson, Don W.: *See*—
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Ernsberger, Fred M.: *See*—
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Esco Corp.: *See*—
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Esso Production Research Co.: *See*—
Carlton, Louis A., Rich, and Peters. 3,357,025.
Koonce, Kenneth T., Burkhardt, and Knapp. 3,355,899.

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Kuntz, Irving. 3,356,619.
McGlothlin, Quentin T. 3,356,515.
Moritz, Karsten H., and DeLany. 3,356,660.
Mirviss, Stanley B., and Skell. 3,356.720.
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Eubank, Franklin J., and D. E. Johnson, to Westinghouse Electric Corp. Multi-stage flash evaporator with recirculation of distillant. 3,356,592, 12–5–67, Cl. 203—11.

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Everman, Paul W. to United States of America, Navy. Absolute microwave refractometer. 3,356,941, 12–5–67, Cl. 324—58.5.

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FMC Corp.: *See*—
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Fairc Brothers & Co., Ltd.: *See*—
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Farah, Basil S., E. E. Gilbert, and J. A. Otto, to Allied Chemical Corp. Herbicidal composition and method. 3,356,485, 12–5–67, Cl. 71—122.

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Farrand, Clair L., to Inductosyn Corp. Position measuring transformer having coil winding for salient poles. 3,356,932, 12–5–67, Cl. 323—51.

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Favre, Francois, and P. Lienhard, to J. R. Geigy, A.G. Nonsulfonated mono azo amino pyrazole dyestuffs. 3,356,673, 12–5–67, Cl. 260—163.

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Fedorcv, Leonid I., to Zavod "Gomselmash." Method of, and device for, manufacturing profile articles, preferably gears and star wheels. 3,355,930, 12–5–67, Cl. 72—377.

Fee, Harry R., and J. D. Ferguson, to Hercules Inc. Inorganic oxidizer salt aqueous blasting compositions containing a nitroparaffin. 3,356,544, 12–5–67, Cl. 149—38.

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Ferguson, John D., to Hercules Inc. Aqueous slurry type nitrocarbonitrate blasting compositions containing flake aluminum-dinitrotoluene as the only sensitizer. 3,356,545, 12–5–67, Cl. 149—39.

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Ferris, Donald L., to United States of America, Navy. Blade fold adjustment and lock. 3,356,155, 12–5–67, Cl. 170—160.12.

Feyling, Anders F., to Geodyne Corp. Electrical instrument cable-supported apparatus. 3,356,787, 12–5–67, Cl. 174—70.

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Field, Sheldon B., and T. F. Bridges, to John J. McMullen Associates, Inc. Ship stabilizer. 3,356,060, 12–5–67, Cl. 114—125.

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First National Bank of Morgantown: *See*—
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Fitch, Frederick T., and J. G. Smith, W. R. Grace & Co. Preparation of a thoria sol by heating an aqueous solution of a thorium salt in an autoclave. 3,356,615, 12–5–67, Cl. 252—301.1.

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Fitts, Robert B.: *See*—
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Flarity, Warren H., to The Ryan Aeronautical Co. Phase comparison radio receiver. 3,356,950, 12–5–67, Cl. 325—420.

Fleischmann, Lester K. Writing materials holder for typewriter use. 3,356,201, 12–5–67, Cl. 197—135.

Fleming-Williams, Brian C., to Sylvania Thorn Colour Television Laboratories Ltd. Frequency-sensitive and photosensitive device. 3,356,850, 12–5–67, Cl. 250—211.

Flintoft, Trevor, to Lo-Dense Fixings (Rugby) Ltd. Nail. 3,355,978, 12–5–67, Cl. 85—29.

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Forehand, Joseph E., to United States of America, Army. Hinged spar flexible wing glider. 3,356,316, 12–5–67, Cl. 244—43.

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Foster, John V. Vibration measurement with coherent light. 3,355,934, 12–5–67, Cl. 73—71.3.

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Furukawa, Eiji, to Daido Yusoki Kabushiki Kaisha, and Hitachi Zosen Kabushiki Kaisha. Apparatus for the sidewise displacement of wheeled vehicles. 3,356,038, 12–5–67, Cl. 104—35.

Gaetner, Richard F., to General Electric Co. Process for purification of benzophenone tetracarboxylic dianhydride. 3,356,691, 12–5–67, Cl. 260—346.3.

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Galey, William F., to Pittsburgh Plate Glass Co. Method of controlling the thickness of float glass. 3,356,479, 12–5–67, Cl. 65—99.

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Gerow, Clare W., to E. I. du Pont de Nemours and Co. Composition comprising a polypyromellitimide and a fluoro carbon resin. 3,356,759, 12–5–67, Cl. 260—857.
Geske, Darel R., to The Mead Corp. Multiple tray drier. 3,355,814, 12–5–67, Cl. 34—22.
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Giger, Adolph J., to Bell Telephone Laboratories, Inc. Folded horn-reflector antenna structure. 3,357,022, 12–5–67, Cl. 343—762.
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Rich, Scott R. Mobile building with towing bracket and bracing system. 3,356,381, 12–5–67, Cl. 280—30.

Richardson, Wallace L., M. R. Barusch, and G. J. Kautsky, to Chevron Research Co. Gasoline composition containing phenyltrimethyllead. 3,356,472, 12–5–67, Cl. 44—69.

Richter, Sidney B., to Velsicol Chemical Corp. Method for the control of undesirable plant life. 3,356,484, 12–5–67, Cl. 71—87.

Richter, Sidney B., to Velsicol Chemical Corp. p-Phenylenedicarbomates. 3,356,713, 12–5–67, Cl. 260—479.

Richter, Sidney B., to Velsicol Chemical Corp. Methoxy chlorobenzyl alcohols. 3,356,737, 12–5–67, Cl. 260—613.

Rider, Henry A., Jr., to Westinghouse Electric Corp. Electric control device. 3,356,975, 12–5–67, Cl. 335—160.

Rieth, Harold F., to Packard-Bell Electronics Corp. Television receiving set tuning mechanism. 3,356,972, 12–5–67, Cl. 334—49.

Rigby, William H., Jr.: *See*—
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Riseman, John H., and D. S. Zagoroff, to Corning Glass Works. Valve system. 3,356,106, 12–5–67, Cl. 137—624.12.

Roberts, George S., to Ethyl Corp. Multiple-use storage vessel. 3,356,251, 12–5–67, Cl. 220—63.

Roberts, James E., and J. B. Wilson, to Union Carbide Corp. Vertical lime kiln. 3,356,351, 12–5–67, Cl. 263—30.

Roberts, Lincoln E., to AMP Inc. Temperature-sensing device. 3,356,980, 12–5–67, Cl. 338—28.

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Barr, Thomas A., Jr., Mayo, and Roberts. 3,356,897.

Robertson, H. H., Co.: *See*—
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Loukes, David G., and Robinson. 3,356,475.

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Robinson, Grover C., Jr., and B. Hondalus, to Reynolds Metals Co. Extruded composite conductor rails. 3,356,276, 12–5–67, Cl. 238—150.

Robinson, Leland P., to Friden, Inc. Printer having type dish rotatable in a plane parallel to the printing line. 3,356,199, 12–5–67, Cl. 197—54.

Robinson, Luther, and E. G. Roland. Engine oil conditioner and method of continuously reconditioning lubricating oil. 3,356,182, 12–5–67, Cl. 184—6.

Robson, Henry E., to The Bifurcated & Tubular Rivet Co., Ltd. Machine for assembling a pin and a component. 3,355,790, 12–5–67, Cl. 29—211.

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Karlby, Henning, and Lee. 3,355,947.
Mitchell, Walter G. 3,356,111.

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Sobeck, Harold R. 3,355,864.

Roedel, Hilmar, E. Siggel, L. Riehl, and W. Rein, to Vereinigte Glanzstoff-Fabriken AG. Diglycol terephthalate polyesters prepared by polycondensation in the presence of zinc hexafluorosilicate catalyst and optionally containing a manganese salt as a light stabilizing agent. 3,356,641, 12–5–67, Cl. 260—45.75.

Roemisch, Allen V. Highway marker device. 3,355,998, 12–5–67, Cl. 94—1.5.

Roeske, Eugene A., to Emerson Electric Co. Hydraulic circuit. 3,356,032. 12–5–67, Cl. 103—42.

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Rogers, Francis E., to E. I. du Pont de Nemours and Co. Polyamide-acids and polyimides from hexafluoropropylidine bridged diamine. 3,356,648, 12–5–67, Cl. 260—47.

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Poucher, Michael, and Bill. 3,355,884.
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Romberg, Edgar B., to North American Aviation, Inc. Accelerometer with digital readout. 3,355,952, 12–5–67, Cl. 73—503.

Roos, Eugene. Release means for kite structures. 3,356,322, 12–5–67, Cl. 244—155.

Root, George L., to Reynolds Metals Co. Shipping and dispensing container means and blanks therefor. 3,356,279, 12–5–67, Cl. 229—17.

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Rosen, Frank, to Dominion Electric Corp. Grill. 3,356,012, 12–5–67, Cl. 99—446.

Rosen, Milton K., and C. D. Mason, to Allied Chemical Corp. Process of polymerizing butene-1. 3,356,666, 12–5–67, Cl. 260—93.7.

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Eisenman, George, and Ross. 3,356,596.

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Ross, Wallace C. Aerodynamic sail construction. 3,356,059, 12–5–67, Cl. 114—103.

Rossetti, Lino. Electric heating means to remove and prevent formation of frost and mist on vehicle windscreens. 3,356,824, 12–5–67, Cl. 219—203.

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Rothe, William H. Cutting and scoring tool. 3,355,804, 12–5–67, Cl. 30—317.

Rottmann, Hans R., to Owens-Illinois Glass Co. Radiation sensitive apparatus for inspecting the bottom wall of hollow transparent containers. 3,356,853, 12–5–67, Cl. 250—223.

Rouzier, Michel M., and H. P. Marnat. Reed relay switching networks. 3,356,973, 12–5–67, Cl. 335—112.

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Rowe, Oliver R., and W. J. Dixon, to R. H. Bouligny, Inc. Screw anchor installing method and apparatus. 3,356,163, 12–5–67, Cl. 173—43.

Rowe, Robert G. Resonance vibration testing apparatus. 3,355,933, 12–5–67, Cl. 73—67.2.

Royal Industries, Inc.: *See*—
Chiapparelli, William, and Jungles. 3,356,874.

Ruberoid Co. Ltd., The, and Chemidus Plastics Ltd.: *See*—
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Rubinowicz, Etraim: *See*—
Mugnier, Georges, and Rubinowicz. 3,356,978.

Rubinstein, Sidney P., and H. Star, to Cutler-Hammer, Inc. Automatic size pre-set and automatic length adjustment system for cu-off machines and the like. 3,355,973, 12–5–67, Cl. 83—76.

Rudd, David W.: *See*—
Ballman, Albert A., Laudise, and Rudd. 3,356,463.

Rudner, Bernard, and G. S. Achorn, to Koppers Co., Inc. Polyolefin treatment. 3,356,670, 12–5–67, Cl. 260—94.9.

Ruger, William B., and L. L. Larson, to Sturm, Ruger & Co., Inc. Single shot drop breechblock rifle. 3,355,833, 12–5–67, Cl. 42—23.

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Ruminsky, Paul P., and H. C. Brauchla, ½ each to said Brauchla and J. D. Guernsey. Screw strip driving gun. 3,356,112, 12–5–67, Cl. 144—32.

Rupert, Robert, and N. C. Anderson, to Infrared Industries, Inc. Infrared detector mounted on thermoelectric cooling means and within a container of inert gas. 3,356,846, 12–5–67, Cl. 250—83.

Rusling, Robert B. Road or highway markers. 3,355,999, 12–5–67, Cl. 94—1.5.

Rusnak, Maurice, W. Miller and Peter, to said Rusnak, assor. to P. Miller and W. Miller. Condition-responsive system for inpressing distinctive frequency alarm tone on transmission line. 3,357,009, 12–5–67, Cl. 340—216.

Russell, Burdsall & Ward Bolt and Nut Co.: *See*—
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Russell, Norman E., to Aluminum Goods Ltd. Container and tear trip type lid therefor. 3,356,250, 12–5–67, Cl. 220—54.

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Russey, Edward S., and E. B. Duncan, to Borg-Warner Corp. Anti-rattle device for a torque transmitting mechaniam. 3,355,909, 12–5–67, Cl. 64—6.

Ruszczycky, Mark A., and W. A. Middleton, to United States of America, Navy. Mechanism for deflection of a contra-rotating propeller system. 3,356,150, 12–5–67, Cl. 170—135.26.

Rutter, John W., and E. M. Clausen, to General Electric Co. Method of making electrical heating elements. 3,355,802, 12–5–67, Cl. 29—614.

Ryan Aeronautical Co., The: *See*—
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Ryan, Daniel J., to FMC Corp. Apparatus for making thermoplastic films. 3,355,768, 12–5–67, Cl. 18—14.

Ryan, Thomas J., and I. P. Stapp, to American Electronic Laboratories, Inc. Method and apparatus for testing a transistor and selecting and identifying the unknown leads thereof. 3,356,945, 12–5–67, Cl. 324—158.

S.A.E.S. Getters S.p.A.: *See*—
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S.A.T.A.M.-Societe Anonyme Pour Tous Appareillages Mecaniques: *See*—
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SCM Corp.: *See*—
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Sachau, Helmuth H. Shelf supports. 3,356,328, 12–5–67, Cl. 248—245.

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Sak, August B., and E. A. Price. Modular construction and support means therefor. 3,356,403, 12–5–67, Cl. 287—189.36.

Sampson, William B., R. B. Britton, and P. G. Kruger, to United States of America, Atomic Energy Commission. Quadrupole magnet. 3,356,976, 12–5–67, Cl. 335—216.

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Sandler, Stanley R., K. C. Tsou, and J. E. Dannin, to The Borden Co. Plastic scintillators. 3,356,616, 12–5–67, Cl. 252—301.2.

Sands, David H.: *See*—
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Sankyo Co., Ltd.: *See*—
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Santo, Dominic C. Adjustable awning support. 3,356,329, 12–5–67, Cl. 248—275.

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Sarnecki, Wilhelm, A. Nuerrenbach, and W. Reif, to Badische Anilin-&Soda-Fabrik Aktiengesellschaft. Production of compounds of the axerophthylidene series. 3,356,700, 12–5–67, Cl. 260—410.9.

Sarnecki, Wilhelm, to Badische Anilin-&Soda Fabrik Aktiengesellschaft. Production in pure form of compounds of the carotenoid and vitamin-A series. 3,356,753, 12–5–67, Cl. 260—666.

Sarto, Jorma O.: *See*—
Clark, Robert E., and Sarto. 3,356,083.

Sato, Takeo. Oil indicator-magnetic filter apparatus. 3,356,216, 12–5–67, Cl. 210—94.

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Saunders, Alan C. A., to United Kingdom Atomic Energy Authority. Nuclear reactor fuel element assemblies. 3,356,582, 12–5–67, Cl. 176—41.

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Scaramucci, Domer. Gate valve and seal. 3,356,334, 12–5–67, Cl. 251—172.

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Scheuerer, Guenter, and H. Dickhaeuser, to Badische Anilin-& Soda-Fabrik Aktiengesellschaft. O,O-dialkylthionophosphoryl fatty acid chlorides. 3,356,717, 12–5–67, Cl. 260—941.

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Schindler, Walter, and H. Blattner, to Geigy Chemical Corp. Aminoalkyl-dibenzo-[b,f]thiepins and intermediates. 3,356,680, 12–5–67, Cl. 260—268.

Schleer, Hermann O., and K. Bornschein. Said Bornschein, assignor to said Schleer. Process and apparatus for soldering in the presence of hydrogen gas. 3,356,830, 12–5–67, Cl. 219—373.

Schloeman Aktiengesellschaft: *See*—
Pferdekämper, Hans. 3,355,921.

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Schmidt, Francis J., to General Electric Co. Electrodeposition monitor. 3,356,605, 12–5–67, Cl. 204—195.

Schmidt, Francis J., to General Electric Co. Method and apparatus for measuring electrofinishing stresses. 3,356,597, 12–5–67, Cl. 204—1.

Schmidt, Friedrich A. F. Cam controlled regulating device for an injection system operating on the distributor principle. 3,356,099. 12–5–67, Cl. 137—26.

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Anderko, Kurt, and Wittstock. 3,356,129.

Schmidt, Karl H.: *See*—
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Schnase, Adolph R., to Davidson Optronics, Inc. Camera-to-tripod connector. 3,356,325, 12–5–67, Cl. 248—187.

Schneider, Abraham, to Sun Oil Co. Conversion of non-bridgehead hydroxyadamantane compounds. 3,356,739, 12–5–67, Cl. 260—617.

Schneider, Abraham, to Sun Oil Co. Preparation of hydroxyalkyladamantanes. 3,356,740, 12–5–67, Cl. 260—617.

Schneider, Abraham, to Sun Oil Co. Preparation of dihydroxyalkyladamantanes. 3,356,741, 12–5–67, Cl. 260—617.

Schneider, Abraham, to Sun Oil Co. Preparation of methyladamantane and dimethyladamantanes. 3,356,751, 12–5–67, Cl. 260—666.

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Schramm, Buford J., and R. G. Everts, said Everts assignor to said Schramm. Rotor blade. 3,356,153, 12–5–67, Cl. 170—159.

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Schreyer, Kenneth D., to Lyon Metal Products, Inc. Typewriter shelf. 3,356,430, 12–5–67, Cl. 312—208.

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Schultz, Robert G., J. M. Schuck, and M. R. Ort, to Monsanto Co. Polymerization process and cobalt oxide on carbon catalyst therefor. 3,356,756, 12–5–67, Cl. 260—683.15.

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Scott, Joseph D., to Rohm & Haas Co. Aqueous blends of two water-insoluble polymers, one of which has 1 to 15% of a monomer containing an alcohol hydroxyl, amino, amido or ureido group. 3,356,627, 12–5–67, Cl. 260—29.6.

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Secretary of State for Defense in the Britannic Majesty's Government of the United Kingdom of Great Britain and Northern Ireland: *See*—
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Sedlmeyer, Joseph W., to United States of America, Atomic Energy Commission. Voltage stretch circuit. 3,356,961, 12–5–67, Cl. 330—69.

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Seeler, Henry W., deceased, G. A. Seeler, executrix. Breathing control valve and operator therefor. 3,356,100, 12–5–67, Cl. 137—102.

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Seim, Henry J., J. P. Murdock, and T. L. Larson, to Allis-Chalmers Mfg. Co. Fuel cell electrodes comprising mixtures of silver, nickel, molybdenum and nickel-phosphorus alloys and method of making same. 3,356,536, 12–5–67, Cl. 136—86.

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Sekamakas, Kazys, to DeSoto, Inc. Copolymers containing heterocyclic unsaturated amino alcohols. 3,356,653, 12–5–67, Cl. 260—78.5.

Sekamakas, Kazys, to DeSoto, Inc. Copolymers of hydroxy derivatives of cyclic unsaturated amino acids. 3,356,654, 12–5–67, Cl. 260—78.5.

Sekamakas, Kazys, to DeSoto, Inc. Copolymers of ethylenically unsaturated hydroxy-functional cyclic amines. 3,356,655, 12–5–67, Cl. 260—78.5.

Sendzimir, Tadeusz. Control of deflection in rolling mills and the like. 3,355,924, 12–5–67, Cl. 72—241.

Senft, James R., and M. M. Light, to Personal Service Mfg. Corp. Bi-metal motor. 3,355,880, 12–5–67, Cl. 60—23.

Sev, Alexandre, to CSF-Compagnie Generale de Telegraphie. Stabilized mixer oscillator for wide band television receiver. 3,356,952, 12–5–67, Cl. 325—459.

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CLASSIFICATION OF PATENTS

ISSUED DECEMBER 5, 1967

NOTE.—First number, class; second number, subclass; third number, patent number

2–338	3,355,744	33– 1	3,355,807	61– .5	3,355,892	75– 10	3,356,487	103– 42	3,356,032	136– 6	3,356,534
4–172	3,355,745	32	3,355,808		3,355,893	34	3,356,488	96	3,356,033	86	3,356,535
5–248	3,355,746	46	3,355,809	4	3,355,894	46	3,356,489	97	3,356,034		3,356,536
252	3,355,747	125	3,355,810	14	3,355,895	60	3,356,490	98	3,356,035	120	3,356,537
334	3,355,748	174	3,355,811	29	3,355,896	84	3,356,491	153	3,356,036		3,356,538
7– 14.1	3,355,749	34– 1	3,355,812	35	3,355,897	84.1	3,356,492	162	3,356,037	205	3,356,539
8– 3	3,356,443	16	3,355,813	45	3,355,898	134	3,356,493	104– 35	3,356,038	137– 26	3,356,099
21	3,356,444	22	3,355,814	46.5	3,355,899	141	3,356,494	130	3,356,039	102	3,356,100
54	3,356,445	48	3,355,815	62– 3	3,355,900	214	3,356,495		3,356,040	114	3,356,101
131	3,356,446	116	3,355,816	21	3,355,901	226	3,356,496	148	3,356,041	357	3,356,102
158	3,355,750	124	3,355,817	28	3,355,902	76– 107	3,355,969	105– 215	3,356,042	515.5	3,356,103
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10–141	3,355,752		3,355,819	151	3,355,904	82– 47	3,355,971	106– 53	3,356,579	556.3	3,356,105
12–142	3,355,753	18	3,355,820	156	3,355,905	82	3,355,972	55	3,356,513	624.12:	3,356,106
145	3,355,754	30	3,355,821	209	3,355,906	83– 76	3,355,973	65	3,356,514	625.46:	3,356,107
13– 24	3,356,784	44	3,355,822	229	3,355,907	171	3,355,974	84	3,356,515	138–143	3,356,108
15– 1.5	3,355,755	36– 7.6	3,355,823	244	3,355,908	411	3,355,975	146	3,356,516	139– 1	3,356,109
21	3,355,756	58.5	3,355,824	64– 6	3,355,909	84– 1.06:	3,355,976	148	3,356,517	140– 71	3,356,110
105	3,355,757	37– 42	3,355,825	14	3,355,910	85– 8.1	3,355,977	154	3,356,518	143– 36	3,356,111
181	3,355,758	40– 1.5	3,355,826	65– 26	3,356,474	29	3,355,978	187	3,356,519	144– 32	3,356,112
206	3,355,759	79	3,355,827		3,356,475	88– 2.6	3,355,979	307	3,356,520	34	3,356,113
246	3,355,760	152.1	3,355,828	27	3,356,476	14	3,355,980	107– 1	3,356,044	172	3,356,114
250.1	3,355,761	156	3,355,829	30	3,356,477		3,355,981	4	3,356,045	193	3,356,115
321	3,355,762	310	3,355,830	99	3,356,478		3,355,982	112– 61	3,356,046	326	3,356,116
18– 5	3,355,763	336	3,355,831		3,356,479	24	3,355,983	79	3,356,047	145– 71	3,356,117
12	3,355,764	42– 18	3,355,832	103	3,356,480		3,355,984		3,356,048	146– 72	3,356,118
	3,355,765	23	3,355,833	66– 84	3,355,911	89– 1.816	3,355,985		3,356,049	174	3,356,119
	3,355,766	57	3,355,834	86	3,355,912	24	3,355,986	97	3,356,050	148– 6.15:	3,356,540
	3,355,767	43– 6.5	3,355,835	67– 87	3,355,913	36	3,355,987	158	3,356,051	16.5	3,356,541
14	3,355,768	19	3,355,836	68– 23	3,355,914	45	3,355,988		3,356,052	32.5	3,356,542
	3,355,769	44– 6	3,356,469	70– 63	3,355,915	187	3,355,989	235	3,356,053	186	3,356,543
	3,355,770	10	3,356,470	314	3,355,916	90– 21	3,355,990	252	3,356,054	149– 38	3,356,544
30	3,355,771	69	3,356,471	456	3,355,917	24	3,355,991	114– 16	3,356,055	39	3,356,545
36	3,355,772		3,356,472	71– 9	3,356,481	91– 47	3,355,992	17	3,356,056	47	3,356,546
19–105	3,355,773	46– 17	3,355,837	11	3,356,482	171	3,355,993	27	3,356,057	51	3,356,547
106	3,355,774	78	3,355,838	66	3,356,483	412	3,355,994		3,356,058	66	3,356,548
159	3,355,775	51– 56	3,355,839	87	3,356,484	93– 1	3,355,995	103	3,356,059	150– .5	3,356,120
202	3,355,776	71	3,355,840	122	3,356,485	8	3,355,996	125	3,356,060	151– 21	3,356,121
23–106	3,356,447	94	3,355,841	126	3,356,486	35	3,355,997	117– 17	3,356,521	156– 3	3,356,549
109	3,356,448	135	3,355,842	72– 16	3,355,918	94– 1.5	3,355,998	33.3	3,356,522	22	3,356,550
110	3,356,449	309	3,356,473	51	3,355,919		3,355,999		3,356,523	49	3,356,551
112	3,356,450	397	3,355,843	83	3,355,920	95– 1.1	3,356,000	33.5	3,356,524	69	3,356,552
	3,356,451	400	3,355,844	171	3,355,921	11	3,356,001	46	3,356,525	117	3,356,553
145	3,356,452	52– 5	3,355,845	178	3,355,922	18	3,356,002	100	3,356,526	184	3,356,554
162	3,356,453	58	3,355,846	224	3,355,923	44	3,356,003	107.2	3,356,527	205	3,356,555
190	3,356,454	116	3,355,847	241	3,355,924	63	3,356,004		3,356,528	244	3,356,556
202	3,356,455	285	3,355,848	244	3,355,925	85	3,356,005	201	3,356,529	461	3,356,557
	3,356,456	396	3,355,849	245	3,355,926	96– 1	3,356,497	211	3,356,530	519	3,356,558
207.5	3,356,457	617	3,355,850	261	3,355,927		3,356,498	118– 2	3,356,061	158– 1.5	3,356,122
230	3,356,458	698	3,355,851	355	3,355,928		3,356,499	7	3,356,062	159– 16	3,356,123
270.5	3,356,459	725	3,355,852	367	3,355,929	36	3,356,500	35	3,356,063	17	RE.26,317
272	3,356,460	745	3,355,853	377	3,355,930	36.3	3,356,501	66	3,356,064		3,356,124
290.5	3,356,461	53– 28	3,355,854	404	3,355,931	50	3,356,502	107	3,356,065	49	3,356,125
292	3,356,462	75	3,355,855	73– 49.3	3,355,932	109	3,356,503	109	3,356,066	160– 62	3,356,126
301	3,356,463	76	3,355,856	67.2	3,355,933	98– 33	3,356,006	123	3,356,067	181	3,356,127
315	3,356,464	182	3,355,857	71.3	3,355,934	59	3,356,007	244	3,356,068	161– 5	3,356,559
24– 81	3,355,777	303	3,355,858	88.5	3,355,935	115	3,356,008	301	3,356,069		3,356,560
205.14:	3,355,778	55– 25	3,355,859		3,355,936		3,356,009		3,356,070	80	3,356,561
205.15:	3,355,779	31	3,355,860	100	3,355,937	99– 2	3,356,504	410	3,356,071	128	3,356,562
208	3,355,780	158	3,355,861	141	3,355,938	26	3,356,505	637	3,356,072	170	3,356,563
230	3,355,781	166	3,355,862	152	3,355,939	90	3,356,506	122– 7	3,356,159	162–155	3,356,564
265	3,355,782	276	3,355,863	170	3,355,940	139	3,356,507	379	3,356,073	199	3,356,565
25–142	3,355,783	443	3,355,864	178	3,355,941	142	3,356,508	406	3,356,074	164–127	3,356,128
28– 62	3,355,784	56–208	3,355,865		3,355,942	154	3,356,509	479	3,356,075	138	3,356,129
76	3,355,785	57– 31	3,355,866		3,355,943	182	3,356,510	480	3,356,076	233	3,356,130
29– 96	3,355,786	58.54:	3,355,867	194	3,355,944	193	3,356,511		3,356,077	314	3,356,131
149.5	3,355,787	58.95:	3,355,868	201	3,355,945	204	3,356,512		3,356,078	401	3,356,132
157.3	3,355,788		3,355,869	212	3,355,946	283	3,356,010	123– 11	3,356,079	165– 47	3,356,133
159.2	3,355,789	77.45:	3,355,870	230	3,355,947	289	3,356,011	48	3,356,080	49	3,356,134
187	3,356,465		3,355,871	290	3,355,948	446	3,356,012	102	3,356,081	159	3,356,135
191	3,356,466	157	3,355,872	345	3,355,949	100– 3	3,356,013		3,356,082	166– .5	3,356,136
194	3,356,467	58– 90	3,355,873	422	3,355,950	4	RE.26,315	117	3,356,083	3	3,356,137
195	3,356,468		3,355,874	503	3,355,951	35	3,356,014	198	3,356,084	9	3,356,138
211	3,355,790	91	3,355,875		3,355,952	95	3,356,015	126– 37	3,356,085	115	RE.26,319
227	3,355,791	59– 22	3,355,876	74– 5	3,355,953	97	3,356,016	127– 33	3,356,531	119	3,356,139
237	3,355,792	60– 13	3,355,877	5.34:	3,355,954	192	3,356,017	58	3,356,532	128	3,356,140
421	3,355,793		3,355,878	10.52:	3,355,955	208	3,356,018	128– 24	3,356,086	134	3,356,141
479	3,355,794		3,355,879	84	3,355,956	101– 39	3,356,019	172	3,356,087		3,356,142
481	3,355,795	23	3,355,880	87	3,355,957	44	3,356,020	188	3,356,088	176	3,356,143
528	3,355,796	24	3,355,881	353	3,355,958	93	3,356,021	221	3,356,089	208	3,356,144
568	3,355,797		3,355,882	424.8	3,355,959	97	3,356,022	280	3,356,090	224	3,356,145
	3,355,798	39.51:	3,355,883	471	3,355,960	128.3	3,356,023	286	3,356,091	241	3,356,146
	3,355,799	39.74:	3,355,884	473	3,355,961	452	3,356,030	287	3,356,092		3,356,147
	3,355,800	39.82:	3,355,885	493	3,355,962	102– 28	3,356,024	349	3,356,093	167– 22	3,356,566
598	3,355,801	53	3,355,886	501	3,355,963	39	3,356,025	131–266	3,356,094	30	3,356,567
614	3,355,802	54.6	3,355,887	504	3,355,964	70.2	3,356,026	132– 84	3,356,095	53	3,356,568
30– 91.1	3,355,803	223	3,355,888	532	3,355,965	76	3,356,027	134– 58	3,356,096	55	3,356,569
317	3,355,804	228	3,355,889	688	3,355,966	79	3,356,028	112	3,356,097	58	3,356,570
31– 46	3,355,805	262	3,355,890		3,355,967	92	3,356,029	135– 1	3,356,098	65	3,356,571
33– 1	3,355,806	270	3,355,891	826	3,355,968	103– 2	3,356,031	136– 6	3,356,533		3,356,572

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41 : 3,355,876
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47 : 3,356,706	48 : 3,356,140	48 : 3,356,710	50 : 3,356,911	53 : 3,356,511	55 : 3,355,970
3,356,776	3,356,142	3,356,750	51 : 3,356,160	3,356,704	3,356,128
48 : Re.26,319	3,356,143	3,356,786	3,356,276	3,356,744	3,356,172
3,355,755	3,356,145	3,356,898	3,356,316	54 : 3,356,068	3,356,241
3,355,776	3,356,146	3,356,926	3,356,462	3,356,144	3,356,249
3,355,788	3,356,170	3,356,938	3,356,549	3,356,650	3,356,261
3,355,899	3,356,177	3,356,940	3,356,789	3,356,705	3,356,266
3,355,908	3,356,178	3,356,990	3,356,829	3,356,743	3,356,358
3,355,938	3,356,341	3,357,001	53 : 3,355,965	3,356,752	3,356,413
3,355,946	3,356,389	3,357,025	3,356,017	55 : 3,355,797	3,356,431
3,355,961	3,356,515	49 : 3,355,853	3,356,227	3,355,798	3,356,535
3,356,080	3,356,520	3,356,595	3,356,301	3,355,800	3,356,536
3,356,102	3,356,583	3,356,596	3,356,370	3,355,805	3,356,922
3,356,104	3,356,629	50 : 3,356,089	3,356,427	3,355,816	3,356,974
3,356,139	3,356,659				

Design Patents

6 : 209,455	17 : 209,453	26 : 209,475	36 : 209,447	36 : 209,472	39 : 209,465
209,463	209,461	209,476	209,448	209,474	209,468
209,484	209,489	209,481	209,451	209,477	42 : 209,459
209,487	209,492	34 : 209,464	209,456	209,478	209,483
209,490	209,493	209,473	209,460	209,482	209,495
209,494	18 : 209,457	209,486	209,466	209,497	209,496
8 : 209,454	25 : 209,467	36 : 209,444	209,470	39 : 209,458	44 : 209,469
9 : 209,480	209,479	209,445	209,471	209,462	48 : 209,491

Plant Patents

6 : 2,781	6 : 2,782

U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

December 5, 1967 Volume 845 Number 1

TRADEMARKS

NOTICES

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 318,900 (ROMA), Battista Cella, doing business as Roma Wine Company, Schenley Industries, Inc., Wines; **Reg. No. 422,161**, same, Roma Wine Company, Schenley Industries, Inc., Wines, **filed** June 2, 1965, D.C.N.J. (Newark), Doc. C585–65, *Schenley Industries, Inc. and Schenley Distillers Inc.* v. *Rex Vinegar Co., Inc. and Vincent B. Acrelesimo.* Order of dismissal, June 2, 1965.

Reg. No. 378,389 (WHO'S WHO IN AMERICA), A. N. Marquis Company, Marquis-Who's Who, Inc., Publications in the nature of a directory published approximately once every two years; **Reg. No. 508,802** (WHO'S WHO IN COMMERCE AND INDUSTRY), A. N. Marquis Company, Publications in the nature of a directory published from time to time; **Reg. No. 696,101** (WHO'S WHO IN THE EAST), Marquis-Who's Who, Inc., Publications in the nature of a directory published from time to time; **Reg. No. 696,099** (WHO'S WHO IN THE MIDWEST), Marquis-Who's Who, Inc., Publications in the nature of a directory published from time to time; **Reg. No. 696,100** (WHO'S WHO IN THE WEST), Marquis-Who's Who, Inc., Publications in the nature of a directory published from time to time; **Reg. No. 696,098** (WHO'S WHO IN THE SOUTH AND SOUTHWEST), Marquis-Who's Who, Inc., Publications in the nature of a directory published from time to time; **Reg. No. 729,754** (WHO'S WHO OF AMERICAN WOMEN), Marquis-Who's Who, Inc., Publications in the nature of a directory published from time to time, **filed** Sept. 13, 1967, D.C., N.D. Ill. (Chicago), Doc. 67c1574, *Marquis-Who's Who, Inc.* v. *Historical Record Association, Inc.*

Reg. No. 422,161. (See Reg. No. 318,900.)

Reg. No. 508,802. (See Reg. No. 378,389.)

Reg. No. 554,811 (DACRON), E. I. du Pont de Nemours and Company, Synthetic polyester fibers for generalized use in the industrial arts; **Reg. No. 555,085**, same, Yarns of synthetic fibers, **filed** Sept. 12, 1967, D.C., S.D.N.Y., Doc. 67–C–3489, *E. I. du Pont de Nemours and Company* v. *Zary Fashions, Inc.*

Reg. No. 555,085. (See Reg. No. 554,811.)

Reg. No. 592,888 (PELLON AND DESIGN), Pellon Corporation, Sheet or roll made of coated and bonded staples for use as lamination, reinforcement, interfacing or backing for furniture covers, articles of clothing, transmission belts, filters, electronic sealing, and furnishings; **Reg. No. 594,573** (PELLON), same, Non-woven fabric for use as an interlining for clothing and for stiffening purposes in relation to other fabrics; **Reg. No. 599,211**, same, Non-woven fabric for use as an interlining for clothing and for stiffening purposes in relation to other fabrics, and as lamination, reinforcement, interfacing, or backing for furniture covers, transmission belts, filters, and electronic sealings and furnishings, **filed**

CONDITION OF TRADEMARK APPLICATIONS AS OF OCTOBER 31, 1967

Total number of applications awaiting action [excluding renewals and Sec. 12 (c)]	17,038
Date of oldest new application	Dec. 13, 1966
Date of oldest amended application (filing date)	Oct. 21, 1964

C. M. WENDT, Director, Trademark Examining Operation

TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application: New	Oldest Application: Amended
(I) L. J. BETTENDORF, Classes 2, 3, 4, 5, 7, 9, 10, 11, 27, 28, 30, 32, 33, 37, 38, 39, 40, 41, 42, 43, 50; Certification Marks, Classes A and B	1-16-67	1-11-66
(II) F. H. WETHERBEE, Classes 1, 6, 15, 18, 45, 46, 47, 48, 49, 51, 52; Collective Membership Mark, Class 200	1-18-67	11-1-65
(III) P. S. BALL, Classes 19, 21, 23, 26, 31, 34, 35, 36	12-13-66	4-16-65
(IV) M. E. ABRAMSON, Classes 8, 12, 13, 14, 16, 17, 20, 22, 24, 25, 29, 44; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, and 107	12-19-66	10-21-64
Renewals (All Classes)	10-16-67	----------
Sec. 12(c) Publications (All Classes)	10-16-67	----------

Applications filed during the month of October 1967—2,473

Registrations Issued ---------- 443—No. 839,778 to No. 840,220
Renewals Issued ---------- 70

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, $12.00 per annum, foreign mailing $4.00 additional; single copies, 25 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 20 cents each. Address orders to the Commissioner of Patents, Washington, D.C., 20231.

Mar. 14, 1966, D.C., S.D.N.Y., Doc. 66–C–727, *Pellon Corp.* v. *Sally Gee, Inc.* Filed judgment against plaintiff Pellon Corporation, dismissing the action, Sept. 14, 1967.

Reg. No. 594,573. (See Reg. No. 592,888.)

Reg. No. 599,211. (See Reg. No. 592,888.)

Reg. No. 696,098. (See Reg. No. 378,389.)

Reg. No. 696,099. (See Reg. No. 378,389.)

Reg. No. 696,100. (See Reg. No. 378,389.)

Reg. No. 696,101. (See Reg. No. 378,389.)

Reg. No. 729,754. (See Reg. No. 378,389.)

Reg. No. 784,934 (JADE EAST), Swank, Inc., Cologne, after-shave lotion and deodorant; **Reg. No. 791,153,** same, Men's toiletries—namely, talcum powder and shaving cream, **filed** Aug. 25, 1967, D.C., C.D. Calif. (Los Angeles), Doc. 67–1263–EC, *Swank, Inc.* v. *United of California, Inc., and Saxony Products, Inc.* **Same, filed** Sept. 26, 1967, D.C., S.D.N.Y., Doc. 67–C–3726, *Swank, Inc.* v. *Norman Levy, doing business as Global Imports et al.*

Reg. No. 791,153. (See Reg. No. 784,934.)

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 228,300. Bölkow Gesellschaft mit beschrankter Haftung, Ottobrunn, near Munich, Germany. Filed Sept. 22, 1965.

BÖLKOW

Priority claimed under Sec. 44(d) on German application filed Apr. 3, 1965; Reg. No. 808,874, dated Aug. 27, 1965. Owner of U.S. Reg. Nos. 732,398, 743,381, and others.

Class 9—Explosives, Firearms, Equipments, and Projectiles

For Missiles.

Class 19—Vehicles

For Aircraft—Namely, Engine-Driven Airplanes, Sailplanes and Gliders, Fixed-Wing Aircraft and Rotary-Wing Aircraft Including Helicopters; Flying Bodies—Namely, Pilotless Aircraft, Including Remote-Controlled Aircraft With Reaction Drive, Vertical Take-Off Aircraft, Convertible Aircraft; Satellites, Spacecraft, Controllable Spacecraft, Space Probes, Take-Off and Landing Gears for Aircraft, Undercarriages, Transport Vehicles and Auxiliary Vehicles for Aircraft; Shock Absorbers and Springs, Including Those Made of Glass Fiber Reinforced Synthetic Materials for Air- and Spacecraft; Re-Entry Bodies for Absorption of Frictional Heat for Spacecraft; Parachutes; Runners for Bob Sleds, Sleighs and Ski Sleighs, Sport Boats and Their Parts, Oars, and Masts.

Class 26—Measuring and Scientific Appliances

For Data Acquisition Systems; Digital to Analog Converters; Analog to Digital Converters; Precision Voltage Sources; Differential Voltmeters; Analog to Digital Multiplexers; Data Distributors; Seismic Recording Systems; Logging Systems; Sample and Hold Systems; Digital Computer Circuits; Analog Computer Circuits; and Counters.

First use November 1962.

SN 240,289. Fränkische Pelzindustrie, Märkle & Co., Furth, Bavaria, Germany. Filed Mar. 7, 1966.

ROYAL DARK

The word "Dark" is disclaimed apart from the mark as shown, all common law rights for the word being reserved. Owner of German Reg. No. 796,751, dated Nov. 11, 1964.

Class 1—Raw or Partly Prepared Materials

For Dressed and Dyed Fur Skins.

Class 39—Clothing

For Wearing Apparel—Namely, Fur Coats, Fur Jackets, Fur Stoles, Fur Capes, Fur Hats, Fur-Trimmed Coats, Fur Dresses, and Fur Pants.

First use November 1963; in commerce November 1963.

SN 242,532. Redcor Corporation, Canoga Park, Calif. Filed Apr. 4, 1966.

RC

Class 21—Electrical Apparatus, Machines, and Supplies

For Buffer Amplifier Assemblies; Tape Format Sequencers; Amplifiers; Differential Amplifiers; Circuit Boards Containing Electronic and Electrical Components; Power Supplies; Transformers; Resistors; Capacitors; Inductors; Diodes; Transistors; and Filters.

First use Mar. 30, 1962.

SN 242,533. Redcor Corporation, Canoga Park, Calif. Filed Apr. 4, 1966.

REDCOR

Class 21—Electrical Apparatus, Machines, and Supplies

For Buffer Amplifier Assemblies; Tape Format Sequencers; Amplifiers; Differential Amplifiers; Circuit Boards Containing Electronic and Electrical Components; Power Supplies; Transformers; Resistors; Capacitors; Inductors; Transistors; Diodes; and Filters.

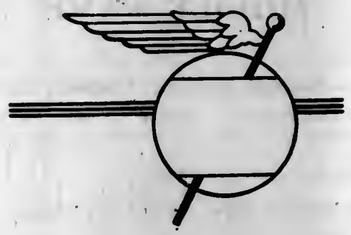
First use 1957.

Class 26—Measuring and Scientific Appliances

For Data Acquisition Systems; Digital to Analog Converters; Analog to Digital Converters; Precision Voltage Sources; Differential Voltmeters; Analog to Digital Multiplexers; Data Distributors; Seismic Recording Systems; Logging Systems; Sample and Hold Systems; Digital Computer Circuits; Analog Computer Circuits; and Counters.

First use November 1962.

SN 242,701. Afco Electronics, Inc., Oakland, Calif. Filed Apr. 5, 1966.



Class 21—Electrical Apparatus, Machines, and Supplies

For Radios, Transistor Radios, Transceivers, Closed System Circuit Television Systems, and Batteries; Parts and Accessories for Said Products—Namely, Loud Speakers, Earphones, Antennas, Transistors, Micro Motors, Microphones, Adapters for A.C. Lines and Auto Cigarette Lighters, On-And-Off and Remote Control Switches, and Cabinets, Carrying Cases, and Straps Sold as Units With Said Products.

First use in or about September 1958.

Class 36—Musical Instruments and Supplies

For Transistor Tape Recorders, and Parts and Accessories for Said Products—Namely, Tapes and Reels; and Microphones, Batteries, Earphones, Adapters for A.C. Lines and

Auto Cigarette Lighters, On-and-Off and Remote Control Switches, Cabinets and Carrying Cases Sold as Units With Said Products.
First use in or about April 1960.

SN 247,173. Allied Farm Equipment, Inc., Chicago, Ill. Filed June 3, 1966.

ALLIED

Class 19—Vehicles

For Farm Wagons.
First use about November 1965.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Farm Equipment—Namely, Harrows, Harrow Drawbars, Cultivators, Auger Conveyors for Grain, Bale Conveyors and Loaders, Bale Stookers, and Bale Lifting Forks, and Parts Thereof.
First use about Oct. 14, 1965.

Class 101—Advertising and Business

For Wholesale Farm Equipment Distribution Services—Namely, Distribution of Harrows, Harrow Drawbars, Cultivators, Auger Conveyors for Grain, Bale Conveyors and Loaders, Bale Stookers, Bale Lifting Forks, Crop Handling Conveyors, Hay Cutters, Straw Shoppers, Windrowers, Windrow Pickups, Grain Dryers, Grain Storage Bins, Feedmakers, Cattle Oilers, and Field Sprayers, and Parts Thereof.
First use about April 1965.

SN 252,306. Rosemount Engineering Company, Minneapolis, Minn. Filed Aug. 15, 1966.

ENGINEERING IS OUR MIDDLE NAME

Class 21—Electrical Apparatus, Machines, and Supplies

For Electric Resistance Heating Elements for Aerospace and Industrial Applications, and Power Supplies for Instruments.
First use on or about Apr. 16, 1966.

Class 22—Games, Toys, and Sporting Goods

For Ski Boots.
First use Nov. 24, 1965.

Class 26—Measuring and Scientific Appliances

For Aircraft Instruments Including Total Temperature Sensors, Pitot and Pitot-Static Tubes, Flight Angle Sensors, Stall Warning Systems, and Ice Detectors; Temperature Sensors Including Standard Thermometers, Immersion Temperature Sensors, and Surface Temperature Sensors; Pressure Sensors; Mass Flow Sensors; Resistance Bridges and Components Therefor for Use With Measuring Devices; Devices for Calibrating Pressure Sensors and Temperature Sensors and Vibration Isolation Tables.
First use on or about Apr. 16, 1966.

Class 39—Clothing

For Insoles for Shoes and Boots.
First use on or about Aug. 1, 1965.

SN 256,027. Night-Eye, Incorporated, Iowa City, Iowa. Filed Oct. 10, 1966.

NIGHT EYE

Class 21—Electrical Apparatus, Machines, and Supplies

For Electric Automatic Building Alarms.
First use on or about Mar. 9, 1963.

Class 103—Construction and Repair

For Services of Installing and Maintaining Automatic Alarm Warning Systems and Devices.
First use during November 1962.

SN 257,807. Vision Electronics, Inc., San Antonio, Tex. Filed Nov. 2, 1966.

VISION

Class 21—Electrical Apparatus, Machines, and Supplies

For Radios.

Class 36—Musical Instruments and Supplies

For Record Players and Tape Recorders.

First use on or about July 1, 1960.

SN 257,809. Cities Service Oil Company, Tulsa, Okla. Filed Nov. 3, 1966.

CITGO

The drawing is lined for the colors orange and red. Owner of Reg. Nos. 764,543, 811,941, and others.

Class 6—Chemicals and Chemical Compositions

For Antifreeze, Rust Inhibitor, Solvent, and Liquefied Petroleum Gas.

Class 15—Oils and Greases

For Gasolene, Lubricating Oils, Petroleum Wax, Automatic Transmission Fluid, Penetrating Oil, Grease, Cutting Oil, and Mold Release Oil.

Class 102—Insurance and Financial

For Retail Credit Services.

Class 103—Construction and Repair

For Automobile Service Station Services.

First use at least as early as May 17, 1965.

SN 260,135. Horst Wolfgang Bentz, d.b.a. Melitta-Werke Bentz & Sohn, Minden, Westphalia, Germany. Filed Dec. 6, 1966.

MELITTA 1X4

Owner of U.S. Reg. Nos. 624,591, 817,374, and others; and German Reg. No. 813,255, dated Oct. 22, 1965.

Class 30—Crockery, Earthenware, and Porcelain

For Filter-Type Coffeemakers and Coffeepots Made of Crockery, Earthenware, and Porcelain.

Class 31—Filters and Refrigerators

For Filters for Coffeemakers and Filterpaper Therefor.

Class 33—Glassware

For Filter-Type Coffeemakers and Coffeepots Made of Glass.

SN 260,136. Horst Wolfgang Bentz, d.b.a. Melitta-Werke Bentz & Sohn, Minden, Westphalia, Germany. Filed Dec. 6, 1966.

MELITTA 1X10

Owner of U.S. Reg. Nos. 624,591, 817,374, and others; and German Reg. No. 813,090, dated July 8, 1964.

Class 30—Crockery, Earthenware, and Porcelain

For Filter-Type Coffeemakers and Coffeepots Made of Crockery, Earthenware, and Porcelain.

Class 31—Filters and Refrigerators

For Filters for Coffeemakers and Filterpaper Therefor.

Class 33—Glassware

For Filter-Type Coffeemakers and Coffeepots Made of Glass.

SN 262,078. Ace Hi Modern Furniture, Inc., Gardena, Calif. Filed Jan. 9, 1967.

Prelude

Class 16—Protective and Decorative Coatings

For Canned Wood Finishes.

Class 32—Furniture and Upholstery

For Solid Hardwood Furniture (Case Goods, No Upholstery)—Namely, Dining Room, Bedroom, Desks, Coffee Tables, End Tables, and Cabinets for Hi-Fi's.

First use Jan. 1, 1961.

SN 262,080. Superior Tea and Coffee Company, Chicago, Ill. Filed Jan. 9, 1967.

WHIP-O-MATIC

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Apparatus for Preparing and Dispensing a Cocoa Beverage.

Class 46—Foods and Ingredients of Foods

For Instant Hot Cocoa Mix.

First use on or about Dec. 2, 1966.

SN 263,503. Main Line Distributors, Inc., Toledo, Ohio. Filed Jan. 30, 1967.

MAIN LINE

Owner of Reg. Nos. 642,638, 648,290, and others.

Class 21—Electrical Apparatus, Machines, and Supplies

For Radio Receivers, Television Receivers, Electric Food Mixers, Electric Dryers, Vacuum Cleaners for Household Use, Electric Irons, Toasters, Electric Percolators, Electric Fryers, and Electric Sweepers for Household Use.

Class 24—Laundry Appliances and Machines

For Electric Washing Machines, Clothes Dryers, and Ironers.

Class 31—Filters and Refrigerators

For Refrigerators and Deep Freezers.

Class 34—Heating, Lighting, and Ventilating Apparatus

For Electric Ranges and Room Air Conditioners.

Class 36—Musical Instruments and Supplies

For Phonographs, Tape Recorders, and Mechanically Grooved Phonograph Records.

First use Oct. 30, 1954.

SN 263,504. Main Line Distributors, Inc., Toledo, Ohio. Filed Jan. 30, 1967.

MAIN LINE

Owner of Reg. Nos. 642,638, 648,290, and others.

Class 21—Electrical Apparatus, Machines, and Supplies

For Radio Receivers, Television Receivers, Electric Food Mixers, Electric Dryers, Vacuum Cleaners for Household Use, Electric Irons, Toasters, Electric Percolators, Electric Fryers, and Electric Sweepers for Household Use.

Class 24—Laundry Appliances and Machines

For Electric Washing Machines, Clothes Dryers, and Ironers.

Class 31—Filters and Refrigerators

For Refrigerators and Deep Freezers.

Class 34—Heating, Lighting, and Ventilating Apparatus

For Electric Ranges and Room Air Conditioners.

Class 36—Musical Instruments and Supplies

For Phonographs, Tape Recorders, and Mechanically Grooved Phonograph Records.

First use Dec. 16, 1966.

SN 263,505. Main Line Distributors, Inc., Toledo, Ohio. Filed Jan. 30, 1967.

MAINLINER

Owner of Reg. Nos. 642,638, 648,290, and others.

Class 21—Electrical Apparatus, Machines, and Supplies

For Radio Receivers, Television Receivers, Electric Food Mixers, Electric Dryers, Vacuum Cleaners for Household Use, Electric Irons, Toasters, Electric Percolators, Electric Fryers, and Electric Sweepers for Household Use.

Class 24—Laundry Appliances and Machines

For Electric Washing Machines, Clothes Dryers, and Ironers.

Class 31—Filters and Refrigerators

For Refrigerators and Deep Freezers.

Class 34—Heating, Lighting, and Ventilating Apparatus

For Electric Ranges and Room Air Conditioners.

Class 36—Musical Instruments and Supplies

For Phonographs, Tape Recorders, and Mechanically Grooved Phonograph Records.

First use Dec. 16, 1966.

SN 263,863. Garlock, Inc., Palmyra, N.Y. Filed Feb. 3, 1967.

GARLOCK

Owner of Reg. Nos. 647,487, 801,648, and others.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Throttling Valves.

Class 16—Protective and Decorative Coatings

For Paint and Enamel, and Thinner or Reducer for the Same.

Class 26—Measuring and Scientific Appliances

For Apparatus for Testing Rubber or Thermal-Setting Plastic Compounds.

First use 1883.

SN 270,604. Painting and Decorating Contractors of America, Inc., Chicago, Ill. Filed May 3, 1967.

PAINTING AND DECORATING CONTRACTORS OF AMERICA 18 84

Class 100—Miscellaneous

For Association Services, Such Services Being To Assist Its Members in Labor Relations, Public Relations, Apprentice and Vocational Training, and Promotion of the Services Rendered by Its Members.

Class 200

For Indicating Membership in Applicant.

First use Oct. 1, 1933.

SN 270,730. National Steel Construction Co., Newark, Calif. Filed May 5, 1967.

GLASTEEL

Owner of Reg. Nos. 604,631, 713,973, and others.

Class 2—Receptacles

For Hydro-Pneumatic Tanks, Fluid Storage Tanks, and Pressure Vessels.
First use Apr. 10, 1958.

Class 34—Heating, Lighting, and Ventilating Apparatus

For Domestic and Commercial Water Heaters, Both Electric and Gas Types, and Range Boilers.
First use Nov. 21, 1952.

SN 279,250. Diamond Alkali Company, Cleveland, Ohio. Filed Aug. 29, 1967.

HERITAGE HOUSE

Owner of Reg. Nos. 749,603, 773,788, and others.

Class 2—Receptacles

For Plastic Utility Bags.
First use Nov. 7, 1966.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Tie Down for Plastic Sheeting.
First use Dec. 12, 1966.

Class 20—Linoleum and Oiled Cloth

For Vinyl Floor Coverings.
First use Nov. 7, 1966.

Class 50—Merchandise Not Otherwise Classified

For Tarpaulins.
First use Nov. 7, 1966.

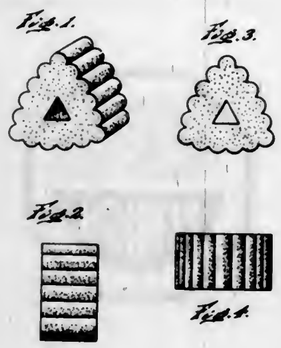
SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.
A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

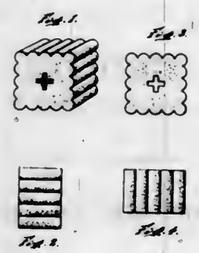
Class 1—Raw or Partly Prepared Materials

SN 243,675. Kingsford Company, Louisville, Ky. Filed Apr. 18, 1966.



The mark consists of a configuration of a charcoal briquet in which the sides are generally triangular, and fluted, the ends generally flat and a triangular generally central opening passes through from one end to the other.
For Charcoal Briquets.
First use Jan. 18, 1966.

SN 243,676. Kingsford Company, Louisville, Ky. Filed Apr. 18, 1966.



The configuration of charcoal briquets has sides which are generaly rectangular and fluted, ends which are generally flat and a cruxiform generally central interior opening.
For Charcoal Briquets.
First use Jan. 18, 1966.

SN 261,751. Owens-Illinois, Inc., Toledo, Ohio. Filed Dec. 30, 1966.

DURALON

Owner of Reg. Nos. 184,940, 390,467, and 814,302.
For Roll or Sheet Material Formed From Combinations of Plastic and Cellulosic Materials.
First use Aug. 6, 1966.

SN 262,800. Christensen Minkery, Cambridge, Wis. Filed Jan. 18, 1967.

Twilight Mist

For Mink and Mink Pelts.
First use Dec. 28, 1964.

SN 262,934. The General Fireproofing Company, Youngstown, Ohio. Filed Jan. 20, 1967.

VI-GEN

For Plastic Upholstering Material for Chairs.
First use Dec. 7, 1966.

SN 263,010. Beebe Rubber Company, Nashua, N.H. Filed Jan. 23, 1967.

BEEBE

Owner of Reg. Nos. 375,903, 734,957, and others.
For Unvulcanized Rubber and Rubberous Sheets for Blanks for Shoe Manufacturers; Unvulcanized Preform Rubber and Rubberous Blanks for Shoe Manufacturers.
First use Aug. 11, 1939.

SN 279,614. Beaunit Corporation, New York, N.Y. Filed Sept. 5, 1967.

TOUGH STUFF

Owner of Reg. No. 834,185.
For Polyester Fiber for Use in Fabrics for Outer Garments.
First use on or about Oct. 11, 1966.

Class 2—Receptacles

SN 244,369. Keebler Company, Melrose Park, Ill., by change of name from United Biscuit Company of America, Melrose Park, Ill. Filed Apr. 26, 1966.

WRAP TRAP

For Containers for Use on Dining Tables, Lunch Counters, and the Like for Receiving Waste Materials Such as Sugar Envelopes, and Wrappers for Cigarettes, Crackers, Cookies, Gum, Candy, and the Like.
First use Mar. 30, 1966.

SN 246,625. West Virginia Pulp and Paper Company, New York, N.Y. Filed May 25, 1966.

SCHOOL-PAK

For Paper Containers for Liquids.
First use Mar. 10, 1966.

SN 249,835. C-Thru Products Inc., Brooklyn, N.Y. Filed July 8, 1966.

PUP-ET-PAK

For Polyethylene Display Bags.
First use Apr. 1, 1966.

SN 267,464. The Witt Company, Cincinnati, Ohio. Filed Mar. 23, 1967.



The mark comprises a stylized "W."
For Receptacles—Namely, Cans and Pails Such as Refuse Cans and Pails, Chef Cans, Roller Cans, Janitor Pails, Contractor Pails, and the Like.
First use in or about August 1964.

SN 271,067. Paramedical Packaging Co., Inc., New York, N.Y. Filed May 9, 1967.

DIALTROL

For Containers for Dispensing Drugs.
First use July 1, 1966.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

SN 264,702. The Saddle Makers of Hall Lane Limited, Walsall, England. Filed Jan. 9, 1967.

APOLLO

Priority claimed under Sec. 44(d) on British Reg. No. 899,959, dated Sept. 30, 1966.
For Riding Saddles.
First use Nov. 9, 1966; in commerce Nov. 9, 1966.

SN 265,039. Boyd Lane & Co. Pty. Limited, Sydney, New South Wales, Australia. Filed Feb. 20, 1967.

OROTON

Owner of Australian Reg. No. 181,763, dated Dec. 17, 1962.
For Hand Bags, Including Hand Bags Made of Metal or Principally of Metal.

SN 273,719. Ernst, Inc., San Francisco, Calif. Filed June 13, 1967.

ERNST

For Tote Bags.
First use August 1966.

SN 276,726. Jana Accessories Ltd., New York, N.Y. Filed July 25, 1967.

LA BAGAGERIE

The English meaning of "La Bagagerie" is a place where baggage or other goods of the category such as handbags or carrying goods are sold, primarily leather items, but can include almost anything interms of material.
For Handbags.
First use July 20, 1967.

Class 4 — Abrasives and Polishing Materials

SN 265,335. Roto-Finish Company, Kalamazoo, Mich. Filed Feb. 23, 1967.



The drawing is lined for the color red, but applicant does not claim any particular color as a feature of its marks. Applicant disclaims the word "Finish" apart from the mark as shown. Owner of Reg. Nos. 397,895, 647,055, and others.
For Chemicals and Chemical Compositions for Use in Deburring, Cleaning, Descaling, Burnishing, Finishing, and Polishing Operations.
First use 1944.

Class 5 — Adhesives

SN 269,732. Allied Compositions Co., Inc., Maspeth, N.Y. Filed Apr. 21, 1967.

GRIP-ON

For Adhesive for Floor and Wall Tile.
First use Sept. 18, 1958.

Class 6 — Chemicals and Chemical Compositions

SN 248,987. Epoxon Corporation, San Francisco, Calif. Filed June 27, 1966.

EPOXON

For Concrete Additives for Improving the Wear and Weathering Resistance of Concrete Compositions in Which They Are Contained.
First use May 16, 1966.

SN 258,768. American Cyanamid Company, Wayne, N.J. Filed Nov. 16, 1966.

CIFLE

For Insecticide for Veterinary Use.
First use Nov. 7, 1966.

SN 258,769. American Cyanamid Company, Wayne, N.J. Filed Nov. 16, 1966.

CYFLEE

For Insecticide for Veterinary Use.
First use Nov. 7, 1966.

SN 268,673. American Aniline Products, Inc., Paterson, N.J. Filed Apr. 10, 1967.

GRANUFLOW

For Non-Dusting Oil Colors, Particularly for Use in Gasoline.
First use prior to October 1959.

SN 268,677. American Aniline Products, Inc., Paterson, N.J. Filed Apr. 10, 1967.

KALINE

For Dyestuffs for Polyester/Cotton Blends.
First use Jan. 7, 1965.

SN 269,388. Arden-Mayfair, Inc., d.b.a. Low Cost Markets, Los Angeles, Calif. Filed Apr. 18, 1967.



For All Purpose Bleach, Fabric Softening Laundry Rinse, Concentrated Laundry Starch, Household Ammonia, and Fabric Finish in Spray Container.
First use Mar. 1, 1967.

SN 280,839. Diamond Alkali Company, Cleveland, Ohio. Filed Sept. 21, 1967.

KINLUBE

For Textile Lubricant for Use in Professional Laundries.
First use June 26, 1967.

SN 280,844. C. J. Webb, Inc., Dresher, Pa. Filed Sept. 21, 1967.



Owner of Reg. No. 708,612 and others.
For Corrosion Inhibiting Composition for Inhibiting Rust and Corrosion to Metals.
First use Mar. 30, 1967.

Class 8 — Smokers' Artides, Not Including Tobacco Products

SN 260,753. Mastercraft Pipes, New York, N.Y. Filed Dec. 14, 1966.



For Smokers' Products—Namely, Pipes, Lighters, and Tobacco Pouches.
First use June 24, 1966.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

SN 266,821. Zenith Corporation, Clinton, Mo. Filed Mar. 15, 1967.

BALL-O-FYR

For Pyrotechnic Devices—Namely, Fireworks.
First use Mar. 3, 1967.

Class 11 — Inks and Inking Materials

SN 265,670. Zip-Mark Corporation, Bordentown, N.J. Filed Feb. 28, 1967.

PERM-INK

For Ink for Use in Writing Instruments.
First use Jan. 3, 1967.

Class 12 — Construction Materials

SN 203,197. Paddock of California, Inc., Albany, N.Y. Filed Oct. 2, 1964.

PADDOCK

For Swimming Poola; and Swimming Pool Equipment and Supplies, Sold Together With the Swimming Pools.
First use 1922.

SN 244,099. General Portland Cement Company, Chicago, Ill. Filed Apr. 22, 1966.

FLORIDA

Owner of Reg. Nos. 345,226, 359,256, and 714,887.
For Portland Cement.
First use in or before 1927.

SN 251,079. Speakman Company, Wilmington, Del. Filed July 26, 1966.

SHOWEROUND

For Group Showering Systems Comprising Shower Column Stalls, and Parts of Such Systems.
First use June 22, 1966.

SN 256,391. U.S. Plywood-Champion Papers Inc., New York, N.Y., by merger and change of name from United States Plywood Corporation, New York, N.Y. Filed Oct. 12, 1966.

HISPANIC

For Lumber and Wood Products, i.e., Plywood.
First use Sept. 23, 1966.

SN 256,394. U.S. Plywood-Champion Papers Inc., New York, N.Y., by merger and change of name from United States Plywood Corporation, New York, N.Y. Filed Oct. 12, 1966.

CASTANIA

For Lumber and Wood Products, i.e., Plywood.
First use Sept. 23, 1966.

SN 264,525. The Dow Chemical Company, Midland, Mich. Filed Feb. 13, 1967.

DERASPAN

Owner of Reg. Nos. 708,595 and 713,315.
For Insulating Panels Having a Cellular Plastic Core.
First use Oct. 3, 1966.

SN 267,746. The Flecto Company, Inc., Oakland, Calif. Filed Mar. 28, 1967.

FLECTO SEAMLESS

Exclusive use of the word "Seamless" is disclaimed apart from the mark as shown. Owner of Reg. No. 755,336.
For Clear Laminated Plastic Surfacing Composition for Application to Linoleum, Tile, Wood, and Concrete.
First use Jan. 10, 1967.

SN 277,963. Arrow Metal Products Corp., Haskell, N.J. Filed Aug. 10, 1967.

ARROW

For Knock-Down Metallic Assemblies—Namely, Storage Houses and Sheds.
First use Jan. 16, 1967.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

SN 235,808. Fluid Power Limited, Richmond, Surrey, England. Filed Jan. 5, 1966.

FLUI-TROL

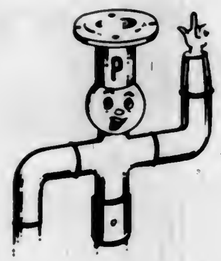
Owner of British Reg. No. 838,859, dated Sept. 3, 1962.
For Miniaturized Hydraulic Control Valves, and Parts and Fittings Therefor.

SN 253,739. Earnest Machine Products Company, Cleveland, Ohio. Filed Sept. 2, 1966.



The phrase "150M PSI" is disclaimed apart from the mark as shown.
For Bolts.
First use on or about Nov. 23, 1965.

SN 254,626. Pico Corporation, Conshohocken, Pa. Filed Sept. 16, 1966.



For Pipe Fittings Such as Elbows, T's, Reducers, Crosses, Caps, Returns, Stub Ends, and Flanges, for Use in Process Piping.
First use March 1963.

SN 260,361. Robert Manufacturing Company, Los Angeles, Calif. Filed Dec. 8, 1966.

ROBT-FLEX

For Flexible Metal Connectors.
First use Sept. 2, 1966.

SN 262,523. Toyo Valve Company Limited, Chuo-ku, Tokyo, Japan. Filed Jan. 13, 1967.

RED-WHITE

Owner of U.S. Reg. No. 811,232; and Japanese Reg. No. 547,391, dated Jan. 30, 1960.
For Valves and Cocks.
First use October 1958; in commerce January 1959.

SN 263,369. Fimco, Lake Park, Fla. Filed Jan. 26, 1967.
For Irrigation System Valves.

CYCLO-MATIC

First use on or about Aug. 19, 1965.

SN 263,490. Spotnails, Inc., Long Island City, N.Y. Filed Jan. 27, 1967.

SPOTNAILS

Owner of Reg. Nos. 413,423, 836,195, and others.
For Fasteners Including Staples, Nails, Tacks, Corrugated Fasteners, and the Like.
First use Aug. 29, 1941.

SN 263,685. The New York Air Brake Company, New York, N.Y. Filed Jan. 31, 1967.

BIF

For Butterfly Valves, Check Valves, Proportioning Valves, and Parts and Accessories Therefor.
First use February 1955.

SN 264,615. Toro Manufacturing Corporation, Minneapolis, Minn. Filed Feb. 13, 1967.

MOIST O'MATIC

Owner of Reg. No. 617,357.
For Irrigation Devices and Systems, Including Soil Moisture Sensing Devices for Initiating and Terminating Irrigation Cycles, Program Timers for Controlling a Series of Irrigation Outlets, Vacuum Responsive Valves and Remote Control Valves, Sprinklers, Fittings, Tubing, and Other Components of Irrigation Devices and Systems.
First use Sept. 22, 1952.

SN 265,180. D and G Plastics Co., Kent, Ohio. Filed Feb. 21, 1967.

FAST & TITE

For Couplings for Hollow Conduit.
First use on or about June 30, 1960.

SN 265,565. Spraying Systems Co., Bellwood, Ill. Filed Feb. 27, 1967.

DEFLECTOJET

For Spray Nozzles.
First use Nov. 1, 1966.

SN 266,450. Practical Manufacturing Company, New York, N.Y. Filed Mar. 10, 1967.

KLEER-FLO DE-MOISTER

Owner of Reg. No. 441,334.
For Air Actuated Valve Comprising a Substantially Cylindrical Body Which Is Inserted in a Gaseous or Fluid Conveying Hollow Pipe System and Which Permits Liquid Condensation in the System To Be Discharged Through a Drain or Vent in the Valve Body.
First use Oct. 25, 1966.

SN 266,638. American Home Products Corporation, New York, N.Y. Filed Mar. 14, 1967.

FASHIONETTE

For Cookware Including Pots, Pans, Skillets, and Griddles.
First use on or about Sept. 15, 1966.

SN 266,663. Hydromatics, Inc., Bloomfield, N.J. Filed Mar. 14, 1967.

OMNIFLO

For Fluid Valves.
First use Jan. 31, 1967.

SN 266,773. MerNelCo, Inc., Sparta, Mich. Filed Mar. 15, 1967.

KAN-BIB

For Shielding Devices for the Tops of Paint-Holding Vessels.
First use Apr. 6, 1966.

SN 266,847. Aluminum Specialty Company, Manitowoc, Wis. Filed Mar. 16, 1967.

Chilton

Owner of Reg. No. 795,442 and others.
For Cooking Utensils—Namely, Combination Pan Sets, Covered Sauce Pans, Covered Sauce Pots, Drip Coffee Makers, Fry Pans, and Percolators.
First use Feb. 15, 1967.

SN 267,862. The West Bend Company, West Bend, Wis. Filed Mar. 29, 1967.

LUMA-CORE

For Stainless Steel Cooking Utensils.
First use November 1966.

SN 271,672. Just Manufacturing Company, Franklin Park, Ill. Filed May 17, 1967.

GLOW SINK

Applicant disclaims the word "Sink" apart from the mark as shown and without waiving any of its common law rights in the mark.
For Sinks.
First use on or about May 2, 1967.

SN 271,975. Ashley F. Ward, Inc., d.b.a. The Skinner Irrigation Company, Troy, Ohio. Filed May 19, 1967.

SPRINGMIST

For Sprayers, Sprinklers, and Spray Irrigation Piping and Nozzle Systems for Lawn, Garden and General Use, Especially When Sold as a Packaged Unit for Installation by Dealers or Purchasers, and Parts Therefor.
First use Mar. 28, 1966, on sprinklers.

SN 271,977. Ashley F. Ward, Inc., d.b.a. The Skinner Irrigation Company, Troy, Ohio. Filed May 19, 1967.



Owner of Reg. Nos. 533,306 and 629,379.
For Sprayers, Sprinklers, and Spray Irrigation Piping and Nozzle Systems for Lawn, Garden and General Use, aad Parts Therefor.
First use Feb. 15, 1965; Jan. 1, 1910, as to "Skinner," on sprinklers.

SN 274,829. Red Line Commercial Co., Inc., New York, N.Y. Filed June 12, 1967.

CS CHAIN SYSTEMS

Applicant disclaims the words "Chain Systems," apart from the mark as shown.
For Tire Protection Chains.
First use Jan. 10, 1967.

SN 274,830. Red Line Commercial Co., Inc., New York, N.Y. Filed June 12, 1967.



Applicant disclaims the words "Chain Systems," apart from the mark as shown.
For Tire Protection Chains.
First use Jan. 10, 1967.

SN 277,759. United States Steel Corporation, Pittsburgh, Pa. Filed Aug. 8, 1967.

UNIBAND

For Pipe Couplings.
First use July 28, 1967.

Class 14 — Metals and Metal Castings and Forgings

SN 262,447. A. O. Smith Corporation, Milwaukee, Wis. Filed Jan. 12, 1967.

E-M-P

For Molding Grade Steel Powder.
First use Nov. 19, 1964.

SN 262,912. Amercon Mfg. Corp., Inc., Coffeyville, Kans. Filed Jan. 20, 1967.

KAZITE

For Zinc Base Alloy in Ingot Form; Also for Use in Battery Terminals, and Various Types of Electrical Connectors, and for Other Articles of Manufacture.
First use Jan. 6, 1967.

SN 274,288. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed June 20, 1967.

DYKO

Owner of Reg. No. 738,488.
For Metallic Coating of Cadmium.
First use May 5, 1967.

SN 279,350. United States Steel Corporation, Pittsburgh, Pa. Filed Aug. 30, 1967.

STRATA STEEL

Applicant disclaims the word "Steel" apart from the mark as shown.
For Steel Sheets.
First use June 28, 1967.

Class 15 — Oils and Greases

SN 213,058. Southwest Grease & Oil Co. (Kansas City), Inc., Kansas City, Mo. Filed Mar. 1, 1965.

BATTENFELD

Owner of Reg. No. 716,874.
For Lubricating Oils and Greases.
First use in or before 1921.

SN 271,567. Small Bros. Oil Company, South Chicago Heights, Ill. Filed May 16, 1967.



The drawing is lined to indicate the colors red and blue. Applicant disclaims the words "Premium Regular" apart from the mark as shown.
For Gasoline.
First use on or about Feb. 15, 1967.

Class 16 — Protective and Decorative Coatings

SN 246,682. Harris Paint Co., Tampa, Fla. Filed May 26, 1966.



The drawing is lined for the color red.
For Fluorescent Paint for Indoor and Outdoor Use.
First use in or about May 1965.

SN 250,239. M. A. Bruder & Sons, Incorporated, Philadelphia, Pa. Filed July 14, 1966.



For Paints—Namely, Oil Base Exterior House Paint, Latex Base Exterior House Paint, Floor Enamel, Interior Alkyd Flat Paint, Interior Latex Flat Paint, Interior Enamel, White Enamel, Exterior House Paint Primer, Interior Vinyl Primer, and Enamel Undercoater.
First use June 8, 1965.

SN 251,029. S. Wolf's Sons, New York, N.Y. Filed July 25, 1966.



The drawing is lined for the color red, but no claim for color is made. Owner of Reg. No. 526,039.
For Latex and Solvent-Thinned Paints and Enamels for Application to Floors, Walls, and Ceilings; Varnishes; Red Lead; Liquid Driers; Mineral Spirits; Lacquers for Application on Wood and Metal Surfaces; Bronze Paints; and Paint Colors.
First use April 1962.

SN 251,030. S. Wolf's Sons, New York, N.Y. Filed July 25, 1966.



The drawing is lined for the colors red and yellow, but no claim for color is made. Owner of Reg. No. 526,039.
For Latex and Solvent-Thinned Paints and Enamels for Application to Floors, Walls, and Ceilings; Varnishes; Red Lead; Liquid Driers; Mineral Spirits; Lacquers for Application on Wood and Metal Surfaces; Bronze Paints; and Paint Colors.
First use April 1962.

SN 252,418. Red Top Maintenance Service, Inc., Denver, Colo. Filed Aug. 15, 1966.



Owner of Reg. No. 805,777.
For Industrial Protective Coatings—Namely, Acrylic Emulsion Sealers for Floors.
First use May 29, 1965.

SN 259,835. Kingscliffe Super-Refractories Limited, Sheffield, England. Filed Dec. 1, 1966.



For Compositions for the Preparation of Refractory Paint for the Protection of Ingot Moulds, Base Plates for Such Moulds, and Slag Ladles.
First use on or about May 10, 1966; in commerce on or about May 10, 1966.

SN 276,880. Talens & Son, Inc., Union, N.J. Filed July 26, 1967.



Owner of Reg. Nos. 528,926 and 200,741.
For Artists' Pastels.
First use January 1962.

SN 281,015. Permanent Pigments, Inc., Norwood, Ohio. Filed Sept. 25, 1967.

SOLUVAR

For Artists' Picture Varnish.
First use Sept. 11, 1967.

Class 17 — Tobacco Products

SN 255,815. F. Palicio & Co., Inc., New York, N.Y. Filed Oct. 5, 1966.

JOSE GENER

"Jose Gener" is presently an assumed name of a person, who is no longer alive. Owner of Reg. No. 86,340.
For Cigars.
First use 1865.

SN 257,463. Danby Imported Cigar Corp., New York, N.Y. Filed Oct. 28, 1966.

BELINDA

Owner of Reg. Nos. 226,818 and 307,755.
For Cigars.
First use Apr. 18, 1873.

SN 260,666. Lane Limited, New York, N.Y. Filed Dec. 13, 1966.

BAYBERRY

For Smoking Tobacco.
First use October 1966.

SN 263,579. Iwan Ries & Co., Chicago, Ill. Filed Jan. 30, 1967.

IRC BON VIVANT!

For Cigarettes.
First use about Dec. 19, 1966.

Class 18—Medicines and Pharmaceutical Preparations

SN 207,778. Allergan Pharmaceuticals, Santa Ana, Calif. Filed Sept. 14, 1964.

ALLERGAN

For Ophthalmic Antihistamine Decongestant and Nasal Drops for Relief of Nasal Congestion Due to Colds and Hay Fever.
First use Jan. 20, 1950.

SN 258,385. Janssen Pharmaceutica N.V., Beerse, Belgium. Filed Nov. 10, 1966.

NILVERM

Priority claimed under Sec. 44(d) on Belgian Reg. No. 2,156, dated June 5, 1966.
For Anthelmintic Preparation for Veterinary Use.

SN 258,712. Narmeco, Inc., Springfield, Mo. Filed Nov. 15, 1966.

Myconox

For Medicated Feed Suplement for the Control of Mycosis, the Prevention of Iron Deficiency Anemia, and for Growth Stimulant in Poultry and Turkeys.
First use May 18, 1965.

SN 266,077. Palmedico, Inc., Columbia, S.C. Filed Mar. 6, 1967.

PALONYL

For Oral Estrogen.
First use July 27, 1960.

SN 266,078. Palmedico, Inc., Columbia, S.C. Filed Mar. 6, 1967.

G-1

For Analgesic-Antipyretic.
First use Nov. 3, 1964.

SN 266,400. American Dietaids Company, Inc., Yonkers, N.Y. Filed Mar. 10, 1967.

ENRICH

Owner of Reg. No. 711,366.
For Dietary Supplement Containing Iron.
First use 1938.

SN 266,579. Philips Roxane, Inc., New York, N.Y. Filed Mar. 13, 1967.

PEDIAQUIL

For Cough Syrup for Children.
First use approximately October 1960.

SN 266,732. Cela Landwirtschaftliche Chemikalien GmbH, Ingelheim (Rhine), Germany. Filed Mar. 15, 1967.

VOREN

Owner of German Reg. No. 790,533, dated July 10, 1964.
For Veterinary Preparations.

SN 266,926. A. H. Robins Company, Incorporated, Richmond, Va. Filed Mar. 16, 1967.

TYBATRAN

Owner of Reg. Nos. 817,296 and 817,297.
For Pharmaceutical Preparation Used as a Tranquilizer.
First use Feb. 21, 1967.

SN 266,931. Savage Laboratories, Inc., Houston, Tex. Filed Mar. 16, 1967.

CHROMAX

For Veterinary Preparation for Iron and Vitamin Deficiencies in Animals.
First use Jan. 26, 1967.

Class 19—Vehicles

SN 239,164. Mitsubishi Jukogyo Kabushiki Kaisha, Chiyoda-ku, Tokyo, Japan. Filed Feb. 18, 1966.

THREE DIAMONDS

Owner of Japanese Reg. No. 459,311, dated Jan. 28, 1955.
For Automobiles, Ships, Freight Cars, Tank Cars, Monorail Cars, Aircraft, Bicycles, and Motorcycles.

SN 239,165. Mitsubishi Jukogyo Kabushiki Kaisha, Chiyoda-ku, Tokyo, Japan. Filed Feb. 18, 1966.



Owner of Japanese Reg. No. 441,831, dated Mar. 10, 1954.
For Automobiles, Ships, Freight Cars, Tank Cars, Monorail Cars, Aircraft, Bicycles, and Motorcycles.

SN 239,166. Mitsubishi Jukogyo Kabushiki Kaisha, Chiyoda-ku, Tokyo, Japan. Filed Feb. 18, 1966.

MITSUBISHI

The English translation of the Japanese word "Mitsubishi" is "three rhomboids." Owner of Japanese Reg. No. 441,834, dated Mar. 10, 1954.
For Automobiles, Ships, Freight Cars, Tank Cars, Monorail Cars, Aircraft, Bicycles, and Motorcycles.

SN 242,956. Maurice H. Butler, d.b.a. Yawler Boat Equipment Company, Arlington, Tex. Filed Apr. 7, 1966.

YAWLER

The design shown within the letters "Y" and "R" in the drawing is disclaimed apart from the mark as shown.
For Telescopic Boat Controllers Comprising a Base and Reciprocable Extension for Controlling Speed and/or Direction of Travel of Boats.
First use Oct. 15, 1965.

SN 255,225. Nikko Denki Kogyo Kabushiki Kaisha (Nikko Electric Industry Co., Ltd.), Ohta-ku, Tokyo, Japan. Filed Sept. 27, 1966.

Beebo

For Combination Back-Up Light With Warning Siren for Vehicles.
First use on or about May 15, 1964; in commerce on or about Oct. 22, 1965.

SN 257,651. Republic Industrial Corporation, New York, N.Y. Filed Oct. 31, 1966.

RICHMOND

The drawing is lined for the color blue.
For Vehicles, More Particularly, Barges.
First use Sept. 25, 1966.

SN 257,750. American Kawasaki Motorcycle Corp., Chicago, Ill. Filed Nov. 2, 1966.

SAMURAI

The word "Samurai" in Japanese means "warrior" or "knight."
For Motorcycles.
First use in or about early August 1966.

SN 261,475. The Englishtown Corporation, New York, N.Y. Filed Dec. 27, 1966.

TOWNLEY

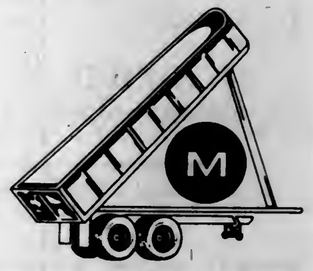
Owner of Reg. No. 577,483.
For Motorcycles and Bicycles.
First use January 1947.

SN 261,663. A. Le Comte Company, Inc., New Rochelle, N.Y. Filed Dec. 29, 1966.



The mark consists of the letters "ALC."
For Yachts and Structural Parts Therefor.
First use on or about June 22, 1956.

SN 261,669. Montone Manufacturing Company, Hazleton, Pa. Filed Dec. 29, 1966.



The representation of the dump truck is disclaimed apart from the mark as shown.
For Dump Trailers, Truck Bodies, Platform Bodies, Dump Bodies, and Cargo Bodies.
First use Dec. 5, 1966; on or about Mar. 1, 1964, in another form.

SN 262,520. Textron, Inc., Providence, R.I. Filed Jan. 13, 1967.

E-Z-GO

Owner of Reg. No. 663,388.
For Gasoline-Powered Light Utility and Maintenance Vehicles.
First use Oct. 17, 1966.

SN 262,798. Midget Motors Corporation, Athens, Ohio. Filed Jan. 18, 1967.

KING MIDGET

For Automobiles and Powerized Golf Carts.
First use at least as early as 1947.

SN 263,266. Ford Motor Company, Dearborn, Mich. Filed Jan. 25, 1967.

CITATION

For Automobiles.
First use Apr. 25, 1966.

SN 263,543. Corder Manufacturing Company, Inc., Concordia, Mo. Filed Jan. 30, 1967.

OZARK LUXURY LINER

Owner of Reg. No. 776,904.
For Pick-Up Truck Coaches and Travel Trailers.
First use Dec. 29, 1965.

SN 273,716. Paul H. MacMahon, Arlington, Va. Filed June 13, 1967.

LITE-A-BIKE WITH BIKE-A-LITE

"Lite-A-Bike" is disclaimed apart from the mark as shown.
For Lighted Bicycle Pedals.
First use June 1, 1967.

SN 273,717. Paul H. MacMahon, Arlington, Va. Filed June 13, 1967.

BIKE-A-LITE

For Lighted Bicycle Pedals.
First use June 1, 1967.

Class 21—Electrical Apparatus, Machines, and Supplies

SN 226,609. Belsinger Sign Works, Inc., Baltimore, Md. Filed Aug. 27, 1965.

SIGN-TIFIC

For Electrically Illuminated Display Signs.
First use Mar. 18, 1965.

SN 243,382. American Radiator & Standard Sanitary Corporation, New York, N.Y. Filed Apr. 14, 1966.

IDEAL STANDARD

Owner of Reg. Nos. 76,482, 580,757, and others.
For Electric Food Waste Disposer Units, Electrical Switches, Electrical Controls for Timing, Starting and Stopping Domestic and Industrial Boilers, and Air Conditioners.
First use Mar. 11, 1966.

SN 243,386. American Radiator & Standard Sanitary Corporation, New York, N.Y. Filed Apr. 14, 1966.



Owner of Reg. Nos. 544,406, 580,757, and others.
For Electric Food Waste Disposer Units, Electrical Switches, Electrical Controls for Timing, Starting and Stopping Domestic and Industrial Boilers, and Air Conditioners.
First use Mar. 11, 1966.

SN 243,390. American Radiator & Standard Sanitary Corporation, New York, N.Y. Filed Apr. 14, 1966.

AMERICAN STANDARD

Owner of Reg. Nos. 58,506, 580,757, and others.
For Electric Food Waste Disposer Units, Electrical Switches, Electrical Controls for Timing, Starting and Stopping Domestic and Industrial Boilers, and Air Conditioners.
First use Mar. 11, 1966, on disposer units; April 1946 as to "American Standard."

SN 244,366. Marcel Teppaz, Paul Seyvos, and Jean Alexis Teppaz (joint owners), Lyon, Rhone, France. Filed Apr. 26, 1966.

TEPPAZ

Owner of French Reg. No. 701,132, dated Oct. 15, 1965; and U.S. Reg. No. 756,078.
For Radio Receiving and Radio Transmitting Sets and Television Sets.

SN 248,804. The Edwin F. Guth Company, St. Louis, Mo. Filed June 23, 1966.

SQUARE DE LUME

"Square" is disclaimed apart from the mark as shown.
For Electric Lighting Fixtures.
First use May 20, 1966.

SN 252,226. George A. Wood, Indianapolis, Ind. Filed Aug. 11, 1966.

MUSICAL WAIT

For Telephone Caddy With Music Box.
First use Mar. 7, 1966.

SN 254,542. Hunt Electronics Company, Dallas, Tex. Filed Sept. 15, 1966.



For Incandescent and Fluorescent Light Dimmers, Light Sensitive Photoelectric Power Controls, Semiconductor Switching Devices, Motorized Lighting Controls, Motor Speed Controls, Soldering Iron Controls, and Voltage Regulators.
First use at least as early as March 1962.

SN 255,427. El-Tronics, Inc., Warren, Pa. Filed Sept. 29, 1966.

ELTRON

Owner of Reg. No. 555,238.
For Fluorescent Lamps, Incandescent Lamps, Other Than Lamps Intended To Be Sold in Connection With Community Antenna Systems.
First use on or about Oct. 13, 1961.

SN 259,682. Superflexit Limited, Slough, England. Filed Nov. 29, 1966.

KAFON

Owner of British Reg. No. 891,790, dated Mar. 11, 1966.
For Electrical Conduits.

SN 260,228. Anzac Electronics, Inc., Norwalk, Conn. Filed Dec. 7, 1966.



The stippling appearing on the mark on the drawing is for shading purposes only.
For High Frequency Electrical Components—Namely, Mixers, Hybrid Junctions, Frequency Multipliers, Tunable Preselectors, Signal Distributors, Electronic Switches, Frequency Doublers, and Modulators.
First use at least as early as Apr. 6, 1962.

SN 260,434. Hunt Electronics Company, Dallas, Tex. Filed Dec. 9, 1966.

ACT ONE

For Portable Stage Light Dimmers.
First use at least as early as October 1966.

SN 260,552. International Electric Fence Company, Inc., Albert Lea, Minn. Filed Dec. 12, 1966.

SHURSTING

For Electric Fence Controllers and Battery Chargers.
First use Aug. 15, 1966.

SN 260,664. International Electric Fence Company, Inc., Albert Lea, Minn. Filed Dec. 13, 1966.

"Stings like a Bee!"



The words "Stings Like a Bee" are disclaimed apart from the mark as shown and without waiving any common law rights as a source identification in connection with the goods identified.
For Electric Fence Controllers and Battery Chargers.
First use Nov. 14, 1964.

SN 261,480. Fedtro, Inc., Rockville Centre, N.Y. Filed Dec. 27, 1966.

AUTO JET-O-MATIC

For Electric Vacuum Cleaners Operated Through Automobile Cigarette Lighters.
First use Dec. 12, 1966.

SN 261,897. Virginia Electronics Company, Inc., Washington, D.C. Filed Jan. 3, 1967.

VELCO

For Electronic Equipment—Namely, Communication Control Centers, Emergency Control Consoles, Circuit Programming Systems, Transformers and Coils, and Patch Panels.
First use June 24, 1957.

SN 262,667. Amperex Electronic Corporation, Hicksville, N.Y. Filed Jan. 17, 1967.

TOMORROW'S THINKING IN TODAY'S PRODUCTS

For Semiconductors and Electronic Tubes.
First use Jan. 2, 1967.

SN 263,179. John L. Gray, d.b.a. Au-Tenna Systems Co., New Canaan, Conn. Filed Jan. 24, 1967.

AU-TENNA

For Antenna System for Two-Way Radio Communications, Transmitters, and Receivers.
First use Apr. 24, 1964.

SN 264,242. Radio Corporation of America, New York, N.Y. Filed Feb. 8, 1967.

NEW LOOK IN SOUND

For Radios.
First use at least as early as Jan. 9, 1967.

SN 265,714. General Electric Company, Schenectady, N.Y. Filed Mar. 1, 1967.

VULKAFLEX

For Electric Wire and Cable.
First use Oct. 28, 1964.

SN 265,717. Instrument Systems Corporation, New York, N.Y. Filed Mar. 1, 1967.

TDH-49

For Earphones.
First use at least as early as November 1959.

SN 266,240. LTV Ling Altec, Inc., Anaheim, Calif. Filed Mar. 8, 1967.

MINI-FLEX

For Loudspeaker Systems, Cabinets Therefor, and Parts and Components Thereof.
First use Oct. 9, 1962.

SN 266,519. Essex Wire Corporation, Fort Wayne, Ind. Filed Mar. 13, 1967.

THERMETEX GP200

Owner of Reg. Nos. 672,137 and 672,150.
For Insulated Electrical Wire.
First use Mar. 6, 1967.

SN 269,928. W. H. Salisbury & Co., Chicago, Ill. Filed Apr. 24, 1967.

ORANGE SALCOR

The word "Orange" is disclaimed apart from the mark as shown, but without waiver of common law rights.
For Linemen's Rubber Protective Equipment—Namely, Insulating Hose for Electrical Conductors, Insulating Hoods and Hose Connectors, and Insulating Blankets and Jackets.
First use Feb. 6, 1967.

Class 22 — Games, Toys, and Sporting Goods

SN 241,673. Michael J. McDonald, Ontario, Calif. Filed Mar. 23, 1966.

BILLY BOY

For Stilts.
First use Nov. 17, 1965.

SN 243,869. Forest P. Hagin, Garland, Tex. Filed Apr. 20, 1966.

T-BALL

For Apparatus Sold as a Unit for Playing a Football-Type Parlor Game.
First use on or about July 16, 1965.

SN 244,485. Goldberger Doll Mfg. Co., Inc., Brooklyn, N.Y. Filed Apr. 28, 1966.

itsy bitsy

For Dolls.
First use Feb. 28, 1966.

SN 245,894. Anderson & Thompson Ski Co., Inc., Seattle, Wash. Filed May 18, 1966.

BLITZ

Owner of Reg. No. 763,034.
For Snow Skis and Parts Thereof.
First use Dec. 1, 1960.

SN 260,146. The Englishtown Corporation, New York, N.Y. Filed Dec. 6, 1966.

GS
Grand Slam

Owner of Reg. No. 801,750.
For Bowling Balls.
First use Oct. 15, 1964.

SN 261,789. Axaline, Inc., Inglewood, Calif. Filed Jan. 3, 1967.

Stingray

For Golf Putters.
First use Oct. 3, 1966.

SN 263,518. American Character, Inc., New York, N.Y. Filed Jan. 30, 1967.

TURN 'N LEARN

For Dolls.
First use Nov. 15, 1966.

SN 263,580. Donald Le Roy Johnson, San Pedro, Calif. Filed Jan. 30, 1967.

ZINGER

For Toy Footballs and Sports Footballs.
First use Jan. 19, 1967.

SN 263,709. J. Swedlin, Inc., d.b.a. Gund Manufacturing Company, Brooklyn, N.Y. Filed Jan. 31, 1967.

WOOLNO

For Stuffed Toys.
First use Jan. 2, 1964.

SN 264,179. Abbott Laboratories, d.b.a. The Faultless Rubber Company, North Chicago, Ill. Filed Feb. 8, 1967.

WEAREVER

Owner of Reg. Nos. 118,284, 435,457, and 436,550.
For Golf Balls.
First use Nov. 8, 1966.

SN 264,455. Totem Bait, Inc., Ellensburg, Wash. Filed Feb. 10, 1967.

TOTEM'S

For Processed Fish Bait.
First use Apr. 20, 1962.

SN 265,003. Woodstream Corporation, Lititz, Pa. Filed Feb. 17, 1967.

COUGAR

For Fishing Tackle and Equipment—Namely, Tackle Boxes, Fishing Reels, and Parts Thereof.
First use Sept. 2, 1966.

SN 267,112. Mattel, Inc., Hawthorne, Calif. Filed Mar. 20, 1967.

TALKING TILES

Applicant disclaims the word "Tiles" apart from the mark as shown.
For Phonograph Recording Plates and Toy Teaching Machine Apparatus for Reproducing the Sounds Recorded Thereon.
First use Feb. 21, 1967.

SN 267,737. Dunlop Tire and Rubber Corporation, Buffalo, N.Y. Filed Mar. 28, 1967.

65

Owner of Reg. No. 635,123.
For Golf Clubs and Golf Balls.
First use Feb. 5, 1954, on golf balls.

SN 267,844. Pflueger Corporation, Akron, Ohio. Filed Mar. 29, 1967.

SUMMIT

Owner of Reg. No. 229,914.
For Rods, Reels, Parts for Reels, Rod and Reel Combinations, and Fishing Lines.
First use on or about Jan. 25, 1967.

SN 267,845. Pflueger Corporation, Akron, Ohio. Filed Mar. 29, 1967.

TRUMP

Owner of Reg. No. 298,593.
For Rods, Reels, Parts for Reels, Rod and Reel Combinations, and Fishing Lines.
First use on or about Jan. 27, 1967.

SN 267,853. The Saturn Corporation, Denver, Colo. Filed Mar. 29, 1967.

Spoofies

For Flying Toys in the Nature of Kites and Inflatable Flying Toys.
First use on or about Feb. 1, 1967.

SN 267,854. The Saturn Corporation, Denver, Colo. Filed Mar. 29, 1967.

Spoofers

For Flying Toys in the Nature of Kites and Inflatable Flying Toys.
First use on or about Feb. 1, 1967.

SN 268,062. Pflueger Corporation, Akron, Ohio. Filed Mar. 31, 1967.

CUB

Owner of Reg. No. 291,374.
For Drag Handles for Fishing Reels.
First use in or about August 1939.

SN 268,064. Pflueger Corporation, Akron, Ohio. Filed Mar. 31, 1967.

TRUSTY

Owner of Reg. No. 291,714.
For Fishing Reels.
First use on or about Oct. 24, 1966.

SN 268,184. Healthways, Los Angeles, Calif. Filed Apr. 3, 1967.

INTERSPORT

For Line of Exercising Equipment Including Barbells, Dumbbells, Bars, Weights, Headstraps, Boot Assemblies for Attachment of Weights, Bar and Chain Assemblies for Attachment of Weights, and Shot-Puts.
First use Oct. 4, 1963.

SN 268,256. Wilson Sporting Goods Co., River Grove, Ill., assignee of Wilson Sporting Goods Co., River Grove, Ill. Filed Apr. 3, 1967.

CUP DEFENDER

For Golf Clubs.
First use 1928.

SN 268,339. Rozel Industries, Inc., Lincolnwood, Ill. Filed Apr. 4, 1967.

PACER

For Billiard Tables, Pool Tables, and Cue Sticks.
First use November 1963.

SN 268,340. Rozel Industries, Inc., Lincolnwood, Ill. Filed Apr. 4, 1967.

TROPHY

For Billiard Tables, Pool Tables, and Cue Sticks.
First use November 1963.

SN 274,157. Mattel, Inc., Hawthorne, Calif. Filed June 19, 1967.

PICKY NIDDLE

Owner of Reg. No. 818,221.
For Dolls, Doll Clothing, and Doll Accessories.
First use May 29, 1967.

SN 274,160. Mattel, Inc., Hawthorne, Calif. Filed June 19, 1967.

LOUISE LOCKET

The mark is fanciful, and is not known to refer to any particular individual. No claim of exclusive right, apart from the mark as shown, is made to the word "Locket" for the goods recited. Owner of Reg. Nos. 825,254 and 825,257.
For Dolls, Doll Clothing, and Doll Accessories.
First use May 29, 1967.

SN 277,411. The Northwestern Corporation, Morris, Ill. Filed Aug. 3, 1967.

BOOZ-BAROMETER

For Coin-Operated Amusement Device—Namely, a Game Device for Measuring Skill.
First use Oct. 28, 1966.

SN 278,640. Mattel, Inc., Hawthorne, Calif. Filed Aug. 21, 1967.

TIGHT SQUEEZE

For Equipment Sold as a Unit for Playing an Action-Type Parlor Game.
First use July 12, 1967.

SN 278,642. Mattel, Inc., Hawthorne, Calif. Filed Aug. 21, 1967.

SQUEEZE

For Equipment Sold as a Unit for Playing an Action-Type Parlor Game.
First use July 13, 1967.

SN 278,647. Mattel, Inc., Hawthorne, Calif. Filed Aug. 21, 1967.

LORETTA LOCKET

The mark is fanciful and is not known to refer to any particular individual. No claim of exclusive right is made to the word "Locket," apart from the mark as shown, for the goods recited.
For Dolls, Doll Clothing, and Doll Accessories.
First use July 18, 1967.

SN 279,442. The Toney Penna Company, Jupiter, Fla. Filed Aug. 31, 1967.

INSTANT-ACTION

For Golf Clubs.
First use July 15, 1967.

SN 279,896. Mattel, Inc., Hawthorne, Calif. Filed Sept. 8, 1967.

SUKI SKEDIDDLE

Owner of Reg. No. 825,255.
For Dolls, Doll Clothing, and Doll Accessories.
First use Aug. 15, 1967.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

SN 243,499. Toro Manufacturing Corporation, Minneapolis, Minn. Filed Apr. 14, 1966.

GREENS MASTER

For Turf Care Equipment, Including Lawn Mowers.
First use at least as early as 1934.

SN 248,234. Johnson & Johnson, New Brunswick, N.J. Filed June 16, 1966.

LISTER'S

Owner of Reg. Nos. 58,463, 527,764, and 807,317.
For Razors.
First use at least as early as Feb. 14, 1966.

SN 250,408. Sherman Car Wash Equipment Co., Palmyra, N.J. Filed July 15, 1966.

KWIK-LIK

For Automatic Car Wash Installation or Systems, and Component Parts, Comprising Body Brush, Rinse, Blower, Foamer, and Applicator Units.
First use May 3, 1966.

SN 250,409. Sherman Car Wash Equipment Co., Palmyra, N.J. Filed July 15, 1966.

CYCLO WASH

The word "Wash" is disclaimed apart from the mark as shown.
For Coin-Operated and Other Fully Automatic Spray Car Washer Installation or System, and Component Parts, Comprising Applicator, Track Assembly, Pump, Motors, Tanks, and Heaters.
First use Oct. 10, 1963.

SN 252,300. The U.S. Baird Corporation, Stratford, Conn. Filed Aug. 12, 1966.

MULTIPLE TRANSFER

For Metal Working Machine Tools—Namely, Metal Forming and Stamping Presses.
First use Jan. 30, 1966.

SN 253,355. Stenotype Grandjean, Paris, France. Filed Aug. 29, 1966.

GRANDJEAN

For Shorthand Machines and Shorthand Tape Readers.
First use at least as early as 1910; in commerce at least as early as 1950.

SN 254,909. Aqua Jet Pumps Limited, Toronto, Ontario, Canada. Filed Sept. 22, 1966.

AQUA JET

Applicant disclaims the right to the exclusive use of the word "Jet," apart from the mark. Owner of Canadian Reg. No. 124,042, dated Oct. 20, 1961.
For Water Pumping Systems (Comprising a Pressure and Water Storage Tank, a Motor Coupled to a Pump, and Controls Therefor), and Pumps.

SN 254,910. Aqua Jet Pumps Limited, Toronto, Ontario, Canada. Filed Sept. 22, 1966.

Aqua Jet WATER SYSTEMS

Applicant disclaims the right to the exclusive use of the words "Jet" and "Water Systems," apart from the mark. Owner of Canadian Reg. No. 121,367, dated Mar. 3, 1961.
For Water Pumping Systems (Comprising a Pressure and Water Storage Tank, a Motor Coupled to a Pump, and Controls Therefor), and Pumps.

SN 256,081. FMC Corporation, San Jose, Calif. Filed Oct. 10, 1966.

CHICAGO PUMP

For Sewage and Waste Treatment Equipment.
First use on or about Dec. 31, 1909.

SN 259,531. The Dow Chemical Company, Midland, Mich. Filed Nov. 28, 1966.

ARPOR

For Insecticide Spray Equipment.
First use Nov. 4, 1966.

SN 262,330. Gray Company, Inc., Minneapolis, Minn. Filed Jan. 11, 1967.

GRACO

For Dispensing Systems for Lubricants and Various Other Fluids and Parts and Accessories Thereof; Pressurized Fluid Spraying Systems for Spraying Paints, Mastic Materials and Cleaning Solutions and Parts and Accessories Thereof; Fluid Pumping Systems and Parts and Accessories Thereof; Service Reel Assemblies for Lubricants and Various Other Fluids; Air Powered Pumps; Air Compressors; Agitator Units for Mixing Fluids; and Spray Guns and Parts Thereof.
First use June 1, 1926, on dispensing systems for lubricants and parts and accessories thereof.

SN 262,331. Gray Company, Inc., Minneapolis, Minn. Filed Jan. 11, 1967.

GRACO

For Dispensing Systems for Lubricants and Various Other Fluids and Parts and Accessories Thereof; Pressurized Fluid Spraying Systems for Spraying Paints, Mastic Materials and Cleaning Solutions and Parts and Accessories Thereof; Fluid Pumping Systems and Parts and Accessories Thereof; Service Reel Assemblies for Lubricants and Various Other Fluids; Air Powered Pumps; Air Compressors; Agitator Units for Mixing Fluids; and Spray Guns and Parts Thereof.
First use Feb. 7, 1964, on service reel assemblies.

SN 262,828. White Motor Corporation, Cleveland, Ohio. Filed Jan. 18, 1967.

GIESEL

For Internal Combustion Engines.
First use on or about Oct. 16, 1966.

SN 263,206. Spartan Saw Works, Inc., Springfield, Mass. Filed Jan. 24, 1967.

SABRE-SPAR

For Saw Blades.
First use Jan. 3, 1967.

SN 263,207. Spartan Saw Works, Inc., Springfield, Mass. Filed Jan. 24, 1967.

RECIPRO-SPAR

For Saw Blades.
First use Nov. 2, 1966.

SN 263,208. Spartan Saw Works, Inc., Springfield, Mass. Filed Jan. 24, 1967.

SPAR-CHIP

For Welders' Hammers.
First use Dec. 2, 1966.

SN 265,281. Dexco Corporation, Detroit, Mich. Filed Feb. 23, 1967.

GEARBUR

For Carbide Coated Tools Used for Honing, Grinding, and the Like.
First use Sept. 13, 1961.

SN 272,448. Spec-Trac, Inc., Indianapolis, Ind. Filed May 26, 1967.

GOPHER

For Cable Laying Apparatus.
First use May 18, 1967.

SN 275,723. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed July 11, 1967.

SCOTCHFLEX

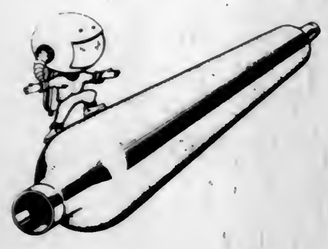
Owner of Reg. No. 805,439.
For Hand Rollers Useful for Adhering Flat Cable Having an Adhesive Attached to One Side Thereof.
First use Oct. 3, 1961.

SN 275,725. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed July 11, 1967.

3M

Owner of Reg. No. 824,845.
For Hand Rollers Useful for Adhering Flat Cable Having an Adhesive Attached to One Side Thereof.
First use Oct. 3, 1961.

SN 276,249. Randel's Manufacturing Company, Incorporated, Oklahoma City, Okla. Filed July 18, 1967.



Applicant disclaims the representation of the muffler apart from the mark as shown.
For Automotive Mufflers.
First use Mar. 1, 1966.

Class 25—Locks and Safes

SN 262,660. The Spartan Works, Ltd., New York, N.Y. Filed Jan. 17, 1967.

pak-a-lok

For Removable Drawer and Cabinet Locks.
First use Aug. 1, 1966.

Class 26—Measuring and Scientific Appliances

SN 233,160. Les Fabriques d'Assortiments Reunies, Le Locle, Switzerland. Filed Nov. 23, 1965.

CARY

Owner of U.S. Reg. No. 741,277.
For Instruments and Apparatus for Measuring Lengths, Thicknesses, and/or Angles; Instruments and Apparatus for Measuring Lengths, Thicknesses, and/or Angles and Having as a part thereof Mechanical, Optical, and Electronic Amplification Means; Gauges, Master Gauges, Gauge Blocks for Measuring Dimensions of Outer or Inner Sections and Thicknesses, Respectively.
First use in or about December 1936; in commerce 1945.

SN 239,553. Svenska Ackumulator Aktiebolaget Jungner, Oskarshamn, Sweden. Filed Feb. 24, 1966.

SAL LOG

Applicant disclaims "Log" other than as used in the entire mark. Priority claimed under Sec. 44(d) on Swedish application filed Sept. 10, 1965; Reg. No. 120,827, dated Sept. 1, 1967.
For Devices and Plants for Indicating and for Automatic Recording of Measurement Results—Namely, Data Logs, Ships' Logs, Apparatus for Measuring and Recording the Draught of a Ship, Pressure Gages and Viscosity Measuring Instruments, Speedometers, and Odometers.

SN 244,846. Olson Manufacturing Co., Ames, Iowa. Filed May 3, 1966.

AMES

For Drafting Equipment, Comprising T-Squares, Stadia Protractors, Radius Curves, Lettering Guides, Portable Combination Drawing Board and Drawing Tool Container Kits, and Drafting Visual Aids Comprising Projection Boxes and Wall Charts.
First use on or about Jan. 1, 1918, on lettering guides.

SN 245,927. Ilex Optical Co., Inc., Rochester, N.Y. Filed May 18, 1966.

UNIVERSAL SYNCHRO

For Camera Shutters and Tachistoscopes.
First use at least as early as Jan. 12, 1925.

SN 247,102. Ayres Corporation, Wilmington, Calif. Filed June 2, 1966.

CALCULER-D

For Tax Calculator Slide Rule.
First use June 1, 1950.

SN 254,030. Asahi Optical Company, Limited, Itabashi-ku, Tokyo, Japan. Filed Sept. 8, 1966.

METALICA

Owner of Japanese Reg. No. 589,657, dated June 15, 1962.
For Photographic Cameras, Motion Picture Cameras, and Photographic Lenses for Cameras and Motion Picture Cameras.

SN 255,693. Buck X-Graph Company, St. Louis, Mo. Filed Oct. 4, 1966.

X-OGRAPH

For Medical and Dental Photographic Supplies and Equipment, X-Ray Supplies and Equipment, and Photo-Copy Paper and Supplies.
First use May 15, 1918.

SN 256,138. Saint-Gobain Techniques Nouvelles, Courbevoie (Seine), France. Filed Oct. 10, 1966.

CAISSON

For Protective Housings Including Pneumatic Systems, Especially for Radioactive Gases.
First use on or about Jan. 31, 1964; in commerce on or about Jan. 31, 1964.

SN 259,708. Becton Dickinson and Company, East Rutherford, N.J. Filed Nov. 30, 1966.

BIOTIP

For Disposable Tips for Automatic Pipette.
First use on or about Apr. 13, 1966.

SN 259,709. Becton Dickinson and Company, East Rutherford, N.J. Filed Nov. 30, 1966.

BIOPETTE

For Automatic Pipette.
First use on or about Apr. 13, 1966.

SN 260,637. R. B. Aldcroftt, Downey, Calif. Filed Dec. 13, 1966.

ALDCROFT INFINITY

For Machine for Projecting Varying Color Designs on Surfaces With the Aid of Light and Lens.
First use Nov. 2, 1965.

SN 261,084. The Jay International Corp., Palatine, Ill. Filed Dec. 19, 1966.

AUTOMARK

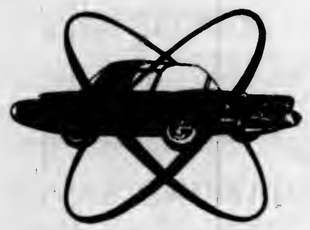
Owner of Reg. No. 809,207.
For Thermometers.
First use Sept. 19, 1966.

SN 261,405. Smith Kline & French Laboratories, Philadelphia, Pa. Filed Dec. 23, 1966.

ESKALAB

For Clinical Chemistry Assay Kit Composed of Reagents and Diluents; Disposable Pipette and Curvette Assembly; Spectrophotometer Micro-Pipette; Diluents Reservoir; Adaptor and Optical Cell.
First use Dec. 15, 1966.

SN 261,575. Electronic Sensor Company, Inc., Cherry Hill, N.J. Filed Dec. 28, 1966.



For Revenue Control Systems, Vehicle Counting Equipment, and Counter Controlled Systems.
First use on or about Sept. 27, 1966.

SN 262,251. Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany. Filed Jan. 10, 1967.

SOLINA

Owner of German Reg. No. 640,159, dated June 17, 1953.
For Photographic Cameras.

SN 262,356. Sigma Instruments, Inc., South Braintree, Mass. Filed Jan. 11, 1967.

DATACEL

Owner of Reg. No. 787,131.
For Optoelectronic and Optical Electronic Light Sensitive Logic, Switching and Detecting Devices.
First use Oct. 4, 1966.

SN 262,959. Newell' Corporation, Madison, Wis. Filed Jan. 20, 1967.

FURNACE SITTER

For Battery Operated, Thermostatically Controlled, Warning Light, Used to Indicate Heating System Failures.
First use Nov. 22, 1966.

SN 263,271. Hunter Associates Laboratory, Incorporated, Fairfax, Va. Filed Jan. 25, 1967.

HUNTERLAB

For Test Equipment and Instruments for Use in the Analysis and Measurement of Colors, Color Differences, and Appearance Properties of Materials—Namely, Colorimeters, Goniophometers, Glossmeters, Reflectometers, and Color Profile Recorders.
First use Oct. 31, 1956.

SN 263,416. Unicam Instruments Limited, Cambridge, England. Filed Jan. 26, 1967.

UNICAM

Owner of British Reg. No. 574,606, dated Jan. 22, 1937.
For Infrared Detectors, Spectrometers, Colorimeters, Spectrophotometers, Photometers, Absorptiometers, Crystal Goniometers, Powder Cameras, and Clinical Analyzers.

SN 270,006. Robertson Photo-Mechanix, Inc., Des Plaines, Ill. Filed Apr. 25, 1967.

VACUUMAGIC

For Vacuum Film Holders for Use on Graphic Arts Cameras.
First use Mar. 28, 1967.

SN 270,069. Logetronics Inc., Springfield, Va. Filed Apr. 26, 1967.

LOGETAR

For Optical Lenses for Photographic Equipment.
First use May 17, 1963.

SN 274,289. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed June 20, 1967.

CASUAL

For Electrically Operated Machine for Making Copies of Printed or Pictorial Matter.
First use May 22, 1967.

Class 27—Horological Instruments

SN 260,066. Movado Watch Agency, Inc., New York, N.Y. Filed Dec. 5, 1966.

QUEENDIVER

Owner of Reg. No. 821,125.
For Watches.
First use Nov. 7, 1966.

SN 260,067. Movado Watch Agency, Inc., New York, N.Y. Filed Dec. 5, 1966.

STARDIVER

Owner of Reg. No. 821,125.
For Watches.
First use Nov. 7, 1966.

SN 263,818. Cornavin Watch S.A., Geneva, Switzerland. Filed Feb. 2, 1967.



Owner of Swiss Reg. No. 208,011, dated Nov. 6, 1964.
For Watches, Clocks, Chronometers, Chronographs, and Parts, Fittings, and Accessories Therefor.

SN 263,819. Cornavin Watch S.A., Geneva, Switzerland. Filed Feb. 2, 1967.

CORNAVIN

Owner of Swiss Reg. No. 181,812, dated June 20, 1960.
For Watches, Clocks, Chronometers, Chronographs, and Parts, Fittings, and Accessories Therefor.

SN 264,954. Nivada A.G. (Nivada, S.A., Nivada, Ltd.), Grenchen, Solothurn, Switzerland. Filed Feb. 17, 1967.

GLACIER

Priority claimed under Sec. 44(d) on Swiss Reg. No. 221,915, dated Dec. 2, 1966.
For Watches and Parts Thereof.

SN 265,543. Movado Watch Agency, Inc., New York, N.Y. Filed Feb. 27, 1967.

WHICHWATCH

For Watches.
First use May 10, 1966.

SN 266,675. Montres Cortébert, Juillard & Cie., S.A., Bienne, Switzerland. Filed Mar. 14, 1967.

TELLUS

Owner of Swiss Reg. No. 193,861, dated Sept. 13, 1962.
For Horological Products—Namely, Watches, Movements of Watches, Cases of Watches, Dials of Watches, and Parts Thereof.

SN 266,896. Le Mans Time Corp., Yonkers, N.Y. Filed Mar. 16, 1967.

LE MANS

For Wrist Watches, Pocket Watches, and Pendant Watches.
First use Oct. 26, 1966.

Class 28 — Jewelry and Precious-Metal Ware

SN 258,368. Irving J. Egel, d.b.a. Larry Guthman Company and La Ray of Miami, Miami, Fla. Filed Nov. 10, 1966.

La Ray OF MIAMI

Applicant disclaims the phrase "of Miami" apart from the mark as shown. Owner of Reg. No. 687,548.
For Jewelry and Precious Metal Ware.
First use Jan. 25, 1965.

SN 267,764. Oneida Ltd., Oneida, N.Y. Filed Mar. 28, 1967.

MARTINIQUE

For Sterling Silver Flatware.
First use Mar. 14, 1967.

SN 270,611. The Richelieu Corp., Holbrook, N.Y. Filed May 3, 1967.

DIAMOND SAVOY

The term "Diamond" is disclaimed apart from the mark as shown.
For Necklaces, Bracelets, Finger Rings, Jewelry Clips, Brooches, and Earrings.
First use January 1945.

SN 272,141. Sarah Coventry Inc., Newark, N.Y. Filed May 23, 1967.

ENTRÉ

For Costume Jewelry for Men and Women.
First use Mar. 16, 1967.

SN 279,433. Buccellati Silver, Ltd., New York, N.Y. Filed Aug. 31, 1967.

QUIRINALE

The mark "Quirinale" is the Italian equivalent of "Quirinal," which is the name of one of the seven hills of Rome, and the name of a papal palace in that city.
For Sterling Silver Flatware.
First use Aug. 15, 1967.

Class 29 — Brooms, Brushes, and Dusters

SN 254,452. Richard A. Kaskey, d.b.a. Jenard Company, Narberth, Pa. Filed Sept. 14, 1966.

Beauty Leaves

Applicant disclaims the word "Leaves" apart from the mark as shown.
For Thin Linen Facial Tissue.
First use June 7, 1966.

Class 30 — Crockery, Earthenware, and Porcelain

SN 263,558. Fürstenberg Ehemalige Herzoglich Braunschweigische Porzellanmanufaktur, Furstenberg (Wesler), Germany. Filed Jan. 30, 1967.



Priority claimed under Sec. 44(d) on German application filed July 28, 1966; Reg. No. 828,752, dated Jan. 18, 1967. Owner of U.S. Reg. No. 775,351.
For Cups, Saucers, Dishes, Plates, Coffee and Tea Dispensers, Ceramic Table Ware, Crockery Kitchenware, Vases, Candlesticks, and Ornamental Boxes Made of China.

Class 31 — Filters and Refrigerators

SN 264,479. Conoflow Corporation, Blackwood, N.J. Filed Feb. 13, 1967.

CONOFLOW

Owner of Reg. No. 624,768.
For Combination Air Filter and Regulator Unit for Providing Clean Air Under Regulated Pressure to Instruments and Controls, Automatic Machinery and Other Pneumatic Devices.
First use April 1949.

SN 269,915. Nolin Manufacturing Company, Inc., Montgomery, Ala. Filed Apr. 24, 1967.

NOLIN

For Commercial Refrigeration Equipment and Accessories—Namely, Beverage Coolers, Closed Meat Cases, Refrigerated Display Cases Having Moisturizers, Open View Cases, Reach-In Cases, Specialty Refrigerated Cases, and Walk-In Coolers and Freezers.
First use Sept. 15, 1961.

Class 32 — Furniture and Upholstery

SN 254,275. The Gerwin Corporation, Michigan City, Ind. Filed Sept. 12, 1966.

PEG STRIP

For Formed Blocks Having Spaced Perforations To Receive Various Hanger Devices.
First use July 22, 1966.

SN 261,385. The Maryland Bedding Company, d.b.a. Sealy Mattress Company, Baltimore, Md. Filed Dec. 23, 1966.

STRATA-BUILT

For Mattresses and Box Springs.
First use at least as early as Nov. 30, 1966.

SN 267,645. Monarch Metal Products, Inc., New Windsor, N.Y. Filed Mar. 27, 1967.

UNI DOSE

For Storage and Dispensary Cabinets for Holding Medications.
First use Nov. 14, 1966.

SN 267,778. Woodland Furniture Mfg., Inc., Torrance, Calif. Filed Mar. 28, 1967.



The color blue is claimed to be an essential feature of applicant's mark, and is considered a part thereof.
For Shelving, Desks, Cabinets, and Other Items of Furniture, Normally Designated as Case Goods.
First use Sept. 1, 1965.

SN 269,916. Nolin Manufacturing Company, Inc., Montgomery, Ala. Filed Apr. 24, 1967.

NOLIN

For Commercial Furniture—Namely, Check Out Counters, Display Racks, and Pizza Tables Having Storage Areas for Ingredients and a Working Area for Making Pizzas.
First use Sept. 15, 1961.

Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 245,943. National Stamping & Electric Works, St. Louis, Mo. Filed May 18, 1966.

SPEED-O-MATIC

For Commercial Type Coffee and Hot Water Makers.
First use 1962.

SN 249,089. Tenney Engineering, Inc., Union, N.J. Filed June 27, 1966.

RELIALAB

Owner of Reg. No. 790,686.
For Temperature and/or Humidity Controlled Plant Growth Rooms and Chambers, Freeze Dryers, Temperature Controlled Fluid Heaters and Coolers.
First use January 1966.

SN 256,942. Joslyn Mfg. and Supply Co., Chicago, Ill. Filed Oct. 21, 1966.

FLAMELESS CHEF

No exclusive right to the word "Flameless" is claimed apart from the mark as shown.
For Barbecue Grills.
First use Oct. 6, 1966.

SN 258,784. Chevron Chemical Company, San Francisco, Calif. Filed Nov. 16, 1966.

ORTHO

For Petroleum Wax Fired Heaters for Trees, Vines, and Crops.
First use Oct. 28, 1966.

SN 281,430. The Vulcan Radiator Company, Hartford, Conn. Filed Sept. 29, 1967.

FLOORLINE

For Radiators—Namely, Finned-Tube Radiator Elements and Enclosures, and Structural Parts Thereof.
First use in or about August 1964.

Class 35—Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 263,052. The Goodyear Tire & Rubber Company, Akron, Ohio. Filed Jan. 23, 1967.

DURA BELT

The word "Belt" is disclaimed apart from the mark as shown.
For Tires.
First use Nov. 16, 1966.

SN 273,948. Dayco Corporation, Dayton, Ohio. Filed June 15, 1967.



No claim is made to the representation of the length of hose apart from the mark as described. The trademark consists of an orange stripe extending helically about the exterior of the hose at a pitch of about fifteen degrees, the stripe being about one-fourth the diameter of the hose, as shown in the drawing. The stripe is lined for the color orange.
For Fluid Conveying Hose.
First use on or about Dec. 31, 1965.

Class 36—Musical Instruments and Supplies

SN 243,465. Milky Way Records, Danville, Ill. Filed S.R. Apr. 14, 1966; Am. P.R. Sept. 18, 1967.

MILKY WAY

For Phonograph Records.
First use Jan. 1, 1965.

SN 245,895. Audio Devices, Inc., New York, N.Y. Filed May 18, 1966.

AUDIOPAK

Owner of Reg. Nos. 388,865, 388,866, and 622,966.
For Magnetic Recording Tape and Cartridges Therefor.
First use January 1964.

SN 256,638. ARC Sound Limited, Toronto, Ontario, Canada. Filed Oct. 18, 1966.

International ARTISTS

Applicant disclaims the word "Artists" apart from the mark as shown.
For Phonograph Records and Sound Recording Tapes.
First use August 1965; in commerce August 1965.

SN 258,847. St. Louis Music Supply Company, St. Louis, Mo. Filed Nov. 16, 1966.

René Dumont

For Clarinets, Saxophones, and Flutes.
First use 1938.

SN 276,394. The Total Sound, Inc., New York, N.Y. Filed July 20, 1967.

SOCK-O

For Phonograph Records.
First use June 9, 1967.

Class 37—Paper and Stationery

SN 252,443. Paper Converting Corporation, Chicago, Ill. Filed Aug. 12, 1966.

ULTRA-CEL

For Cellophane Having a Barrier Coating Used for Making Bags, Envelopes, and Like Products.
First use Aug. 18, 1965.

SN 267,038. Graphic Controls Corporation, Buffalo, N.Y. Filed Mar. 17, 1967.

REPROVEL

For Drafting and Tracing Paper.
First use prior to 1945.

SN 267,938. Good-Will Greetings, Inc., Mineola, N.Y. Filed Mar. 30, 1967.

BRIEF-O-GRAM

For Business Reply Forms.
First use January 1947.

SN 268,104. Rexall Drug and Chemical Company, d.b.a. Colorite Plastics Company, Los Angeles, Calif. Filed Mar. 31, 1967.

POLYSORB

For Felt Marker Wicks.
First use Dec. 14, 1966.

SN 281,518. Fox River Paper Corporation, Appleton, Wis. Filed Oct. 2, 1967.

ARIA

For Writing Paper.
First use Sept. 11, 1967.

SN 281,519. Fox River Paper Corporation, Appleton, Wis. Filed Oct. 2, 1967.

CAPRICCIO

For Writing Paper.
First use Sept. 11, 1967.

SN 281,520. Fox River Paper Corporation, Appleton, Wis. Filed Oct. 2, 1967.

LARGO

For Writing Paper.
First use Sept. 11, 1967.

SN 281,521. Fox River Paper Corporation, Appleton, Wis. Filed Oct. 2, 1967.

NOCTURNE

For Writing Paper.
First use Sept. 11, 1967.

SN 281,523. Fox River Paper Corporation, Appleton, Wis. Filed Oct. 2, 1967.

RHAPSODY

For Writing Paper.
First use Sept. 11, 1967.

SN 281,524. Fox River Paper Corporation, Appleton, Wis. Filed Oct. 2, 1967.

RONDO

For Writing Paper.
First use Sept. 11, 1967.

Class 38—Prints and Publications

SN 239,328. Securities Council, Inc., Poughkeepsie, N.Y. Filed Feb. 21, 1966.

STOCKOGRAM

For Stock and Financial Newsletter or Bulletin.
First use Dec. 24, 1965.

SN 246,045. Cocktails by Mail, Inc., Omaha, Nebr. Filed May 19, 1966.



For Gift Certificates for Use in Bars and Restaurants.
First use at least as early as Apr. 1, 1966.

SN 262,586. The J. L. Hudson Company, Detroit, Mich. Filed Jan. 16, 1967.

ACTION AGE

For Magazine, Published Monthly.
First use Dec. 27, 1966.

SN 263,668. Hospital Publications, Inc., Cleveland, Ohio. Filed Jan. 31, 1967.

PR CAPSULES

For Periodic Newsletters on Public Relations and Related Subjects for Hospital Officials.
First use August 1962.

SN 264,027. The Christophers, Inc., New York, N.Y. Filed Feb. 6, 1967.

CHRISTOPHER NEWS NOTES

Owner of Reg. No. 722,609.
For Periodical Religious Pamphlet.
First use May 1946.

SN 264,089. Norcross, Inc., New York, N.Y. Filed Feb. 6, 1967.

V.I.P.

For Greeting Cards.
First use Jan. 6, 1967.

SN 265,606. The Billboard Publishing Company, d.b.a. Watson-Guptill Publications, Cincinnati, Ohio. Filed Feb. 28, 1967.



For Books.
First use on or about Apr. 1, 1937.

SN 265,904. Jerome L. Landsman, Skokie, Ill. Filed Mar. 3, 1967.

CASH, "STAT!"

For Charts, Instruction Sheets, and Forms.
First use Jan. 16, 1967.

SN 267,276. The White & Bagley Company, Worcester, Mass. Filed Mar. 21, 1967.

CAVALCADE OF AUTO RACING

For Annual Periodical.
First use May 27, 1964.

SN 269,195. The Merrill Anderson Company, Inc., New York, N.Y. Filed Apr. 14, 1967.

THE PHILADELPHIA TRUSTEE

For Bulletins Published Periodically Relating to Trusts, Estates, and Taxes Prepared by the Applicant for Use by Applicant's Customers.
First use Feb. 20, 1967.

SN 269,789. Rexall Drug and Chemical Company, d.b.a. Vanda Cosmetics Company, Los Angeles, Calif. Filed Apr. 21, 1967.

VANDA

For Publication—Namely, House Organ.
First use August 1966.

SN 281,005. Hornblower & Weeks-Hemphill, Noyes, New York, N.Y. Filed Sept. 25, 1967.

SINCE 1888

Owner of Reg. No. 831,989.
For Periodical Investment Advisory Reports, Market Letters and Technical Reports, Leaflets, Pamphlets, and Booklets Issued From Time to Time.
First use Apr. 1, 1966.

SN 281,257. The Hearst Corporation, New York, N.Y. Filed Sept. 27, 1967.

REDEYE

For Newspaper Cartoons.
First use Sept. 11, 1967.

SN 282,600. The New Yorker Magazine, Inc., New York, N.Y. Filed Oct. 24, 1967.

THE NEW YORKER

For Weekly Magazine.
First use Feb. 21, 1925.

Class 39 — Clothing

SN 236,612. Alfred Leiss and Walter Heil (joint venture), d.b.a. Kio-Strickenfabrik, Leiss, Heil & Co., Selbitz, Upper Franconia, Germany. Filed Jan. 17, 1966.

Owner of German Reg. No. 708,744, dated Nov. 27, 1957.
For Woven and Knitted Sweaters, Dresses, Skirts, Costumes, Blouses, and Coats.

SN 237,289. Allied Stores Corporation, d.b.a. The Bon Marche, Seattle, Wash. Filed Jan. 26, 1966.

SUZI CHRISTI

"Suzi Christi" is not the name of any known living individual.
For Footwear.
First use May 10, 1965.

SN 242,108. Celanese Corporation, New York, N.Y., by change of name from Celanese Corporation of America, New York, N.Y. Filed Mar. 29, 1966.

CELANESE

Owner of Reg. Nos. 186,516, 389,206, and others.
For Men's, Women's, and Children's Slacks; Women's and Girls' Dresses, Shirts, Panties, Slips, Nightgowns, and Shorts; Men's and Boys' Shorts and Shirts.
First use Feb. 21, 1966; Sept. 28, 1923, as to "Celanese."

SN 242,109. Celanese Corporation, New York, N.Y., by a change of name from Celanese Corporation of America, New York, N.Y. Filed Mar. 29, 1966.

CELANESE

Owner of Reg. Nos. 186,516, 389,206, and others.
For Men's, Women's, and Children's Slacks; Women's and Girls' Dresses, Shirts, Panties, Slips, Nightgowns, and Shorts; Men's and Boys' Shorts and Shirts.
First use Feb. 21, 1966; Sept. 28, 1923, as to "Celanese."

SN 242,110. Celanese Corporation, New York, N.Y., by change of name from Celanese Corporation of America, New York, N.Y. Filed Mar. 29, 1966.

For Men's, Women's, and Children's Slacks; Women's and Girls' Dresses, Shirts, Panties, Slips, Nightgowns, and Shorts; Men's and Boys' Shorts and Shirts.
First use Feb. 21, 1966.

SN 243,093. Stoffel AG, St. Gall, Switzerland. Filed Mar. 23, 1966.

STOFFELS AQUAPERL

Owner of Swiss Reg. No. 144,103, dated Oct. 29, 1952; and U.S. Reg. Nos. 713,909 and 810,189.
For Dresses, Coats, Anoracs (Parkas), Shirts, and Sportswear Consisting of Shorts, Sports-Shirts, Blazers and Suits, Sports Sweaters, Sports Overalls, Gym-Dresses, Tennis Suits, Caps, Ski-Trousers and Windproof Jackets, Sports-Shoes. Plimsolls, Skirts, Blouses, and Sports Trousers.

SN 243,662. Goldring Inc., New York, N.Y. Filed Apr. 18, 1966.

Rona Di Roma

Apart from the relationship to the trademark shown in the drawing, without affecting any of the rights therein of applicant at common law, and only for the purpose of registration, the words, "Di Roma," are disclaimed.
For Dresses and Suits for Women.
First use Mar. 26, 1966.

SN 244,083. Joseph F. Corcoran Shoe Co., Inc., Stoughton, Mass., by mesne assignment and change of name from Corcoran, Inc., Stoughton, Mass. Filed Apr. 22, 1966.

Corcoran BRAND OF Quality

The words "Brand of Quality" are disclaimed apart from the mark as shown. Owner of Reg. No. 730,144.
For Paratroop Jump Boots and Hunting Boots.
First use January 1946.

SN 246,996. Bear Brand Hosiery Co., Chicago, Ill. Filed June 1, 1966.

HOSIERY HEAVEN

The word "Hosiery" is disclaimed apart from the mark as shown.
For Ladies' Hosiery.
First use June 1963.

SN 247,844. Tabby Sportswear Co., Inc., Brooklyn, N.Y. Filed June 10, 1966.

Applicant disclaims the word "Knits" apart from the mark as shown.
For Sweaters; Women's Skirts and Suits.
First use June 1965.

SN 248,632. Puritan Fashions Corporation, New York, N.Y. Filed June 21, 1966.

DOMANI

The word "Domani" is the Italian word for "tomorrow." Owner of Reg. Nos. 703,996 and 759,266.
For Women's Wear—Namely, One, Two, and Three Piece Knitted Suits and Dresses.
First use on and prior to Sept. 6, 1960.

SN 248,633. Puritan Fashions Corporation, New York, N.Y. Filed June 21, 1966.

LADY DOMANI

The word "Domani" is the Italian word for "tomorrow." Owner of Reg. Nos. 703,996 and 759,266.
For Women's Wear—Namely, One, Two, and Three Piece Knitted Suits and Dresses.
First use on and prior to Sept. 6, 1960.

SN 249,214. Bear Brand Hosiery Co., Chicago, Ill. Filed June 29, 1966.

SHEER CHARM

For Ladies' Hosiery.
First use early 1960.

SN 251,123. H. Daroff & Sons, Inc., Philadelphia, Pa. Filed July 27, 1966.

NATURAL GENTLEMAN

For Men's Suits, Topcoats, and Overcoats.
First use on or about June 15, 1961.

SN 252,045. Welpro, Inc., Portsmouth, N.H. Filed Aug. 9, 1966.

WELPRO

For Women's and Misses' Shoes.
First use June 13, 1966.

SN 253,654. Johnston & Murphy, Nashville, Tenn. Filed Sept. 1, 1966.

LEVELER

For Men's Shoes.
First use at least as early as April 1966.

SN 253,670. New York Merchandise Co., Inc., New York, N.Y. Filed Sept. 1, 1966.

BEST MAID

Owner of Reg. Nos. 205,276, 702,624, and others.
For Infants' Wear—Namely, Bootees, Sacques, Caps, Pajamas, Bibs, Socks, Shirts, and Shoes.
First use 1930.

SN 253,959. Compagnie Generale de la Maille en Abrege Cogema, Paris, Seine, France. Filed Sept. 7, 1966.

FRESYL

Owner of French Reg. No. 528,595, dated Feb. 26, 1965 (Seine); Natl. Inst. No. 241,993.
For Outerwear and Underwear—Namely, Jackets, Coats, Overcoats, Suits, Frocks, Waistcoats, Cardigans, Trousers, Skirts, Hats, Bodices, Shirts, Slips, Pants, Knickers, Tights, Neckties, Stockings, Socks, Gloves, Bathing Suits, Corsets, Girdles, and Brassieres.

SN 254,055. J/P Imports, Inc., Cincinnati, Ohio. Filed Sept. 8, 1966.

FLOGGS

The lining shown on the mark is a part of the mark and not for color.
For Outer Shorts, Pants, Jackets, and Slacks.
First use Aug. 23, 1966.

SN 255,925. Spartans Industries, Inc., New York, N.Y. Filed Oct. 6, 1966.

Ann Robin

The name "Ann Robin" is fanciful.
For Ladies' Wearing Apparel—Namely, Sweaters, Skirts, Slacks, Blouses, Pajamas, and Hosiery.
First use May 1, 1960.

SN 256,082. Federated Department Stores, Inc., Brooklyn, N.Y. Filed Oct. 10, 1966.

A & S

For Sports Clothes—Namely, Outer Jackets, Sport Shirts, Sweaters, Slacks, Walk Shorts, Sport Coats, Raincoats, Ties; Loungerwear—Namely, Pajamawear and Bathrobes; Playwear—Namely, Slacks, Knit Shirts, T-Shirts, Cabanna Sets, and Beach Coats; and Millinery—Namely, Caps, Beach Hats, Rain Hats, and Rain Caps.
First use October 1894.

SN 256,228. Oxford Industries, Inc., Atlanta, Ga., by change of name from Oxford Manufacturing Company, Atlanta, Ga. Filed Oct. 11, 1966.

PANTREE

Owner of Reg. No. 808,561.
For Women's and Misses' Outerwear—Namely, Pants, Jackets, Pants Sets (Pants, Jackets and Shirts), Bermuda Sets (Shorts and Man-Tailored Shirts), Sweaters, and Jumpers.
First use June 1, 1965.

SN 256,301. McGregor-Doniger Inc., New York, N.Y. Filed Oct. 12, 1966.

Bernhard Altmann

The mark identifies "Bernhard Altmann," now deceased.
For Men's Slacks, Sport Shirts, Sweater Shirts, Knit Shirts, Walking Shorts, Sweaters, Sport Jackets, Sport Coats, and Outer Jackets; and Women's Sweaters, Skirts, Slacks, Walking Shorts, Shirts, Dresses, Blazers, Knit Shirts, Sweater Shirts, and Outer Jackets.
First use 1946.

SN 259,673. Pinehurst Textiles, Inc., Asheboro, N.C. Filed Nov. 29, 1966.

REDDY-MATES

Owner of Reg. No. 732,183.
For Slipper Socks.
First use Nov. 23, 1966.

SN 261,166. Spartans Industries, Inc., New York, N.Y. Filed Dec. 20, 1966.

McAllister

For Men's, Women's, and Children's Clothing—Namely, Shirts, Underwear, Sweaters, Socks, and Shoes.
First use June 1, 1950.

SN 261,388. Oxford Industries, Inc., Atlanta, Ga., by change of name from Oxford Manufacturing Company, Atlanta, Ga. Filed Dec. 23, 1966.

COBBIES BY COS COB

Owner of Reg. No. 719,368.
For Women's and Girls' Shirt-Shift.
First use October 1966.

SN 263,009. Beebe Rubber Company, Nashua, N.H. Filed Jan. 23, 1967.

Beebe

Owner of Reg. Nos. 375,903, 734,957, and others.
For Soles and Heels of Natural and Synthetic Rubber and Rubberous Composition.
First use Aug. 11, 1939.

SN 263,744. Chadbourn Gotham, Inc., Charlotte, N.C. Filed Feb. 1, 1967.

RIP NOT

Owner of Reg. Nos. 427,219 and 582,226.
For Men's and Boys' Work Pants, Work Shirts, Overalls, Lined Coats; Sportswear—Namely, Slacks, Knickers, Shirts, Jackets and Breeches, Including Hunting Breeches; and Industrial Uniforms—Namely, Shirts and Pants To Match.
First use January 1937.

SN 264,690. J. P. Stevens & Co., Inc., New York, N.Y. Filed Feb. 14, 1967.

HIGH SPIRIT

Owner of Reg. No. 825,811.
For Hosiery.
First use Feb. 3, 1967.

SN 264,695. Teenform, Inc., New York, N.Y. Filed Feb. 14, 1967.

MARIACHI

For Brassieres.
First use Jan. 25, 1967.

SN 265,369. Sears, Roebuck and Co., Chicago, Ill., assignee of Rubber Corporation of Pennsylvania, West Hazelton, Pa. Filed Feb. 27, 1967.

SKIPFOAM

For Footwear.
First use Aug. 1, 1954.

SN 265,389. C. W. Anderson Hosiery Company, Clinton, S.C. Filed Feb. 24, 1967.

QUEEN MAID

For Ladies' Hosiery.
First use Jan. 25, 1967.

SN 265,545. McGregor-Doniger Inc., New York, N.Y. Filed Feb. 27, 1967.

DRY GUY

For Outer Jackets, Coats, and Ski-Wear.
First use Feb. 14, 1967.

SN 265,629. Huddlespun Inc., New York, N.Y. Filed Feb. 28, 1967.

SCENE-STEALER

For Women's Knitted Suits and Skirts.
First use Feb. 2, 1967.

SN 267,164. Levi Strauss & Co., San Francisco, Calif. Filed Mar. 20, 1967.

NUVO

For Garments, Particularly Trousers.
First use on or before Jan. 15, 1966.

SN 267,169. Melville Shoe Corporation, New York, N.Y. Filed Mar. 20, 1967.

DAVID ST. CLARE

"David St. Clare" is a fanciful name.
For Women's Shoes.
First use Mar. 13, 1967.

SN 267,330. Glen Raven Knitting Mills, Inc., Glen Raven, N.C. Filed Mar. 22, 1967.

GLEN DORA

For Ladies' Hosiery.
First use Feb. 22, 1967.

SN 267,411. A. du Bois & Sons, Inc., New York, N.Y. Filed Mar. 23, 1967.

BATTLE LEADER

For Military Uniforms.
First use May 1942.

SN 268,249. The Warner Brothers Company, Bridgeport, Conn. Filed Apr. 3, 1967.

LITTLE FIBBER

For Brassieres.
First use Oct. 28, 1964.

SN 268,250. The Warner Brothers Company, Bridgeport, Conn. Filed Apr. 3, 1967.

CONCENTRATE

For Women's Girdles.
First use Aug. 17, 1966.

SN 268,251. The Warner Brothers Company, Bridgeport, Conn. Filed Apr. 3, 1967.

FAIR 'N' COOLER

For Brassieres.
First use Jan. 25, 1963.

SN 269,113. Stanley L. Seligman, Hollywood, Fla. Filed Apr. 13, 1967.

KIA

For Women's Dresses, Skirts, Blouses, Slacks, Shorts, and Shifts.
First use May 1, 1966.

SN 269,193. H. Mendel & Co., Inc., Atlanta, Ga. Filed Apr. 14, 1967.

Lenox Square

For Ladies' Blouses, Skirts, Slacks, Sweaters, Dresses, and Swimsuits.
First use Mar. 13, 1967.

SN 269,846. Barmon Brothers Company, Inc., Buffalo, N.Y. Filed Apr. 24, 1967.

MISTER RICHARD

For Dresses for Women and Misses.
First use Aug. 25, 1966.

SN 271,024. Apollo Apparel, Inc., Andalusia, Ala. Filed May 9, 1967.

APOLLO

For Men's Clothing—Namely, Suits, Coats, Pants, Slacks, Shirts, Pajamas, Underwear, and Hose.
First use Mar. 29, 1967.

SN 271,662. Teenform, Inc., New York, N.Y. Filed May 16, 1967.

TEENFORMATION

Owner of Reg. No. 628,728.
For Brassieres and Girdles.
First use May 3, 1967.

SN 271,663. Teenform, Inc., New York, N.Y. Filed May 16, 1967.

TEENFORMATIC

Owner of Reg. No. 628,728.
For Brassieres and Girdles.
First use May 3, 1967.

SN 271,997. Acme Boot Company, Inc., Clarksville, Tenn. Filed May 22, 1967.

SKYDIVER

For Children's Leather Boots.
First use Apr. 15, 1967.

SN 279,028. Melville Shoe Corporation, New York, N.Y. Filed Aug. 25, 1967.

CHESS MAN

For Teen-Age Wearing Apparel—Namely, Suits, Sport Jackets, Outerwear Jackets, Slacks, Shirts, and Sweaters; and Footwear—Namely, Shoes and Hosiery.
First use July 31, 1967.

SN 280,542. Beaunit Corporation, New York, N.Y. Filed Sept. 18, 1967.

LUXURON

For Acetate Tricot Sold in the Form of Undergarments.
First use 1947.

SN 281,016. Petit Leigue, Inc., Philadelphia, Pa. Filed Sept. 25, 1967.

PETIT LEIGUE

Owner of Reg. Nos. 739,416 and 745,515.
For Women's Dresses, Blouses, Sport Suits, Pants, Shorts, Sweaters, Bathing Suits, Shifts, Socks, and Hats.
First use Oct. 20, 1961, on dresses.

Class 40—Fancy Goods, Furnishings, and Notions

SN 281,423. Reid-Meredith, Inc., Lawrence, Mass. Filed Sept. 29, 1967.

Cinderella

For Wigs and Hairpieces.
First use July 21, 1966.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 269,123. J. P. Stevens & Co., Inc., New York, N.Y. Filed Apr. 13, 1967.

BEAUTY ROSE

Owner of Reg. Nos. 287,585, 647,168, and 717,946.
For Towels, Bath Rugs, Blankets, Sheets, and Pillow Cases.
First use Sept. 9, 1960.

SN 269,124. J. P. Stevens & Co., Inc., New York, N.Y. Filed Apr. 13, 1967.

ROSEBOWER

Owner of Reg. Nos. 52,685 and 717,945.
For Towels, Bath Rugs, Blankets, Sheets, and Pillow Cases.
First use Sept. 9, 1960.

SN 281,517. Deering Milliken, Inc., New York, N.Y. Filed Oct. 2, 1967.

FUNSTER

For Textile Fabrics Made of Wool, Cotton, and Synthetic Fibers, and Combinations Thereof.
First use on or about Jan. 7, 1960

Class 43—Thread and Yarn

SN 268,775. John L. Stickley & Company, Inc., Charlotte, N.C. Filed Apr. 10, 1967.



For Yarns.
First use September 1962.

Class 44—Dental, Medical, and Surgical Appliances

SN 253,481. C. R. Bard, Inc., Murray Hill, N.J. Filed Aug. 31, 1966.

QUIK-EE-HANGER

For Urinary Drainage Bag.
First use Aug. 8, 1966.

SN 256,057. Bio/Systems, Inc., Santa Monica, Calif. Filed Oct. 10, 1966.

MAKS

For Self-Contained Units That Prepare and Deliver at Controlled Temperatures a Dialysate Solution to Dialyzers Such as Artificial Kidneys.
First use Mar. 18, 1965.

SN 256,275. Dairy Research Products, Inc., Yarmouth, Maine. Filed Oct. 12, 1966.

ATRAKTOL

For Cattle Magnets.
First use Jan. 2, 1964.

SN 259,802. Baxter Laboratories, Inc., Morton Grove, Ill. Filed Dec. 1, 1966.

CYSTOFLO

For Urinary Drainage Set With Drainage Bag.
First use June 29, 1966.

SN 262,021. Minnesota Mining and Manufacturing Company, St. Paul, Minn., assignee of Cardiosonics Medical Instruments Corporation, Cambridge, Mass. Filed Jan. 6, 1967.

PLOSS

For Medical Apparatus for Monitoring Blood Pressure, Heart Beat, and the Like Comprising a System Having Interchangeable Binaural and Monaural Stethoscope Head Sets, Tubing, Valves, and a Plurality of Chestpieces Including a Sphygmomanometer and a Precordial Chestpiece Together With Quick Disconnect Junctions With the Various Components Operatively Interconnected.
First use at least as early as October 1966.

SN 262,649. Helen Case, Ottawa, Ontario, Canada. Filed Nov. 28, 1966.

INVISABELT

Priority claimed under Sec. 44(d) on Canadian application filed June 23, 1966; Reg. No. 150,381, dated Apr. 21, 1967.
For Sanitary Belts.

SN 262,860. The Foregger Company, Inc., Roslyn Heights, N.Y. Filed Jan. 19, 1967.



For Vaporizers; Resuscitators; Wall Outlets for Medical Gases, Compressed Air and Suction; Regulators; Drainage Bottles; Disposable Airways; and Connectors of Various Types.
First use Sept. 7, 1966.

SN 263,233. Parke, Davis & Company, Detroit, Mich. Filed Jan. 25, 1967.

READI-WRAP

Owner of Reg. Nos. 634,636 and 809,965.
For Sanitary Napkins, Composite Padding, Over Sponges, Examination Gloves, Surgeons' Gloves, Gauze Pads, and Gauze Sponges.
First use on or before Dec. 12, 1956.

SN 263,804. American Cyanamid Company, Wayne, N.J. Filed Feb. 2, 1967.

TYCRON

For Surgical Sutures.
First use Jan. 23, 1967.

SN 264,237. Popper & Sons, Inc., New York, N.Y. Filed Feb. 8, 1967.

GOLD LINE

For Fever Thermometers.
First use September 1963.

SN 264,589. Ritter Pfaulder Corporation, Rochester, N.Y. Filed Feb. 13, 1967.

SATURN

For Foot Controller for Dental Accessories.
First use Dec. 15, 1966.

SN 267,715. Aero-Med Thermal Instrument Co., Inc., Rockville, Md. Filed Mar. 28, 1967.

AMTICO

For Electronic Thermometers for Medical Uses.
First use Nov. 21, 1966.

Class 46—Foods and Ingredients of Foods

SN 182,450. Vanex, Inc., Flint, Mich. Filed Dec. 5, 1963.

VANEX

For Flavorings for Foods and Beverages.
First use Aug. 1, 1935.

SN 235,028. Ah Soo Chen, Newcastle-upon-Tyne, Northumberland, England. Filed Dec. 13, 1965.

MAYKWAY

Owner of British Reg. No. 852,580, dated Aug. 8, 1963.
For Curry Powder; and Preparations Consisting of Curry Powder, Flour, and Seasonings for Use in Making Curry.

SN 239,602. William T. Day, d.b.a. Daylight Donut Flour Company, Tulsa, Okla. Filed Feb. 25, 1966.

DAYLIGHT DONUTS

The word "Donuts" is disclaimed apart from the mark as shown.
For Doughnuts.
First use Jan. 15, 1952.

SN 239,603. William T. Day, d.b.a. Daylight Donut Flour Company, Tulsa, Okla. Filed Feb. 25, 1966.

DAYLIGHT

For Doughnuts and Doughnut Flour.
First use Jan. 15, 1952.

SN 240,427. General Mills, Inc., Minneapolis, Minn. Filed Mar. 8, 1966.

MIGHTY FLAKES

The word "Flakes" is disclaimed apart from the mark as shown.
For Ready-To-Eat Breakfast Cereal.
First use Feb. 7, 1966.

SN 241,498. New England Apple Products Co., Inc., Littleton, Mass. Filed Mar. 21, 1966.



The name "Johnny Appleseed" and pictorial representation are those of the deceased historical character.
For Apple Juice, Apple-Cranberry Juice, Apple Sauce, Apricot Nectar, Cider, Cider Vinegar, Cranberry Juice, Orange Food Drink, Prune Juice, and Vinegar, All Being Canned and Unfrozen.
First use June 23, 1954.

SN 243,173. San Giorgio Macaroni, Inc. (Delaware corporation), Lebanon, Pa., assignee of San Giorgio Macaroni, Inc. (Pennsylvania corporation), Lebanon, Pa. Filed Apr. 11, 1966.

SAN GIORGIO

"San Giorgio" means "St. George" in English.
For Alimentary Pastes, Including Various Sizes, Lengths, Styles, Shapes, and Cuts of Spaghetti and Macaroni; and for Egg Noodles and Egg Noodle Products—Namely, Pot Pie Bows, Pot Pie Squares, Dumplings, Egg Noodle Flakes, Folded Noodles, Baby Pastina; Flavored Bread Crumbs, Grated Cheese, Macaroni and Cheese, Noodles and Cheese, Canned Tomato Paste, and Canned Meat-Flavored and Meatless Spaghetti Sauces.
First use Feb. 1, 1916.

SN 243,174. San Giorgio Macaroni, Inc. (Delaware corporation), Lebanon, Pa., assignee of San Giorgio Macaroni, Inc. (Pennsylvania corporation), Lebanon, Pa. Filed Apr. 11, 1966.



For Alimentary Pastes, Including Various Sizes, Lengths, Styles, Shapes, and Cuts of Spaghetti and Macaroni; and for Egg Noodles and Egg Noodle Products—Namely, Pot Pie Bows, Pot Pie Squares, Dumplings, Egg Noodle Flakes, Folded Noodles, Baby Pastina; Flavored Bread Crumbs, Grated Cheese, Macaroni and Cheese, Noodles and Cheese, Canned Tomato Paste, and Canned Meat-Flavored and Meatless Spaghetti Sauces.
First use Apr. 6, 1964; Feb. 1, 1916, as to the representation of St. George and the dragon.

SN 243,175. San Giorgio Macaroni, Inc. (Delaware corporation), Lebanon, Pa., assignee of San Giorgio Macaroni, Inc. (Pennsylvania corporation), Lebanon, Pa. Filed Apr. 11, 1966.



The drawing is lined for blue, red, and gold, but no claim is made as to color. Owner of Reg. Nos. 128,415 and 607,385.
For Macaroni, Egg Noodles, and Egg Noodle Products—Namely, Pot Pie Bows and Pot Pie Squares.
First use Apr. 6, 1964; Feb. 1, 1916, as to "San Giorgio" and the representation of St. George and the dragon.

SN 246,166. Food Technology, Inc., Chicago, Ill. Filed May 20, 1966.

DRI-MOL

For Dehydrated Molasses for Human Use.
First use Sept. 4, 1963.

SN 247,020. Georgia-Pacific Corporation, Portland, Oreg. Filed June 1, 1966.

Y.L.S.

For Livestock Feed Additives Containing Yeast and Lignosulfonate Feed Values as the Principal Nutritional Constituents.
First use Sept. 29, 1964.

SN 248,674. Carnation Company, Los Angeles, Calif. Filed June 22, 1966.

CIB

For Fortified Milk Powder for Use in Combination With Fluid Milk To Make an Instant Breakfast, and Also for Use at Times Other Than Breakfast.
First use May 18, 1966.

SN 250,877. Universal Foods Corporation, Milwaukee, Wis. Filed July 22, 1966.

SUNSET

For Soup Bases.
First use on or about June 13, 1966.

SN 253,274. Beecham Group Limited, d.b.a. The Pure Lemon Juice Company, Brentford, England. Filed Aug. 29, 1966.

PLJ

Owner of British Reg. No. 744,841, dated July 29, 1955.
For Bottled Fruit Juices.

SN 260,842. Great Eastern Food Products Co., Inc., Newark, N.J. Filed Dec. 15, 1966.

GEFCO

For Non-Dairy All Vegetable Coffee Creamer and a Frozen Vegetable Whip Topping.
First use July 25, 1966.

SN 261,588. Keebler Company, Elmhurst, Ill. Filed Dec. 28, 1966.

Keebler

Owner of Reg. No. 221,594.
For Cookies, Crackers, and Candy.
First use May 5, 1966.

SN 261,722. Cuddy Foods Limited, Strathroy, Ontario, Canada. Filed Dec. 30, 1966.

Cuddy Farms

For Frozen Poultry for Human Consumption.
First use May 1, 1966; in commerce June 15, 1966.

SN 262,691. Eskimo Pie Corporation, Richmond, Va. Filed Jan. 17, 1967.

KLONDIKE

Owner of Reg. No. 532,590.
For Ingredients for Frozen Desserts—Namely, Concentrated Flavoring for Frozen Confections.
First use Apr. 29, 1966.

SN 262,692. Eskimo Pie Corporation, Richmond, Va. Filed Jan. 17, 1967.

ESKOLD

Owner of Reg. No. 534,994.
For Frozen Dessert Ingredient—Namely, Vegetable Stabilizer for Frozen Confections in the Nature of Water Ice Mixes.
First use Mar. 20, 1961.

SN 262,693. Eskimo Pie Corporation, Richmond, Va. Filed Jan. 17, 1967.

MONTEZUMA

Owner of Reg. No. 527,522
For Frozen Dessert Ingredients—Namely, Chocolate Flavoring for Frozen Confections.
First use July 25, 1966.

SN 262,946. Knapp-Sherrill-Koelle, Inc., Donna, Tex. Filed Jan. 20, 1967.

DONNAMEX

Owner of Reg. No. 502,347.
For Fresh Mangoes, Fresh Pineapple, and Fresh Citrus Fruits, Including Grapefruit, Lemons, and Oranges.
First use Nov. 28, 1953.

SN 263,785. Granny Goose Foods, Inc., Oakland, Calif., assignee, by mesne assignment, of Spuds, Inc., Brooklyn, N.Y. Filed Feb. 1, 1967.



Apart from its relationship to the trademark shown on the drawing, and without affecting the rights of applicant at common law to the trademark as shown on the drawing, and only for the purpose of registration, the word "Spuds" is disclaimed.
For Fresh and Frozen Blanched French Fried Potatoes, Potato Pancakes, Whole Peeled Potatoes, and Sliced Raw Potatoes.
First use Mar. 3, 1949.

SN 264,141. Beech-Nut Life Savers, Inc., d.b.a. Martinson Coffee, New York, N.Y. Filed Feb. 7, 1967.

MARTINSON

Owner of Reg. Nos. 581,583, 818,377, and others.
For Candy.
First use Nov. 1, 1966.

SN 265,330. The Pillsbury Company, Minneapolis, Minn. Filed Feb. 23, 1967.

HUNGRY JACK

Owner of Reg. Nos. 339,297 and 807,335.
For Dehydrated Potatoes.
First use Jan. 21, 1967.

SN 266,574. Pacific Alaska Fisheries, Inc., Seattle, Wash. Filed Mar. 13, 1967.

PRIDE OF THE OCEAN

Owner of Reg. No. 82,803.
For Canned Seafoods.
First use on or about July 1, 1900.

SN 266,720. Arvid Nordquist Handelsaktiebolag, Stockholm, Sweden. Filed Mar. 15, 1967.

CLASSIC

Owner of Swedish Reg. No. 90,070, dated Aug. 5, 1960.
For Coffee.

SN 266,722. Berkshire Candy Co., Shillington, Pa. Filed Mar. 15, 1967.



For Confectionery—Namely, Chocolates and Candies.
First use January 1965.

SN 266,853. Beatrice Foods Co., Chicago, Ill. Filed Mar. 16, 1967.



For Bean Sprouts; Mixed Chinese Vegetables; Chop Suey Vegetables; Chow Mein Noodles; Water Chestnuts; Bamboo Shoots; Brown Gravy Sauce; Bead Molasses; Chop Suey or Chow Mein With and Without Meat, Chicken and Shrimp; Chow Mein Dinners Composed of Chow Mein With or Without Meat, Chicken and Shrimp, and Chow Mein Noodles and Soy Sauce; Chop Suey Vegetables With Meat, Chicken and Shrimp; Chow Mein Bi-Pack With Vegetables and a Gravy Containing Mushrooms, Beef, Chicken or Shrimp; Kosher Chop Suey; Mandarin Sauce; Sweet and Sour Sauce; Bean Sprout Salad; Cooked Rice; Fried Rice; Egg Rolls; Shrimp Rolls; Combination Dinners Containing Shrimp, Chicken, Beef or Mushroom Chop Suey With Egg Roll and Fried Rice, All Sold Either in Canned or Frozen Form, or Both.
First use Apr. 5, 1965.

SN 267,010. Thomas Carvel, Yonkers, N.Y. Filed Mar. 17, 1967.

CARVELOG

Owner of Reg. Nos. 597,727, 793,115, and others.
For Frozen Dairy Confections Consisting of Ice Cream, Fruits, Nuts, and Crackers.
First use March 1966.

SN 267,059. Pacific Alaska Fisheries, Inc., Seattle, Wash. Filed Mar. 17, 1967.



Owner of Reg. No. 78,992.
For Canned Seafoods.
First use Aug. 1, 1901.

SN 267,080. United Fruit Company, Boston, Mass. Filed Mar. 17, 1967.

RIGHTAWAY

Owner of Reg. No. 818,799.
For Salad Mixes in Dry Form—Namely, Chicken, Tuna, Ham, and Shrimp Salad.
First use Sept. 8, 1966; Sept. 28, 1965, in a different form.

SN 267,498. Alfonso Gioia and Sons, Inc., Rochester, N.Y. Filed Mar. 24, 1967.

BRAVO

Owner of Reg. No. 373,404.
For Spaghetti Sauce.
First use September 1940.

SN 267,513. Eskimo Pie Corporation, Richmond, Va. Filed Mar. 24, 1967.

ESKIMO MOD-POP

Owner of Reg. Nos. 300,055, 400,973, and others.
For Frozen Dessert Products—Namely, Ice Cream, Ice Milk, and Water Ice.
First use Mar. 22, 1967.

SN 267,522. The Glidden Company, d.b.a. Durkee Famous Foods, Cleveland, Ohio. Filed Mar. 24, 1967.

DURKEX

Owner of Reg. Nos. 547,098 and 798,144.
For Edible Vegetable Oils.
First use May 23, 1963.

SN 267,747. Food Industries Corporation, Dallas, Tex. Filed Mar. 28, 1967.

TANG

For Acidifying Agent and Improver Used in the Making of Bread.
First use on or about Mar. 20, 1967.

SN 270,621. Terleckey Brothers, Amsterdam, N.Y. Filed May 3, 1967.

TRIPLE CROWN

For Livestock Feed.
First use Apr. 20, 1966.
Subj. to Intf. with SN 257,270 and SN 257,271.

SN 277,860. General Mills, Inc., Minneapolis, Minn. Filed Aug. 9, 1967.

BIG CHIEFS

Owner of Reg. No. 221,074.
For Ready To Eat Breakfast Cereal.
First use Mar. 29, 1967.

SN 277,861. General Mills, Inc., Minneapolis, Minn. Filed Aug. 9, 1967.

CHIEF CRISP

The word "Crisp" is disclaimed apart from the mark as shown. Owner of Reg. No. 221,074.
For Ready To Eat Breakfast Cereal.
First use Mar. 29, 1967.

SN 277,862. General Mills, Inc., Minneapolis, Minn. Filed Aug. 9, 1967.

MR. CONES

The word "Cones" is disclaimed apart from the mark as shown. The term "Mr. Cones" does not identify any particular living individual.
For Ready To Eat Breakfast Cereal.
Firs use Nov. 9, 1966.

SN 278,693. Hershey Chocolate Corporation, Hershey, Pa. Filed Aug. 21, 1967.



For Milk Chocolate Covered Nut Roll.
First use on or about Aug. 3, 1967.
Subj. to Intf. with SN 278,719.

SN 278,719. Mars, Incorporated, d.b.a. M & M Candies, Wilmington, Del. Filed Aug. 21, 1967.

RALLY

For Candy.
First use July 31, 1967.
Subj. to Intf. with SN 278,693.

SN 278,937. General Mills, Inc., Minneapolis, Minn. Filed Aug. 24, 1967.

SUGAR SCOOTERS

The word "Sugar" is disclaimed apart from the mark as shown.
For Ready To Eat Breakfast Cereal.
First use on or prior to June 21, 1967.

SN 279,154. Tri-Valley Growers, San Francisco, Calif. Filed Oct. 11, 1967.



Owner of Reg. Nos. 535,718, 605,246, and 619,590.
For Canned Fruits, Berries, Vegetables, Fruit Nectars, Vegetable Juices, Olives, Pizza Sauce, Tomato Catsup, Tomato Paste, and Tomato Sauce.
First use May 10, 1954.

SN 280,372. International Milling Company Inc., Minneapolis, Minn. Filed Sept. 15, 1967.

SPRING RITE

For Wheat Flour.
First use at least as early as Jan. 1, 1956.

SN 280,378. The Quaker Oats Company, Chicago, Ill. Filed Sept. 15, 1967.

MANCAKES

For Prepared Pancake Mix.
First use June 24, 1967.

SN 280,524. J. D. Packing Company, Oxnard, Calif. Filed Sept. 18, 1967.



For Canned Cat Food.
First use Aug. 29, 1967.

Class 49 — Distilled Alcoholic Liquors

SN 254,814. H. Stenham Limited, d.b.a. Highland Blending Company, London, England. Filed Sept. 20, 1966.

GRAND SCOT

Owner of British Reg. No. B796,136, dated Oct. 2, 1959.
For Scotch Whisky.

SN 265,633. Intercontinental Import & Export Co., Inc., Chicago, Ill. Filed Feb. 28, 1967.

CANADIAN PRINCE

No claim of exclusive right is made to the word "Canadian" as used on Canadian whisky apart from the mark as shown.
For Canadian Whisky.
First use on or about Dec. 7, 1966.

SN 274,571. Blanchard Importing & Distributing Co., Inc., d.b.a. J. D. MacCoy & Company, Boston, Mass. Filed June 23, 1967.

RUBINOFF

Applicant claims use for the area comprising the States of Massachusetts, Rhode Island, Connecticut, and Vermont. Owner of Reg. No. 800,078.
For Vodka.
First use in or before 1954.
Subj. to Con. Use Proc. with SN 222,766.

SN 277,331. National Distillers and Chemical Corporation, d.b.a. National Distillers Products Co., and W. & A. Gilbey, Ltd., New York, N.Y. Filed Aug. 2, 1967.



For Vodka.
First use Feb. 20, 1967.

Class 50—Merchandise Not Otherwise Classified

SN 253,905. Pictorial Productions, Inc., Mount Vernon, N.Y. Filed Sept. 6, 1966.

PICTORIALINE

For Signs and Pictorial Displays for Use by Others for Advertising, Business, and Educational Purposes.
First use 1958.

SN 256,842. International Assemblix Corporation, Toledo, Ohio. Filed Oct. 20, 1966.

CUSTOMFOAM

For Three-Dimensional Objects for Display and Advertising, Such as Letters, Signs, Symbols, Monograms, Crests, and Enlargements of Three-Dimensional Physical Things Such as Flowers, Animals, Bottles, Cans, and the Like.
First use Sept. 16, 1966.

SN 257,647. Plastic Enterprises, Incorporated, Independence, Mo. Filed Oct. 31, 1966.

seal·eze

Owner of Reg. No. 835,235.
For Overcaps for Containers.
First use June 2, 1966.

SN 260,059. Manufacture d'Armes & Cycles de Chatellerault (M.A.C.C.), Chatellerault, France. Filed Dec. 5, 1966.

ESCAMOBILE

For Movable Scaffold.
First use Oct. 17, 1966; in commerce Oct. 26, 1966.

SN 281,533. Ward Manufacturing, Inc., Hamilton, Ohio. Filed Oct. 2, 1967.

CAMPANTRY

Owner of Reg. No. 723,954.
For Kit Comprising a Chest Which Houses a Gas or Oil Stove, a Sink and a Water Supply Reservoir, Sold as a Unit Installed in Campers or Trailers.
First use at least as early as Sept. 1, 1966.

Class 51—Cosmetics and Toilet Preparations

SN 233,003. Orbital Laboratories Ltd., Vancouver, British Columbia, Canada. Filed Nov. 19, 1965.

ORBIDENT

Owner of Canadian Reg. No. 121,160, dated Feb. 10, 1961.
For Dental Plate Cleaner for Use Outside the Mouth; But Which Is Unsuitable for Use in the Mouth.

SN 233,004. Orbital Laboratories Ltd., Vancouver, British Columbia, Canada. Filed Nov. 19, 1965.

ORBIDEX

Owner of Canadian Reg. No. 122,408, dated June 2, 1961.
For Dental Plate Cleaner for Use Outside the Mouth; But Which Is Unsuitable for Use in the Mouth.

SN 245,387. Clairol Incorporated, New York, N.Y. Filed May 11, 1966.

THE ESCAPE KIT

Applicant disclaims "Kit" apart from the mark as shown.
For Plurality of Lipsticks Sold Together.
First use Mar. 3, 1966.

SN 251,827. Mary Quant Cosmetics Limited, Surbiton, Surrey, England. Filed Aug. 5, 1966.



For Astringents, Mouth Rinses, Skin Creams, Skin Lotions, Lip Creams, Lipsticks, Rouge, Rouge Boxes Containing Rouge, Nail Polish, Nail Polish Remover, Face Powder, Talcum Powder, Deodorants for Personal Use, Depilatory Preparations, Hair Dyes and Tints, Hair Grooming Preparations, Eyebrow Pencils, Eyeshadow, With and Without Applicators, Mascara, Perfumes, and Sachets.
First use on or about Apr. 30, 1966; in commerce on or about June 30, 1966.

SN 254,247. Clairol Incorporated, New York, N.Y. Filed Sept. 12, 1966.

DAY IN THE SUN

For Hair Lightener.
First use July 8, 1966.

SN 257,932. Caron Corporation, New York, N.Y. Filed Nov. 4, 1966.

CARON IS THE KIND OF FRENCH EVERY WOMAN UNDERSTANDS

Owner of Reg. No. 164,476.
For Perfumes, Face Powder, Toilet Water, and Talcum Powder.
First use July 1966.

SN 261,276. Avon Products, Inc., New York, N.Y. Filed Dec. 22, 1966.

CARTOUCHE

For After Shave Lotion, After Shave Spray, Talc, Personal Aerosol Deodorant, Cream Hair Dress, and Cologne.
First use Dec. 9, 1966.

SN 264,947. The Mennen Company, Morristown, N.J. Filed Feb. 17, 1967.

RAWHIDE

For After Shave Lotion.
First use Jan. 30, 1967.

SN 267,533. The Mennen Company, Morristown, N.J. Filed Mar. 24, 1967.

FIRST FACE

For Skin Conditioner.
First use Mar. 7, 1967.

SN 279,626. Chesebrough-Pond's Inc., New York, N.Y. Filed Sept. 5, 1967.

COOL 'N KIND

The word "Cool" is disclaimed apart from the mark as shown.
For Personal Deodorant.
First use June 29, 1967.

SN 280,017. Chesebrough-Pond's Inc., New York, N.Y. Filed Sept. 11, 1967.

POND'S



Owner of Reg. Nos. 215,081, 530,393, and 583,463.
For Skin Cream.
First use July 31, 1966.

SN 280,018. Chesebrough-Pond's Inc., New York, N.Y. Filed Sept. 11, 1967.

ULTRABAN

For 2-Ethoxyethyl p-Methoxycinnamate, an Ingredient in a Lip Balm.
First use Aug. 17, 1967.

Class 52—Detergents and Soaps

SN 241,031. Chemtronics Inc., Brooklyn, N.Y. Filed Mar. 15, 1966.

CHEMTRONICS

For Chemical Dirt and Grime Remover, Electrical Contact Cleaner, and Tape Recorder Cleaner.
First use on or about Feb. 20, 1958.

SN 261,214. Houbigant, Inc., New York, N.Y. Filed Dec. 21, 1966.

BAIN NOUVEAU

The English translation of "Bain Nouveau" is "bath new."
Owner of Reg. No. 821,272.
For Toilet and Bath Soap.
First use Sept. 14, 1966.

SN 266,436. The Metalife Company, Wentzville, Mo. Filed Mar. 10, 1967.

Whisk

The drawing is lined for red, but no claim is made to color.
Owner of Reg. No. 640,153.
For Cream Hand Cleaner Having Skin Softening Properties.
First use Oct. 15, 1962; Oct. 17, 1946, as to "Whisk."

SN 279,449. Beecham Products Inc., Clifton, N.J. Filed Aug. 31, 1967.

FINALLY FREE

For Hair Shampoo.
First use Aug. 2, 1967.

SN 281,534. B. E. Williams, La Grange Park, Ill. Filed Oct. 2, 1967.

LINEN LIFE

Applicant disclaims "Linen" apart from the mark as shown.
Owner of Reg. Nos. 773,344, 786,140, and 792,449.
For Liquid Soap-Detergent Fabric Conditioner for Use in Laundering.
First use May 3, 1963.

SERVICE MARKS

Class 100 — Miscellaneous

SN 236,791. The Black Steer, Yankton, S. Dak. Filed Jan. 18, 1966.

BLACK STEER



Owner of Reg. No. 757,836.
For Restaurant Services Consisting of the Preparation and Serving of Foods and Beverages.
First use on or about May 31, 1957.

SN 246,100. Port-O-Fino, Redondo Beach, Calif. Filed May 19, 1966.

Portofino

The Enligsh transiation of "Porto" means "harbor" and "Fino" means "fine."
For Small Boat Slip Rental Services and Hotel, Motel Apartments; Lounge and Restaurant Services in Connection Therewith.
First use April 1964.

SN 254,866. The Downtowner Corporation, Memphis, Tenn. Filed Sept. 21, 1966.



The rectangular background design forms no part of applicant's mark.
For Restaurant Services.
First use December 1965.
Subj. to Intf. with SN 263,181.

SN 260,115. Zepi's Pizza, Inc., Kansas City, Mo. Filed Dec. 5, 1966.

ZEPI'S

For Restaurant Services.
First use Dec. 28, 1964.

SN 260,919. Better-Way, Inc., Chicago, Ill. Filed Dec. 16, 1966.

BETTER-WAY

For Business Consulting Services Performed in the Transportation Industry.
First use at least as early as Mar. 7, 1964.

SN 261,683. Scripture Union, Upper Darby, Pa. Filed Dec. 29, 1966.



For Promoting the Study of the Bible and the Development of Christian Character.
First use Nov. 1, 1965.

SN 261,906. Restaurant Associates, Inc., New York, N.Y. Filed Jan. 4, 1967.



For Restaurant Services.
First use during 1948.

SN 263,181. Happy Chef Systems, Inc., Mankato, Minn. Filed Jan. 24, 1967.



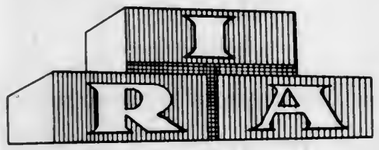
For Restaurant Services.
First use October 1957.
Subj. to Intf. with SN 254,866.

SN 268,495. Information Research Associates, Inc., Lexington, Mass. Filed Apr. 6, 1967.

IRA

For Research, Development and Consulting Services in the Information, Mathematical, and Communication Sciences.
First use Sept. 9, 1964.

SN 268,496. Information Research Associates, Inc., Lexington, Mass. Filed Apr. 6, 1967.



The drawing is lined for the color red.
For Research, Development and Consulting Services in the Information, Mathematical, and Communication Sciences.
First use Sept. 9, 1964.

SN 274,574, Buckaroo Steak Ranches, Inc., St. Louis, Mo., assignee of Miller Brothers Company, Inc., Johnson City, Tenn. Filed June 23, 1967.

BUCKAROO STEAK RANCH

The applicant disclaims the word "Steak" apart from the mark as shown.
For Restaurant Services.
First use June 23, 1967.

Class 101 — Advertising and Business

SN 220,395. Mar-Tec International, Inc., Seattle, Wash. Filed June 4, 1965.

MAR-TEC

For Retail Marine Equipment Store Services.
First use Jan. 6, 1963.

SN 238,070. Florists' Transworld Delivery Association, Detroit, Mich. Filed Feb. 4, 1966.

FTD

Owner of Reg. Nos. 407,189, 773,394, and others.
For Association Services—Namely, Promoting the Interests of Florists, Assisting Florists in Development and Operation of Their Business, Arranging for Exchange and Delivery of Goods Among and by Florists, and Performing Clearing House Services for Said Florists.
First use August 1920.

SN 247,708. Management Counselors, Inc., Chicago, Ill. Filed June 9, 1966.



Applicant disclaims the words "Management Counselors" apart from the design portions of this service mark.
For Office Management Services for Others.
First use Apr. 6, 1966.

SN 254,663. Brainpower, U.S.A. Incorporated, Los Angeles, Calif. Filed Sept. 19, 1966.

BRAINPOWER U.S.A.

Applicant disclaims the designation "U.S.A." apart from its use in conjunction with the word "Brainpower."
For Furnishing Scientific, Engineering, and Technical Personnel and Facilities to Others on a Contract Basis.
First use Aug. 15, 1966.

SN 255,959. Bradfute Corporation, Eastchester, N.Y. Filed Oct. 7, 1966.

MAGIC BOWLING

For Promoting the Sale of Goods and Services of Others by Having the Latter Distribute Coupons to Customers, Some of Which Are Redeemable in Cash Prizes.
First use March 1965.

SN 274,691. Metal Edge Industries, Barrington, N.J. Filed June 26, 1967.

CHECKPOINT

For Security Services—Namely, Preventing the Unauthorized Removal of Materials From Restricted Areas.
First use May 8, 1967.

SN 275,721. Rozinsky's Incorporated, Hatrford, Conn. Filed July 11, 1967.

ROZINSKY'S

For Retail Mail Order Department Store Services.
First use at least as early as November 1964.

Class 102 — Insurance and Financial

SN 256,457. Oak Cliff Savings and Loan Association, Dallas, Tex. Filed Oct. 14, 1966.

OAK CLIFF SAVINGS

Applicant disclaims any exclusive right to the word "Savings."
For Savings and Loan Services.
First use Sept. 19, 1966.

SN 259,144. The Omaha National Bank, Omaha, Nebr. Filed Nov. 21, 1966.



For Banking Services.
First use Dec. 31, 1957.

SN 260,545. Georgia International Life Insurance Company, Atlanta, Ga. Filed Dec. 12, 1966.



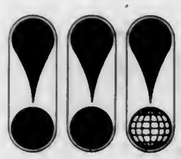
Owner of Reg. No. 791,987.
For Combined Life and Educational Underwriting Insurance Services.
First use Nov. 13, 1966.

SN 260,679. The Presidential Life Insurance Company of America, Chicago, Ill. Filed Dec. 13, 1966.

TRUST IN PRESIDENTIAL FOR LIFE

Owner of Reg. No. 804,864.
For Insurance Underwriting Service.
First use June 6, 1966.

SN 264,554. La Bow, Haynes Company, Inc., Seattle, Wash. Filed Feb. 13, 1967.



For Insurance Brokerage Services.
First use Mar. 10, 1966.

SN 281,006. Hornblower & Weeks-Hemphill, Noyes, New York, N.Y. Filed Sept. 25, 1967.



Owner of Reg. No. 831,989.
For Investment Banking, Investment Management, and Brokerage Services, Including Public and Private Underwriting, Distribution and Placement of Corporate, Municipal and Governmental Securities, Investment Management and Counseling Services, and Brokerage of and Other Dealings in Securities and Commodities.
First use Feb. 28, 1966.

Class 103 — Construction and Repair

SN 251,335. Rayne Corporation, Santa Barbara, Calif. Filed July 29, 1966.

Rayne WATER CONDITIONING

Applicant disclaims any rights to the words "Water Conditioning" apart from the mark as shown. Owner of Reg. No. 700,965.
For Rental and Servicing of Soft Water Equipment.
First use May 1966.

SN 262,194. Rayne Corporation, Santa Barbara, Calif. Filed Jan. 9, 1967.

RAYNE

Owner of Reg. No. 700,965.
For Rental and Maintenance of Soft Water Equipment.
First use 1932.

SN 264,092. P.M.I. Corporation, San Francisco, Calif. Filed Feb. 6, 1967.



For Construction and Engineering Services in the Installation of Industrial, Commercial, and Governmental Machinery, Equipment, Piping, and Related Sheet Metal.
First use May 1, 1965.

Class 105 — Transportation and Storage

SN 260,638. AITS, Inc., Chestnut Hill, Mass., by change of name from American International Travel Service, Inc., Chestnut Hill, Mass. Filed Dec. 13, 1966.

EUROPEAN CARNIVAL

The word "European" is disclaimed apart from the mark as shown.
For Arranging and Conducting Tours.
First use at least as early as Nov. 15, 1966.

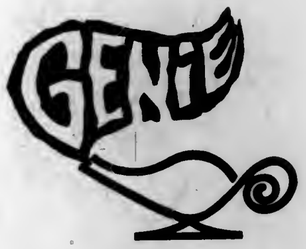
Class 106 — Material Treatment

SN 246,747. Bradford Dyeing Association (U.S.A.) Inc., Westerly, R.I. Filed May 27, 1966.

BRADPERMACPP

Owner of Reg. Nos. 191,216, 674,746, and 812,807.
For Service of Finishing Textile Fabrics To Provide Them With a No-Iron Permanent Press.
First use Jan. 26, 1965.

SN 280,748. Kim Color, Inc., Hialeah, Fla. Filed Sept. 20, 1967.



For Color Photograph Developing Services.
First use July 3, 1967.

SN 281,166. United Refining & Smelting Co., Franklin Park, Ill. Filed Sept. 26, 1967.

UNIFIRE

For Refining of Metals.
First use on or about Jan. 15, 1967.

Class 107 — Education and Entertainment

SN 209,504. Florida Atlantic University, Boca Raton, Fla. Filed Jan. 7, 1965.



The drawing is lined for blue, but no claim is made to color as a feature of the mark. No claim is made to the word "Florida" apart from the mark as shown.
For Educational Services at the University Level.
First use September 1964.

SN 246,052. Daniel's Den Inc., Saginaw, Mich. Filed May 19, 1966.

DANIEL'S DEN

For Operating Establishments Which Feature Soft Drinks, Recreation, Dancing, and Entertainment for Young People.
First use Mar. 1, 1964.

SN 261,748. New Orleans Saints, New Orleans, La. Filed Dec. 30, 1966.

NEW ORLEANS SAINTS

The words "New Orleans" are disclaimed apart from the mark as shown.
For Furnishing Entertainment Services in the Nature of Professional Football Games.
First use Dec. 28, 1966.

SN 262,969. Professional Panhellenic Association, Arlington, Va. Filed Jan. 20, 1967.

For Educational Services—Namely, Promoting High Educational Standards in Professional Training; Stimulating Improvement in the Professions; Advancing Interests of, and Development of Opportunities for, Professional Women.

First use 1964.

SN 280,745. Colgems Records, Inc., New York, N.Y. Filed Sept. 20, 1967.

For Entertainment Services—Namely, Musical Entertainment Services Rendered by a Vocal and Instrumental Group.

First use July 24, 1967.

TRADEMARK REGISTRATIONS ISSUED

PRINCIPAL REGISTER

Class 1—Raw or Partly Prepared Materials

839,778. HYDRON. National Patent Development Corporation. SN 244,512. Pub. 5-9-67. Filed 4-28-66.

839,779. ALPHA ROMAN. Domestic Marble & Stone Corporation. SN 249,310. Pub. 9-19-67. Filed 6-30-66.

839,780. UNIROS. Union Camp Corporation. SN 252,973. Pub. 7-4-67. Filed 8-23-66.

839,781. GRANDSTAND AND DESIGN. DeWine & Hamma Seed Company, Inc., d.b.a. DeWine Seeds. SN 253,426. Pub. 9-19-67. Filed 8-30-66.

839,782. FAIRFIELD 100 AND DESIGN. DeWine & Hamma Seed Company, Inc., d.b.a. DeWine Seeds. SN 253,427. Pub. 9-19-67. Filed 8-30-66.

839,783. RED KING AND DESIGN. DeWine & Hamma Seed Company, Inc., d.b.a. DeWine Seeds. SN 253,428. Pub. 9-19-67. Filed 8-30-66.

839,784. AVICRIMP. FMC Corporation. SN 258,519. Pub. 9-19-67. Filed 11-14-66.

Class 2—Receptacles

839,785. CORRACOOL. West Virginia Pulp and Paper Company. SN 232,254. Pub. 2-21-67. Filed 11-5-65.

839,786. CRYSTAL PACK. Mutual Plastic Mold Corporation. SN 232,338. Pub. 12-13-66. Filed 11-8-65.

839,787. LUSTRKON. Arkay Packaging Corporation. SN 235,810. Pub. 9-19-67. Filed 1-5-66.

839,788. CLIK-A-SWEET. Counterpart Corp. SN 244,681. Pub. 9-19-67. Filed 5-2-66.

839,789. BIN'TAINER. Fusion Rubbermaid Corporation. SN 245,073. Pub. 9-19-67. Filed 5-6-66.

839,790. AIRTEK. Fansteel Metallurgical Corporation. SN 245,917. Pub. 9-19-67. Filed 5-18-66.

839,791. PHILCAN. Philadelphia Can Co., Inc. SN 250,023. Pub. 9-19-67. Filed 7-11-66.

839,792. SEPRO. Continental Can Company, Inc. SN 251,608. Pub. 9-19-67. Filed 8-3-66.

839,793. TWIRL-A-SCRIPT AND DESIGN. Twirl-A-Script, Inc. SN 253,182. Pub. 9-19-67. Filed 8-25-66.

839,794. EL CID AND DESIGN. El Cid Ltd. SN 253,510. Pub. 9-19-67. Filed 8-31-66.

839,795. FALCON (DESIGN). Falcon Alarm Company, Inc. MULTIPLE CLASS (Classes 2, 12, 21, and 23). SN 257,735. Pub. 9-19-67. Filed 11-2-66.

839,796. CLUSTER-CASE. The Mead Corporation. SN 258,562. Pub. 9-19-67. Filed 11-14-66.

839,797. MILLER AND DESIGN. Miller Manufacturing Company. SN 259,752. Pub. 9-19-67. Filed 11-30-66.

839,798. ADL. A.D.L. Cement Products, Inc. SN 259,886. Pub. 9-19-67. Filed 12-2-66.

839,799. COVER GIRL. Noxell Corporation. SN 260,069. Pub. 9-19-67. Filed 12-5-66.

839,800. TEX-LOK. Weyerhaeuser Company. SN 260,120. Pub. 9-19-67. Filed 12-2-66.

839,801. CC AND DESIGN. Coulter Electronics, Inc. SN 260,732. Pub. 9-19-67. Filed 12-14-66.

839,802. TR PLASTICS AND DESIGN. Tedruth Plastics Corporation. SN 261,115. Pub. 9-19-67. Filed 12-19-66.

839,803. REFRESHER. United States Envelope Company. SN 261,337. Pub. 9-19-67. Filed 12-22-66.

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

839,804. CONTOURA. Samsonite Corporation, assignee of Shwayder Brothers, Inc. SN 213,166. Pub. 8-9-66. Filed 3-2-65.

839,805. H BUCKLEY AND DESIGN. L. J. McMullen, d.b.a. Belgrade Saddlery. SN 241,163. Pub. 9-19-67. Filed 3-16-66.

Class 4—Abrasives and Polishing Materials

839,806. CE-RITE. Transelco, Inc. SN 252,139. Pub. 9-19-67. Filed 8-10-66.

839,807. DYGLEAM. MacDermid Incorporated. SN 255,111. Pub. 9-19-67. Filed 9-26-66.

839,808. LEA LUXEMATIC. The Lea Manufacturing Company. SN 263,926. Pub. 9-19-67. Filed 2-3-67.

Class 6—Chemicals and Chemical Compositions

839,809. LISSAFOAM. Imperial Chemical Industries of Australia and New Zealand Limited. SN 201,635. Pub. 10-19-65. Filed 8-10-64.

839,810. ACHEMYL. Amylo Chemie N.V. SN 235,617. Pub. 9-19-67. Filed 1-3-66.

839,811. TOTALGAZ. Compagnie Francaise de Raffinage, Société Anonyme. SN 240,154. Pub. 9-19-67. Filed 3-4-66.

839,812. SPERLOX-SZ AND DESIGN. Dawson Chemical Company. SN 250,457. Pub. 9-19-67. Filed 7-18-66.

839,813. TYNOL. Milchem Incorporated. SN 260,342. Pub. 8-8-67. Filed 12-8-66.

839,814. REHAVID. Armour Pharmaceutical Company, d.b.a. Rehels Chemical Company. SN 260,513. Pub. 9-19-67. Filed 12-12-66.

839,815. REHYZYME. Armour Pharmaceutical Company, d.b.a. Rehels Chemical Company. SN 260,811. Pub. 9-19-67. Filed 12-15-66.

839,816. TRANS-VERT. Amchem Products, Inc. SN 261,018. Pub. 9-19-67. Filed 12-19-66.

839,817. SOVERMOL. Dehydag Deutsche Hydrierwerke G.m.b.H. SN 261,285. Pub. 9-19-67. Filed 12-22-66.

839,818. RHONDIUM. Tivian Laboratories Inc. SN 262,820. Pub. 9-19-67. Filed 1-18-67.

839,819. DQR. Ira S. Latimer. SN 263,090. Pub. 9-19-67. Filed 1-23-67.

839,820. SPECTRATHENE. National Distillers and Chemical Corporation. SN 263,193. Pub. 9-19-67. Filed 1-24-67.

Class 10—Fertilizers

839,821. T-C-T-A. Great Lakes Carbon Corporation. SN 259,315. Pub. 9-19-67. Filed 11-23-66.

Class 11 — Inks and Inking Materials

839,822. OPTICHROME. Lawter Chemicals, Inc. SN 257,714. Pub. 9–19–67. Filed 11–1–66.

Class 12 — Construction Materials

839,795. (See Class 2 for this trademark.)

839,823. POLYGROUT. Polycell Products Limited. SN 235,933. Pub. 9–19–67. Filed 1–6–66.

839,824. GUARD-O-PACK. Napco, Inc. SN 236,769. Pub. 9–19–67. Filed 1–18–66.

839,825. FIBRE-SEAL. Carl L. Sterner, d.b.a. C. L. Sterner Co. SN 246,493. Pub. 9–19–67. Filed 5–24–66.

839,826. CHEMLON. Manuel Manna, assignee of Continental Manufacturers, Inc. SN 246,881. Pub. 9–19–67. Filed 5–31–66.

839,827. DELTA. Nils Eric Algot Noryd. SN 247,082. Pub. 9–19–67. Filed 5–11–66.

839,828. PERM-SURE. Birma Products Corporation. SN 247,880. Pub. 9–19–67. Filed 6–13–66.

839,829. VAPO-SURE. Birma Products Corporation. SN 247,884. Pub. 9–19–67. Filed 6–13–66.

839,830. WEATHER-SURE. Birma Products Corporation. SN 247,885. Pub. 9–19–67. Filed 6–13–66.

839,831. DELTA DECOLITE. Delta Steel Buildings Co. SN 249,627. Pub. 9–19–67. Filed 7–6–66.

839,832. DELTA SPACE BEAM. Delta Steel Buildings Co. SN 249,628. Pub. 9–19–67. Filed 7–6–66.

839,833. DELTA DECOKOLOR. Delta Steel Buildings Co. SN 249,629. Pub. 9–19–67. Filed 7–6–66.

839,834. HUSKEE-BILT. Huskee-Bilt Construction Co. SN 250,483. Pub. 9–19–67. Filed 7–18–66.

839,835. HOMASOTE 4-WAY. Homasote Company. SN 253,311. Pub. 9–19–67. Filed 8–29–66.

839,836. R-M AND DESIGN. Interchemical Corporation. SN 253,882. Pub. 7–4–67. Filed 9–6–66.

839,837. MONRAY. Monier-Raymond Concrete Tile Co. SN 254,886. Pub. 9–19–67. Filed 9–21–66.

839,838. VARIAN. Varian Associates. SN 255,372. Pub. 9–19–67. Filed 9–28–66.

839,839. VA AND DESIGN. Varian Associates. SN 255,375. Pub. 9–19–67. Filed 9–28–66.

839,840. "SUPERVENT." Airtherm Manufacturing Company. SN 256,707. Pub. 9–19–67. Filed 10–19–66.

839,841. INSULCAP. The Glidden Company. SN 257,182. Pub. 9–19–67. Filed 10–25–66.

839,842. NALCO. Nalco Chemical Company. SN 257,793. Pub. 9–19–67. Filed 11–2–66.

839,843. OXILINE K. Harbison-Walker Refractories Company. SN 257,855. Pub. 9–19–67. Filed 11–3–66.

839,844. OXILINE KL. Harbison-Walker Refractories Company. SN 257,857. Pub. 9–19–67. Filed 11–3–66.

839,845. ADJUSTA-FLEX. Balco, Inc. SN 257,922. Pub. 9–19–67. Filed 11–4–66.

839,846. KUSHION-AIRE. Weather-Seal, Inc. SN 258,339. Pub. 9–19–67. Filed 11–9–66.

839,847. W WEST-O-MATIC AND DESIGN. L. R. West Manufacturing Co. SN 258,433. Pub. 9–19–67. Filed 11–10–66.

839,848. DESIGN OF SWINGING S. Southwest Forest Industries, Inc. SN 260,366. Pub. 9–19–67. Filed 12–8–66.

839,849. MY-RO. My-Ko Chemical Corporation. SN 262,804. Pub. 9–19–67. Filed 1–18–67.

839,850. SUSPEND-A STAIRS AND DESIGN. Pease Woodwork Company, Inc. SN 263,604. Pub. 9–19–67. Filed 1–30–67.

839,851. 3M. Minnesota Mining and Manufacturing Company. SN 271,319. Pub. 9–19–67. Filed 5–12–67.

839,852. SCOTCH-SEAL. Minnesota Mining and Manufacturing Company. SN 271,322. Pub. 9–19–67. Filed 5–12–67.

839,853. HANDI-FLEX. The Gibson-Homans Company, d.b.a. Handi-Products Company. SN 271,576. Pub. 9–19–67. Filed 5–16–67.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

839,854. GRACIOUS LADY. Walter Kidde & Company, Inc., assignee of S. W. Farber, Inc. SN 224,525. Pub. 7–12–66. Filed 7–29–65.

839,855. TLI AND DESIGN. Thermionics Laboratory, Inc. MULTIPLE CLASS (Classes 13, 21, 23, and 34). SN 227,360. Pub. 9–19–67. Filed 9–7–65.

839,856. PHILLIPS. Phillips Screw Company. SN 243,577. Pub. 10–18–66. Filed 4–14–66.

839,857. HAGER AND DESIGN. C. Hager & Sons Hinge Manufacturing Company. SN 251,211. Pub. 9–19–67. Filed 7–28–66.

839,858. ACCROFILL. Herman Laub III, d.b.a. Laub Engineering Company. SN 252,922. Pub. 9–19–67. Filed 8–9–66.

839,859. JAMCO. J. A. McFarland Corporation. SN 253,775. Pub. 9–19–67. Filed 9–2–66.

839,860. FISH (DESIGN). Sternco Industries, Inc. SN 257,526. Pub. 9–19–67. Filed 10–28–66.

Class 14 — Metals and Metal Castings and Forgings

839,861. VISCOTHERM. Special Metals Corporation. SN 259,587. Pub. 9–19–67. Filed 11–28–66.

839,862. ANCOLOR. Hoeganaes Corporation. SN 259,920. Pub. 9–19–67. Filed 12–2–66.

Class 15 — Oils and Greases

839,863. MECHANICS CHOICE. Avnet, Inc. SN 256,915. Pub. 9–19–67. Filed 10–21–66.

839,864. SUPER-TEST. Signal Oil and Gas Company. SN 260,088. Pub. 9–19–67. Filed 12–5–66.

839,865. DICRONITE. Lubrication Sciences, Inc. SN 275,576. Pub. 9–19–67. Filed 7–10–67.

Class 16 — Protective and Decorative Coatings

839,866. WOODLUX. Textron Industries, Inc., assignee of H. K. Porter Company, Inc. SN 164,170. Pub. 5–12–64. Filed 3–7–63.

839,867. STORMTITE. Colonial Refining and Chemical Company. SN 254,132. Pub. 9–19–67. Filed 9–9–66.

839,868. SONOCLEAR. Sonneborn Building Products, Inc. SN 255,827. Pub. 9–19–67. Filed 10–5–66.

839,869. PLI-O-DRI. Hydralum Industries, Inc. SN 256,359. Pub. 9–19–67. Filed 10–13–66.

839,870. PLI-O-NAM'L. Hydralum Industries, Inc. SN 256,448. Pub. 9–19–67. Filed 10–14–66.

839,871. MECHANICS CHOICE. Avnet, Inc. SN 256,916. Pub. 9–19–67. Filed 10–21–66.

839,872. ENGARD. Engard Coatings Corporation, by change of name from Endurance Coatings Corporation. SN 261,474. Pub. 9–5–67. Filed 12–27–66.

839,873. MICRO GARD. Micro-Lube, Inc. SN 264,564. Pub. 9–19–67. Filed 2–13–67.

839,874. 3M. Minnesota Mining and Manufacturing Company. SN 265,954. Pub. 9–19–67. Filed 3–6–67.

839,875. PYRALIN. E. I. du Pont de Nemours and Company. SN 269,827. Pub. 9–19–67. Filed 4–24–67.

Class 18 — Medicines and Pharmaceutical Preparations

839,876. ALHYDROGEL. Superfos Export Company A/S. SN 230,007. Pub. 9–19–67. Filed 10–12–65.

839,877. MEMORETTE. Syntex Laboratories, Inc. SN 244,537. Pub. 9–19–67. Filed 4–28–66.

839,878. BOSQUE. Jose L. Camacho, d.b.a. Bosque. SN 251,790. Pub. 9–19–67. Filed 8–5–66.

839,879. TYRO-SUL. Masti-Kure Products Co. SN 252,487. Pub. 9–19–67. Filed 8–16–66.

839,880. SIRLENE. The Dow Chemical Company. SN 253,286. Pub. 9–19–67. Filed 8–29–66.

839,881. D-E-A-R. Cook Laboratories, Inc. SN 254,133. Pub. 9–19–67. Filed 9–9–66.

839,882. SNIFTY. International Pharmaceutical Corporation. SN 254,448. Pub. 9–19–67. Filed 9–14–66.

839,883. SIMPLEX. Gynecic Laboratories, Inc. SN 254,760. Pub. 9–19–67. Filed 9–19–66.

839,884. DEVROM. The Parthenon Company, Inc. SN 254,939. Pub. 9–19–67. Filed 9–22–66.

839,885. GLUTANOR. The Purdue Frederick Company. SN 255,124. Pub. 9–19–67. Filed 9–26–66.

839,886. LOREMED. The William A. Webster Co. SN 255,140. Pub. 9–19–67. Filed 9–26–66.

839,887. MEDI-GUARD AND DESIGN. Eagle Food Centers, Inc. SN 255,522. Pub. 9–19–67. Filed 9–30–66.

839,888. CONTRAST. Bristol-Myers Company. SN 255,871. Pub. 9–19–67. Filed 10–6–66.

839,889. KATTLE-KING. V.M.E. Corp. SN 256,780. Pub. 9–19–67. Filed 10–19–66.

839,890. RONDOTABS. Chas. Pfizer & Co., Inc. SN 258,324. Pub. 9–19–67. Filed 11–9–66.

839,891. NUTRI-HEALTH. Pet & Pal, Inc. SN 260,358. Pub. 9–19–67. Filed 12–8–66.

839,892. CONTOUR. Hudson National, Inc. SN 262,937. Pub. 9–19–67. Filed 1–20–67.

839,893. DETECLO. American Cyanamid Company. SN 263,003. Pub. 9–19–67. Filed 1–23–67.

839,894. INTIME. Stanley Drug Products, Inc. SN 263,210. Pub. 9–19–67. Filed 1–24–67.

839,895. THWART. American Home Products Corporation. SN 263,436. Pub. 9–19–67. Filed 1–27–67.

839,896. BONE-EZE. Melvin Charles Dugger, d.b.a. Perflex Products Co. SN 264,526. Pub. 9–19–67. Filed 2–13–67.

839,897. PECTORAL DE KEMP. Lanman & Kemp-Barclay & Co. Incorporated. SN 268,010. Pub. 9–19–67. Filed 3–31–67.

Class 19 — Vehicles

839,898. KAWASAKI AIRCRAFT. Kawasaki Aircraft Co., Ltd. SN 244,411. Pub. 9–19–67. Filed 4–27–66.

839,899. KAWASAKI AND DESIGN. Kawasaki Aircraft Co., Ltd. SN 244,413. Pub. 9–19–67. Filed 4–27–66.

839,900. CONSTELLATION. Chris-Craft Industries, Inc. SN 258,493. Pub. 9–19–67. Filed 11–14–66.

839,901. CRUSADER. Chris-Craft Industries, Inc. SN 258,494. Pub. 9–19–67. Filed 11–14–66.

839,902. CASCADE. Yacht Constructors, Inc. SN 258,953. Pub. 9–19–67. Filed 11–17–66.

839,903. CHINOOK. Yacht Constructors, Inc. SN 258,954. Pub. 9–19–67. Filed 11–17–66.

Class 21 — Electrical Apparatus, Machines, and Supplies

839,795. (See Class 2 for this trademark.)

839,855. (See Class 13 for this trademark.)

839,904. NORSTAT. Gebrüder Bühler. SN 228,675. Pub. 9–19–67. Filed 9–27–65.

839,905. BUHLER NORSTAT. Gebrüder Bühler. SN 228,817. Pub. 9–19–67. Filed 9–28–65.

839,906. CALLMASTER. Phonemaster, Inc. SN 238,106. Pub. 9–19–67. Filed 2–4–66.

839,907. V. Vitramon, Incorporated. SN 240,682. Pub. 9–19–67. Filed 3–10–66.

839,908. VITRAMON. Vitramon, Incorporated. SN 240,684. Pub. 9–19–67. Filed 3–10–66.

839,909. TREPAC AND DESIGN. Trepac Corporation of America. SN 242,863. Pub. 9–19–67. Filed 4–6–66.

839,910. DATATONE. Trepac Corporation of America. SN 242,864. Pub. 9–19–67. Filed 4–6–66.

839,911. ESSCO. Electric Sweeper Service Company. SN 245,178. Pub. 9–19–67. Filed 5–9–66.

839,912. CAB CHARGER. John L. Callaway, d.b.a. Cab Charger Company. SN 250,636. Pub. 9–19–67. Filed 7–20–66.

839,913. INSUL-8 BAR AND DESIGN. Insul-8-Corp., by assignment and change of name from Insul-8-Corp. SN 252,385. Pub. 9–19–67. Filed 8–15–66.

839,914. BEREC AND DESIGN. The Ever Ready Company (Great Britain) Limited. SN 253,512. Pub. 9–19–67. Filed 8–31–66.

839,915. CHASEFLEX. Chase & Sons, Inc. SN 253,727. Pub. 9–19–67. Filed 9–2–66.

839,916. CHASEMAT. Chase & Sons, Inc. SN 253,728. Pub. 9–19–67. Filed 9–2–66.

839,917. TRANSAMIKE. Electronic Development Corporation. SN 253,962. Pub. 9–19–67. Filed 9–7–66.

839,918. GOODY-KOOKER. John T. Miller. SN 255,911. Pub. 9–19–67. Filed 10–6–66.

839,919. FISH (DESIGN). Sternco Industries, Inc. SN 257,528. Pub. 9–19–67. Filed 10–28–66.

839,920. CYCLE-GUARD. Anzac Industries, Inc. SN 257,756. Pub. 9–19–67. Filed 11–2–66.

839,921. MACH III. Anzac Industries, Inc. SN 258,473. Pub. 9–19–67. Filed 11–14–66.

839,922. NATIONAL AND DESIGN. Matsushita Electric Industrial Co., Ltd. SN 261,701. Pub. 5–2–67. Filed 12–30–66.

Class 22 — Games, Toys, and Sporting Goods

839,923. GYRO-BALANCED. SW Industries, Inc. SN 225,998. Pub. 11–1–66. Filed 8–18–65.

839,924. JEKKU. Woodex Henrik Gustafsson & Co. SN 233,032. Pub. 9–19–67. Filed 11–19–65.

839,925. SMAD. Walter C. Meyers, d.b.a. Haltwelen Company. SN 245,085. Pub. 9–19–67. Filed 5–6–66.

839,926. SNEAKER. Stance-Rite Co. SN 245,254. Pub. 9–19–67. Filed 5–9–66.

839,927. HI YO. The Ohio Art Company. SN 254,556. Pub. 9–19–67. Filed 9–15–66.

839,928. THERMO/CRAFT. Emenee Industries, Inc. SN 255,302. Pub. 9–19–67. Filed 9–28–66.

839,929. RAPCO. Rapaport Brothers, Inc. SN 255,356. Pub. 9–19–67. Filed 9–28–66.

839,930. MICRO-GROOV. Raymon W. Cook, d.b.a. Ray Cook. SN 256,347. Pub. 9–19–67. Filed 10–13–66.

839,931. HUNTERFLAGE. Delta Products, Inc. SN 261,144. Pub. 9–19–67. Filed 12–20–66.

839,932. SCOTT, FORESMAN. Scott, Foresman and Company. MULTIPLE CLASS (Classes 22 and 38). SN 266,387. Pub. 9–19–67. Filed 3–10–67.

839,933. JUST FOR THE FUN OF IT. Eldon Industries, Inc. SN 267,584. Pub. 9–19–67. Filed 3–27–67.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

839,795. (See Class 2 for this trademark.)

839,855. (See Class 13 for this trademark.)

839,934. RATCLIFF. Ratcliff Hoist Company, Inc. SN 240,653. Pub. 9–19–67. Filed 3–10–66.

839,935. ACCURATED. UTD Corporation. SN 245,032. Pub. 5–2–67. Filed 5–5–66.

839,936. PERFECTION AMERICAN. Perfection American, Inc. SN 248,926. Pub. 9–19–67. Filed 6–24–66.

839,937. LITTLE GIANT AND DESIGN. Beckley-Cardy Company. SN 250,631. Pub. 9–19–67. Filed 7–20–66.

839,938. PUG. Wells Tool Company. SN 254,206. Pub. 9–19–67. Filed 9–7–66.

839,939. GEOPACTOR. Societe Anonyme des Anciens Etablissements Albaret. SN 255,549. Pub. 9–19–67. Filed 9–30–66.

839,940. COMET. Schnellpressenfabrik Koenig & Bauer Aktiengesellschaft. SN 274,921. Pub. 9–19–67. Filed 6–28–67.

839,941. COURIER. Schnellpressenfabrik Koenig & Bauer Aktiengesellschaft. SN 274,922. Pub. 9–19–67. Filed 6–28–67.

Class 26 — Measuring and Scientific Appliances

839,942. 330. Xerox Corporation. SN 240,380. Pub. 9–19–67. Filed 3–7–66.

839,943. LILIPUT. Hellige International Inc. SN 240,437. Pub. 9–19–67. Filed 3–8–66.

839,944. AUTOPRINT. General Aniline & Film Corporation. SN 240,726. Pub. 9–19–67. Filed 3–11–66.

839,945. BENCOTE. N. P. Benson Optical Company, d.b.a. Benson Optical Company. MULTIPLE CLASS (Classes 26 and 106). SN 242,531. Pub. 9–19–67. Filed 4–4–66.

839,946. DIGITRAK. Edo Western Corporation. SN 250,834. Pub. 9–19–67. Filed 7–22–66.

839,947. AR. Mallinckrodt Chemical Works. SN 254,058. Pub. 9–19–67. Filed 9–8–66.

839,948. PIDEX. Optomechanisms, Inc. SN 255,342. Pub. 9–19–67. Filed 9–28–66.

839,949. HV AND DESIGN. High Voltage Engineering Corporation. SN 269,604. Pub. 9–19–67. Filed 4–20–67.

839,950. TURTOX. General Biological Supply House, Inc. SN 271,207. Pub. 9–19–67. Filed 5–11–67.

Class 27 — Horological Instruments

839,951. IMEXAL. Icko Wakmann, d.b.a. Relide Clock Company. SN 252,223. Pub. 9–19–67. Filed 8–11–66.

839,952. WATCH DOG. Medco, Inc. SN 260,264. Pub. 9–19–67. Filed 12–7–66.

Class 28 — Jewelry and Precious-Metal Ware

839,953. RL. Rudy Levy Inc. SN 242,735. Pub. 9–19–67. Filed 4–5–66.

839,954. KAPREE. Abraham G. Sager, d.b.a. Kapree Wedding Ring Company. SN 248,142. Pub. 9–19–67. Filed 6–15–66.

839,955. VA. Van Alst Wedding Ring Corporation. SN 253,379. Pub. 9–19–67. Filed 8–29–66.

839,956. WHITE PAISLEY. Gorham Corporation. SN 260,660. Pub. 9–19–67. Filed 12–13–66.

839,957. BOUNTIFUL. Oneida Ltd. SN 261,593. Pub. 9–19–67. Filed 12–28–66.

839,958. OLD ITALIAN. Buccellati Silver, Ltd. SN 263,335. Pub. 9–19–67. Filed 1–26–67.

839,959. ROYAL CREST AND DESIGN. C. H. Stuart & Co., Inc. SN 264,476. Pub. 9–19–67. Filed 2–13–67.

839,960. FAITHFUL WITNESS. Warner Press, Inc. SN 264,994. Pub. 9–19–67. Filed 2–17–67.

Class 29 — Brooms, Brushes, and Dusters

839,961. CAPITAL OX. Elder & Jenks, Inc. SN 260,907. Pub. 9–19–67. Filed 12–16–66.

Class 30 — Crockery, Earthenware, and Porcelain

839,962. CROWN SUSSEX. Crown Staffordshire China Company, Ltd. SN 254,208. Pub. 9–19–67. Filed 9–6–66.

Class 31 — Filters and Refrigerators

839,963. GENERAL IONICS AND DESIGN. General Ionics Corporation. SN 246,832. Pub. 9–19–67. Filed 5–31–66.

839,964. FISH (DESIGN). Sternco Industries, Inc. SN 257,531. Pub. 9–19–67. Filed 10–28–66.

839,965. MARVLFLO. Marvel Engineering Company. SN 258,391. Pub. 9–19–67. Filed 11–10–66.

839,966. MARVELINE-TB. Marvel Engineering Company. SN 258,392. Pub. 9–19–67. Filed 11–10–66.

839,967. MARVELINE-TT. Marvel Engineering Company. SN 258,825. Pub. 9–19–67. Filed 11–16–66.

839,968. JETSTREAM. HPE, Inc. SN 259,111. Pub. 9–19–67. Filed 11–21–66.

839,969. CARVEL AND DESIGN. Thomas Carvel. MULTIPLE CLASS (Classes 31 and 32). SN 259,202. Pub. 9–19–67. Filed 11–22–66.

Class 32 — Furniture and Upholstery

839,969. (See Class 31 for this trademark.)

839,970. VENTI-SHELF. Atlas Manufacturing Company. SN 246,639. Pub. 9–19–67. Filed 5–26–66.

839,971. LATTOFLEX. H. Degeh. SN 250,828. Pub. 9–19–67. Filed 7–22–66.

839,972. CLASSICRAFT AND DESIGN. G & S Chair Frame Company, Inc. SN 250,837. Pub. 9–19–67. Filed 7–22–66.

839,973. COMFORT PLUS AND DESIGN. Babcock-Phillips Corporation. SN 253,480. Pub. 9–19–67. Filed 8–31–66.

839,974. UREFORM. Thor Tösse. SN 258,733. Pub. 9–19–67. Filed 11–15–66.

839,975. CRANE AND DESIGN. Gaines-American Moulding Corp. SN 260,330. Pub. 9–19–67. Filed 12–8–66.

839,976. RUBBERLUX. SAR Manufacturing Company, Inc. SN 261,106. Pub. 9–19–67. Filed 12–19–66.

839,977. EVEREST. Modern Upholstered Chair Company, Inc., d.b.a. Everest Chair Company. SN 268,209. Pub. 9–19–67. Filed 4–3–67.

839,978. ROYAL CROWN. Chittenden & Eastman Company. SN 272,789. Pub. 9–19–67. Filed 6–1–67.

839,979. CASTRONAUT. Castro Convertible Corporation. SN 275,018. Pub. 9–19–67. Filed 6–29–67.

Class 33 — Glassware

839,980. CRISPLINE. Libbey-Owens-Ford Glass Company. SN 253,891. Pub. 9–19–67. Filed 9–6–66.

839,981. RITE OF SPRING. Riekes Crisa Corporation. SN 254,184. Pub. 9–19–67. Filed 9–9–66.

839,982. RENATA. Riekes Crisa Corporation. SN 254,185. Pub. 9–19–67. Filed 9–9–66.

Class 34 — Heating, Lighting, and Ventilating Apparatus

839,855. (See Class 13 for this trademark.)

839,983. SPRAY-CEL. Midland-Ross Corporation. SN 257,065. Pub. 9–19–67. Filed 10–24–66.

839,984. MODULINE. Hardwick Stove Company. SN 257,624. Pub. 9–19–67. Filed 10–31–66.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

839,985. PRESTONE. Union Carbide Corporation. SN 254,955. Pub. 9–19–67. Filed 9–22–66.

839,986. TTT AND DESIGN. Wayne Hudson, d.b.a. Triple T Patching. SN 256,839. Pub. 9–19–67. Filed 10–20–66.

839,987. DAMTITE. Union Tank Car Company. SN 261,412. Pub. 9–19–67. Filed 12–23–66.

839,988. PERFECT PROFILE. Dunlop Tire and Rubber Corporation. SN 274,916. Pub. 9–19–67. Filed 6–28–67.

Class 36 — Musical Instruments and Supplies

839,989. REK-O-KUT. Koss Electronics, Inc. SN 240,630. Pub. 9–19–67. Filed 3–10–66.

839,990. HOWARD COMBO. D. H. Baldwin Company. SN 248,290. Pub. 9–19–67. Filed 6–17–66.

839,991. DORIC TRANSISTORIZED ORGAN. Doric Organ Company. SN 250,567. Pub. 9–19–67. Filed 7–19–66.

839,992. AUDIO ARTS AND DESIGN. Listening Library, Inc. SN 251,065. Pub. 9–19–67. Filed 7–26–66.

839,993. VIVA. Viva Records, Inc. SN 255,737. Pub. 9–19–67. Filed 10–4–66.

839,994. DARDO. Puchito Record Mfg. Co. Inc. SN 258,924. Pub. 9–19–67. Filed 11–17–66.

839,995. TWIN CIRCLE. Twin Circle Publishing Co., Inc. SN 266,616. Pub. 9–19–67. Filed 3–14–67.

839,996. OVATION AND DESIGN. Kaman Corporation, by change of name from Kaman Aircraft Corporation. SN 267,787. Pub. 9–19–67. Filed 3–29–67.

839,997. STRATOCASTER. Columbia Broadcasting System, Inc. SN 270,186. Pub. 9–19–67. Filed 4–28–67.

839,998. MUSTANG. Columbia Broadcasting System, Inc. SN 270,192. Pub. 9–19–67. Filed 4–28–67.

839,999. F. Columbia Broadcasting System, Inc. SN 270,196. Pub. 9–19–67. Filed 4–28–67.

840,000. GRETSCH. The Fred. Gretsch Mfg. Co. SN 270,457. Pub. 9–19–67. Filed 5–2–67.

Class 37 — Paper and Stationery

840,001. GRAF-RITE. The Waterbury Pen Co., Inc. SN 251,974. Pub. 9–19–67. Filed 8–8–66.

840,002. WATERBURY. The Waterbury Pen Co., Inc. SN 251,976. Pub. 9–19–67. Filed 8–8–66.

840,003. WRITE-BACK. Marion Donovan, d.b.a. Donovan Associates. SN 253,503. Pub. 9–19–67. Filed 8–31–66.

840,004. PERMACOTE. Permalin Products Corporation. SN 254,759. Pub. 9–19–67. Filed 9–16–66.

840,005. SEMPERIGHT. Semper Paper Co. Inc. SN 256,978. Pub. 9–19–67. Filed 10–21–66.

840,006. MULTIGLOSS. Semper Paper Co. Inc. SN 256,979. Pub. 9–19–67. Filed 10–21–66.

840,007. MISTY PRINTS AND DESIGN. Gibson Greeting Cards, Inc. SN 257,013. Pub. 9–19–67. Filed 10–24–66.

840,008. FILE-O-BINDER. United States Tabulating Binder Corporation. SN 258,335. Pub. 9–19–67. Filed 11–9–66.

840,009. ALCOA ALWRAP. Aluminum Company of America. SN 259,631. Pub. 9–19–67. Filed 11–29–66.

840,010. BRADCO. Bradner Central Company, assignee of Lakeside Central Company. SN 259,742. Pub. 9–19–67. Filed 11–30–66.

840,011. RED LABEL. A. B. Dick Company. SN 261,049. Pub. 9–19–67. Filed 12–19–66.

840,012. GOLD LABEL. A. B. Dick Company. SN 261,051. Pub. 9–19–67. Filed 12–19–66.

840,013. GREEN LABEL. A. B. Dick Company. SN 261,052. Pub. 9–19–67. Filed 12–19–66.

840,014. WESTLAND. The Northwest Paper Company. SN 261,749. Pub. 9–19–67. Filed 12–30–66.

840,015. WALKER AND DESIGN. Termoplastic S.r.l. SN 264,879. Pub. 9–19–67. Filed 2–17–67.

Class 38 — Prints and Publications

839,932. (See Class 22 for this trademark.)

840,016. CON-TACT. United Merchants and Manufacturers, Inc. SN 210,239. Pub. 9–19–67. Filed 1–19–65.

840,017. FAIRCHILD VISUALS. Fairchild Publications, Inc. SN 228,248. Pub. 9–19–67. Filed 9–21–65.

840,018. PERKY PUPPET. The Curtis Publishing Company. SN 242,221. Pub. 9–19–67. Filed 3–30–66.

840,019. POINT OF VIEW AND DESIGN. The Christian Science Publishing Society. SN 242,800. Pub. 9–19–67. Filed 4–6–66.

840,020. STATE OF THE NATIONS AND DESIGN. The Christian Science Publishing Society. SN 242,801. Pub. 9–19–67. Filed 4–6–66.

840,021. KNIT DIRECTIONS ETC. AND DESIGN. Richard Geer, d.b.a. Geer Publishing Company. SN 244,982. Pub. 9–19–67. Filed 5–5–66.

840,022. MISCELLANEOUS DESIGN. American Society for Oceanography. SN 249,933. Pub. 9–19–67. Filed 7–11–66.

840,023. TAKETHOU. John L. Hammer, Jr., d.b.a. Hammer Publishing Company. SN 250,479. Pub. 9–19–67. Filed 7–18–66.

840,024. IDENTI-CODE. Eli Lilly and Company. SN 251,126. Pub. 9–19–67. Filed 7–27–66.

840,025. METODO "ABSORBOMATICO." Foto Features, Inc. SN 254,266. Pub. 9–19–67. Filed 9–12–66.

840,026. DOG (DESIGN). American Book Company. SN 255,508. Pub. 9–19–67. Filed 9–30–66.

840,027. MAC/RAN. Measurement Analysis Corporation. SN 256,759. Pub. 9–19–67. Filed 10–19–66.

840,028. SPACEAID. Graphic Products Corporation. SN 257,618. Pub. 9–19–67. Filed 10–31–66.

840,029. PAPER SALESMAN. The Mead Corporation. SN 257,639. Pub. 9–19–67. Filed 10–31–66.

840,030. COLUMBIA-MINERVA. Columbia-Minerva Corporation. MULTIPLE CLASS (Classes 38 and 43). SN 258,439. Pub. 9–19–67. Filed 11–14–66.

840,031. MASTER PALETTE. The Glidden Company. SN 258,536. Pub. 9–19–67. Filed 11–14–66.

840,032. SEAL (DESIGN). First National City Bank. SN 258,995. Pub. 9–19–67. Filed 11–18–66.

840,033. MANU-GIDE. Lebhar-Friedman Publications, Inc. SN 262,300. Pub. 9–19–67. Filed 1–11–67.

840,034. POWER PARADE. General Motors Corporation. SN 263,267. Pub. 9–19–67. Filed 1–25–67.

840,035. SNOWGOER AND DESIGN. Snow Goer, Ltd. SN 264,450. Pub. 9–19–67. Filed 2–10–67.

840,036. THE DELIVERANCE VOICE AND DESIGN. Deliverance Evangelistic Center Inc. SN 269,381. Pub. 9–19–67. Filed 4–18–67.

840,037. JOLLY ROGER BOOK. Rand McNally & Company. SN 269,729. Pub. 9–19–67. Filed 4–21–67.

840,038. OPHTHALMIC OBSERVER. KPR Publications, Inc. SN 271,982. Pub. 9–19–67. Filed 5–22–67.

840,039. JAYBIRD JOURNAL AND DESIGN. Jaybird Enterprises, Inc. SN 272,667. Pub. 9–19–67. Filed 5–31–67.

840,040. DRI-APPLI. Allied Decals, Inc. SN 274,579. Pub. 9–19–67. Filed 6–23–67.

840,041. K AND DESIGN. Kordet Color Corporation. SN 274,634. Pub. 9–19–67. Filed 6–23–67.

840,042. LOOART. Looart Press, Inc. SN 275,581. Pub. 9–19–67. Filed 7–10–67.

Class 39 — Clothing

840,043. EDITH LANCES AND DESIGN. Edith Lances Corporation. SN 233,967. Pub. 9–19–67. Filed 12–6–65.

840,044. CASUALCRAFT. Casualcraft, Inc. SN 243,220. Pub. 9–19–67. Filed 4–12–66.

840,045. LORD ANTHONY KINGS ROAD W.1. Sirkin, Davis, Levin, Inc. SN 245,863. Pub. 9–19–67. Filed 5–17–66.

840,046. POISE'N IVY AND DESIGN. Geb Casuals, Inc. SN 247,015. Pub. 9–19–67. Filed 6–1–66.

840,047. REDI-PUFFS. Wembley, Inc. SN 248,868. Pub. 9–19–67. Filed 6–23–66.

840,048. FRILLY DILLY. Rudolph C. Malchar, d.b.a. Malchar Industries. SN 249,027. Pub. 9–19–67. Filed 6–27–66.

840,049. DUNKA-CLOTH. Cape Ann Manufacturing Co. SN 251,278. Pub. 9–19–67. Filed 7–29–66.

840,050. FLORGALLE. Societe Nouvelle A. Godde, Bedin. MULTIPLE CLASS (Classes 39 and 42). SN 252,145. Pub. 9–19–67. Filed 8–11–66.

840,051. JOE-D AND DESIGN. The Josephine Co. SN 254,880. Pub. 9–19–67. Filed 9–21–66.

840,052. JO-DEE AND DESIGN. The Josephine Co. SN 254,881. Pub. 9–19–67. Filed 9–21–66.

840,053. GOLDEN LTD. Piedmont Shirt Company. SN 255,999. Pub. 9–19–67. Filed 10–7–66.

840,054. FIRESTONE. The Firestone Tire & Rubber Company. SN 256,535. Pub. 9–19–67. Filed 10–17–66.

840,055. GINO CHARLES. Gino Charles, Ltd. SN 256,545. Pub. 9–19–67. Filed 10–17–66.

840,056. DAMON. Damon Creations, Inc. SN 259,304. Pub. 9–19–67. Filed 11–23–66.

840,057. TIES+ BY ANJAC. Anjac Corporation. SN 260,131. Pub. 9–19–67. Filed 12–6–66.

840,058. BUS STOP. Louis Walter & Company, Inc. SN 260,789. Pub. 9–19–67. Filed 12–14–66.

840,059. ROGER DRAKE. Associated Dry Goods Corporation, d.b.a. J. W. Robinson Co. SN 261,273. Pub. 9–19–67. Filed 12–22–66.

840,060. COUNTESS. Julius Schmid, Inc. SN 263,405. Pub. 9–19–67. Filed 1–26–67.

840,061. INFATUATION. Kayser-Roth Corporation. SN 263,672. Pub. 9–19–67. Filed 1–31–67.

840,062. BODY MAKE-UP. Lady Marlene Brassiere Corp. SN 263,673. Pub. 9–19–67. Filed 1–31–67.

840,063. MICHAEL J AND DESIGN. Wally Sportwear Inc. SN 264,117. Pub. 9–19–67. Filed 2–6–67.

840,064. SUNCREST. Suncrest Sportswear, Inc., by change of name from Suncrest Sportswear, Incorporated. SN 268,560. Pub. 9–19–67. Filed 4–7–67.

840,065. FITMASTER. Pantsmaster Incorporated, d.b.a. Mr. Pantsmaster of New England Inc. SN 270,408. Pub. 9–19–67. Filed 5–1–67.

Class 41 — Canes, Parasols, and Umbrellas

840,066. KOBOLD. Kortenbach & Raub Kommanditgesellschaft. SN 258,192. Pub. 9–19–67. Filed 11–7–66.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

840,050. (See Class 39 for this trademark.)

840,067. FANTASTISS. Bianchini Ferier. SN 246,534. Pub. 9–19–67. Filed 5–25–66.

840,068. FLEXSLEEVE. Barrday Limited. SN 249,296. Pub. 9–19–67. Filed 6–30–66.

840,069. SPECTATOR CLOTH BY CONCORD. Concord Fabrics Inc. SN 249,844. Pub. 9–19–67. Filed 7–8–66.

840,070. BAR-IRON BRAND. Concord Fabrics Inc. SN 257,940. Pub. 9–19–67. Filed 11–4–66.

840,071. STAMINA. Stamina Mills, Inc. SN 259,345. Pub. 9–19–67. Filed 11–23–66.

840,072. CARLETEX. Carletex Corp. SN 259,641. Pub. 9–19–67. Filed 11–29–66.

840,073. HAPPY HOME ETC. AND DESIGN. F. W. Woolworth Co. SN 260,123. Pub. 9–19–67. Filed 12–5–66.

840,074. RICOL AND DESIGN. Ricol Limited. SN 260,586. Pub. 9–19–67. Filed 12–12–66.

840,075. HAPPY HOME ETC. AND DESIGN. F. W. Woolworth Co. SN 260,619. Pub. 9–19–67. Filed 12–12–66.

840,076. LANCINA. Lancer Fabrics, Inc. SN 260,941. Pub. 9–19–67. Filed 12–16–66.

840,077. TRETFORD. Hollandse Tapijt Industrie N.V. SN 261,079. Pub. 9–19–67. Filed 12–19–66.

840,078. EAGLE CARPET MILLS AND DESIGN. Eagle Carpets, Inc. SN 261,647. Pub. 9–19–67. Filed 12–29–66.

840,079. JOBAN. Johnson & Johnson, d.b.a. Chicopee Manufacturing Company. SN 266,635. Pub. 9–19–67. Filed 3–14–67.

840,080. JONFLEX. Johnson & Johnson, d.b.a. Chicopee Manufacturing Company. SN 266,636. Pub. 9–19–67. Filed 3–14–67.

840,081. JEZEBEL. Klopman Mills, Inc. SN 267,094. Pub. 9–19–67. Filed 3–20–67.

840,082. REDI-KUT. Penn-Tex Sales Co. SN 272,245. Pub. 9–19–67. Filed 5–24–67.

840,083. SWAHILI. E. F. Timme & Son, Inc. SN 274,677. Pub. 9–19–67. Filed 6–23–67.

840,084. QUIK-NET. Kay Mar, Inc. SN 275,207. Pub. 9–19–67. Filed 7–3–67.

Class 43 — Thread and Yarn

840,030. (See Class 38 for this trademark.)

840,085. PRIMROSE. Philmore Tucker, d.b.a. Primrose Yarn. SN 250,606. Pub. 9–19–67. Filed 7–19–66.

Class 46 — Foods and Ingredients of Foods

840,086. CS AND DESIGN. Colonial Stores Incorporated. SN 234,624. Pub. 9–19–67. Filed 12–15–65.

840,087. BLT TICKLES. Keebler Company, by change of name from United Biscuit Company of America. SN 239,834. Pub. 9–19–67. Filed 2–28–66.

840,088. ORION AND DESIGN. Ceskoslovenske Cokoladovny, Oborovy Podnik, Modrany. SN 242,111. Pub. 8–8–67. Filed 3–29–66.

840,089. HW AND DESIGN. Hunt-Wesson Foods, Inc., assignee of Hunt Foods and Industries, Inc., d.b.a. Hunt-Wesson Foods. SN 242,607. Pub. 9–19–67. Filed 4–4–66.

840,090. SLIMCRUISE. Slimcruises Limited. SN 245,976. Pub. 9–19–67. Filed 5–18–66.

840,091. CAMBERZYME. London Oil Corporation Limited. SN 246,087. Pub. 9–19–67. Filed 5–19–66.

840,092. BLUE SATIN. Beatrice Foods Co. SN 246,253. Pub. 9–19–67. Filed 5–23–66.

840,093. CARICATURE HOLDING HAMBURGER (DESIGN). The Red Barn System, Inc. SN 246,609. Pub. 9–19–67. Filed 5–25–66.

840,094. RED TULIP. Red Tulip Proprietary Limited. SN 246,946. Pub. 9–19–67. Filed 5–31–66.

840,095. X-PRO. Batley-Janss Enterprises. SN 247,309. Pub. 9–19–67. Filed 6–6–66.

840,096. 12 O'CLOCK. Carnation Company. SN 247,328. Pub. 9–19–67. Filed 6–6–66.

840,097. WAIST LINER. Carnation Company. SN 247,329. Pub. 9–19–67. Filed 6–6–66.

840,098. COMPEN. Allied Chemical Corporation. SN 248,091. Pub. 9–19–67. Filed 6–15–66.

840,099. U.N.F.-40. Diamond Alkali Company, by merger from Nopco Chemical Company. SN 249,060. Pub. 9–19–67. Filed 6–27–66.

840,100. LET US DO YOUR CRYING FOR YOU. Ore-Ida Foods, Inc. SN 249,063. Pub. 9–19–67. Filed 6–27–66.

840,101. CAPT'N BENNY. B. H. Wilson Fisheries. SN 249,463. Pub. 9–19–67. Filed 7–1–66.

840,102. CHATHAM. The Nestlé Company, Inc. SN 249,552. Pub. 9–19–67. Filed 7–5–66.

840,103. COMMANDER. The Nestlé Company, Inc. SN 249,553. Pub. 9–19–67. Filed 7–5–66.

840,104. ULTRA. The Nestlé Company, Inc. SN 249,558. Pub. 9–19–67. Filed 7–5–66.

840,105. MONOGRAM. The Nestlé Company, Inc. SN 249,560. Pub. 9–19–67. Filed 7–5–66.

840,106. ORBA. The Nestlé Company, Inc. SN 249,561. Pub. 9–19–67. Filed 7–5–66.

840,107. MADISON. The Nestlé Company, Inc. SN 249,562. Pub. 9–19–67. Filed 7–5–66.

840,108. ZENDA. The Nestlé Company, Inc. SN 249,563. Pub. 9–19–67. Filed 7–5–66.

840,109. FULTON. The Nestlé Company, Inc. SN 249,564. Pub. 9–19–67. Filed 7–5–66.

840,110. GOURMET-SPRAY. Milwaukee Seasoning Laboratories, Inc. SN 250,168. Pub. 9–19–67. Filed 7–13–66.

840,111. HOFFMAN'S AND DESIGN. J. S. Hoffman Company. SN 250,271. Pub. 9–19–67. Filed 7–14–66.

840,112. CITROSYNTH. Florasynth, Inc. SN 251,199. Pub. 9–19–67. Filed 7–28–66.

840,113. DANDY. The Glidden Company, d.b.a. Bell Food Products. SN 251,914. Pub. 9–19–67. Filed 8–8–66.

840,114. "TUNA TOTS." Ore-Ida Foods, Inc. SN 253,779. Pub. 9–19–67. Filed 9–2–66.

840,115. EL DORADO. Los Angeles Importing Co. SN 253,826. Pub. 11–22–66. Filed 9–6–66.

840,116. AMERICAN BAKERY, INC. ETC. AND DESIGN. American Bakery, Inc. SN 253,830. Pub. 9–19–67. Filed 9–6–66.

840,117. AMERICAN BAKERY, INC. ABI AND DESIGN. American Bakery, Inc. SN 253,831. Pub. 9–19–67. Filed 9–6–66.

840,118. VERSADEX. Standard Brands Incorporated. SN 254,196. Pub. 9–19–67. Filed 9–9–66.

840,119. ODD BALLS. W. R. Grace & Co., assignee of Leaf Brands, Inc. SN 254,545. Pub. 7–25–67. Filed 9–15–66.

840,120. 99'ER. Chicken Delight, Inc. SN 256,345. Pub. 9–19–67. Filed 10–13–66.

840,121. SOUTHERN BEST. Gulf Coast Packing Company, Inc. SN 256,733. Pub. 9–19–67. Filed 10–19–66.

840,122. BISCOS. National Biscuit Company. SN 257,504. Pub. 9–19–67. Filed 10–28–66.

840,123. D DONRUSS AND DESIGN. The Donruss Company. SN 257,947. Pub. 9–19–67. Filed 11–4–66.

840,124. GOLD CREST. Brane Services, Inc., d.b.a. Gold Crest Chicken. SN 258,665. Pub. 9–19–67. Filed 11–15–66.

840,125. RED DIAMOND BRAND AND DESIGN. Service Packing Company. SN 259,858. Pub. 9–19–67. Filed 12–1–66.

840,126. SERV-A-PORTION AND DESIGN. Serv-A-Portion, Inc. SN 260,772. Pub. 9–19–67. Filed 12–14–66.

840,127. LIFELINE. J. Howard Smith, Inc. SN 261,109. Pub. 9–19–67. Filed 12–19–66.

840,128. GOOD MEASURE. Mead Johnson & Company. SN 264,484. Pub. 9–19–67. Filed 2–13–67.

840,129. PROMISE. Batchelors Foods Limited. SN 270,108. Pub. 9–19–67. Filed 4–27–67.

840,130. GREAT GUM FOREVER. Philip Morris Incorporated, d.b.a. Clark Gum Co. SN 272,792. Pub. 9–19–67. Filed 6–1–67.

Class 47 — Wines

840,131. PEREZ. Bodegas Felix Ruiz & Ruiz, S.A. SN 235,385. Pub. 9–19–67. Filed 12–28–65.

840,132. SIP. Antonio Jose da Silva-Vinhos, S.A.R.L. SN 246,514. Pub. 9–19–67. Filed 5–20–66.

840,133. CHATEAU MAISON. Franzia Brothers Winery, d.b.a. Old Chateau Wine Co. SN 254,268. Pub. 9–19–67. Filed 9–12–66.

Class 49 — Distilled Alcoholic Liquors

840,134. MACCOY & MACCOY. Blanchard Importing & Distributing Co., Inc. SN 251,881. Pub. 9–19–67. Filed 8–8–66.

840,135. GLEN LILY. H. Stenham Limited, d.b.a. Highland Blending Co. and Premier Scotch Whisky Co. SN 254,813. Pub. 7–4–67. Filed 9–20–66.

S40,136. ZODIAC (DESIGN). Puerto Rico Distillers, Inc., d.b.a. Barcelo Marques & Co. SN 269,146. Pub. 9–19–67. Filed 4–14–67.

S40,137. RONRICO AND DESIGN. Ronrico Corporation, d.b.a. Ronrico Rum Company. SN 272,900. Pub. 9–19–67. Filed 6–2–67.

Class 50 — Merchandise Not Otherwise Classified

S40,138. ISI AND DESIGN. International Salespower Institute, Inc. SN 256,099. Pub. 9–19–67. Filed 10–10–66.

S40,139. PENNYFEATHER FEEDER. Pennyfeather Corporation. SN 262,613. Pub. 9–19–67. Filed 1–16–67.

S40,140. TURTOX. General Biological Supply House, Inc. SN 271,205. Pub. 9–19–67. Filed 5–11–67.

S40,141. COLUMBIA. Columbia Statuary, Inc. SN 272,671. Pub. 9–19–67. Filed 5–31–67.

Class 51 — Cosmetics and Toilet Preparations

S40,142. FLO-MATIC. Merle Norman Cosmetics, Inc., d.b.a. Merle Norman Cosmetics. SN 244,717. Pub. 9–19–67. Filed 5–2–66.

S40,143. K AND BELL DESIGN. Kanegafuchi Boseki Kabushiki Kaisha, d.b.a. Kanegafuchi Spinning Co., Ltd. SN 247,805. Pub. 8–1–67. Filed 6–10–66.

S40,144. YANKEE GIN. Warner Electric Company, Inc. SN 249,370. Pub. 9–19–67. Filed 6–30–66.

S40,145. DOROTHY REED. Lander Co., Inc., d.b.a. Dorothy Reed. SN 252,582. Pub. 9–19–67. Filed 8–17–66.

S40,146. 003½. Colgate-Palmolive Company. SN 252,726. Pub. 9–19–67. Filed 8–19–66.

S40,147. MABROUKA. Richefleur Laboratories, Inc. SN 253,053. Pub. 9–19–67. Filed 8–24–66.

S40,148. VSC. Brunswig Drug Company, Rabin-Winters Division. SN 253,685. Pub. 9–19–67. Filed 9–1–66.

S40,149. SURF LOOK. Clairol Incorporated. SN 254,125. Pub. 7–18–67. Filed 9–9–66.

S40,150. DAWNLIT BLONDE. Clairol Incorporated. SN 258,046. Pub. 9–19–67. Filed 11–7–66.

S40,151. BET-A. S. Sampino & Waverly Beauty Products, Inc., d.b.a. Waverly Beauty Products. SN 258,413. Pub. 9–19–67. Filed 11–10–66.

S40,152. FINE-A. S. Sampino & Waverly Beauty Products, Inc., d.b.a. Waverly Beauty Products. SN 258,414. Pub. 9–19–67. Filed 11–10–66.

S40,153. PRE-ODORANT. The Gillette Company, d.b.a. The Toni Company. SN 260,247. Pub. 9–19–67. Filed 12–7–66.

S40,154. BLONDE FAVOR. Clairol Incorporated. SN 261,632. Pub. 9–19–67. Filed 12–29–66.

S40,155. MY FAVORITE BLONDE. Clairol Incorporated. SN 262,313. Pub. 9–19–67. Filed 1–11–67.

S40,156. HYPOTROPIC. Hypotropic, Inc. SN 263,329. Pub. 9–19–67. Filed 1–26–67.

S40,157. ATHLETE. Chesebrough-Pond's Inc. SN 263,746. Pub. 9–19–67. Filed 2–1–67.

S40,158. RESTOR MOISTURE MAGIC. Buty-Wave Products Co. Inc. SN 267,105. Pub. 9–19–67. Filed 3–20–67.

S40,159. EVERSHARP. Eversharp, Inc. SN 270,028. Pub. 9–19–67. Filed 4–26–67.

S40,160. KRONA COMFORT AND DESIGN. Eversharp, Inc. SN 270,029. Pub. 9–19–67. Filed 4–26–67.

S40,161. FOLLOW THE SUN. Chesebrough-Pond's Inc. SN 271,690. Pub. 9–19–67. Filed 5–17–67.

S40,162. LOKI. Jerdon, Inc. SN 273,007. Pub. 9–19–67. Filed 6–5–67.

S40,163. PACE. The Procter & Gamble Company. MULTIPLE CLASS (Classes 51 and 52). SN 273,827. Pub. 9–19–67. Filed 6–14–67.

S40,164. LIQUI-CREME. Lanvin-Charles of the Ritz, Inc. SN 274,569. Pub. 9–19–67. Filed 6–23–67.

S40,165. CMX. Redken Laboratories, Inc. SN 274,684. Pub. 9–19–67. Filed 6–26–67.

S40,166. LIQUESSENCE. Sterling Drug Inc. SN 274,842. Pub. 9–19–67. Filed 6–27–67.

Class 52 — Detergents and Soaps

S40,163. (See Class 51 for this trademark.)

S40,167. DOCTOR STAIN. Certified Chemical and Equipment Company. SN 246,440. Pub. 9–19–67. Filed 5–24–66.

S40,168. 5 DROPS (DESIGN). Metal Lubricants Co. SN 246,804. Pub. 9–19–67. Filed 5–27–66.

S40,169. MY-RO. My-Ko Chemical Corporation. SN 262,802. Pub. 9–19–67. Filed 1–18–67.

S40,170. THE SYSTEM. American Home Products Corporation. SN 271,746. Pub. 8–15–67. Filed 5–18–67.

Service Marks

Class 100 — Miscellaneous

S40,171. GREEK LETTER "SIGMA." Verstand Engineering, Inc. SN 235,056. Pub. 3–21–67. Filed 12–17–65.

S40,172. COMFORTABLE CAREFREE COTTON AND DESIGN. National Cotton Council of America, d.b.a. National Cotton Council, and Cotton Council. SN 236,322. Pub. 10–25–66. Filed 1–10–66.

S40,173. LAND & WATER CONSERVATION AND DESIGN. U.S. Department of the Interior. SN 239,838. Pub. 9–19–67. Filed 2–28–66.

S40,174. ECHO AND DESIGN. Echo Communications, Inc. SN 245,915. Pub. 9–19–67. Filed 5–18–66.

S40,175. HAWAIIAN VILLAGE. Hilton-Burns Hotel Co., Inc. SN 248,619. Pub. 9–19–67. Filed 6–21–66.

Class 101 — Advertising and Business

S40,176. ACE HARDWARE AND DESIGN. Ace Hardware Corporation. SN 228,593. Pub. 9–19–67. Filed 9–27–65.

S40,177. STUB CLUB. John S. Anderson. SN 240,143. Pub. 9–19–67. Filed 3–4–66.

S40,178. SRI. Services Rendered, Inc. SN 242,055. Pub. 9–19–67. Filed 3–28–66.

S40,179. THE YANKEE PEDLAR. Arthur J. Tickell. SN 250,700. Pub. 9–19–67. Filed 7–20–66.

S40,180. DECORATOR ON THE GO. Beatrice C. Jarvis. SN 252,260. Pub. 9–19–67. Filed 8–12–66.

S40,181. GET WELL CENTERS. The Read Drug & Chemical Co. of Baltimore City. SN 252,282. Pub. 9–19–67. Filed 8–12–66.

S40,182. CSI AND DESIGN. Computoservice, Inc. SN 255,779. Pub. 9–19–67. Filed 10–5–66.

S40,183. MISCELLANEOUS DESIGN. Foremost Sales Promotions, Inc. SN 270,325. Pub. 9–19–67. Filed 5–1–67.

S40,184. EXHIBITRY. Display-O-Rama, Inc. SN 270,845. Pub. 9–19–67. Filed 5–8–67.

Class 102 — Insurance and Financial

S40,185. JALICO. John Alden Life Insurance Company. SN 243,068. Pub. 9–19–67. Filed 4–11–66.

S40,186. ROYAL-GLOBE INSURANCE ETC. AND DESIGN. Royal Insurance Company, Limited. SN 243,817. Pub. 9–19–67. Filed 4–6–66.

S40,187. ALLSTATE. Allstate Insurance Company. SN 250,332. Pub. 9–19–67. Filed 7–15–66.

S40,188. JUST CALL US BY OUR FIRST NAME ETC. AND DESIGN. The First National Bank of Fort Worth. SN 251,534. Pub. 9–19–67. Filed 8–2–66.

S40,189. MAGICASH. Peoples National Bank & Trust Company. SN 253,700. Pub. 8–8–67. Filed 8–29–66.

S40,190. EAGLE AND DESIGN. Home Federal Savings and Loan Association. SN 256,666. Pub. 9–19–67. Filed 10–18–66.

Class 103 — Construction and Repair

S40,191. ALLIED BUILDERS AND DESIGN. Construction Design, Inc. SN 238,716. Pub. 9–19–67. Filed 2–14–66.

S40,192. BIZZY BEE AND DESIGN. Adamco, Inc., d.b.a. Bizzy Bee. SN 244,386. Pub. 9–19–67. Filed 4–27–66.

S40,193. 4T AND DESIGN. Adamco, Inc., d.b.a. Bizzy Bee. SN 244,387. Pub. 9–19–67. Filed 4–27–66.

S40,194. O AND DESIGN. Cutter Laboratories, Inc. SN 272,543. Pub. 9–19–67. Filed 5–29–67.

Class 104 — Communication

S40,195. COMSAT AND DESIGN. Communications Satellite Corporation. SN 247,010. Pub. 9–19–67. Filed 6–1–66.

Class 105 — Transportation and Storage

S40,196. MISS THRIFTY. Stemmons, Inc. SN 228,759. Pub. 9–19–67. Filed 9–27–65.

S40,197. PEE LINE AND DESIGN. Eugene L. Miller, d.b.a. Bee-Line Trailer Rental and Bee-Line Co. SN 250,588. Pub. 9–19–67. Filed 7–19–66.

S40,198. MISCELLANEOUS DESIGN. Sky Tours Hawaii, Inc. SN 252,969. Pub. 9–19–67. Filed 8–23–66.

Class 106 — Material Treatment

S39,945. (See Class 26 for this trademark.)

S40,199. MAGIC AIRE. Peacedale Processing Co., Inc. SN 255,346. Pub. 9–19–67. Filed 9–28–66.

Class 107 — Education and Entertainment

S40,200. V.I.P. Milton Q. Ford. SN 248,033. Pub. 9–19–67. Filed 6–14–66.

S40,201. SPORTS WORLD. Tel Ra Productions, Inc. SN 254,328. Pub. 9–19–67. Filed 9–12–66.

Certification Marks

Class A — Goods

S40,202. PMOC AND DESIGN. HMH Publishing Co., Inc. SN 229,348. Pub. 9–19–67. Filed 10–5–65.

S40,203. IUE ETC. AND DESIGN. International Union of Electrical, Radio and Machine Workers, AFL-CIO-CLC. SN 258,546. Pub. 9–19–67. Filed 11–14–66.

Class B — Services

S40,204. RECOMMENDED BY SUNSET FOR WESTERN FAMILIES AND DESIGN. Lane Magazine & Book Company. SN 274,073. Pub. 9–19–67. Filed 6–16–67.

SUPPLEMENTAL REGISTER

Theso registrations are not subject to opposition.

Class 4 — Abrasives and Polishing Materials

S40,205. C. H. Tripp Finishing Company, San Diego Calif. SN 262,294. Filed P.R. 1–10–67; Am. S.R. 10–16–67.

SANDING AGENT

For Cleaner for Preparing Old Surface for Refinishing.
First use September 1965.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

S40,206. Sherman Car Wash Equipment Co., Palmyra, N.J. SN 250,407. Filed P.R. 7–15–66; Am. S.R. 10–6–67.

SUPERCARWASH

For Automatic Car Wash Installation or System and Component Parts Comprising Body Brush Units, Drying Unit, Conveyor Line, Vacuum Cleaner, Rinse Unit, Steam Guns, Wheel Washer, Steam Cleaner, Mitting Tank, Blower Unit, Chain Return, and Foamer Unit.
First use Mar. 18, 1963.

Class 29 — Brooms, Brushes, and Dusters

S40,207. Shur-Line Manufacturing Co., Inc., Lancaster, N.Y. SN 234,952. Filed P.R. 12–20–65; Am. S.R. 10–20–67.

ROLL-IT

For Paint Rollers.
First use on or about Jan. 28, 1958.

Class 36 — Musical Instruments and Supplies

S40,208. Aeolian Corporation, New York, N.Y. SN 266,482. Filed P.R. 3–13–67; Am. S.R. 10–4–67.



For Pianos.
First use on or about Jan. 1, 1940.

Class 38 — Prints and Publications

840,209. Esquire, Inc., New York, N.Y. SN 233,089. Filed P.R. 11–22–65; Am. S.R. 10–10–67.

CAMPUS & CAREER

For Magazine Published Periodically.
First use Aug. 3, 1965.

840,210. The Shivell-Hall Company, Inc., New York, N.Y. SN 240,964. Filed P.R. 3–14–66; Am. S.R. 9–26–67.

THIS MONTH DO THIS

For Folders Containing a Variety of Pamphlets and Other Memorandum Material of Assistance in Running Businesses in Different Fields.
First use March 1964.

840,211. Golf Digest, Inc., South Norwalk, Conn. SN 251,129. Filed P.R. 7–27–66; Am. S.R. 9–28–67.

CLUB OPERATIONS

For Magazine.
First use during November 1963.

840,212. Pennsylvania Medical Society, Harrisburg, Pa. SN 253,048. Filed P.R. 8–24–66; Am. S.R. 9–26–67.

PENNSYLVANIA MEDICINE

For Magazine Published Monthly.
First use Mar. 1, 1966.

840,213. Boys' Outfitter Co. Inc., New York, N.Y. SN 260,921. Filed P.R. 12–16–66; Am. S.R. 10–10–67.

TEENS' & BOYS' OUTFITTER

For Trade Magazine in the Field of Boys' and Teenagers' Wearing Apparel and Accessories.
First use Jan. 15, 1966; 1922 as to the mark "Boys' Outfitter."

840,214. Monastic Studies, Pine City, N.Y. SN 260,947. Filed 12–16–66.

monastic studies

For Religious Publication in the Nature of a Collection of Monographs Issued at Irregular Intervals, Having Special Appeal to Members of Monastic Orders.
First use May 11, 1963.

Class 39 — Clothing

840,215. Excelsior Import Corporation, New York, N.Y. SN 238,727. Filed P.R. 2–14–66; Am. S.R. 9–14–67.

LONDON PRESS

For Boys' Dress Shirts, Walk Shorts and Slacks, Ladies' Blouses, and Men's, Boys' and Ladies' Raincoats.
First use Dec. 13, 1965.

840,216. Blue Bell, Inc., Greensboro, N.C. SN 255,394. Filed P.R. 9–29–66; Am. S.R. 10–2–67.

JUTES

For Jeans.
First use Sept. 7, 1966.

840,217. Shorewood Mills, Milwaukee, Wis. SN 256,241. Filed P.R. 10–11–66; Am. S.R. 10–10–67.

FROSTOGS

For Men's and Boys' Knit Underwear.
First use Sept. 14, 1966.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

840,218. Deering Milliken, Inc., New York, N.Y. SN 278,934. Filed P.R. 8–24–67; Am. S.R. 10–13–67.

CAMERON

For Textile Fabrics Made of Wool, Cotton and Synthetic Fibers and Combinations Thereof.
First use as early as 1884.

Class 50 — Merchandise Not Otherwise Classified

840,219. Keller Industries, Inc., Miami, Fla. SN 238,091. Filed P.R. 2–4–66; Am. S.R. 9–17–67.

[redacted]ANT-TWIST"

The drawing is lined for blue but no claim is made to color.
For Consumer and Industrial Ladders, Including Aluminum Extension Ladders.
First use Jan. 2, 1966.

840,220. Clopay Corporation, Cincinnati, Ohio. SN 263,018. Filed P.R. 1–23–67; Am. S.R. 10–9–67.

Cohere

For Adhesive Backed Decorative Sheet Material.
First use Oct. 3, 1966.

TRADEMARK REGISTRATIONS RENEWED

64,717. CROWN FLEXOR AND DESIGN. Cl. 1. 8–20–07.
65,709. MANOR HOUSE. Cl. 46. 10–15–07.
67,088. "JOHANN FABER" AND DESIGN. Cl. 37. 1–14–08.
67,104. LIQUEUR SUPREME FECAMP AND DESIGN. Cl. 49. 1–14–08.
67,166. METALASTIC. Cl. 16. 1–21–08.
68,150. "LEA & PERRINS" ETC. AND DESIGN. Cl. 46. 3–10–08.
68,337. MUELLER. Cl. 23. 3–31–08.
232,393. MISCELLANEOUS DESIGN. Cl. 7. 9–6–27.
234,029. "CUNOCAR" ETC. AND DESIGN. Cl. 37. 10–18–27.
234,405. ORIOLE BRAND AND DESIGN. Cl. 1. 10–25–27.
234,944. EDITOR & PUBLISHER AND DESIGN. Cl. 38. 11–8–27.
235,715. LE DANDY. Cl. 51. 11–22–27.
236,178. QUALITY DIAMOND SAND SERVICE AND DESIGN. Cl. 1. 12–6–27.
236,467. BUCCANEER. Cl. 39. 12–13–27.
236,694. TWO CONCENTRIC CIRCLES. Cl. 46. 12–20–27.
236,895. S.S.P. CO. PURITAS ET CURA AND DESIGN. Cl. 46. 12–27–27.
238,662. TOLCO. Cl. 1. 2–14–28.
238,736. "MINWAX" AND DESIGN. Cl. 12. 2–14–28.
240,039. DELTA. Cl. 46. 3–20–28.
240,588. SANTA ROSA. Cl. 46. 4–3–28.
240,706. SOLID GOLD. Cl. 46. 4–3–28.
429,849. TEX-RITE. Cl. 37. 5–20–47.
430,598. IVOTAL. Cl. 26. 6–17–47.
430,600. TALYMIN. Cl. 26. 6–17–47.
430,601. TALYSURF. Cl. 26. 6–17–47.
431,851. HAUGROL. Cl. 18. 8–12–47.
431,852. FLOID AND DESIGN. Cl. 51. 8–12–47.
431,853. HAUGROQUINA FLOID AND DESIGN. Cl. 51. 8–12–47.
433,392. MERIDIAN. Cl. 39. 10–14–47.
433,425. GMP AND DESIGN. Cl. 21. 10–14–47.
433,437. LAVA SOAP AND DESIGN. Cl. 52. 10–14–47.
433,465. W.L.G. Cl. 52. 10–14–47.
433,476. NICKLTEX. Cl. 4. 10–14–47.
433,518. LAUNDROMAT. Cl. 24. 10–14–47.
433,556. MISCELLANEOUS DESIGN. Cl. 23. 10–21–47.
433,558. CELATONE. Cl. 42. 10–21–47.
433,572. SPEED-GRITS. Cl. 4. 10–21–47.
434,015. RAT-TROL. Cl. 6. 11–4–47.
434,234. AKTONE. Cl. 6. 11–11–47.
434,262. PRESENTATION. Cl. 37. 11–18–47.
434,422. WALL STREET. Cl. 51. 11–18–47.
434,435. CONTALENS. Cl. 18. 11–18–47.
434,707. MISCELLANEOUS DESIGN. Cl. 51. 12–2–47.
434,841. KAZ AND DESIGN. Cl. 44. 12–9–47.
434,882. NATAC. Cl. 6. 12–9–47.
434,946. RAPITOX. Cl. 6. 12–9–47.
435,121. NEU-CAL. Cl. 6. 12–9–47.
435,527. MISCELLANEOUS DESIGN. Cl. 52. 12–30–47.
435,564. EKTANON. Cl. 26. 12–30–47.
435,591. REQUEST. Cl. 46. 1–6–48.
435,745. CALAPRINT. Cl. 42. 1–6–48.
435,891. BROMA. Cl. 16. 1–13–48.
435,910. COCK 'N BULL. Cl. 46. 1–13–48.
436,064. HOME-TIES. Cl. 43. 1–20–48.
436,065. HOME-TIES AND DESIGN. Cl. 7. 1–20–48.
436,101. CAPRICE. Cl. 43. 1–20–48.
436,145. 4-ALL. Cl. 10. 1–27–48.
436,206. LETTEREX. Cl. 11. 1–27–48.
436,255. RECIPE. Cl. 46. 1–27–48.
436,444. KAYSER. Cl. 39. 2–10–48.
436,511. PHOENIX MASTERPIECE NECKWEAR. Cl. 39. 2–10–48.
436,570. TRI-6 NO. 50W. Cl. 6. 2–10–48.
436,748. COLUMBIAN. Cl. 37. 2–17–48.
437,038. BIG SMITH. Cl. 39. 3–2–48.
437,255. LADYLAINE. Cl. 43. 3–9–48.
437,773. CORRECT COMFORT. Cl. 32. 3–30–48.
437,778. 100% HUNDRED PERCENT. Cl. 51. 3–30–48.
437,797. PUR-O-TEX. Cl. 35. 3–30–48.
437,804. CASTFLUX. Cl. 6. 3–30–48.
438,007. CHICKS AND DESIGN. Cl. 46. 4–6–48.

TRADEMARK REGISTRATIONS CANCELED

Section 8

The following registrations issued Oct. 17, 1961

722,719. GAHNA MAROKINO. Cl. 1.
722,722. SYMBOL DEPICTING A TREE IN A TRIANGLE. Cl. 2.
722,733. LYTER-FYRE. Cl. 6.
722,736. CRETESET. Cl. 6.
722,740. SEA NYMPH ETC. AND DESIGN. Cl. 12.
722,745. THUNDERBIRD. Cl. 12.
722,755. TW AND DESIGN. Cl. 13.
722,756. WATER DEMON. Cl. 13.
722,758. C & H AND DESIGN. Cl. 14.
722,772. QUINTAMYCIN. Cl. 18.
722,780. FAMILY FORMULA ONE-CAPS. Cl. 18.
722,787. TUDAY. Cl. 18.
722,789. PHAR-MED ETC. AND DESIGN. Cl. 18.
722,792. RIDEMASTER. Cl. 19.
722,793. AQUA-GEM. Cl. 19.
722,795. EXPRESSWAY. Cl. 19.
722,797. PIP. Cl. 21.
722,798. WEEPAK. Cl. 21.
722,800. REPICON. Cl. 21.
722,801. SUPREME 60. Cl. 21.
722,807. ULYSSES S. GRANT. Cl. 21.
722,808. COMMUNITY AND DESIGN. Cl. 22.
722,809. HAT AND HAND (DESIGN). Cl. 22.
722,814. SHEATH SENSATION. Cl. 22.
722,816. ZIP A CHEK. Cl. 22.
722,818. BOBBER. Cl. 22.
722,820. BENDO-JIG. Cl. 22.
722,822. AUTOCARBONATOR. Cl. 23.
722,823. CHROME CRANK. Cl. 23.
722,827. STRAP-TITE. Cl. 24.
722,831. DIGISTROBE. Cl. 26.
722,835. SILVER SPRAY. Cl. 30.
722,839. REDI-PAC. Cl. 31.
722,841. SILVER SPRAY. Cl. 33.
722,842. GEORGIAN. Cl. 33.
722,846. REMIND-O-GRAM. Cl. 37.
722,851. TEL-A-GLANCE. Cl. 37.
722,855. GIRAFFE. Cl. 37.
722,860. SEEQUICK. Cl. 37.
722,863. BETWEEN THE LINES. Cl. 38.
722,873. BIG STEER. Cl. 46.
722,875. LITTLE IMP. Cl. 46.
722,907. "PRINCESS BEE." Cl. 50.
722,908. IRSA. Cl. 51.
722,912. OGC AND DESIGN. Cl. 100.
722,915. A LIBERTY BELL STORE AND DESIGN. Cl. 101.
722,916. SUMMIT. Cl. 103.
722,921. GLASTUBE. Cl. 31.

TRADEMARK REGISTRATIONS AMENDED, DISCLAIMED, CORRECTED, ETC.

214,076. SPIC AND SPAN. Cl. 52. 6–15–26. Whistle Bottling Company. The Procter & Gamble Company, Cincinnati, Ohio. Amended to appear:

SPIC AND SPAN

227,355. WONDERWEAR AND DESIGN. Cl. 39. 5–3–27. B. Friedman Shoe Co., Inc. Norwich Shoe Co., Inc., Norwich, N.Y. Amended: In the statement, column 2, lines 4 through 6 are deleted, and the drawing is amended to appear:

WONDER-WEAR

235,000. PRO AND DESIGN. Cl. 46. 11–8–27. Oklahoma City Mill & Elevator Co., General Mills, Inc., Minneapolis, Minn. Amended to appear:

PRO

236,747. GIANT KING AND DESIGN. Cl. 46. 12–20–27. Washburn Crosby Company. General Mills, Inc., Minneapolis, Minn. Amended to appear:

GIANT KING

430,620. TWENTY-ONES. Cl. 39. 6–17–47. General Shoe Corporation. Genesco Inc., Nashville, Tenn. Amended: In the statement, column 2, line 5, "Ones" is deleted and *1* is inserted, and the drawing is amended to appear as follows:

TWENTY-1

521,930. REPEAT-A-TONE. Cl. 21. 3–7–50. Nutone, Incorporated, Chicago, Ill. Corrected: In the certificate, lines 4 and 15, in the heading, signature and in the statement, column 1, line 1, "NuTone" should be deleted and *Nutone* should be inserted and in the certificate, line 5 and in the statement, column 1, line 2, "Illinois" should be deleted and *New York* should be inserted.

771,704. DU-KAST AND DESIGN. Cl. 12. 6–23–64. The Sivad Ceramic Corporation, Oak Hill, Ohio. Corrected: In the statement, column 1, line 1, before "Sivad" *The* should be inserted.

819,283. WL AND DESIGN. Cls. 100 and 103. 11–22–66. The Wellman-Lord Engineering, Inc. Wellman-Lord, Inc., Lakeland, Fla. Corrected: In the statement, column 1, before line 1, *Wellman-Lord, Inc., by change of name from* should be inserted.

831,725. BETALOC. Cl. 18. 7–11–67. Aktiebolaget Astra, Sodertalje, Sweden. Amended: In the statement, column 2, line 1, the description of goods is deleted and *beta-receptor-blockers for the treatment of angina pectoris and other cardiovascular diseases* is inserted.

833,242. NOXIDE. Cl. 21. 8–8–67. Union Carbide Corporation, New York, N.Y. Corrected: In the statement, column 2, line 2, before "machines" *and* should be inserted.

836,620. TURBOWRAP. Cl. 21. 10–10–67. American Enka Corporation, Enka, N.C. Corrected: In the statement, column 2, line 4, "In" should be deleted and *ing* should be inserted.

836,903. GATEWAY SUPER MARKETS AND DESIGN. Cl. 101. 10–10–67. The Creasey Company of Delaware, Louisville, Ky. Corrected: In the statement, column 1, line 1, "Creasy" should be deleted and *Creasey* should be inserted.

TRADEMARK REGISTRATIONS—NEW CERTIFICATES

New Certificates issued under sections 7(c), 7(f), 7(g) of the Trademark Act of 1946 for the unexpired term of the original registrations.

527,605. MOTOR MICA. Cl. 15. Frank L. Moscow, doing business as Scientific Lubricants Company. 7–11–50. New Cert. Sec. 7(c) to Grace J. Gill, Chicago, Ill.

595,101. BENZODENT. Cl. 18. Peter, Strong & Co. Inc. 9–14–54. New Cert. Sec. 7(c) to Richardson-Merrell Inc., New York, N.Y.

597,120. TEMPO'S. Cl. 39. The Selby Shoe Company. 10–19–54. New Cert. Sec. 7(c) to Wohl Shoe Company, St. Louis, Mo.

690,901. MEDALLION. Cl. 34. John Paul Muther. 1–5–60. New Cert. Sec. 7(c) to National Electrical Manufacturers Association, New York, N.Y.

723,683. SILVER CHECK AND DESIGN. Cl. 51. Hughes & Price Proprietary Limited. 11–7–61. New Cert. Sec. 7(c) to Silvercheck Pty. Limited, Victoria, Australia.

741,742. PATRIOT LIFE INSURANCE COMPANY AND DESIGN. Cl. 102. C.I.T. Financial Corporation. 12–4–62. New Cert. Sec. 7(c) to Patriot Life Insurance Company, New York, N.Y.

829,702. PAM TOP AND DESIGN. Cl. 19. Pam Top Manufacturing Co., Inc. 6–6–67. New Cert. Sec. 7(c) to Plastimet Corporation, Portland, Oreg.

REGISTRATIONS PUBLISHED UNDER SEC. 12(c)

The following marks registered under the act of 1905, or the act of 1881, are published under the provisions of section 12(c) of the Trademark Act of 1946. These registrations are not subject to opposition but are subject to cancellation under section 14 of the act of 1946.

Class 6—Chemicals and Chemical Compositions

249,687. Nov. 20, 1928. E. Bilhuber, Inc., New York, N.Y. Pub. by Knoll Pharmaceutical Company, Orange, N.J.

Metrazol

For Medicine for the Heart and the Vascular System.

431,053. July 1, 1947. Monsanto Chemical Company, St. Louis, Mo. Pub. by Monsanto Company, St. Louis, Mo.

NIPHOS

For Chemical Products for Use in Combating Insects and Fungi.

432,858. Sept. 16, 1947. Monsanto Chemical Company, St. Louis, Mo. Pub. by Monsanto Company, St. Louis, Mo.

SANTOTINE

For Chemical for Use in Combating Insects and Fungi.

433,224. Sept. 30, 1947. Monsanto Chemical Company, St. Louis, Mo. Pub. by Monsanto Company, St. Louis, Mo.

QUINOTINE

For Chemical Products for Use as Insecticides, etc.

Class 9—Explosives, Firearms, Equipments, and Projectiles

435,338. Dec. 16, 1947. Crosman Arms Company, Inc., Fairport, N.Y. Pub. by registrant.

SuperPells

For Slugs and Shot, Particularly for Rifles.

Class 12—Construction Materials

436,651. Feb. 17, 1948. Aluminum Building Products Co., Milwaukee, Wis. Pub. by Alumatic Corporation of America, Milwaukee, Wis.

ALUMATIC

For Combination Storm and Screen Windows.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

168,898. May 29, 1923. Henry Vogt Machine Co., Louisville, Ky. Pub. by registrant.

Vogt

For Drop-Forged Steel Valves and Fittings.

Class 17—Tobacco Products

61,497. Mar. 26, 1907. De Erven de Wed. J. Van Nelle, assignor to De Erven de Wed. J. Van Nelle, Rotterdam, Netherlands. Pub. by De Erven de Wed. J. Van Nelle N.V., Rotterdam, Netherlands.

THE RISING HOPE

For Smoking Tobacco, etc.

65,877. Oct. 29, 1907. De Erven de Wed. J. Van Nelle, assignor to De Erven de Wed. J. Van Nelle, Rotterdam, Netherlands. Pub. by De Erven de Wed. J. Van Nelle N.V., Rotterdam, Netherlands.



For Smoking Tobacco, Cigars, Cigarettes, and Snuff.

Class 18—Medicines and Pharmaceutical Preparations

194,898. Feb. 10, 1925. E. Bilhuber, Inc., New York, N.Y. Pub. by Knoll Pharmaceutical Company, Orange, N.J.

THEOCALCIN

For Medical Preparation for Treatment of the Kidneys and Heart.

287,291. Sept. 15, 1931. E. Bilhuber, Inc., Jersey City, N.J. Pub. by Knoll Pharmaceutical Company, Orange, N.J.

Phyllicin

For Medical Preparation for the Treatment of the Cardiovascular System and Kidneys.

298,197. Oct. 18, 1932. E. Bilhuber, Inc., Jersey City, N.J. Pub. by Knoll Pharmaceutical Company, Orange, N.J.

Dilaudid

For Medical Compound for the Alleviation of Pain and Cough.

346,729. June 8, 1937. E. Bilhuber, Inc., Jersey City, N.J. Pub. by Knoll Pharmaceutical Company, Orange, N.J.

Dicodid

For Medicinal Compound Used Principally for the Relief of Pain and Cough.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

422,151. July 9, 1946. Aktiebolaget Archimedes, Stockholm, Sweden. Pub. by registrant.

ARCHIMEDES

For Internal Combustion Outboard Motors for Boats; and Accessories for Such Motors—Namely, Vaporizers and Carburetors, Cooling Water Jackets, Cylinder Air Cooling Flanges and Cooling Apparatus for the Muffler, Mechanical Starters, Mechanical Valves, Toothed Gearing and Gear Boxes, Fuel Compressors, Air Pumps, Lubrication Pumps, Fuel Pumps, and Water Pumps.

Class 26 — Measuring and Scientific Appliances

435,536. Dec. 30, 1947. American Photographic Appliance Corporation, Shelburne, Mass. Pub. by registrant.

APAC

For Photographic Enlarging Apparatus and Electronic Timers for Presetting the Exposure Time of Photographic Enlarging Apparatus.

Class 28 — Jewelry and Precious-Metal Ware

434,306. Nov. 18, 1947. Joseph H. Meyer Bros., Brooklyn, N.Y. Pub. by The Richelieu Corp., Holbrook, N.Y.

MYST

For Necklaces, Bracelets, etc.

Class 36 — Musical Instruments and Supplies

115,901. Mar. 20, 1917. Barnett Samuel & Sons, Ltd., London, England. Pub. by MCA Inc., New York, N.Y.

DECCA

For Phonographs and Records for the Same.

Class 39 — Clothing

232,954. Sept. 20, 1927. John B. Stetson Company, Philadelphia, Pa. Pub. by registrant.

JOHN B.

For Soft and Stiff Felt Hats and Caps for Men, etc.

Class 40 — Fancy Goods, Furnishings, and Notions

67,702. Feb. 18, 1908. Thos. Harper & Sons Ltd., London, England. Pub. by Needle Industries Limited, Birmingham, England.



For Crewel-Needles for Hand-Sewing.

234,879. Nov. 8, 1927. Bernhard Ulmann Co. Inc., New York, N.Y. Pub. by Indian Head Inc., New York, N.Y.

QUILTKRAFT

For Fabric or Material Stamped for Art Needlework To Be Finished Into Spreads, Curtains, Scarfs, Buffet Sets, etc.

434,622. Nov. 25, 1947. United States Rubber Company, New York, N.Y. Pub. by Uniroyal, Inc., New York, N.Y.

KOYLON

For Bust Form Foam Rubber Flatstock for Use in Brassieres.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

228,871. June 14, 1927. The Narrow Fabric Co., West Reading and Reading, Pa. Pub. by Wyomissing Corporation, Reading, Pa.

Protolastik

For Elastic Fabric in the Piece.

Class 44 — Dental, Medical, and Surgical Appliances

229,254. June 21, 1927. The Narrow Fabric Co., West Reading and Reading, Pa. Pub. by Wyomissing Corporation, Reading, Pa.

Nusan

For Sanitary Napkins.

435,262. Dec. 16, 1947. Allen & Hanburys, Limited, London, England. Pub. by Bonochord Limited, Beckenham, Kent, England.

BONOCHORD

For Hearing Aids and Parts Thereof.

Class 46 — Foods and Ingredients of Foods

186,828. July 22, 1924. Hershey Chocolate Company, Hershey, Pa. Pub. by Hershey Chocolate Corporation, Hershey, Pa.



For Chocolates and Candy.

228,764. June 7, 1927. Geo. T. Myers & Co., Seattle, Wash. Pub. by New England Fish Company, Seattle, Wash.

ELLIOTT BAY

For Canned Salmon.

243,477. June 26, 1928. Hershey Chocolate Company, Hershey, Pa. Pub. by Hershey Chocolate Corporation, Hershey, Pa.

Velvetier

For Chocolate Compound Used for the Purpose of Producing Smoothness in Ice Cream and Other Foods.

Class 48 — Malt Beverages and Liquors

52,011. May 1, 1906. Jos. Schlitz Brewing Company, Milwaukee, Wis. Pub. by registrant.



For Lager Beer.

INDEX OF REGISTRANTS

DECEMBER 5, 1967

(Registered ; Renewed ; Canceled ; Amended, Disclaimed, Corrected, etc. ; New Certificates ; 12c Publications.)

A.D.L. Cement Products, Inc., Portland, Mich. 839,798, pub. 9–19–67. Cl. 2.
Ace Hardware Corp., Chicago, Ill. 840,176, pub. 9–19–67. Cl. 101.
Adamco, Inc., d.b.a. Bizzy Bee, Littlestown, Pa. 840,192–3, pub. 9–19–67. Cl. 103.
Aeolian Corp., New York, N.Y. 840,208. Cl. 36.
Aeroplastics Corp., Venice, Calif. 722,818, canc. Cl. 22.
Airtherm Mfg. Co., St. Louis, Mo. 839,840, pub. 9–19–67. Cl. 12.
Aktiebolaget Archimedes, Sundbyberg, by Aktiebolaget Archimedes, Stockholm, Sweden. 422,151, 12(c) pub. 12–5–67. Cl. 23.
Aktiebolaget Astra, Sodertalje, Sweden. 831,725. Am. 7(d). Cl. 18.
Alden, John, Life Insurance Co., Chicago, Ill. 840,185, pub. 9–19–67. Cl. 102.
Allen & Hanburys, Ltd., London, by Bonochord Ltd., Beckenham, Kent, England. 435,262, 12(c) pub. 12–5–67. Cl. 44.
Allied Chemical Corp., New York, N.Y. 840,098, pub. 9–19–67. Cl. 46.
Allied Decals, Inc., Cleveland, Ohio. 840,040, pub. 9–19–67. Cl. 38.
Allied/Egry Business Systems, Inc. : *See*—
McGregor & Werner, Inc.
Allstate Insurance Co., Northbrook, Ill. 840,187, pub. 9–19–67. Cl. 102.
Alumatic Corp. of America : *See*—
Aluminum Building Products Co.
Aluminum Building Products Co., by Alumatic Corp. of America, Milwaukee, Wis. 436,651, 12(c) pub. 12–5–67. Cl. 12.
Aluminum Co. of America, Pittsburgh, Pa. 840,009, pub. 9–19–67. Cl. 37.
Amchem Products, Inc., Ambler, Pa. 839,816, pub. 9–19–67. Cl. 6.
American Bakery, Inc., South Gate, Calif. 840,116–7, pub. 9–19–67. Cl. 46.
American Book Co., New York, N.Y. 840,026, pub. 9–19–67. Cl. 38.
American Chewing Products Corp., Havertown, Pa. 438,007, ren. 12–5–67. Cl. 46.
American Cyanamid Co., Wayne, N.J. 839,893, pub. 9–19–67. Cl. 18.
American Enka Corp., Enka, N.C. 836,620, cor. Cl. 21.
American Hard Rubber Co., New York, N.Y., to Humble Oil & Refining Co., Houston, Tex. 64,717, ren. 12–5–67. Cl. 1.
American Home Products Corp., New York, N.Y. 839,895, pub. 9–19–67. Cl. 18.
American Home Products Corp., New York, N.Y. 840,170, pub. 8–15–67. Cl. 52.
American Photographic Appliance Corp., Shelburne, Mass. 435,536, 12(c) pub. 12–5–67. Cl. 26.
American Seating Co., Grand Rapids, Mich. 722,795, canc. Cl. 19.
American Society for Oceanography, Houston, Tex. 840,022, pub. 9–19–67. Cl. 38.
Amylo Chemie N.V., Koog Zaan, Netherlands. 839,810, pub. 9–19–67. Cl. 6.
Anderson, John S., Atlanta, Ga. 840,177, pub. 9–19–67. Cl. 101.
Anheuser-Busch, Inc. : *See*—
Cuban-American Syrup Co., The.
Anjac Corp., Denver, Colo. 840,057, pub. 9–19–67. Cl. 39.
Anzac Industries, Inc., Cleveland, Ohio. 839,920–1, pub. 9–19–67. Cl. 21.
Arkay Packaging Corp., New York, N.Y. 839,787, pub. 9–19–67. Cl. 2.
Armour Pharmaceutical Co., d.b.a. Reheis Chemical Co., Chicago, Ill. 839,814–5, pub. 9–19–67. Cl. 6.
Associated Dry Goods Corp., d.b.a. J. W. Robinson Co., New York, N.Y. 840,059, pub. 9–19–67. Cl. 39.
Atlas Mfg. Co., Minneapolis, Minn. 839,970, pub. 9–19–67. Cl. 32.
Avnet, Inc., New York, N.Y. 839,863, pub. 9–19–67. Cl. 15.
Avnet, Inc., New York, N.Y. 839,871, pub. 9–19–67. Cl. 16.
Babcock-Phillips Corp., Richmond, Va. 839,973, pub. 9–19–67. Cl. 32.
Bacon, Charles H., Co., Inc. : *See*—
Scott, Rufus W., Co.
Balco, Inc., Wichita, Kans. 839,845, pub. 9–19–67. Cl. 12.
Baldwin, D. H., Co., Cincinnati, Ohio. 839,990, pub. 9–19–67. Cl. 36.
Barcelo Marques & Co. : *See*—
Puerto Rico Distillers, Inc.
Barnett, Samuel, & Sons. Ltd. London, England, by MCA Inc., New York, N.Y. 115.901, 12(c) pub. 12–5–67. Cl. 36.
Barrday, Ltd., Galt, Ontario, Canada. 840,068, pub. 9–19–67. Cl. 42.
Basciani, George J. : *See*—
Pasquier, Michel.
Batchelors Foods, Ltd., Sheffield, England. 840,129, pub. 9–19–67. Cl. 46.
Batley-Janss Enterprises, Brawley, Calif. 840,095, pub. 9–19–67. Cl. 46.
Beatrice Foods Co., Chicago, Ill. 840,092, pub. 9–19–67. Cl. 46.
Beckley-Cardy Co., Chicago, Ill. 839,937, pub. 9–19–67. Cl. 23.
Beecham Research Laboratories Ltd., Brentfor, England. 722,772, canc. Cl. 18.
Beech-Nut Life Savers, Inc. : *See*—
Life Savers, Inc.
Bee-Line Co. : *See*—
Miller, Eugene L.
Bee-Line Trailer Rental : *See*—
Miller, Eugene L.
Behr-Manning Corp., Troy, to Norton Co., Watervliet, N.Y. 433,572, ren. 12–5–67. Cl. 4.
Belgrade Saddlery : *See*—
McMullen, L. J.
Bell Food Products : *See*—
Glidden Co., The.
Beller Electric Co., Newark, N.J. 722,915, canc. Cl. 101.
Benedictine Distillerie de la Liqueur l'Ancienne Abbaye de Fecamp : *See*—
Ste. de la Distillerie du Supreme Fecamp.
Benson, N. P., Optical Co., d.b.a. Benson Optical Co., Minneapolis, Minn. 839,945, pub. 9–19–67. Multiple Class (Classes 26 and 106).
Benson Optical Co. : *See*—
Benson, N. P., Optical Co.
Bilhuber, E., Inc., New York, N.Y., by Knoll Pharmaceutical Co., Orange, N.J. 194,898, 12(c) pub. 12–5–67. Cl. 18.
Bilhuber, E., Inc., New York, N.Y., by Knoll Pharmaceutical Co., Orange, N.J. 249,687, 12(c) pub. 12–5–67. Cl. 6.
Bilhuber, E., Inc., Jersey City, N.J., by Knoll Pharmaceutical Co., Orange, N.J. 287,291, 12(c) pub. 12–5–67. Cl. 18.
Bilhuber, E., Inc., Jersey City, N.J., by Knoll Pharmaceutical Co., Orange, N.J. 298,197, 12(c) pub. 12–5–67. Cl. 18.
Bilhuber, E., Inc., Jersey City, N.J., by Knoll Pharmaceutical Co., Orange, N.J. 346,729, 12(c) pub. 12–5–67. Cl. 18.
Birma Products Corp., Sayreville, N.J. 839,828–30, pub. 9–19–67. Cl. 12.
Biro Mfg. Co., The, Marblehead, Ohio. 433,556, ren. 12–5–67. Cl. 23.
Bizzy Bee : *See*—
Adamco, Inc.
Blanchard Importing & Distributing Co., Inc., Boston, Mass. 840,134, pub. 9–19–67. Cl. 49.
Bleistiftfabrik vormals Johann Faber Actien-Gesellschaft to A. W. Faber-Castell, Stein Bei, Nuremberg, Germany. 67,088, ren. 12–5–67. Cl. 37.
Blue Bell, Inc., Greensboro, N.C. 840,216. Cl. 39.
Bodegas Felix Ruiz & Ruiz, S.A., Cadiz, Spain. 840,131, pub. 9–19–67. Cl. 47.
Bonochord Ltd. : *See*—
Allen & Hanburys, Ltd.
Borden Co., The : *See*—
Cracker Jack Co., The.
Bosque : *See*—
Camacho, Jose L.
Boys' Outfitter Co., Inc., New York, N.Y. 840,213. Cl. 38.
Bradner Central Co., from Lakeside Central Co., Chicago, Ill. 840,010, pub. 9–19–67. Cl. 37.
Brane Services, Inc., d.b.a. Gold Crest Chicken, Largo, Fla. 840,124, pub. 9–19–67. Cl. 46.
Bristol-Myers Co., New York, N.Y. 839,888, pub. 9–19–67. Cl. 18.
Brunswick Drug Co., Rabin-Winters Division, El Segundo, Calif. 840,148, pub. 9–19–67. Cl. 51.
Bryant, Cuno R., to Cunocar Accounting Service, Portland, Oreg. 234,029, ren. 12–5–67. Cl. 37.
Buccellati Silver, Ltd., New York, N.Y. 839,958, pub. 9–19–67. Cl. 28.
Buhler, Gebruder, Uzwil, Switzerland. 839,904–5, pub. 9–19–67. Cl. 21.
Buty-Wave Products Co., Inc., Los Angeles, Calif. 840,158, pub. 9–19–67. Cl. 31.
CF & I Steel Corp. : *See*—
Roeblings, John A., Sons Co.
Cab Charger Co. : *See*—
Callaway, John L.
Callaway, John L., d.b.a. Cab Charger Co., Jacksonville, Fla. 839,912, pub. 9–19–67. Cl. 21.
Calumet & Hecla, Inc., Calumet, Mich. 722,758, canc. Cl. 14.
Camacho, Jose L., d.b.a. Bosque, Elizabeth, N.J. 839,878, pub. 9–19–67. Cl. 18.
Cape Ann Mfg. Co., Gloucester, Mass. 840,049, pub. 9–19–67. Cl. 39.
Carco, Inc. : *See*—
Tex-Rite Products Co.
Carletex Corp., New York, N.Y. 840,072, pub. 9–19–67. Cl. 42.
Carnation Co., Los Angeles, Calif. 840,096–7, pub. 9–19–67. Cl. 46.
Carvel, Thomas, Yonkers, N.Y. 839,969, pub. 9–19–67. Multiple Class (Classes 31 and 32).
Castro Convertible Corp., New Hyde Park, N.Y. 839,979, pub. 9–19–67. Cl. 32.
Casualcraft, Inc., New York, N.Y. 840,044, pub. 9–19–67. Cl. 39.
Celanese Corp. : *See*—
Celanese Corp. of America.
Celanese Corp. of America, to Celanese Corp., New York, N.Y. 433,558, ren. 12–5–67. Cl. 42.

Certified Chemical & Equipment Co., Cleveland, Ohio. 840,167, pub. 9–19–67. Cl. 52.
Ceskoslovenske Cokoladovny, Oborovy Podnik, Modrany, Modrany, Czechoslovakia. 840,088, pub. 8–8–67. Cl. 46.
Charles, Gino, Ltd., New York, N.Y. 840,055, pub. 9–19–67. Cl. 39.
Chase & Sons, Inc., Randolph, Mass. 839,915–6, pub. 9–19–67. Cl. 21.
Chesebrough-Pond's, Inc., New York, N.Y. 840,157, pub. 9–19–67. Cl. 51.
Chesebrough-Pond's, Inc., New York, N.Y. 840,161, pub. 9–19–67. Cl. 51.
Chicken Delight, Inc., Rock Island, Ill. 840,120, pub. 9–19–67. Cl. 46.
Chicopee Mfg. Co.: *See*—
Johnson & Johnson.
Chittenden & Eastman Co., Burlington, Iowa. 839,978, pub. 9–19–67. Cl. 32.
Chris-Craft Industries, Inc., Pompano Beach, Fla. 839,900–1, pub. 9–19–67. Cl. 19.
Christian Science Publishing Society, The, Boston, Mass. 840,019–20, pub. 9–19–67. Cl. 38.
Clairol, Inc., New York, N.Y. 840,149–50, pub. 7–18–67. Cl. 51.
Clairol, Inc., New York, N.Y. 840,154–5, pub. 9–19–67. Cl. 51.
Clark Gum Co.: *See*—
Morris, Philip, Inc.
Clopay Corp., Cincinnati, Ohio. 840,220. Cl. 50.
Cock 'n Bull Products, Hollywood, to Cock 'n Bull Products, Los Angeles, Calif. 435,910, ren. 12–5–67. Cl. 46.
Colgate-Palmolive Co., New York, N.Y. 840,146, pub. 9–19–67. Cl. 51.
Colonial Refining & Chemical Co., Cleveland, Ohio. 839,867, pub. 9–19–67. Cl. 16.
Colonial Stores, Inc., East Point, Ga. 840,086, pub. 9–19–67. Cl. 46.
Columbia Broadcasting System, Inc., New York, N.Y. 839,997–9, pub. 9–19–67. Cl. 36.
Columbia Statuary, Inc., Boston, Mass. 840,141, pub. 9–19–67. Cl. 50.
Columbia-Minerva Corp., New York, N.Y. 840,030, pub. 9–19–67. Multiple Class (Classes 38 and 43).
Communications Satellite Corp., Washington, D.C. 840,195, pub. 9–19–67. Cl. 104.
Compagnie Francaise de Raffinage, Societe Anonyme, Paris, France. 839,811, pub. 9–19–67. Cl. 6.
Computoservice, Inc., Mankato, Minn. 840,182, pub. 9–19–67. Cl. 101.
Concord Fabrics, Inc., New York, N.Y. 840,069–70, pub. 9–19–67. Cl. 42.
Construction Design, Inc., Los Angeles, Calif. 840,191, pub. 9–19–67. Cl. 103.
Continental Can Co., Inc., New York, N.Y. 839,792, pub. 9–19–67. Cl. 2.
Continental Manufacturers, Inc.: *See*—
Manna, Manuel.
Continental Oil Co., Ponca City, Okla. 722,736, canc. Cl. 6.
Cook Laboratories, Inc., Springfield, Mo. 839,881, pub. 9–19–67. Cl. 18.
Cook, Ray: *See*—
Cook, Raymon W.
Cook, Raymon W., d.b.a. Ray Cook, San Antonio, Tex. 839,930, pub. 9–19–67. Cl. 22.
Cotton Council: *See*—
National Cotton Council of America.
Coulter Electronics, Inc., Hialeah, Fla. 839,801, pub. 9–19–67. Cl. 2.
Counterpart Corp., New York, N.Y. 839,788, pub. 9–19–67. Cl. 2.
Cracker Jack Co., The, Chicago, Ill., to The Borden Co., New York, N.Y. 436,255, ren. 12–5–67. Cl. 46.
Creasey Co. of Delaware, The, Louisville, Ky. 836,903, cor. Cl. 101.
Crosman Arms Co., Inc., Fairport, N.Y. 435,338, 12(c) pub. 12–5–67. Cl. 9.
Crown Staffordshire China Co., Ltd., Stoke-on-Trent, England. 839,962, pub. 9–19–67. Cl. 30.
Cuban-American Syrup Co., The, Little Rock, Ark., to Anheuser-Busch, Inc., St. Louis, Mo. 240,039, ren. 12–5–67. Cl. 46.
Cunocar Accounting Service: *See*—
Bryant, Cuno R.
Curtis Publishing Co., The, Philadelphia, Pa. 840,018, pub. 9–19–67. Cl. 38.
Cutter Laboratories, Inc., Los Angeles, Calif. 840,194, pub. 9–19–67. Cl. 103.
Damon Creations, Inc., New York, N.Y. 840,056, pub. 9–19–67. Cl. 39.
Danker & Wohlk, Inc.: *See*—
Modern Invisible Lens Service, Inc.
Da Silva-Vinhos, Antonio Jose, S.A.R.L., Vila Nova de Gaia, Portugal. 840,132, pub. 9–19–67. Cl. 47.
Dawson Chemical Co., Houston, Tex. 839,812, pub. 9–19–67. Cl. 6.
Deering Milliken, Inc., New York, N.Y. 840,218. Cl. 42.
De Erven de Wed. J. Van Nelle, assor. to De Erven de Wed. J. Van Nelle, by De Erven de Wed. J. Van Nelle N.V., Rotterdam, Netherlands. 61,497, 12(c) pub. 12–5–67. Cl. 17.
De Erven de Wed. J. Van Nelle, assor. to De Erven de Wed. J. Van Nelle, by De Erven de Wed. J. Van Nelle N.V., Rotterdam, Netherlands. 65,877, 12(c) pub. 12–5–67. Cl. 17.
De Erven de Wed. J. Van Nelle N.V.: *See*—
De Erven de Wed. J. Van Nelle.
Degen, H., Basel, Switzerland. 839,971, pub. 9–19–67. Cl. 32.
Dehn & Co., Inc.: *See*—
Dehn, Karl.
Dehn, Karl, d.b.a. Norland Packing Co., to Dehn & Co., Inc., Seattle, Wash. 435,591, ren. 12–5–67. Cl. 46.
Dehydag Deutsche Hydrierwerke G.m.b.H., Dusseldorf, Germany. 839,817, pub. 9–19–67. Cl. 6.
Deliverance Evangelistic Center Inc., Brooklyn, N.Y. 840,036, pub. 9–19–67. Cl. 38.
Dellander, John B., d.b.a. Torette Mfg. Co., St. Paul, Minn. 722,827, canc. Cl. 24.
Delta Products, Inc., San Antonio, Tex. 839,931, pub. 9–19–67. Cl. 22.
Delta Steel Buildings Co., Dallas, Tex. 839,831–3, pub. 9–19–67. Cl. 12.
De Markus, Louis, Corp., Buffalo, N.Y. 722,822, canc. Cl. 23.
De Wine & Hamma Seed Co., Inc., d.b.a. De Wine Seeds, Yellow Springs, Ohio. 839,781–3, pub. 9–19–67. Cl. 1.
De Wine Seeds: *See*—
De Wine & Hamma Seed Co., Inc.
Diamond Alkali Co., Cleveland, Ohio, from Nopco Chemical Co., Newark, N.J. 840,099, pub. 9–19–67. Cl. 46.
Diamond Crystal Salt Co., from Diamond Crystal Salt Co., St. Clair, Mich. 722,873, canc. Cl. 46.
Diamond Sand Co., Bartow, Fla. 236,178, ren. 12–5–67. Cl. 1.
Dick, A. B., Co., Niles, Ill. 840,011–13, pub. 9–19–67. Cl. 37.
Display-O-Rama, Inc., New York, N.Y. 840,184, pub. 9–19–67. Cl. 101.
Domestic Marble & Stone Corp., New York, N.Y. 839,779, pub. 9–19–67. Cl. 1.
Donovan Associates: *See*—
Donovan, Marion.
Donovan, Marion, d.b.a. Donovan Associates, Southport, Conn. 840,003, 9–19–67. Cl. 37.
Donruss Co., The, Memphis, Tenn. 840,123, pub. 9–19–67. Cl. 46.
Doric Organ Co., Morristown, N.J. 839,991, pub. 9–19–67. Cl. 36.
D'Orsay Perfumerics Corp., New York, N.Y., to Societe Anonyme, Compagnie Francaise des Parfums d'Orsay, Pateaux (Hauts-de-Seine), France. 235,715, ren. 12–5–67. Cl. 51.
Dow Chemical Co., The, Midland, Mich. 839,880, pub. 9–19–67. Cl. 18.
Dralle, Georg, Hamburg-Altona, Germany. 722,908, canc. Cl. 51.
Drugger, Melvin C., d.b.a. Perflex Products Co., Indianapolis, Ind. 839,896, pub. 9–19–67. Cl. 18.
Duluth Filter Co., Duluth, Minn. 722,839, canc. Cl. 31.
Dunlop Tire and Rubber Corp., Buffalo, N.Y. 839,988, pub. 9–19–67. Cl. 35.
Du Pont de Nemours, E. I., & Co., Wilmington, Del. 839,875, pub. 9–19–67. Cl. 16.
Eagle Carpets, Inc., Cartersville, Ga. 840,078, pub. 9–19–67. Cl. 42.
Eagle Food Centers, Inc., Milan, Ill. 839,887, pub. 9–19–67. Cl. 18.
Earlibest Orange Assn.: *See*—
Rocky Hill Corp.
Eastman Kodak Co., Rochester, N.Y. 435,564, ren. 12–5–67. Cl. 26.
Echo Communications, Inc., Cedarburg, Wis. 840,174, pub. 9–19–67. Cl. 100.
Editor & Publisher Co., The, New York, N.Y. 234,944, ren. 12–5–67. Cl. 38.
Edo Western Corp., Salt Lake City, Utah. 839,946, pub. 9–19–67. Cl. 26.
El Cid, Ltd., Santa Monica, Calif. 839,794, pub. 9–19–67. Cl. 2.
Elder & Jenks, Inc., Bayonne, N.J. 839,961, pub. 9–19–67. Cl. 29.
Eldon Industries, Inc., Hawthorne, Calif. 839,933, pub. 9–19–67. Cl. 22.
Electric Sweeper Service Co., Cleveland, Ohio. 839,911, pub. 9–19–67. Cl. 21.
Electronic Development Corp., Salt Lake City, Utah. 839,917, pub. 9–19–67. Cl. 21.
Emenee Industries, Inc., New York, N.Y. 839,928, pub. 9–19–67. Cl. 22.
Endurance Coatings Corp.: *See*—
Engard Coatings Corp.
Engard Coatings Corp., from Endurance Coatings Corp., Long Beach, Calif. 839,872, pub. 9–5–67. Cl. 16.
Esquire, Inc., New York, N.Y. 840,209. Cl. 38.
Ever Ready Co. (Great Britain), Ltd., The, London, England. 839,914. pub. 9–19–67. Cl. 21.
Everest Chair Co.: *See*—
Modern Upholstered Chair Co., Inc.
Eversharp, Inc., Chicago, Ill., to The Parker Pen Co., Janesville, Wis. 434,262, ren. 12–5–67. Cl. 37.
Eversharp, Inc., Milford, Conn. 840,159–60, pub. 9–19–67. Cl. 51.
Excelsior Import Corp., New York, N.Y. 840,215. Cl. 39.
FMC Corp.: *See*—
Food Machinery Corp.
FMC Corp., Philadelphia, Pa. 839,784, pub. 9–19–67. Cl. 1.
Faber-Castell, A. W.: *See*—
Bleistiftfabrik vormals Johann Faber Actien-Gesellschaft.
Fairchild Publications, Inc., New York, N.Y. 840,017, pub. 9–19–67. Cl. 38.
Falcon Alarm Co., Inc., Springfield, N.J. 839,795, pub. 9–19–67. Multiple Class (Classes 2, 12, 21, and 23).
Fansteel Metallurgical Corp., North Chicago, Ill. 839,790, pub. 9–19–67. Cl. 2.
Farber, S. W., Inc.: *See*—
Kidde, Walter, & Co., Inc.
Ferier, Bianchini, Lyons, France. 840,067, pub. 9–19–67. Cl. 42.
Firestone Tire & Rubber Co., The, Akron, Ohio. 840,054, pub. 9–19–67. Cl. 39.

First National Bank of Fort Worth, The, Fort Worth, Tex. 840,188, pub. 9–19–67. Cl. 102.
First National City Bank, National Banking Assn., New York, N.Y. 840,032, pub. 9–19–67. Cl. 38.
Fish-Eze Products, Inc., Los Angeles, Calif. 722,820, canc. Cl. 22.
Florasynth, Inc., Bronx, N.Y. 840,112, pub. 9–19–67. Cl. 46.
Food Machinery Corp., San Jose, Calif., & Middleport, N.Y., to FMC Corp., New York, N.Y. 435,121, ren. 12–5–67. Cl. 6.
Ford, Milton Q., Washington, D.C. 840,200, pub. 9–19–67. Cl. 107.
Foremost Sales Promotions, Inc., Chicago, Ill. 840,183, pub. 9–19–67. Cl. 101.
Fort Dearborn Pharmacal Co., Chicago, Ill. 722,787, canc. Cl. 18.
Foto Features, Inc., Woodland, Calif. 840,025, pub. 9–19–67. Cl. 38.
Franzia Brothers Winery, d.b.a. Old Chateau Wine Co., Ripon, Calif. 840,133, pub. 9–19–67. Cl. 47.
Frederick, Purdue, Co., The, Yonkers, N.Y. 839,885, pub. 9–19–67. Cl. 18.
Friedman, B., Shoe Co., Inc., Norwich Shoe Co., Inc., Norwich, N.Y. 227,355, Am. 7(d). Cl. 39.
Fuller, D. B., & Co., Inc., to J. P. Stevens & Co., Inc., New York, N.Y. 435,745, ren. 12–5–67. Cl. 42.
Fusion Rubbermaid Corp., Statesville, N.C. 839,789, pub. 9–19–67. Cl. 2.
G & S Chair Frame Co., Inc., Brooklyn, N.Y. 839,972, pub. 9–19–67. Cl. 32.
Gaines-American Moulding Corp., New York, N.Y. 839,975, pub. 9–19–67. Cl 32.
Geb Casuals, Inc., New York, N.Y. 840,046, pub. 9–19–67. Cl. 39
Geer Publishing Co.: *See*—
Geer, Richard.
Geer, Richard, d.b.a. Geer Publishing Co., New York, N.Y. 840,021, pub. 9–19–67. Cl. 38.
General Aniline & Film Corp., New York, N.Y. 839,944, pub. 9–19–67. Cl. 26.
General Biological Supply House, Inc., Chicago, Ill. 839,950, pub. 9–19–67. Cl. 26.
General Biological Supply House, Inc., Chicago, Ill. 840,140, pub. 9–19–67. Cl. 50.
General Cable Corp.: *See*—
Metal Textile Corp.
General Ionics Corp., Bridgeville, Pa. 839,963, pub. 9–19–67. Cl. 31.
General Molded Products, Inc., Des Plaines, Ill. 433,425, ren. 12–5–67. Cl. 21.
General Motors Corp., Detroit, Mich. 840,034, pub. 9–19–67. Cl. 38.
General Precision, Inc., Little Falls, N.J. 722,831, canc. Cl. 26.
General Products Corp., Union Springs, N.Y. 722,800, canc. Cl. 21.
General Shoe Corp., Genesco Inc., Nashville, Tenn. 430,620. Am. 7(d). Cl. 39.
Gibson Greeting Cards, Inc., Cincinnati, Ohio. 840,007, pub. 9–19–67. Cl. 37.
Gibson-Homans Co., The, d.b.a. Handi-Products Co., Cleveland, Ohio. 839,853, pub. 9–19–67. Cl. 12.
Gillette Co., The, d.b.a. The Toni Co., Boston, Mass. 840,153, pub. 9–19–67. Cl. 51.
Glidden Co., The, Cleveland, Ohio. 839,841, pub. 9–19–67. Cl. 12.
Glidden Co., The, Cleveland, Ohio. 840,031, pub. 9–19–67. Cl. 38.
Glidden Co., The, d.b.a. Bell Food Products, Cleveland, Ohio. 840,113, pub. 9–19–67. Cl. 46.
Goerlich's Inc., Toledo, Ohio. 722,792, canc. Cl. 19.
Gold Crest Chicken: *See*—
Brane Services, Inc.
Golf Digest, Inc., South Norwalk, Conn. 840,211. Cl. 38.
Gorham Corp., Providence, R.I. 839 956, pub. 9–19–67. Cl. 28.
Grace, W. R., & Co., New York, N.Y., from Leaf Brands, Inc., Chicago, Ill. 840,119, pub. 7–25–67. Cl. 46.
Graphic Products Corp., Rolling Meadows, Ill. 840,028, pub. 9–19–67. Cl. 38.
Great Lakes Carbon Corp., New York, N.Y. 839,821, pub. 9–19–67. Cl. 10.
Gretsch, Fred, Mfg. Co., The, Brooklyn, N.Y. 840,000, pub. 9–19–67. Cl. 36.
Gulf Coast Packing Co., Inc., Houma, La. 840,121, pub. 9–19–67. Cl. 46.
Gustafsson, Woodex Henrik, & Co., Helsinki, Finland. 839,924, pub. 9–19–67. Cl. 22.
Gynecic Laboratories, Inc., Yonkers, N.Y. 839,883, pub. 9–19–67. Cl. 18.
HMH Publishing Co., Inc., Chicago, Ill. 840,202, pub. 9–19–67. Cl. A.
HPE, Inc., Colton, Calif. 839,968, pub. 9–19–67. Cl. 31.
Hager, C., & Sons Hinge Mfg. Co., St. Louis, Mo. 839,857, pub. 9–19–67. Cl. 13.
Haltwelen Co.: *See*—
Meyers, Walter C.
Hammer, John L., d.b.a. Hammer Publishing Co., Princeton, N.J. 840,023, pub. 9–19–67. Cl. 38.
Hammer Publishing Co.: *See*—
Hammer, John L.
Handi-Products Co.: *See*—
Gibson-Homans Co., The.
Harbison-Walker Refractories Co., Pittsburgh, Pa. 839,843–4, pub. 9–19–67. Cl. 12.
Harbor House Foods, Inc., Tampa, Fla. 722,875, canc. Cl. 46.
Hardwick Stove Co., Cleveland, Tenn. 839,984, pub. 9–19–67. Cl. 34.
Harper, Thos., & Sons, Ltd., London, by Needle Industries, Ltd., Birmingham, England. 67,702, 12(c) pub. 12–5–67. Cl. 40.
Haugron Cientifical, S.A., Barcelona, Spain. 431,851–3, ren. 12–5–67. Cl. 18.
Hellige International, Inc., Garden City, N.Y. 839,943, pub. 9–19–67. Cl. 26.
Hercules, Inc.: *See*—
Hercules Powder Co.
Hercules Powder Co., to Hercules, Inc., Wilmington, Del. 434,946, ren. 12–5–67. Cl. 6.
Hershey Chocolate Co., by Hershey Chocolate Corp., Hershey, Pa. 186,828, 12(c) pub. 12–5–67. Cl. 46.
Hershey Chocolate Co., by Hershey Chocolate Corp., Hershey, Pa. 243,477, 12(c) pub. 12–5–67. Cl. 46.
Hershey Chocolate Corp.: *See*—
Hershey Chocolate Co.
High Voltage Engineering Corp., Burlington, Mass. 839,949, pub. 9–19–67. Cl. 26.
Highland Blending Co.: *See*—
Stenham, H., Ltd.
Hilton-Burns Hotel Co., Inc., Chicago, Ill. 840,175, pub. 9–19–67. Cl. 100.
Hoeganaes Corp., New York, N.Y. 839,862, pub. 9–19–67. Cl. 14.
Hoffman, J. S., Co., Chicago, Ill. 840,111, pub. 9–19–67. Cl. 46.
Hollandse Tapijt Industrie N.V., Alkmaar, Netherlands. 840,077, pub. 9–19–67. Cl. 42.
Homasote Co., Trenton, N.J. 839,835, pub. 9–19–67. Cl. 12.
Home Federal Savings & Loan Assn., Washington, D.C. 840,190, pub. 9–19–67. Cl. 102.
Huber, J. M., Corp., Borger, Tex. 434,234, ren. 12–5–67. Cl. 6.
Huber, J. M., Corp.: *See*—
Huber, J. M., Inc.
Huber, J. M., Inc., assor. to J. M. Huber Corp., Red Bank, N.J., to J. M. Huber Corp., Borger, Tex. 434,882, ren. 12–5–67. Cl. 6.
Hudson National, Inc., New York, N.Y. 839,892, pub. 9–19–67. Cl. 18.
Hudson, Wayne, d.b.a. Triple T Patching, Nashville, Tenn. 839,986, pub. 9–19–67. Cl. 35.
Hughes & Price Proprietary Ltd., to Silvercheck Pty. Ltd., Victoria, Australia. 723,683, new cert. Cl. 51.
Humble Oil & Refining Co.: *See*—
American Hard Rubber Co.
Hunt Foods & Industries, Inc.: *See*—
Hunt-Wesson Foods, Inc.
Hunt-Wesson Foods: *See*—
Hunt-Wesson Foods, Inc.
Hunt-Wesson Foods, Inc., from Hunt Foods & Industries, Inc., d.b.a. Hunt-Wesson Foods, Fullerton, Calif. 840,089, pub. 9–19–67. Cl. 46.
Huskee-Bilt Construction Co., Chicago, Ill. 839,834, pub. 9–19–67. Cl. 12.
Hydralum Industries, Inc., Chicago, Ill. 839,869–70, pub. 9–19–67. Cl. 16.
Hypotropic, Inc., Bronx, N.Y. 840,156, pub. 9–19–67. Cl. 51.
Imperial Chemical Industries of Australia and New Zealand, Ltd., Melbourne, Victoria, Australia. 839,809, pub. 10–19–65. Cl 6.
Indian Head, Inc.: *See*—
Ulmann, Bernhard, Co., Inc.
Insul-8-Corp., Oakland, from Insul-8-Corp., San Carlos, Calif. 839,913, pub. 9–19–67. Cl. 21.
Interchemical Corp., New York, N.Y. 839,836, pub. 7–4–67. Cl. 12.
International Pharmaceutical Corp., King of Prussia, Pa. 839,882, pub. 9–19–67. Cl. 18.
International Salespower Institute, Inc., Montgomery, Ala. 840,138. pub. 9–19–67. Cl. 50.
International Union of Electrical, Radio & Machine Workers, AFL-CIO-CLC, Washington, D.C. 840,203, pub. 9–19–67. Cl. A.
January & Wood Co., Maysville, Ky. 436,064–5, ren. 12–5–67. Cl. 43.
Jarvis, Beatrice C., Stoughton, Wis. 840,180, pub. 9–19–67. Cl. 101.
Jaybird Enterprises, Inc., North Hollywood, Calif. 840,039, pub. 9–19–67. Cl. 38.
Jerdon, Inc., New York, N.Y. 840,162, pub. 9–19–67. Cl. 51.
Johnson & Johnson, d.b.a. Chicopee Mfg. Co., New Brunswick, N.J. 840,079–80, pub. 9–19–67. Cl. 42.
Josephine Co., The, St. Paul, Minn. 840,051–2, pub. 9–19–67. Cl. 39.
KPR Publications, Inc., New York, N.Y. 840,038, pub. 9–19–67. Cl. 38.
Kaman Aircraft Corp.: *See*—
Kaman Corp.
Kaman Corp., from Kaman Aircraft Corp., Bloomfield, Conn. 839,996, pub. 9–19–67. Cl. 36.
Kanegafuchi Boseki Kabushiki Kaisha, d.b.a. Kanegafuchi Spinning Co., Ltd., Osaka, Japan. 840,143, pub. 8–1–67. Cl. 51.
Kanegafuchi Spinning Co., Ltd.: *See*—
Kanegafuchi Boseki Kabushiki Kaisha.
Kapree Wedding Ring Co.: *See*—
Sager, Abraham G.
Kawasaki Aircraft Co., Ltd., Ikuta-Ku, Kobe, Japan. 839,898–9, pub. 9–19–67. Cl. 19.
Kay Mar, Inc., Parma, Ohio. 840,084, pub. 9–19–67. Cl. 42.
Kayser, Julius, & Co., to Kayser-Roth Corp., New York, N.Y. 436,444, ren. 12–5–67. Cl. 39.
Kayser-Roth Corp.: *See*—
Kayser, Julius, & Co.
Phoenix Hosiery Co.

Kayser-Roth Corp., New York, N.Y. 840,061, pub. 9–19–67. Cl. 39.
Kaz Mfg. Co., Inc., New York, N.Y. 434,841, ren. 12–5–67. Cl. 44.
Keebler Co., from United Biscuit Co. of America, Melrose Park, Ill. 840,087, pub. 9–19–67. Cl. 46.
Keller Industries, Inc., Miami, Fla. 840,219. Cl. 50.
Kidde, Walter, & Co., Inc., Belleville, N.J., from S. W. Farber, Inc., New York, N.Y. 839,854, pub. 7–12–66. Cl. 13.
Klein, Irving, d.b.a. Klein Enterprises, New York, N.Y. 722,816, canc. Cl. 22.
Klein Enterprises: *See*—
Klein, Irving.
Klopman Mills, Inc., Rockleigh, N.J. 840,081, pub. 9–19–67. Cl. 42.
Knoll Pharmaceutical Co.: *See*—
Bilhuber, E., Inc.
Kordet Color Corp., Oceanside, N.Y. 840,041, pub. 9–19–67. Cl. 38.
Kortenbach & Rauh Kommanditgesellschaft, Solingen-Weyer, Germany. 840,066, pub. 9–19–67. Cl. 41.
Koss Electronics, Inc., Milwaukee, Wis. 839,989, pub. 9–19–67. Cl. 36.
L.K.R. Chemical Products Corp., Detroit, Mich. 722,907, canc. Cl. 50.
Lady Marlene Brassiere Corp., New York, N.Y. 840,062, pub. 9–19–67. Cl. 39.
Lakeside Central Co.: *See*—
Bradner Central Co.
Lancer Fabrics, Inc., New York, N.Y. 840,076, pub. 9–19–67. Cl. 42.
Lances, Edith, Corp., New York, N.Y. 840,043, pub. 9–19–67. Cl. 39.
Lander Co., Inc., d.b.a. Dorothy Reed, New York, N.Y. 840,145, pub. 9–19–67. Cl. 51.
Lane Magazine & Book Co., Menlo Park, Calif. 840,204, pub. 9–19–67. Cl. B.
Lanman & Kemp-Barclay & Co., Inc., Palisades Park, N.J. 839,897, pub. 9–19–67. Cl. 18.
Lanvin-Charles of the Ritz, Inc., New York, N.Y. 840,164, pub. 9–19–67. Cl. 51.
Latimer, Ira S., Detroit, Mich. 839,819, pub. 9–19–67. Cl. 6.
Laub Engineering Co.: *See*—
Laub, Herman, III.
Laub, Herman, III, d.b.a. Laub Engineering Co., San Gabriel, Calif. 839,858, pub. 9–19–67. Cl. 13.
Lawter Chemicals, Inc., Chicago, Ill. 839,822, pub. 9–19–67. Cl. 11.
Lea Mfg. Co., The, Waterbury, Conn. 839,808, pub. 9–19–67. Cl. 4.
Lea & Perrins, Worcester, England, to Lea & Perrins, Inc., Fair Lawn, N.J. 68,150, ren. 12–5–67. Cl. 46.
Lea & Perrins, Inc.: *See*—
Lea & Perrins.
Leaf Brands, Inc.: *See*—
Grace, W. R., & Co.
Lebhar-Friedman Publications, Inc., New York, N.Y. 840,033, pub. 9–19–67. Cl. 38.
Les Parfums de Dana, Inc., New York, N.Y. 437,778, ren. 12–5–67. Cl. 51.
Levy, Rudy, Inc., New York, N.Y. 839,953, pub. 9–19–67. Cl. 28.
Lewis, J. B., & Sons, Ltd., to Meridian, Ltd., Nottingham, England. 433,392, ren. 12–5–67. Cl. 39.
Libbey-Owens-Ford Glass Co., Toledo, Ohio. 722,842, canc. Cl. 33.
Libbey-Owens-Ford Glass Co., Toledo, Ohio. 839,980, pub. 9–19–67. Cl. 33.
Life Savers, Inc., Port Chester, N.Y., to Beech-Nut Life Savers, Inc., New York, N.Y. 236,694, ren. 12–5–67. Cl. 46.
Lightfoot Schultz Co., New York, N.Y., and Hoboken, N.J., to Philip Morris, Inc., New York, N.Y. 434,707, ren. 12–5–67. Cl. 51.
Lightfoot Schultz Co., New York, N.Y., and Hoboken, N.J., to Philip Morris, Inc., New York, N.Y. 435,527, ren. 12–5–67. Cl. 52.
Lilly, Eli, and Co., Indianapolis, Ind. 840,024, pub. 9–19–67. Cl. 38.
Listening Library, Inc., Old Greenwich, Conn. 839,992, pub. 9–19–67. Cl. 36.
Loewengart & Co., New York, N.Y. 722,719, canc. Cl. 1.
London Oil Corp., Ltd., London, England. 840,091, pub. 9–19–67. Cl. 46.
Loonart Press, Inc., Colorado Springs, Colo. 840,042, pub. 9–19–67. Cl. 38.
Los Angeles Importing Co., Monterey Park, Calif. 840,115, pub. 11–22–66. Cl. 46.
Lubrecht, William E., d.b.a. Remind-O-Gram Co., Covington, Ky. 722,846, canc. Cl. 37.
Lubrication Sciences, Inc., Mountain View, Calif. 839,865, pub. 9–19–67. Cl. 15.
MCA Inc.: *See*—
Barnett, Samuel, & Sons, Ltd.
MacDermid, Inc., Waterbury, Conn. 839,807, pub. 9–19–67. Cl. 4.
Malchar Industries: *See*—
Malchar, Rudolph C.
Malchar, Rudolph C., d.b.a. Malchar Industries, Oklahoma City, Okla. 840,048, pub. 9–19–67. Cl. 39.
Mallinckrodt Chemical Works, St. Louis, Mo. 839,947, pub. 9–19–67. Cl. 26.
Manna, Manuel, Tampa, from Continental Manufacturers, Inc., St. Petersburg, Fla. 839,826, pub. 9–19–67, Cl. 12.
Marvel Engineering Co., Chicago, Ill. 839,965–7, pub. 9–19–67. Cl. 31.
Master Bronze Powder Co., Hammond, Ind., to Master Bronze Powder Co., Inc., Chicago Heights, Ill. 435,891, ren. 12–5–67. Cl. 16.
Master Bronze Powder Co., Inc.: *See*—
Master Bronze Powder Co.
Masti-Kure Products Co., Norwich, Conn. 839,879, pub. 9–19–67. Cl. 18.
Matsushita Electric Industrial Co., Ltd., Osaka, Japan. 839,922, pub. 5–2–67. Cl. 21.
Mattel, Inc., Hawthorne, Calif. 722,814, canc. Cl. 22.
McFarland, J. A., Corp., Chicago, Ill. 839,859, pub. 9–19–67. Cl. 13.
McGregor & Werner, Inc., Washington, D.C., to Allied/Egry Business Systems, Inc., Chicago, Ill. 436,206, ren. 12–5–67. Cl. 11.
McLaughlin, W. F., & Co., Chicago, Ill. 65,709, ren. 12–5–67. Cl. 46.
McMullen, L. J., d.b.a. Belgrade Saddlery, Belgrade, Mont. 839,805, pub. 9–19–67. Cl. 3.
Mead Corp., The, Dayton, Ohio. 839,796, pub. 9–19–67. Cl. 2.
Mead Corp., The, Dayton, Ohio. 840,029, pub. 9–19–67. Cl. 38.
Mead Johnson & Co., Evansville, Ind. 840,128, pub. 9–19–67. Cl. 46.
Measurement Analysis Corp., Los Angeles, Calif. 840,027, pub. 9–19–67. Cl. 38.
Medco, Inc., Kansas City, Mo. 839,952, pub. 9–19–67. Cl. 27.
Meridian, Ltd.: *See*—
Lewis, J. B., & Sons, Ltd.
Merry Mfg. Co., Cincinnati, Ohio. 722,809, canc. Cl. 22.
Metal Lubricants Co., Chicago, Ill. 840,168, pub. 9–19–67. Cl. 52.
Metal Textile Corp., West Orange, N.J., to General Cable Corp., New York, N.Y. 433,476, ren. 12–5–67. Cl. 4.
Meyer, Joseph H., Bros., Brooklyn, by The Richelieu Corp., Holbrook, N.Y. 434,306, 12(c) pub. 12–5–67. Cl. 28.
Meyers, Walter C., d.b.a. Haltwelen Co., Temple City, Calif. 839,925, pub. 9–19–67. Cl. 22.
Micro-Lube, Inc., Dallas, Tex. 839,873, pub. 9–19–67. Cl. 16.
Midland-Ross Corp., Toledo, Ohio. 839,983, pub. 9–19–67. Cl. 34.
Milchem, Inc., Houston, Tex. 839,813, pub. 8–8–67. Cl. 6.
Miller, Eugene L., d.b.a. Bee-Line Trailer Rental and Bee-Line Co., Daytona Beach, Fla. 840,197, pub. 9–19–67. Cl. 105.
Miller, John T., Houston, Tex. 839,918, pub. 9–19–67. Cl. 21.
Miller Mfg. Co., Fort Worth, Tex. 839,797, pub. 9–19–67. Cl. 2.
Milwaukee Seasoning Laboratories, Inc., Milwaukee, Wis. 840,110, pub. 9–19–67. Cl. 46.
Minnesota Mining & Mfg. Co., St. Paul, Minn. 839,851–2, pub. 9–19–67. Cl. 12.
Minnesota Mining & Mfg. Co., St. Paul, Minn. 839,874, pub. 9–19–67. Cl. 16.
Minwax Co., Inc., Delawanna, N.J. 238,736, ren. 12–5–67. Cl. 12.
Mr. Pantsmaster of New England, Inc.: *See*—
Pantsmaster, Inc.
Mite Corp., New Haven, Conn., from Teleprinter Corp., Paramus, N.J. 722,797, canc. Cl. 21.
Modern Invisible Lens Service, Inc., Buffalo, to Danker & Wohlk, Inc., West Hempstead, N.Y. 434,435, ren. 12–5–67. Cl. 18.
Modern Upholstered Chair Co., Inc., d.b.a. Everest Chair Co., Morristown, Tenn. 839,977, pub. 9–19–67. Cl. 32.
Monastic Studies, Pine City, N.Y. 840,214. Cl. 38.
Monier-Raymond Concrete Tile Co., Corono, Calif. 839,837, pub. 9–19–67. Cl. 12.
Monsanto Chemical Co., by Monsanto Co., St. Louis, Mo. 431,053 12(c) pub.12–5–67. Cl. 6.
Monsanto Chemical Co., by Monsanto Co., St. Louis, Mo. 432,858, 12(c) pub. 12–5–67. Cl. 6.
Monsanto Chemical Co., by Monsanto Co., St. Louis, Mo. 433,224, 12(c) pub. 12–5–67. Cl. 6.
Monsanto Co.: *See*—
Monsanto Chemical Co.
Morris, Philip, Inc.: *See*—
Lightfoot Schultz Co.
Morris, Philip, Inc., d.b.a. Clark Gum Co., New York, N.Y. 840,130, pub. 9–19–67. Cl. 46.
Moscow, Frank L., d.b.a. Scientific Lubricants Co., to Grace J. Gill, Chicago, Ill. 527,605, new cert. Cl. 15.
Mueller Co.: *See*—
Mueller, H., Mfg. Co.
Mueller, H., Mfg. Co., to Mueller Co., Decatur, Ill. 68,337, ren. 12–5–67. Cl. 23.
Muther, John P., to National Electrical Mfg. Association, New York, N.Y. 690,901, new cert. Cl. 34.
Mutual Plastic Mold Corp., La Mirada, Calif. 839,786, pub. 12–13–66. Cl. 2.
Myers, Geo. T., & Co., by New England Fish Co., Seattle, Wash. 228,764, 12(c) pub. 12–5–67. Cl. 46.
My-Ko Chemical Corp., Milwaukee, Wis. 839,849, pub. 9–19–67. Cl. 12.
My-Ko Chemical Corp., Milwaukee, Wis. 840,169, pub. 9–19–67. Cl. 52.
Nalco Chemical Co., Chicago, Ill. 839,842, pub. 9–19–67. Cl. 12.
Napco, Inc., Pittsburgh, Pa. 839,824, pub. 9–19–67. Cl. 12.
Narrow Fabric Co., The, West Reading & Reading, by Wyomissing Corp., Reading, Pa. 228,871, 12(c) pub. 12–5–67. Cl. 42.
Narrow Fabric Co., The, West Reading & Reading, by Wyomissing Corp., Reading, Pa. 229,254, 12(c) pub. 12–5–67. Cl. 44.
National Biscuit Co., New York, N.Y. 840,122, pub. 9–19–67. Cl. 46

National Cotton Council: *See*—
National Cotton Council of America.
National Cotton Council of America, d.b.a. National Cotton Council & Cotton Council, Memphis, Tenn. 840,172, pub. 10–25–66. Cl. 100.
National Distillers & Chemical Corp., New York, N.Y. 839,820, pub. 9–19–67. Cl. 6.
National Patent Development Corp., New York, N.Y. 839,778, pub. 5–9–67. Cl. 1.
National Pigment Co., Inc.: *See*—
Sall, Grayce L.
National Research Associates, Inc., College Park, Md. 722,793, canc. Cl. 19.
Needle Industries, Ltd.: *See*—
Harper, Thos., & Sons, Ltd.
Nestle Co., Inc., The, White Plains, N.Y. 840,102–9, pub. 9–19–67. Cl. 46.
New England Fish Co.: *See*—
Myers, Geo. T., & Co.
Newberry, J. J., Co., New York, N.Y. 722,835, canc. Cl. 30.
Newberry, J. J., Co., New York, N.Y. 722,841, canc. Cl. 33.
Nopco Chemical Co.: *See*—
Diamond Alkali Co.
Norland Packing Co.: *See*—
Dehn, Karl.
Norman, Merle, Cosmetics: *See*—
Norman, Merle, Cosmetics, Inc.
Norman, Merle, Cosmetics, Inc., d.b.a. Merle Norman Cosmetics, Los Angeles, Calif. 840,142, pub. 9–19–67. Cl. 51.
Northwest Paper Co., The, Cloquet, Minn. 840,014, pub. 9–19–67. Cl. 37.
Norton Co.: *See*—
Behr-Manning Corp.
Noryd, Nils E. A., Vetlanda, Sweden. 839,827, pub. 9–19–67. Cl. 12.
Noxell Corp., Baltimore, Md. 839,799, pub. 9–19–67. Cl. 2.
Nutone, Inc., Chicago, Ill. 521,930, cor. Cl. 21.
Ohio Art Co., The, Bryan, Ohio. 839,927, pub. 9–19–67. Cl. 22.
Ohio Leather Co., The, Girard, Ohio. 238,662, ren. 12–5–67. Cl. 1.
Oklahoma City Mill & Elevator Co., General Mills, Inc., Minneapolis, Minn. 235,000, Am. 7(d). Cl. 46.
Old Cbatesu Wine Co.: *See*—
Franzia Brothers Winery.
Oneida, Ltd., Oneida, N.Y. 839,957, pub. 9–19–67. Cl. 28.
Optomechanisms, Inc., Plainview, N.Y. 839,948, pub. 9–19–67. Cl. 26.
Ore-Ida Foods, Inc., Ontario, Oreg. 840,100, pub. 9–19–67. Cl. 46.
Ore-Ida Foods, Inc., Ontario, Oreg. 840,114, pub. 9–19–67. Cl. 46.
Overseas Guest Club, Inc., New York, N.Y. 722,912, canc. Cl. 100.
Oxnard Citrus Assn., Port Heuneme, Calif. 240,588, ren. 12–5–67. Cl. 46.
Pam Top Mfg. Co., Inc., to Plastimet Corp., Portland, Oreg. 829,702, new cert. Cl. 19.
Pantsmaster, Inc., d.b.a. Mr. Pantsmaster of New England, Inc., Brockton, Mass. 840,065, pub. 9–19–67. Cl. 39.
Parker Pen Co., The: *See*—
Eversharp, Inc.
Parthenon Co., Inc., The, Waterford, Conn. 839,884, pub. 9–19–67. Cl. 38.
Pasquier, Michel, to George J. Basciani, New York, N.Y. 434,422, ren. 12–5–67. Cl. 51.
Peacedale Processing Co., Inc., Peace Dale, R.I. 840,199, pub. 9–19–67. Cl. 106.
Pease Woodwork Co., Inc., Hamilton, Ohio. 839,850, pub. 9–19–67. Cl. 12.
Pennsylvania Medical Society, Harrisburg, Pa. 840,212. Cl. 38.
Penn-Tex Sales Co., Yardley, Pa. 840,082, pub. 9–19–67. Cl. 42.
Penn-Union Electric Corp., Erie, Pa. 722,801, canc. Cl. 21.
Pennyfeather Corp., Greenville, Del. 840,139, pub. 9–19–67. Cl. 50.
Peoples National Bank & Trust Co., Bay City, Mich. 840,189, pub. 8–8–67. Cl. 102.
Perfection American, Inc., Harvey, Ill. 839,936, pub. 9–19–67. Cl. 23.
Perflex Products Co.: *See*—
Dugger, Melvin C.
Permalin Products Corp., New York, N.Y. 840,004, pub. 9–19–67. Cl. 37.
Pet & Pal, Inc., Floral Park, N.Y. 839,891, pub. 9–19–67. Cl. 18.
Pfizer, Chas., & Co., Inc., New York, N.Y. 839,890, pub. 9–19–67. Cl. 18.
Phar-Med, Inc., East Detroit, Mich. 722,789, canc. Cl. 18.
Philadelphia Can Co., Inc., Philadelphia, Pa. 839,791, pub. 9–19–67. Cl. 2.
Phillips Screw Co., Natick, Mass. 839,856, pub. 10–18–66. Cl. 13.
Phoenix Hosiery Co., Milwaukee, Wis., to Kayser-Roth Corp., New York, N.Y. 436,511, ren. 12–5–67. Cl. 39.
Phonemaster, Inc., Dallas, Tex. 839,906, pub. 9–19–67. Cl. 21.
Piedmont Shirt Co., Greenville, S.C. 840,053, pub. 9–19–67. Cl. 39.
Pierce, S. S., Co., Boston, Mass. 236,895, ren. 12–5–67. Cl. 46.
Polycell Products, Ltd., Welwyn Garden City, England. 839,823, pub. 9–19–67. Cl. 12.
Porter, H. K., Co., Inc.: *See*—
Textron Industries, Inc.
Premier Scotch Whisky Co.: *See*—
Stenham, H., Ltd.
Primrose Yarn: *See*—
Tucker, Philmore.
Procter & Gamble Co., The, Cincinnati, Ohio. 433,437, ren. 12–5–67. Cl. 52.
Procter & Gamble Co., The, Cincinnati, Ohio. 840,163, pub. 9–19–67. Multiple Class (Classes 51 and 52).
Puchito Record Mfg. Co., Inc., Hialeah, Fla. 839,994, pub. 9–19–67. Cl. 36.
Puerto Rico Distillers, Inc., d.b.a. Barcelo Marques & Co., Arecibo, Puerto Rico. 840,136, pub. 9–19–67. Cl. 49.
Rabin Co., The, El Segundon, Calif. 722,733, canc. Cl. 6.
Rakes, Joe F., d.b.a. Joe Rakes Co., Tulsa, Okla. 722,745, canc. Cl. 12.
Rand McNally & Co., Skokie, Ill. 840,037, pub. 9–19–67. Cl. 38.
Rank Organisation, Ltd.: *See*—
Taylor, Taylor & Hobson, Ltd.
Rapaport Brothers, Inc., Chicago, Ill. 839,929, pub. 9–19–67. Cl. 22.
Ratcliff Hoist Co., Inc., Belmont, Calif. 839,934, pub. 9–19–67. Cl. 23.
Read Drug & Chemical Co. of Baltimore City, The, Baltimore, Md. 840,181, pub. 9–19–67. Cl. 101.
Red Barn System, Inc., The, Fort Lauderdale, Fla. 840,093, pub. 9–19–67. Cl. 46.
Red Tulip Proprietary, Ltd., Prahran, Victoria, Australia. 840,094, pub. 9–19–67. Cl. 46.
Redken Laboratories, Inc., Van Nuys, Calif. 840,165, pub. 9–19–67. Cl. 51.
Reed, Dorothy: *See*—
Lander Co., Inc.
Rehels Chemical Co.: *See*—
Armour Pharmaceutical Co.
Relide Clock Co.: *See*—
Wakmann, Icko.
Rex, Clarence R., Toledo, Ohio. 436,145, ren. 12–5–67. Cl. 10.
Richefleur Laboratories, Inc., Brooklyn, N.Y. 840,147, pub. 9–19–67. Cl. 51.
Richelieu Corp., The: *See*—
Meyer, Joseph H., Bros.
Ricol, Ltd., London, England. 840,074, pub. 9–19–67. Cl. 42.
Riekes Crisa Corp., Laredo, Tex. 839,981–2, pub. 9–19–67. Cl. 33.
Robinson, J. W., Co.: *See*—
Associated Dry Goods Corp.
Rocky Hill Corp., to Earlibest Orange Assn., Exeter, Calif. 240,706, ren. 12–5–67. Cl. 46.
Roeblings, John A., Sons Co., Trenton, N.J., to CF & I Steel Corp., Denver, Colo. 232,393, ren. 12–5–67. Cl. 7.
Ronrico Corp., d.b.a. Ronrico Rum Co., Santurce, Puerto Rico. 840,137, pub. 9–19–67. Cl. 49.
Ronrico Rum Co.: *See*—
Ronrico Corp.
Roosevelt, Edith K., New York, N.Y. 722,863, canc. Cl. 38.
Royal Insurance Co., Ltd., New York, N.Y. 840,186, pub. 9–19–67. Cl. 102.
SW Industries, Inc., Newton, Mass. 839,923, pub. 11–1–66. Cl. 22.
Sager, Abraham G., d.b.a. Kapree Wedding Ring Co., Chicago, Ill. 839,954, pub. 9–19–67. Cl. 28.
Ste. de la Distillerie du Supreme Fecamp, to Benedictine Distillerie de la Liqueur l'Ancienne Abbaye de Fecamp, Fecamp, France. 67,104, ren. 12–5–67. Cl. 49.
Sall, Grayce L., d.b.a. National Pigment Co., to National Pigment Co., Inc., Philadelphia, Pa. 437,804, ren. 12–5–67. Cl. 6.
Sampino, S., & Waverly Beauty Products, Inc., d.b.a. Waverly Beauty Products, Brooklyn, N.Y. 840,151–2, pub. 9–19–67. Cl. 51.
Samsonite Corp., from Shwayder Brothers, Inc., Denver, Colo. 839,804, pub. 8–9–66. Cl. 3.
Sar Mfg. Co., Inc., Houston, Tex. 839,976, pub. 9–19–67. Cl. 32.
Scarlett, Wm. G., & Co.: *See*—
Scarlett, William G.
Scarlett, William G., d.b.a. Wm. G. Scarlett & Co., to Wm. G. Scarlett & Co., Baltimore, Md. 234,405, ren. 12–5–67. Cl. 1.
Schlitz, Jos., Brewing Co., Milwaukee, Wis. 52,011, 12(c) pub. 12–5–67. Cl. 48.
Schmid, Julius, Inc., New York, N.Y. 840,060, pub. 9–19–67. Cl. 39.
Schnellpressenfabrik Koenig & Bauer Aktiengesellschaft, Wurzburg, Germany. 839,940–1, pub. 9–19–67. Cl. 23.
Scott, Foresman & Co., Glenview, Ill. 839,932, pub. 9–19–67. Multiple Class (Classes 22 and 38).
Scott, Rufus W., Co., New York, N.Y., to Charles H. Bacon Co., Inc., Lenoir City, Tenn. 236,467, ren. 12–5–67. Cl. 39.
Sea Nymph Pool Corp. of America, New York, N.Y. 722,740, canc. Cl. 12.
Selby Shoe Co., The, to Wohl Shoe Co., St. Louis, Mo. 597,120, new cert. Cl. 39.
Semper Paper Co. Inc., Brooklyn, N.Y. 840,005–6, pub. 9–19–67. Cl. 37.
Serv-A-Portion, Inc., Van Nuys, Calif. 840,126, pub. 9–19–67. Cl. 46.
Service Packing Co., Los Angeles, Calif. 840,125, pub. 9–19–67, Cl. 46.
Services Rendered, Inc., Providence, R.I. 840,178, pub. 9–19–67. Cl. 101.
Sherman Car Wash Equipment Co., Palmyra, N.J. 840,206. Cl. 23.
Sherwin-Williams Co., The, Cleveland, Ohio. 67,166, ren. 12–5–67. Cl. 16.

Shivell-Hall Co., Inc., The, New York, N.Y. 840,210. Cl. 38.
Shorewood Mills, Milwaukee, Wis. 840,217. Cl. 39.
Shur-Line Mfg. Co., Inc., Lancaster, N.Y. 840,207. Cl. 29.
Shwayder Brothers, Inc.: *See*—
Samsonite Corp.
Signal Oil & Gas Co., Los Angeles, Calif. 839,864, pub. 9–19–67. Cl. 15.
Sirkin, Davis, Levin, Inc., New York, N.Y. 840,045, pub. 9–19–67. Cl. 39.
Sivad Ceramic Corp., Oak Hill, Ohio. 771,704, cor. Cl. 12.
Sky Tours Hawaii, Inc., Honolulu, Hawaii. 840,198, pub. 9–19–67. Cl. 105.
Slimcruises, Ltd., London, England. 840,090, pub. 9–19–67. Cl. 46.
Smith Brothers Mfg. Co., Carthage, Mo. 437,038, ren. 12–5–67. Cl. 39.
Smith, J. Howard, Inc., Port Monmouth, N.J. 840,127, pub. 9–19–67. Cl. 46.
Snow Goer, Ltd., Eagle River, Wis. 840,035, pub. 9–19–67. Cl. 38.
Societe Anonyme, Compagnie Francaise des Parfums d'Orsay: *See*—
D'Orsay Perfumeries Corp.
Societe Anonyme des Anciens Etablissements Albaret, Rantigny, Oise, France. 839,939, pub. 9–19–67. Cl. 23.
Societe Nouvelle A. Godde, Bedin, Paris, France. 840,050, pub. 9–19–67. Multiple Class (Classes 39 and 42).
Society of Brothers, Inc., d.b.a. Community Playthings, Rifton, N.Y. 722,808, canc. Cl. 22.
Soilberger, Gus, Inc., Houston, Tex. 722,755, canc. Cl. 13.
Sonneborn Building Products, Inc., Des Plaines, Ill. 839,868, pub. 9–19–67. Cl. 16.
Southern Plating Co., Anniston, Ala. 722,823, canc. Cl. 23.
Southwest Forest Industries, Inc., Phoenix, Ariz. 839,848, pub. 9–19–67. Cl. 12.
Special Metals Corp., New Hartford, N.Y. 839,861, pub. 9–19–67. Cl. 14.
Stamina Mills, Inc., New York, N.Y. 840,071, pub. 9–19–67. Cl. 42.
Stance-Rite Co., Cedar Rapids, Iowa. 839,926, pub. 9–19–67. Cl. 22.
Standard Brands, Inc., New York, N.Y. 840,118, pub. 9–19–67. Cl. 46.
Stanley Drug Products, Inc., Portland, Oreg. 839,894, pub. 9–19–67. Cl. 18.
Stearns & Foster Co., The, Cincinnati, Ohio. 437,773, ren. 12–5–67. Cl. 32.
Stemmons, Inc., Tulsa, Okla. 840,196, pub. 9–19–67. Cl. 105.
Stenham, H., Ltd., d.b.a. Highland Blending Co. & Premier Scotch Whisky Co., London, England. 840,135, pub. 7–4–67. Cl. 49.
Sterling Drug, Inc., New York, N.Y. 840,166, pub. 9–19–67. Cl. 51.
Sternco Industries, Inc., Allendale, N.J. 839,860, pub. 9–19–67. Cl. 13.
Sternco Industries, Inc., Allendale, N.J. 839,919, pub. 9–19–67. Cl. 21.
Sternco Industries, Inc., Allendale, N.J. 839,964, pub. 9–19–67. Cl. 31.
Sterner, C. L., Co.: *See*—
Sterner, Carl L.
Sterner, Carl L., d.b.a. C. L. Sterner Co., Bakersfield, Calif. 839,825, pub. 9–19–67. Cl. 12.
Stetson, John B., Co., by John B. Stetson Co., Philadelphia, Pa. 232,954. 12(c) pub. 12–5–67. Cl. 39.
Stevens, J. P., & Co., Inc.: *See*—
Fuller, D. B., & Co., Inc.
Strong, Peter, & Co., Inc., to Richardson-Merrell Inc., New York, N.Y. 595,101, new cert. Cl. 18.
Stuart, C. H., & Co., Inc., Newark, N.Y. 839,959, pub. 9–19–67. Cl. 28.
Summit Corp., Scranton, Pa. 722,916, canc. Cl. 103.
Sunbeam Corp., Chicago, Ill. 722,807, canc. Cl. 21.
Suncrest Sportswear, Inc., from Suncrest Sportswear, Inc., Los Angeles, Calif. 840,064, pub. 9–19–67. Cl. 39.
Superfos Export Co., A/S, Copenhagen, Denmark. 839,876, pub. 9–19–67. Cl. 18.
Syntex Laboratories, Inc., Palo Alto, Calif. 839,877, pub. 9–19–67. Cl. 18.
Taylor, Taylor & Hobson, Ltd., Leicester, to Rank Organisation, Ltd., London, England. 430,598, ren. 12–5–67. Cl. 26.
Taylor, Taylor & Hobson, Ltd., Leicester, to Rank Organisation, Ltd., London, England. 430,600–1, ren. 12–5–67. Cl. 26.
Tedruth Plastics Corp., Plainview, N.Y. 839,802, pub. 9–19–67. Cl. 2.
Tel Ra Productions, Inc., Philadelphia, Pa. 840,201, pub. 9–19–67. Cl. 107.
Termoplastic S.r.l., Turin, Italy. 840,015, pub. 9–19–67. Cl. 37.
Tex-Rite Products Co., to Carco, Inc., Detroit, Mich. 429,849, ren. 12–5–67. Cl. 37.
Textron Industries, Inc., Providence, R.I., from H. K. Porter Co., Inc., Pittsburgh, Pa. 839,866, pub. 5–12–64. Cl. 16.
Thermionics Laboratory, Inc., Hayward, Calif. 839,855, pub. 9–19–67. Multiple Class (Classes 13, 21, 23, and 34).
Thompson-Hayward Chemical Co., to Thompson-Hayward Chemical Co., Kansas City, Mo. 434,015, ren. 12–5–67. Cl. 6.
Thompson-Hayward Chemical Co., to Thompson-Hayward Chemical Co., Kansas City, Mo. 436,570, ren. 12–5–67. Cl. 6.
Tickell, Arthur J., Woodbridge, Conn. 840,179, pub. 9–19–67. Cl. 101.
Timme, E. F., & Son, Inc., New York, N.Y. 840,083, pub. 9–19–67. Cl. 42.
Tivian Laboratories, Inc., Providence, R.I. 839,818, pub. 9–19–67. Cl. 6.
Toni Co., The: *See*—
Gillette Co., The.
Ton-Tex Corp., Grand Rapids, Mich. 437,797, ren. 12–5–67. Cl. 35.
Tosse, Thor, Frederikssund, Denmark. 839,974, pub. 9–19–67. Cl. 32.
Transelco, Inc., Penn Yan, N.Y. 839,806, pub. 9–19–67. Cl. 4.
Trepac Corp. of America, Englewood, N.J. 839,909–10, pub. 9–19–67. Cl. 21.
Triple T Patching: *See*—
Hudson, Wayne.
Tripp, C. H., Finishing Co., San Diego, Calif. 840,205. Cl. 4.
Tucker, Philmore, d.b.a. Primrose Yarn, Allentown, Pa. 840,085, pub. 9–19–67. Cl. 43.
Turco, Joseph J., Franklin, Mass. 722,851, canc. Cl. 37.
Twin Circle Publishing Co., Inc., New York, N.Y. 839,995, pub. 9–19–67. Cl. 36.
Twirl-A-Script, Inc., Hooker, Okla. 839,793, pub. 9–19–67. Cl. 2.
UTD Corp., Athol, Mass. 839,935, pub. 5–2–67. Cl. 23.
Ulmann, Bernhard, Co., Inc., by Indian Head, Inc., New York, N.Y. 234,879, 12(c) pub. 12–5–67. Cl. 40.
Ulmann, Bernhard, Co., Inc., to Indian Head, Inc., New York, N.Y. 436,101, ren. 12–5–67. Cl. 43.
Ulmann, Bernhard, Co., Inc., to Indian Head, Inc., New York, N.Y. 437,255, ren. 12–5–67. Cl. 43.
Union Camp Corp., New York, N.Y. 839,780, pub. 7–4–67. Cl. 1.
Union Carbide Corp., New York, N.Y. 833,242, cor. Cl. 21.
Union Carbide Corp., New York, N.Y. 839,985, pub. 9–19–67. Cl. 35.
Union Tank Car Co., Chicago, Ill. 839,087, pub. 9–19–67. Cl. 35.
Uniroyal, Inc.: *See*—
United States Rubber Co.
United Biscuit Co. of America: *See*—
Keebler Co.
United Merchants and Mfg., Inc., New York, N.Y. 840,016, pub. 9–19–67. Cl. 38.
U.S. Department of the Interior, Washington, D.C. 840,173, pub. 9–19–67. Cl. 100.
United States Envelope Co., Springfield, Mass. 436,748, ren. 12–5–67. Cl. 37.
United States Envelope Co., Springfield, Mass. 839,803, pub. 9–19–67. Cl. 2.
United States Rubber Co., by Uniroyal, Inc., New York, N.Y. 434,622, 12(c) pub. 12–5–67. Cl. 40.
United States Tabulating Binder Corp., Niles, Ill. 840,008, pub. 9–19–67. Cl. 37.
U.S. Vitamin & Pharmaceutical Corp., New York, N.Y. 722,780, canc. Cl. 18.
V.M.E. Corp., Saginaw, Tex. 839,889, pub. 9–19–67. Cl. 18.
Van Alst Wedding Ring Corp., Long Island City, N.Y. 839,955, pub. 9–19–67. Cl. 28.
Varian Associates, Palo Alto, Calif. 839,838–9, pub. 9–19–67. Cl. 12.
Verstand Engineering, Inc., Madison Heights, Mich. 840,171, pub. 3–21–67. Cl. 100.
Vitramon, Inc., Monroe, Conn. 839,907–8, pub. 9–19–67. Cl. 21.
Viva Records, Inc., Hollywood, Calif. 839,993, pub. 9–19–67. Cl. 36.
Vogt, Henry, Machine Co., Louisville, Ky. 168,898, 12(c) pub. 12–5–67. Cl. 13.
Wakmann, Icko, d.b.a. Relide Clock Co., New York, N.Y. 839,951, pub. 9–19–67. Cl. 27.
Wally Sportwear, Inc., New York, N.Y. 840,063, pub. 9–19–67. Cl. 39.
Walter, Louis, & Co., Inc., Kansas City, Mo. 840,058, pub. 9–19–67. Cl. 39.
Warner Electric Co., Inc., Chicago, Ill. 840,144, pub. 9–19–67. Cl. 51.
Warner Press, Inc., Anderson, Ind. 839,960, pub. 9–19–67. Cl. 28.
Washburn Crosby Co., General Mills, Inc., Minneapolis, Minn. 236,747. Am. 7(d). Cl. 46.
Waterbury Pen Co., Inc., The, Straftord, Conn. 840,001–2, pub. 9–19–67. Cl. 37.
Waverly Beauty Products: *See*—
Sampino, S., & Waverly Beauty Products, Inc.
Weather-Seal, Inc., Barberton, Ohio. 839,846, pub. 9–19–67. Cl. 12.
Webster, William A., Co., The, Memphis, Tenn. 839,886, pub. 9–19–67. Cl. 18.
Wellman-Lord Engineering, Inc., The, Wellman-Lord, Inc., Lakeland, Fla. 819,283, cor. Multiple Class (Classes 100 and 103).
Wells Mfg. Co., Inc., d.b.a. Wells Electronics Co., South Bend, Ind. 722,798, canc. Cl. 21.
Wells Tool Co., Greenfield, Mass. 839,938, pub. 9–19–67. Cl. 23.
Wembley, Inc., New Orleans, La. 840,047, pub. 9–19–67. Cl. 39.
West, L. R., Mfg. Co., Houston, Tex. 839,847, pub. 9–19–67. Cl. 12.
West Virginia Pulp & Paper Co., New York, N.Y. 839,785, pub. 2–21–67. Cl. 2.
Western Brass Works, Los Angeles, Calif. 722,756, canc. Cl. 13.
Westinghouse Electric Corp., Pittsburgh, Pa. 433,518, ren. 12–5–67. Cl. 24.
Weyerhaeuser Co., Tacoma, Wash. 722,722, canc. Cl. 2.
Weyerhaeuser Co., Tacoma, Wash. 839,800, pub. 9–19–67. Cl. 2.

Wheelabrator Corp., Mishawaka, Ind. 722,921, canc. Cl. 31.
Wheeldex Mfg. Co., Inc., Peekskill, N.Y. 722,860, canc. Cl. 37.
Whistle Bottling Co., The Procter & Gamble Co., Cincinnati, Ohio. 214,076. Am. 7(d). Cl. 52.
Wilson, B. H., Fisheries, Eastport, Maine. 840,101, pub. 9–19–67. Cl. 46.
Woolworth, F. W., Co., New York, N.Y. 840,073, pub. 9–19–67. Cl. 42.
Woolworth, F. W., Co., New York, N.Y. 840,075, pub. 9–19–67. Cl. 42.
Wyandotte Chemicals Corp., Wyandotte, Mich. 433,465, ren. 12–5–67. Cl. 52.
Wyomissing Corp.: *See*—
Narrow Fabric Co., The.
Xerox Corp., Rochester, N.Y. 839,942, pub. 9–19–67. Cl. 26.
Yacht Constructors, Inc., Portland, Oreg. 839,902–3, pub. 9–19–67. Cl. 19.
Zavody Bohemia, Narodni Podnik, d.b.a. Bohemia Works, National Corp., Ceske Budejovice, Czechoslovakia. 722,855, canc. Cl. 37.

U.S. GOVERNMENT PRINTING OFFICE: 0—1967

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U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
December 12, 1967 Volume 845 Number 2

PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of October 1967

Examiner affirmed	201
Examiner affirmed in part	31
Examiner reversed	74
Total	306

Guidelines for Disclosures of Utility in Patent Applications for Drugs

The following are guidelines which the Patent Office proposes to adopt in the examination of applications for patents for drugs. Comments as to these guidelines will be considered if received on or before January 16, 1968, on which date a public hearing on the matter will be held at 10:00 a.m. in Building 34 (3rd floor) at Crystal Plaza. All persons wishing to be heard orally at that time are requested to notify the Commissioner of their intended appearance.

EDWARD J. BRENNER,
Oct. 24, 1967. *Commissioner of Patents.*

GUIDELINES FOR DISCLOSURES OF UTILITY IN DRUG CASES

Introduction

It is felt that special consideration be accorded utility disclosures in drug cases in view of the public interest, particularly as expressed in Public Law 87-781.

SEC. 702(a) * * *

(d) The Secretary is authorized and directed, upon request from the Commissioner of Patents, to furnish full and complete information with respect to such questions relating to drugs as the Commissioner may submit concerning any patent applications. The Secretary is further authorized, upon receipt of any such request, to conduct or cause to be conducted, such research as may be required.

The Food, Drug and Cosmetic Act defines a drug—

The term "drug" means (A) articles recognized in the official United States Pharmacopeia, Official Homeopathic Pharmacopeia of the United States, or official National Formulary, or any supplement to any of them; and (B) articles intended for use in the diagnosis, cure mitigation, treatment, or prevention of disease in man or other animals; and (C) articles (other than food) intended to affect the structure or any function of the body of man or other animals; and (D) articles intended for use as a component of any articles specified in clause (A), (B), or (C); but does not include devices or their components, parts, or accessories.

SEC. 201(g)(1) Federal Food, Drug, and Cosmetic Act as amended.

In addition, compositions adapted to be applied to or used by human beings e.g., cosmetics, dentifrices, mouthwashes, etc. may be treated in the same manner as drugs if there is a question that their use may affect the health or well being of the person.

35 U.S.C. 101

Since predictability in this field is limited, a question should be raised as to the adequacy of the disclosure that a claimed genus possesses the asserted utility or operativeness under Section 101. That it does is reasonably inferable from a disclosure or showing of a sufficient number of representative examples together with a statement applicable to the genus as a whole.

Utility must be definite and in currently available form; not merely for further investigation or research. Thus generalized and vague assertions such as "therapeutic agents," "for pharmaceutical purposes," "biological activity," "intermediates," and for making further unspecified preparations are regarded as too nebulous and insufficient.

If the asserted utility is believable on its face and not unreasonable the burden is on the examiner to give adequate reasons for disbelief. On the other hand, incredible statements such as the cure or remission of malignant tumors, cure of tuberculosis or diabetes or of any disease condition or symptom known to be intractable to treatment will require adequate proof on the part of applicants for patents. It is presumed that applicants for patents are in the best position to supply evidence to support the assertions.

A spectrum of credibility exists between the noted limits. Criteria for testing the compliance of the assertion of the utility with Section 101 and the credibility of these assertions depends, inter alia, upon the nature of the disease, the seriousness of the use contemplated, the scope of the results claimed, the similarity to known successful drugs, the specificity with which the use is identified, the pattern of the biological response and the art knowledge concerning such response, and the safety of the drug, where necessary.

In instances where a question of proof to satisfy Section 101 is involved, the evidence offered is to be tested by the same criteria. If the specified or implied utility involves humans, clinical evidence is necessary; however, there is authority that animal tests are acceptable if the tests are of a kind that the results are known to be closely correlated with human utility. In accordance with the present case law, if there is no assertion of human utility, operativeness for use on standard test animals is adequate for patent purposes. Further, if the evidence shows that the drug is not safe in the dosage or mode of use for which it is effective, the disclosure will not satisfy the utility requirement of Section 101. Absolute safety is not necessarily required.

35 U.S.C. 112

The standards of disclosure for compliance with Section 112 in respect to the statutory language of "written description of * * * using" the invention "as to enable any person skilled in the art to which it pertains * * * to use the same" are to be strictly construed in view of the special public

New Applications Received During October 1967

Patents	7650
Designs	428
Plant Patents	13
Reissues	14
Total	8105

Issue—December 12, 1967

Patents	1265	No. 3,357,026 to No. 3,358,290, incl.
Designs	66	No. 209,498 to No. 209,563, incl.
Total	1331	

interest involved. Thus the extension of specific utilities to classes of compounds must be adequately supported by sufficient and typical exemplification and by a representation that the class as a whole possesses the asserted utility.

A mere statement of pharmacological and chemotherapeutic use for a new compound will raise a question of compliance with Section 112. If however the statement of utility contains within it a connotation of how to use and the art recognizes that standard modes of administration, including parameters, are contemplated Section 112 is satisfied. If on the other hand, the use disclosed is of such nature that the art is unaware of successful treatments with chemically analagous compounds a more complete statement of the parameters of utility and mode of administration should be set forth.

In the case of mixtures formulated including a drug as an ingredient or mixtures which are drugs or methods of treating a specific condition with a drug, whether old or new, a specific example of how to use must be set forth, which will include the organism treated and mode and parameters of administration.

General Principles

In those instances where several distinct utilities are disclosed, each should be investigated for compliance with Sections 101 and 112 as though it existed alone and such utility as fails to satisfy these guidelines should be required to be deleted.

The standard for statements and showings in this field is that which is the practice in the United States rather than the country of origin.

Inquiries Re Status of Pending Applications

The Office has lately received a large number of status inquiries relative to the expected action date on pending applications. These require substantial time on the part of the clerical and examiner forces to answer. In many instances it seems that these inquiries are unnecessary since the OFFICIAL GAZETTE notes by Group the filing date of the oldest new and amended case awaiting action.

It appears that many attorneys are routinely sending in status letters because of a misunderstanding of the 826 O.G. 372 notice "Duty of Inquiry as to Status of Pending Applications." Under that notice the question as to applicant's diligence in checking the status of an application arises in connection with petitions to revive applications which become abandoned through failure to respond to an Office action which had been mailed but not received.

That notice seeks to cut down the number of status letters for both new and amended applications. For new applications, no lack of diligence will be attributed if inquiry is made within a reasonable time *after* the OFFICIAL GAZETTE indicates that the date for the Group in which the application is assigned for examination is more recent than applicant's filing date. For amended applications, lack of diligence will not be attributed if inquiry is made within six months after filing the response; obviously an inquiry after only about two months would be premature.

Thus, no status letter or inquiry is needed for new applications until *after* the application date becomes *older* than the reported Group date in the OFFICIAL GAZETTE, and none is needed in an amended case until at least three months after date of filing the amendment or response.

If an inquiry as to the expected time an application will receive an action is found necessary, such inquiry should be accompanied by a stamped return-addressed envelope.

Oct. 17, 1967.

RICHARD A. WAHL,
Assistant Commissioner.

PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner

CONDITION OF PATENT APPLICATIONS AS OF OCTOBER 9, 1967

PATENT EXAMINING OPERATIONS AND GROUPS	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
CHEMICAL EXAMINING OPERATION—I. MARCUS, Director.		
GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—R. L. CAMPBELL, Manager. Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices.	5-27-64	5-31-62
GENERAL ORGANIC CHEMISTRY, GROUP 120—M. STERMAN, Manager. Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	5-11-64	7-23-62
HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING; GROUP 140—L. J. BERCOVITZ, Manager. Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping and Treating Processes.	2-3-65	5-14-62
COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—J. R. LIBERMAN, Manager. Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography.	8-7-64	6-15-62
SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Manager. Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Gas; Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	4-27-64	7-23-62
ELECTRICAL EXAMINING OPERATION—N. H. EVANS, Director.		
INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—E. J. SAX, Manager. Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous.	8-10-64	9-6-63
SECURITY, GROUP 220—S. BOYD, Manager. Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedoes, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	5-9-66	4-18-64
INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—M. L. LEVY, Manager. Communications; Multiplexing Techniques; Facsimile; Data Processing, Computation and Conversion; Storage Devices and Related Arts.	1-20-64	3-15-62
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—W. L. CARLSON, Manager. Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring.	2-10-64	2-2-62
PHYSICS, GROUP 280—R. L. EVANS, Manager. Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	1-18-65	6-24-63
DESIGNS, GROUP 290—S. BOYD, Manager. Industrial Arts; Household, Personal and Fine Arts.	4-20-66	9-3-65

Total number of pending applications (excluding Designs)	182, 046
Total number of Design applications pending	4, 202
Total number of applications awaiting action (excluding Designs)	130, 962
Total number of Design applications awaiting action	2, 205
Date of oldest new application awaiting action	Jan. 20, 1964
Date of oldest amended application awaiting action	Feb. 2, 1962

EXPIRATION OF PATENTS

The patents within the range of numbers indicated below expire during December 1967, except those which may have been extended under the provisions of the Veterans Patent Extension Act (64 Stat. 316 as amended by 66 Stat. 321) and those which may have expired earlier due to shortened terms under the provisions of Public Law 690. A list of Veterans' patents which have been extended appears in the *Annual Index of Patents—1963*.

Patents..... Numbers 2,532,276 to 2,536,015, inclusive
Plant Patents..... Numbers 996 to 1,000, inclusive

PATENT EXAMINING OPERATIONS AND GROUPS (Continued)	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
MECHANICAL EXAMINING OPERATION—F. H. BRONAUGH, Director.		
HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Manager Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid Flexible and Special Receptacles and Packages.	1-28-66	10-16-64
MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—N. BERGER, Manager Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders; Woodworking; Tools; Cutlery; Jacks; Fasteners.	7- 8-65	3-18-63
AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, Manager Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Toiletry; Printing; Typewriters; Stationery; Information Dissemination.	5-24-65	4-22-63
HEAT AND POWER ENGINEERING, GROUP 340—C. F. GAREAU, Manager Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission.	3- 4-66	4-19-65
FIXED CONSTRUCTIONS, SUPPORTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Manager Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports; Cabinet Structures.	10-15-65	4-30-63
TEXTILES, CLEANING AND FLUID HANDLING, GROUP 360—W. S. COLE, Manager Fluid Handling, including Valves; Conduits; Filling Receptacles; Lubrication; Joint Packing; Bathroom Fixtures; Centrifugal Separators; Cleaning; Coating; Pressing; Agitating; Foods; Textiles; Apparel and Shoes and their Manufacture; Sewing Machines; Winding and Reeling.	9-15-65	11- 8-62

DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

IN RE RUDOLF WIECHERT

No. 7636. Decided January 19, 1967

[54 CCPA —; 370 F.2d 927; 149 USPQ 894]

1. PATENTABILITY—COMPOUND—OBVIOUSNESS—SUBSTANTIALLY GREATER EFFECTIVENESS.

Upon considering the patentability of certain steroids over structurally closely related prior art compounds, and with reference to appellant's contentions "that obviousness of a novel compound is to be decided not only from a comparison of its structural formula with that of the prior art compound, but from all the properties of the compounds" and that affidavit evidence showing the claimed compounds to be about 7 to 7.5% times as effective as the prior art compounds constitute "clear proof of unobviousness and patentable greater effectiveness," *Held* that "We think appellant's contentions have merit * * *."

2. SAME—SAME—SAME—SAME.

"As we have indicated in *In re Lohr* * * *, it is possible to obtain a patent where the showing proves substantially greater effectiveness * * *. Again, in *In re Grier* * * * we held that a large difference in degree (3-fold increase) was persuasive evidence, in the absence of countervailing evidence, of unobviousness. See *In re Carabateas* * * * where a showing of six and nine times effectiveness was held insufficient to establish patentability because the record there contained '*other* evidence' (our emphasis) which compelled a holding of obviousness."

3. SAME—SAME—SAME—SAME.

"In the case at bar, we are impressed by the 7-fold improvement in activity and, in the absence of valid countervailing evidence, we find the claimed compounds to be unobvious. There is nothing in any reference of record which would suggest any improvement, let alone a 7-fold improvement in activity."

4. APPEAL TO U.S. COURT OF CUSTOMS AND PATENT APPEALS—MATTER BEFORE COURT—NEW ISSUE—CREDIBILITY OF AFFIDAVIT.

"The Solicitor's brief alleges certain inconsistencies between the two tables in the affidavit and between the affidavit and the application as originally filed. However, these alleged inconsistencies were not pointed out or adverted to by either the Examiner or the Board. Hence we regard this attack, on the credibility as opposed to the sufficiency of the affidavit, to be a new issue rather than a new argument and therefore not properly before us. *In re Nygard*, 52 CCPA 1032, 341 F.2d 924, 144 USPQ 586."

5. SAME—REMAND—NEW GROUND OF REJECTION BY BOARD OF APPEALS.

"We turn now to the issue raised by the 'position isomer' first noted in the Board's opinion. The Board's language, quoted above, in noting the isomer, appears to us to be a rejection of the appealed claims on the ground the claimed compounds are obvious, under 35 U.S.C. 103, in view of the disclosed isomer. For reasons to be stated below, we find this to be a ground of rejection which was specifically pointed out for the first time by the Board and, under the facts of this case, we believe that appellant should be afforded an opportunity to respond to that rejection. In view of the Board's failure to do so, we remand the case to the Board for further proceedings. Cf. *In re Yale*, 52 CCPA 1668, 347 F.2d 995, 146 USPQ 400."

6. PATENTABILITY—COMPOUND—OBVIOUSNESS—POSITION ISOMERISM.

"Position isomerism involves close structural similarity which is to be taken into consideration with all other relevant facts in applying the test of obviousness under section 103. *In re Mehta*, 52 CCPA 1615, 347 F.2d 859, 146 USPQ 284. However, all other relevant facts must also be considered, as the Board appears to have been aware when it stated that 'there is nothing persuasive of record to indicate that the instant compounds are patentable' over the isomer. Of course, there is nothing of record to so indicate since the isomer was first pointed out and relied upon by the Board."

7. SAME—SAME—SAME—EVIDENCE—OPPORTUNITY SHOULD BE AFFORDED TO SHOW UNOBVIOUSNESS.

"An applicant's attention and response are naturally focused on that portion of the reference which is specifically pointed out by the Examiner. More important, where, as here, the appellant depends on a showing of unexpected properties to support patentability, the comparison which results in a conclusion of unexpected properties cannot practically be made for all of the compounds which might be mentioned in a particular reference. Under such circumstances, we conclude that when a rejection is factually based on an entirely different portion of an existing reference the appellant should be afforded an opportunity to make a showing of unobviousness vis-a-vis such portion of the reference."

8. APPEAL TO U.S. COURT OF CUSTOMS AND PATENT APPEALS—JURISDICTION—EFFECT OF INVALID APPOINTMENT TO BOARD OF APPEALS.

"It seems to us that an invalid appointment would not so vitiate a Board's decision that neither waiver nor abandonment of the defect would be possible. In *United States* v. *L. A. Tucker Truck Lines, Inc.*, 344 U.S. 33 (1952), the Supreme Court held that the Interstate Commerce Commission was not ousted of jurisdiction in a case heard by an invalidly appointed examiner. Rejecting 'technical compulsion[s],' the Court characterized the examiner's appointment as an 'irregularity which would invalidate a resulting order if the Commission had overruled an appropriate objection' and 'not one which deprives the Commission of power or jurisdiction * * *.' We feel that the present case is governed by analogous considerations."

9. SAME—MATTER BEFORE COURT—COMPOSITION OF BOARD OF APPEALS.

"In the present proceeding * * * we should not and cannot consider the legality of the composition of the Board for three principal reasons: (1) The question *was not raised* on this appeal by appellant; (2) having raised the question in the Patent Office, he *abandoned* it by not arguing it before us (except as we insisted on his doing so at the reargument); and (3) our *limited statutory authority* precludes our consideration of the question. These reasons will now be amplified."

10. SAME—SAME—REASONS OF APPEAL—COMPOSITION OF BOARD OF APPEALS—35 U.S.C. 142.

"* * * appellant failed to file any reason of appeal raising in this court the question of the Board's constitution. That issue is therefore not before us. 35 U.S.C. 142."

11. SAME—SAME—SAME.

"However broadly or narrowly this court may have construed reasons of appeal in the past, the total absence of a reason bearing, even remotely or by implication, on an issue alleged to be present in a case cannot be overlooked. *LePage's*, * * *"

12. SAME—SAME—ISSUE NOT ARGUED IN COURT IS ABANDONED.

"(2) This court has uniformly followed the sound rule that an issue raised below which is *not argued* in this court, even if it has been properly brought here by a reason of appeal, is regarded as abandoned and will not be considered. It is our function as a court to decide disputed issues, not to create them."

13. APPEAL TO THE BOARD OF APPEALS—CHALLENGE TO COMPOSITION OF THE BOARD—MANDAMUS IN DISTRICT COURT.

"Had appellant wished to pursue the matter further his proper remedy, decisions of the Commissioner on petitions not being appealable to this court, as pointed out under (3) below, would have been by mandamus in the District Court. *United States ex rel. Steinmetz* v. *Allen*, 192 U.S. 543 (1904); *Butterworth* v. *United States ex rel. Hoe*, 112 U.S. 50 (1884); see *Ex parte Frasch*, 192 U.S. 566 (1904); 5 U.S.C. 1009. That would be the proper forum in which to settle the question of the legality of the Board's constitution, with appeal to the Court of Appeals available to either party from an adverse decision."

14. APPEAL TO U.S. COURT OF CUSTOMS AND PATENT APPEALS—JURISDICTION—CHALLENGE TO COMPOSITION OF THE BOARD OF APPEALS—35 U.S.C. 141, 143 AND 28 U.S.C. 1542.

"(3) The basic limitation on our jurisdiction in 35 U.S.C. 141, 143 and 28 U.S.C. 1542 is to the review of 'decisions' of the Board. There was no decision by the Board, whose decision was appealed here, that it was legally constituted. There was such a decision by the First Assistant Commissioner

but there is not provision in the statutes for any appeal to this court from his decisions on petitions. They are reviewable by mandamus. Aggrieved applicants are therefore not without a remedy. But such Commissioner's decisions are not reviewable by us. To take up the legality of the Board's constitution in this case would, therefore, appear to be doing by indirection what we have no authority to do directly and would amount to review of a Commissioner's decision that the Board was legally constituted, which we have no jurisdiction to do."

15. SAME—SAME—COURT HAS JURISDICTION TO REVIEW DECISIONS OF BOARD BUT NOT THOSE OF COMMISSIONER.

"The Patent Office has cited a number of our decisions to support the statement, which is true, that we will not ordinarily interfere in matters of Patent Office practice. We find them beside the point as the question here is not one of Patent Office practice. It is a matter of whose decision we are being asked to review, the Board's or the Commissioner's. We have jurisdiction to review the former but not the latter."

APPEAL from the Patent Office. Serial No. 98,026.

REVERSED AND REMANDED.

Michael S. Striker for appellant.

Joseph Schimmel (*Jack E. Armore*, of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH, and ALMOND, JR., *Associate Judges*

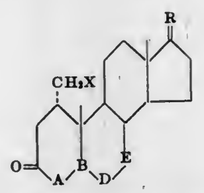
RICH, *J.*, delivered the opinion of the court.

This appeal is from the decision of the Patent Office Board of Appeals affirming the Examiner's rejection of claims 1–3 of application Serial No. 98,026, filed March 24, 1961, for "1α-Methyl Steroids." Claims 11–18 and 25 have been allowed.

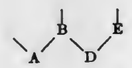
Introduction

The invention relates to certain 1α-methyl dihydrotestosterones and their 17-acylates which possess strong androgenic and anabolic activities. Claim 1, generic to all claims in the application, reads:

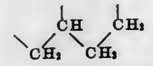
1. A compound of the formula:



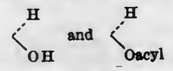
wherein X is selected from the group consisting of hydrogen and halogen; wherein



is



and wherein R is selected from the group consisting of



wherein acyl is derived from a lower aliphatic carboxylic acid.

Appealed claims 2 and 3 are directed to that embodiment of the invention wherein the substituent X in the structural formula of claim 1 is a hydrogen atom. All of the allowed claims are directed to compounds, or processes for making them, wherein X is a halogen.

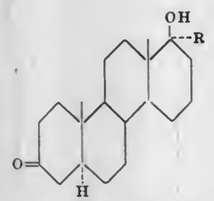
The appealed claims were rejected by the Examiner under 35 U.S.C. 103 as obvious "from the standpoint of structural chemistry" in view of a sole reference:

Ringold et al. [I], 2,908,693, Oct. 13, 1959.

In addition, the Examiner cited the following patent "to show the state of the art":

Ringold et al. [II], 3,032,552, May 1, 1962 (filed Apr. 5, 1955).

The Examiner contended that Ringold [I] discloses dihydrotestosterones which are the 1-desalkyl derivatives of the compounds claimed by the appellant. Ringold [I] is concerned with a process for the production of 2-methyl-dihydrotestosterones and it shows compounds of the following structural formula as starting materials:



where R represents hydrogen or a lower alkyl group of less than 7 carbon atoms. The Examiner stated that "the claimed compounds are so closely related to the prior art compounds * * * as to be obvious * * *."

Appellant submitted an affidavit by Langecker[1] which shows, in the words of the Examiner, that "1-methyl dihydrotestosterone is 7.5 times as strong anabolically and 7 times as strong androgenically as the prior art compound." Appellant contended in essence that the superior properties of his novel compounds impart patentability thereto under *In re Papesch*, 50 CCPA 1084, 315 F.2d 381, 137 USPQ 43.

The Examiner considered the differences in properties shown by appellant's affidavit to be merely "differences of degree rather than of kind" and gave "no affirmative weight" to the affidavit. In addition, the Examiner cited Ringold [II] as showing that the prior art was aware that the 1-methyl substituent would enhance the properties of the "parent compound." Ringold [II] relates to certain 1-methyl-19-nor-Δ^4-3-ketones, which include 1-methyl-19-nor-Δ^4-androstene-17β-ol-3-one (1-methyl-nor-testosterone), and the method of their preparation. The particular portion of Ringold [II],[2] designated by the Examiner for the above purpose, states:

> The novel compounds of the present invention are novel androgenic hormones having at least the anabolic activity characterizing testosterone and in some instances having *enhanced or lesser* androgenic effects. [Emphasis ours.]

The Board, in affirming the Examiner's rejection of claims 1–3, considered the claimed compounds are so closely related to the prior art compounds as to be obvious to those skilled in the art and found

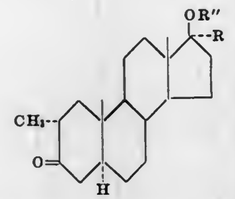
[1] Dr. Hedwig Langecker was, from 1934 to 1945, an associate professor of experimental pharmacology and pharmacognosy at the German University of Prague and, at the time of the affidavit, a scientific advisor for the firm of Schering A.G., Berlin, Germany, assignee of the application at bar.

[2] Ringold [II] is not included in the printed record but copies of that patent were later furnished to us by the Patent Office.

that the affidavit did not overcome "the presumption of obviousness." However, the Board then added:

> We further note that the compound set forth in column 1, lines 60 to 70 of the Ringold et al. reference [Ringold I] is a position isomer of both the instant 17-ol and 17-ester compounds *and there is nothing persuasive of record to indicate* that the instant compounds are patentable thereover. [Emphasis ours.]

The "position isomer" of Ringold [I], not specifically relied on by the Examiner and noted for the first time by the Board, has the following structural formula:



where R represents hydrogen or a lower alkyl group of less than 7 carbon atoms and R'' represents hydrogen or an acyl group of a hydrocarbon carboxylic acid of 2 to 12 carbon atoms. A comparison of the above formula with that of claim 1 will show that the two differ mainly in the location of the CH_3 group on the left ring of the 4-ring nucleus. Thus, the Board termed the two "position isomers."

After the Board's decision was rendered, the history of this application became considerably more complicated. The details of that portion of the prosecution are fully set forth in Part II of this opinion, infra. Suffice it to say for the present that counsel for appellant described it, during oral argument, as a "nightmarish" situation.

We have divided this opinion into two sections, in part for the reason that the argument on the merits and a reargument on the question of the composition of the Board of Appeals panel hearing the case were heard by different benches. We come now to "Part I," dealing with the "merits," that is to say the rejection of the claims.

I. *Merits of the Rejections Based on Ringold [I]*

As indicated above, the Examiner rejected the appealed claims on the basis of the so-called 1-desalkyl derivatives of the claimed 1-methyl dihydrotestosterones shown in Ringold [I]. While the Board affirmed the Examiner's reasoning, it made the additional observation that Ringold [I] discloses a position isomer of the claimed compounds and such isomer is also a bar to the patentability of appellant's claims. We will take up these issues in that order.

Appellant attempted to overcome the Examiner's rejection by the submission of the Langecker affidavit. The Examiner's answer before the Board admitted that the affidavit shows the claimed compounds to be about 7 to 7.5 times as effective as the prior art compound. However, the Examiner, and the Board, found the affidavit insufficient to overcome the reference since affiant has shown no *new* properties but merely an alleged improvement in the *same* properties. The improvement in the same properties possessed by the prior art compounds is labeled by the Examiner and the Board as "differences of degree rather than of kind."

Appellant contends that obviousness of a novel compound is to be decided not only from a comparison of its structural formula with

that of the prior art compound, but from all properties of the compounds. *In re Papesch*, supra. Appellant then submits that the 7-fold androgenic activity and 7.5-fold anabolic activity shown for his compounds constitute "clear proof of unobvious and patentable greater effectiveness."

[1] We think appellant's contentions have merit and the Board's decision with respect to the rejection based on the 1-desalkyl compounds of Ringold [I] is therefore reversed.

[2] As we indicated in *In re Lohr*, 50 CCPA 1274, 317 F.2d 388, 137 USPQ 548, it is possible to obtain a patent where the showing proves substantially greater effectiveness:

> When a new compound so closely related to a prior art compound as to be structurally obvious is sought to be patented based on the alleged greater effectiveness of the new compound *for the same purpose as the old compound*, clear and convincing evidence of substantially greater effectiveness is needed. [Emphasis added.]

Again, in *In re Grier*, 52 CCPA 1081, 342 F.2d 120, 144 USPQ 654, we held that a large difference in degree (3-fold increase) was persuasive evidence, in the absence of countervailing evidence, of unobviousness. See *In re Carabateas*, 52 CCPA 1386, 345 F.2d 1013, 145 USPQ 549, where a showing of six and nine times effectiveness was held insufficient to establish patentability because the record there contained "*other* evidence" (our emphasis) which compelled a holding of obviousness.

[3] In the case at bar, we are impressed by the 7-fold improvement in activity and, in the absence of valid countervailing evidence, we find the claimed compounds to be unobvious. There is nothing in any reference of record which would suggest any improvement, let alone a 7-fold improvement in activity.

The Examiner apparently attempted to rebut the thrust of the affidavit by citing Ringold [II] as showing the art was aware that the 1-methyl substituent would enhance the properties of the parent compound. The statement in Ringold [II] relied upon by the Examiner, quoted above, clearly does not support that proposition. In the first place, Ringold [II] only states that his compounds have "at least the anabolic activity" of the prior art testosterone and "in some instances * * * [have] enhanced or lesser androgenic effects." These phrases could hardly be characterized as teaching that these activities would be increased at all, let alone increased several fold. Furthermore, the cited statement in Ringold [II] refers to 1-methyl-19-nortestosterone and there is no showing that such 19-nor compound and the claimed compounds behave in a similar fashion when substituents are added to or deleted therefrom. Therefore, Ringold [II] does not support the allegation of the Examiner.

[4] The Solicitor's brief alleges certain inconsistencies between the two tables in the affidavit and between the affidavit and the application as originally filed. However, these alleged inconsistencies were not pointed out or adverted to by either the Examiner or the Board. Hence we regard this attack, on the credibility as opposed to the sufficiency of the affidavit, to be a new issue rather than a new argument and therefore not properly before us. *In re Nygard*, 52 CCPA 1032, 341 F.2d 924, 144 USPQ 586.

[5] We turn now to the issue raised by the "position isomer" first noted in the Board's opinion. The Board's language, quoted above, in noting the isomer, appears to us to be a rejection of the appealed

claims on the ground the claimed compounds are obvious, under 35 U.S.C. 103, in view of the disclosed isomer. For reasons to be stated below, we find this to be a ground of rejection which was specifically pointed out for the first time by the Board and, under the facts of this case, we believe that appellant should be afforded an opportunity to respond to that rejection. In view of the Board's failure to do so, we remand the case to the Board for further proceedings. Cf. *In re Yale*, 52 CCPA 1668, 347 F.2d 995, 146 USPQ 400.

[6] Position isomerism involves close structural similarity which is to be taken into consideration with all other relevant facts in applying the test of obviousness under section 103. *In re Mehta*, 52 CCPA 1615, 347 F.2d 859, 146 USPQ 284. However, all other relevant facts must also be considered, as the Board appears to have been aware when it stated that "there is nothing persuasive of record to indicate that the instant compounds are patentable" over the isomer. Of course, there is nothing of record to so indicate since the isomer was first pointed out and relied upon by the Board.

As we had occasion to state, in a different factual situation in *In re Hughes*, 52 CCPA 1355, 345 F.2d 184, 145 USPQ 467:

> It seems basic to the concept of procedural due process that an applicant at least be informed of the broad statutory basis for rejecting his claims, so that he may determine what the issues are on which he can or should produce evidence.

In the present case, the rejection first advanced by the Board left appellant without an opportunity to make a showing of unobviousness. Appellant requests that we provide such an opportunity by remanding the case to the Board.

[7] An applicant's attention and response are naturally focused on that portion of the reference which is specifically pointed out by the Examiner. More important, where, as here, the appellant depends on a showing of unexpected properties to support patentability, the comparison which results in a conclusion of unexpected properties cannot practically be made for all of the compounds which might be mentioned in a particular reference.[3] Under such circumstances, we conclude that when a rejection is factually based on an entirely different portion of an existing reference the appellant should be afforded an opportunity to make a showing of unobviousness vis-a-vis such portion of the reference.

II. *The Question of the Composition of the Patent Office Board of Appeals*

This case was initially argued here on March 10, 1966, Judge Kirkpatrick sitting by designation in place of the Chief Judge pursuant to 28 U.S.C. 294(d). At that time the case was argued on the merits. Appellant also called to our attention a request for reconsideration,[4]

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[3] This point seems to be appreciated by the Patent Office itself as its Rule 106(b) provides, inter alia, that:

> When a reference is complex or shows or describes inventions other than that claimed by the applicant, the particular part relied on must be designated as nearly as practicable.

[4] Appellant's original brief here says "appellant filed a request for reconsideration * * *." The printed record contains this paper with the printed heading, prepared in the Patent Office, "Request for Reconsideration, November 20, 1964." Our Rule 25(3)(b) calls for simplifying such headings to a short title and date and inquiry by us of the Patent Office has brought out the fact that the actual title on the paper as filed was, "Petition to the Commissioner of Patents for a New Hearing before the Board of Appeals."

As required by Patent Office Rule 1, the paper was addressed: "Hon. Commissioner of Patents, Washington, D.C." It bears a Mail Room stamp of Nov. 20, 1964, and a Board of Appeals stamp of Nov. 23, 1964.

On its face it appears to be directed to the Board of Appeals since it requests that the decision of the Board be "withdrawn" and it would appear that no one other than the Board itself could "withdraw" its opinion. See also 35 U.S.C. 7, last sentence of first paragraph, reading: "The Board of Appeals has sole power to grant rehearings."

contained in the record before us, in which, following the wholly adverse and unanimous decision of the Board of October 30, 1964, appellant pointed out that the Board rendering the decision consisted of Federico, Examiner-in-Chief, and Stone and Rosdol, *acting* Examiners-in-Chief. Appellant pointed out that Stone was a Supervisory Examiner. Rosdol, presumably, was a Primary Examiner. While expressly disavowing any objection to the abilities of the acting Examiners-in-Chief, it was urged by appellant that the board was improperly constituted under 35 U.S.C. 7 [5] in that *not more than one acting* Examiner-in-Chief could be a member of a three-man board hearing an appeal—that there must be two regularly appointed (as distinguished from temporarily designated) examiners-in-chief. The Request for Reconsideration asserted that the adverse decision of the Board was a "nullity" because the Board was improperly constituted. Appellant requested that the case "be set for rehearing before a properly constituted Board of Appeals."

The Request for Reconsideration points to no error in and asks for no revision of the Board decision.

The record shows no further action by any Board of Appeals in this case prior to the taking of this appeal. What transpired, in summary, is the following:

1. The Dec. 3, 1964 response by the Patent Office to the above Request for Reconsideration is entitled "Commissioner's Decision" and was by the First Assistant Commissioner. It opens with the statement, "This is a petition requesting that the decision of the Board of Appeals rendered October 30, 1964 in this case affirming the decision of the Primary Examiner be vacated and that the case be set for hearing before another board." The decision was:

> It is clear from the quoted language [from 35 U.S.C. 7, see note 2, supra] that the expression "such primary examiner" refers to the "patent examiner of primary examiner grade" previously referred to and not to the examiner of higher grade. Since a supervisory examiner is of a higher grade than a primary examiner, the Board which decided this case was properly constituted and the petition is accordingly denied.

2. On Dec. 14, 1964 appellant filed a "Petition to Commissioner" under Rule 181 asking the Commissioner, acting under his rule-suspending power (Rule 183), (*a*) to permit the filing of the petition for reconsideration, (*b*) to waive the third sentence of Rule 304 to permit filing this appeal 30 days after the decision on said petition, (*c*) to extend the time for filing a new petition and the filing of an affidavit appellant wished to file answering an alleged new ground of rejection by the Board, and (*d*) to extend the time for filing appeal from the Board's decision.

3. A Commissioner's decision of Dec. 22, 1964 denied all requests for want of a showing of "an extraordinary situation" as required by Rule 183, in the absence of a showing why the Board was not requested *to reconsider* its decision within the time provided by Rule 304.

4. On Dec. 24, 1964 another "Petition to Commissioner" argued that an extraordinary situation had been shown and that appellant could not have asked the *same* Board to *review* its decision without admitting the Board was properly constituted.

5. The Commissioner's decision of Dec. 24, 1964 denied the petition filed the same day.

6. This appeal was taken Dec. 29, 1964, by Notice of Appeal, the eight reasons of appeal annexed thereto alleging error only with respect to the rejection of claims and making no reference, direct or otherwise, to the previously asserted unlawful constitution of the Board.

All of the papers above referred to are included in the record before us. Appellant's brief contains a recitation of what transpired in the Patent Office to lay the basis for only one request of us, namely, that if we do not find the appealed claims allowable, we *remand* the case to the Board "so as to afford appellant an opportunity to submit in an affidavit the tests described hereinabove and to have this affidavit evaluated by the Patent Office prior to adjudication of this case by the Hon. Court of Customs and Patent Appeals." This is the affidavit referred to in "2," above. We are not asked to do anything about, or to take any other action based on, the alleged unlawful constitution of the Board.

Having been made aware of the foregoing factual situation, this court set this case down for reargument by an order dated June 10, 1966, *In re Wiechert*, 53 CCPA 1351, 361 F.2d 482, 149 USPQ 894, the reargument to be limited to the following three questions:

> 1. Is this court authorized to consider, in the present proceeding, appellant's challenge to the composition of the Board of Appeals whose decision is here appealed?
>
> 2. What authority, if any, permits the Commissioner of Patents to designate as members of a Board of Appeals under paragraph 1 of 35 U.S.C. 7, more than one examiner-in-chief serving in such capacity by designation of the Commissioner pursuant to paragraph 2 of 35 U.S.C. 7?
>
> 3. Was the Board of Appeals which rendered the decision here appealed validly constituted under 35 U.S.C. 3, 7?

Briefs were filed by appellant and the Solicitor, U.S. Patent Office, and oral argument held Oct. 3, 1966 limited to the above questions. The five judges hearing the reargument were the regular members of this court. Judge Martin died thereafter, on November 5. By consent of the parties, the Chief Judge and Judge Kirkpatrick are participating in the decision of the entire case.

The Chief Judge, Judge Kirkpatrick and the writer are of the view that question 1, above, should be answered in the negative and that questions 2 and 3 should therefore not be considered, for the reasons more fully set forth below. We therefore reach the merits as dealt with in part I of this opinion.

Judge Almond's views are that question 1 should be answered in the affirmative,[6] that the answer to question 2 is that 35 U.S.C. 7

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[5] Paragraph 2 of 35 U.S.C. 7, so far as applicable here, reads:

> Whenever the Commissioner considers it necessary to maintain the work of the Board of Appeals current, he may *designate* any patent examiner *of the primary examiner grade or higher*, having the requisite ability, to serve as examiner-in-chief for periods not exceeding six months each. An examiner so designated shall be qualified to act as a member of the Board of Appeals. *Not more than one such primary examiner* shall be a member of the Board of Appeals hearing an appeal. [Emphasis ours.]

[6] Judge Almond's stated view is that "this court would lack jurisdiction of the subject matter" if the appointment of one of the members of the board was defective. He does not mean, of course, that a decision of a Board of Appeals would not be subject matter of which we have jurisdiction. He means that there would be no decision of a Board of Appeals to which our jurisdiction could attach. Perhaps, in a broad sense, this is a "jurisdictional" question but it is well to bear in mind its precise nature. It is not a question of a lack of our power to decide but only an alleged lack of an object on which to exercise that power. It is somewhat confusing to regard it as a question of our jurisdiction.

[8] It seems to us that an invalid appointment would not so vitiate a board's decision that neither waiver nor abandonment of the defect would be possible. In *United States* v. *L. A. Tucker Truck Lines, Inc.*, 344 U.S. 33 (1952), the Supreme Court held that the Interstate Commerce Commission was not ousted of jurisdiction in a case heard by an invalidly appointed examiner. Rejecting "technical compulsion[s]," the Court characterized the examiner's appointment as an "irregularity which would invalidate a resulting order if the Commission had overruled an appropriate objection" and "not one which deprives the Commission of power or jurisdiction * * *." We feel that the present case is governed by analogous considerations.

authorized the Board as herein constituted and that the answer to question 3, therefore, is "Yes." He reaches the merits on that basis.

Judge Smith's view is that the answer to question 1 is "Yes," to question 2, "None," and to question 3 "No," wherefore he regards the Board's decision as a nullity and would dismiss the appeal without consideration of the merits.

The Answer to Question 1

[9] In the present proceeding, on the facts above recited, we should not and cannot consider the legality of the composition of the Board for three principal reasons: (1) The question *was not raised* on this appeal by appellant; (2) having raised the question in the Patent Office, he *abandoned* it by not arguing it before us (except as we insisted on his doing so at the reargument); and (3) our *limited statutory authority* precludes our consideration of the question. These reasons will now be amplified.

[10] (1) As above pointed out, appellant failed to file any reason of appeal raising in this court the question of the Board's constitution. That issue is therefore not before us. 35 U.S.C. 142. We are limited by statute to the rendering of decisions "confined to the points set forth in the reasons of appeal," 35 U.S.C. 144. Ample explanation of our long-established position on this point will be found in *In re LePage's Inc.*, 50 CCPA 852, 312 F.2d 455, 136 USPQ 170, and *In re Gruschwitz*, 50 CCPA 1498, 320 F.2d 401, 138 USPQ 451. See also the cases listed in the writer's dissenting opinion in the latter case. We agree with the Solicitor's somewhat overemphatic statement in his supplemental brief that:

> The stark unchallengable, naked fact shown by the record is that the appellant has uttered no challenge in this court to the composition of the Board of Appeals that can properly be considered by this court. There is no reason of appeal in the case at bar * * * which, directly, indirectly, or impliedly raises an issue as to the composition of the Board. * * * The legality of the Board is not an issue in this case. The challenge, if it be a challenge, is the court's, not appellant's.

[11] However broadly or narrowly this court may have construed reasons of appeal in the past, the total absence of a reason bearing, even remotely or by implication, on an issue alleged to be present in a case cannot be overlooked. *LePage's*, supra.

By reason of facts brought out in the discussion of the next point "(2)," we consider appellant's action in not asking us to review the Patent Office ruling on the Board's composition to have been quite deliberate.

[12] (2) This court has uniformly followed the sound rule that an issue raised below which is *not argued* in this court, even if it has been properly brought here by a reason of appeal, is regarded as abandoned and will not be considered. It is our function as a court to decide disputed issues, not to create them. *In re Baird*, 52 CCPA 1747, 348 F.2d 974, 146 USPQ 579; *In re Lorenz*, 49 CCPA 1227, 305 F.2d 875, 134 USPQ 312 (footnote 2); *In re LeBaron*, 42 CCPA 956, 223 F.2d 471, 106 USPQ 176.

It is clear from the record, briefs, and oral arguments that appellant did not present the question of the legality of the Board's composition to us as an issue for us to decide before we set the case for reargument. He merely told us about the contention he made below,

in the past tense, and perhaps for the very good reason that he knew it was not within our jurisdiction to consider that issue.

The first indication that appellant dropped the issue of the Board's composition in coming to this court is the absence of a reason of appeal,[7] as noted in "(1)" above. It is even clearer from a reading of his brief as a whole. After the recitation of the events described under "1" through "6" above, the brief concludes:

> Under the circumstances described above and apparent from the transcript of record, it is respectfully submitted that in the event that the application is not found allowable by the Hon. Court of Customs and Patent Appeals based on the record presently before the court *this case should be remanded to the Hon. Board of Appeals* so as to afford appellant an opportunity to submit in an affidavit the tests described hereinabove [tests described in the brief but not of record] and to have this affidavit evaluated by the Patent Office prior to adjudication of this case by the Hon. Court of Customs and Patent Appeals.

Note that it is not even suggested that the case be remanded to a different board than the one which decided this case. In the "conclusion" of the brief, appellant summarized on the remand request, *if* we deem it necessary to consider the proposed affidavit to find patentability in view of the alleged new ground of rejection made by the Board, by saying,

> * * * such remanding is proper in view of the extraordinary situation existing in this case, as more fully discussed above and apparent from the transcript of record.

The significance of this statement is that by reason of the challenge *below* to the Board's constitution and the ensuing petitions and denials, appellant never succeeded in asking the Board to *reconsider its decision*. He never pursued a procedure which would get into the record the affidavit of additional tests made after the Board's decision and in response to the alleged new ground of rejection in the Board's opinion. Now all he is asking us to do as a result of what he did, and what the Patent Office did, is to take this case history into account in considering his suggestion to remand *if* we do not find his claims allowable on the basis of other arguments. He is not asking us to pass on the constitution of the Board. For all the brief shows, he regarded it at the time of the initial argument as a dead issue. In fact, it appears to us that he regarded it as dead as long ago as the filing of his final "Petition to Commissioner" on Dec. 24, 1964 in which he made this statement:

> It was only after the decision of the First Assistant Commissioner on December 3, 1964, denying the petition of November 20, 1964, that counsel for applicant had any basis for considering that the original Board of Appeals *had been properly constituted* and therefore in submitting a request that this same Board of Appeals reconsider its decision. [Emphasis ours.]

In any event, we can find nothing prior to our setting the case for rehearing indicating any desire on the part of appellant to have us pass on the legality of the constitution of the Board, which we referred to in our prior per curiam order, in question 1, as "appellant's challenge." We wish to make it clear that it was not a challenge in this court and that whatever challenge was made was solely in the Patent Office and not pursued further.

[13] Had appellant wished to pursue the matter further his proper remedy, decisions of the Commissioner on petitions not being appeal-

[7] It happens that appellant's counsel who signed the Notice of Appeal is personally very conscious of the reasons of appeal requirement as he was counsel for the appellant in *In re Gruschwitz*, supra, decided about a year and a half before the filing of the appeal herein, holding reasons of appeal inadequate and dismissing the appeal.

able to this court, as pointed out under (3) below, would have been by mandamus in the District Court. *United States ex rel. Steinmetz* v. *Allen*, 192 U.S. 543 (1904); *Butterworth* v. *United States ex rel. Hoe*, 112 U.S. 50 (1884); see *Ex parte Frasch*, 192 U.S. 566 (1904); 5 U.S.C. 1009. That would be the proper forum in which to settle the question of the legality of the Board's constitution, with appeal to the Court of Appeals available to either party from an adverse decision.

[14] (3) The basic limitation on our jurisdiction in 35 U.S.C. 141, 143 and 28 U.S.C. 1542 is to the review of "decisions" of the Board. There was no decision by the Board, whose decision was appealed here, that it was legally constituted. There was such a decision by the First Assistant Commissioner but there is no provision in the statutes for any appeal to this court from his decisions on petitions. They are reviewable by mandamus. Aggrieved applicants are therefore not without a remedy. But such Commissioner's decisions are not reviewable by us. To take up the legality of the Board's constitution in this case would, therefore, appear to be doing by indirection what we have no authority to do directly and would amount to review of a Commissioner's decision that the Board was legally constituted, which we have no jurisdiction to do. *In re Jewett*, 45 CCPA 714, 247 F.2d 953, 115 USPQ 134; see *In re Mavrogenis*, 19 CCPA 1063, 57 F.2d 361, 13 USPQ 25.

[15] The Patent Office has cited a number of our decisions to support the statement, which is true, that we will not ordinarily interfere in matters of Patent Office practice. We find them beside the point as the question here is not one of Patent Office practice. It is a matter of whose *decision* we are being asked to review, the Board's or the Commissioner's. We have jurisdiction to review the former but not the latter.[8]

Conclusion

The rejection by the Examiner, affirmed by the Board, is reversed. The case is remanded with respect to the Board's added ground of rejection for further proceedings consistent with this opinion.

REVERSED AND REMANDED.

ALMOND, *J.*, concurring.

The jurisdiction of this court in ex parte patent cases is limited to appellate review of a "decision of the Board of Appeals." 35 U.S.C. 141, 28 U.S.C. 1542. Whether a panel *purporting* to render a decision on behalf of the Board of Appeals is capable of rendering a *valid* decision depends upon whether that "board" panel is constituted in accordance with 35 U.S.C. 7. If a given panel is clearly illegally constituted in violation of the terms of section 7, neither the Commissioner of Patents nor any other Patent Office executive could make any decision of such a panel into a valid "decision of the Board of Appeals." To permit this would be to allow administrative officials to override the clear intent of Congress as expressed in the Patent Act of 1952.

I regret that I cannot agree with the majority's decision that this court is precluded from questioning the decision of the First Assistant

[8] On how the Patent Office internally divides the determination of questions relating to patent applications between the Board and the Commissioner, which in turn determines the appropriate route of review thereof, see sec. 1201, Manual of Patent Examining Procedure and Rules of Practice 181 and 191.

Commissioner that the decision of the "board" panel in this case is a binding decision of the Board of Appeals. In my view, the majority has expanded the jurisdiction of this court of limited jurisdiction to cover review of not only (1) decisions of the Board of Appeals but also (2) decisions which the Commissioner represents to be decisions of the Board of Appeals, regardless of whether or not they are legally such.

I am not concerned with whether appellant raised the issue of jurisdiction either in the Patent Office or before this court, or with whether the issue is covered by his Reasons of Appeal, or with whether appellant abandoned the issue. It is too well-settled to require citation of authority that jurisdiction of the subject matter is *never* waived in a pending case. This is the unvarying rule even in courts of general jurisdiction, and it should be applicable with special force in this court of limited jurisdiction.

It would also be a matter of no concern if appellant, the Commissioner, and counsel for both parties all agreed that this court has jurisdiction of the subject matter of this appeal. The parties before a Federal court cannot confer appellate jurisdiction by their mere consent; only Congress can do so. Since Congress has confined our jurisdiction in ex parte patent cases to appellate review of a "decision of the Board of Appeals" under section 141, I believe we should consider the issue of whether the questionable "board" panel in the present case was legally constituted under section 7, so that it could conceivably render a valid decision on behalf of the "Board of Appeals." If the "board" panel could not do so because of its illegal composition, this court would lack jurisdiction of the subject matter under the statute.

The pertinent portion of 35 U.S.C. 7 is set forth in a footnote to the majority opinion. Especially important is the proviso that "not more than one such primary examiner shall be a member of the Board of Appeals hearing an appeal."

I find no patent ambiguity either in the quoted proviso or elsewhere in section 7. To the contrary, the terms are clear, plain, and unambiguous. In such a situation it is well settled that recourse to legislative history is precluded. *Lake County* v. *Rollins*, 130 U.S. 662, 670–671; *United States* v. *Missouri Pacific Railroad Co.*, 278 U.S. 269, 277–278; *Cohn & Lewis* v. *United States*, 25 CCPA 220, 226; *United States* v. *Kung Chen Fur Corp.*, 38 CCPA 107, 117, 188 F.2d 577, 584.

The "board" panel whose decision is on appeal here consisted of a regular member of the Board of Appeals with the rank of examiner-in-chief, a primary examiner, and a supervisory examiner (of higher grade than a primary examiner). The statute, 35 U.S.C. 7, specifically provides that the Commissioner "may designate any patent examiner of the primary examiner grade or higher" as an acting examiner-in-chief, and that any "examiner so designated shall be qualified to act as a member of the Board of Appeals." The only other statutory limitation of significance on the facts of this case is the aforementioned proviso that "not more than one such primary examiner shall be a member of the Board of Appeals hearing an appeal." Only one primary examiner sat on the "board" panel whose decision is here on appeal. Therefore, I think that the panel was legally constituted in accordance with the unambiguous terms of section 7. *Ex parte Beyerstedt*, 103 USPQ 189 (Bd. Appls. 1952). Consequently, its decision

is entitled to be regarded as a "decision of the Board of Appeals" which we have statutory jurisdiction to review.

I think it should be mentioned that, while individual Congressmen or members of committees might well have intended for the proviso to read "not more than one such *designated* examiner shall be a member of the Board of Appeals," the actual language used in the statute is clear and plain to the effect that "not more than one such *primary* examiner shall be a member" of a "Board of Appeals" panel. The class of "designated" examiners-in-chief would clearly include both (1) primary examiners and (2) examiners of higher grade than primary examiners. Since Congress enacted a statute containing the unambiguous terms "primary examiner" in the proviso, the statute must be held to mean exactly what it says, notwithstanding the strong possibility that a minority of individual Congressmen and committee members may have intended the expression in the proviso to read "designated examiner" or "acting examiner-in-chief."

For the above reasons, I have considered the merits of this controversy, and I agree with the majority on the merits.

SMITH, *J.*, dissenting.

The majority opinion of this court rests on the novel concept that an Article III Federal Court does not have jurisdiction to inquire into the legality of an administrative quasi-judicial board whose decision it has been requested to review. This concept is unsupported by authority or precedent and seems to me to be lacking in both reason and logic. The power to inquire into the legality of such a board is a necessary and inherent power of the reviewing court. Such power is the court's only safeguard against putting its judicial imprimatur on a legal nullity. Our obligation is to dispose of the present controversy in a judicial matter to the end that the duty of this court will not be compromised. As we recently stated, in *In re Fischer*, 53 CCPA 1211, 360 F.2d 230, 231, 149 USPQ 631, 32–33:

> • • • The judicial nature of the proceedings in this court, no matter at what stage, is no longer in question. *Lurk* v. *United States*, 370 U.S. 530 (1962) and *Brenner* v. *Manson*, 383 U.S. 519, 148 USPQ 689 (1966). As stated by the Supreme Court, the bulk of this court's work involves the disposition of cases arising under Article III of the Constitution, that is cases arising under Federal law and cases to which the United States is a party. *These cases and controversies are and must be disposed of in a judicial manner.* • • • [Emphasis added.]

Three "principal reasons" are advanced to support the majority position: (1) The question *was not raised* on this appeal by appellant; (2) having raised the question in the Patent Office, he *abandoned* it by not arguing it before us (except as we insisted on his doing so at the reargument); and (3) our *limited statutory authority* precludes our consideration of the question.

While Judge Almond and I differ as to how the issue of the legal competency of the board is to be resolved, we have no differences as to the inherent authority of this court to pass upon the issue here raised.

As I see it, the fallacy in the majority opinion results from confusing the *issues* of an appeal, required to be raised under 35 U.S.C. 141, with the basic *authority* of this court, wholly independent of any reason of appeal or other limitations defined in section 141, to consider whether an appeal lies from the "decision" rendered by an alleged illegally constituted tribunal.

The Issue of Jurisdiction

To emphasize the agreement between Judge Almond and myself on this issue, his concurring opinion contains the statement with which I am in full and entire agreement which I here quote and embody in this opinion:

> I am not concerned with whether appellant raised the issue of jurisdiction either in the Patent Office or before this court, or with whether the issue is covered by his Reasons of Appeal, or with whether appellant abandoned the issue. It is too well-settled to require citation of authority that jurisdiction of the subject matter is *never* waived in a pending case. This is the unvarying rule even in courts of general jurisdiction, and it should be applicable with special force in this court of limited jurisdiction.
>
> It would also be a matter of no concern if appellant, the Commissioner, and counsel for both parties all agreed that this court has jurisdiction of the subject matter of this appeal. The parties before a Federal court cannot confer appellate jurisdiction by their mere consent; only Congress can do so. Since Congress has confined our jurisdiction in ex parte patent cases to appellate review of a "decision of the Board of Appeals" under section 141 I believe we should consider the issue of whether the questionable "board" panel in the present case was legally constituted under section 7, so that it could conceivably render a valid decision on behalf of the "Board of Appeals." If the "board" panel could not do so because of its illegal composition, this court would lack jurisdiction of the subject matter under the statute.

The basic consideration to which we must give effect, it seems to me, is set forth in the following statement from 5 C.J.S. Appeal & Error § 1355, Want of Jurisdiction (1958):

> Inasmuch as lack of jurisdiction in the appellate court renders any decision which it might make on the merits a nullity, if such lack of jurisdiction is patent, or can be readily ascertained by an examination of the record, it warrants the dismissal • • • (citations omitted, 9 columns of cases).

The thought that our decision on the merits of this appeal may be a nullity is appalling. Yet the majority requires the court to proceed to precisely this end. What we have reviewed and the majority decision thereon may well be a nullity.

The alleged jurisdictional defect here "can be readily ascertained by an examination of the record." The composition of the board is stated in the record and the statute is before us. Further, appellant has raised the issue below as to the legality of the board. However, the majority proceeds upon the assumption that in expressing a contrary view on this point one is creating issues and acting outside the scope of authority vested in this court. I do not accept this premise but remain of the view that the issue of jurisdiction existed in this case from the moment the members of the board panel were designated by the Commissioner. This being true, it is my view that this court has no jurisdiction to consider the merits of the appeal for "An appeal from an inferior court or tribunal which has no jurisdiction of a cause confers no jurisdiction on the appellate court," 4 C.J.S. Appeal & Error § 41 (1957). Our jurisdiction as to this issue extends as far as the jurisdiction of any Article III Federal appellate court. "The appellate court has jurisdiction to determine the lack of jurisdiction of the lower court." *Id* at pp. 160–61, citations omitted. An appellate court which lacks jurisdiction cannot acquire it by its decisions or otherwise. Because jurisdiction here depends on the statute, consent, agreement, stipulation, waiver or abandonment cannot operate to confer jurisdiction. 4 C.J.S. Appeal & Error §§ 42–44 (1957).

I do not agree with the underlying view of the majority that the

determination of the absence or presence of jurisdiction in this sense has been restricted by 35 U.S.C. 141. Instead, it is my view that:

> The appellate court has the duty to determine the question of jurisdiction on its own motion, and it will not ignore a want of jurisdiction because the question is not raised or discussed by either party. (Citations omitted, 15 columns of cases). 4 C.J.S. Appeal & Error § 345 Determination of Questions of Jurisdiction.

In footnote 2 of the majority opinion, there is the generalization that Judge Almond has injected confusion into this matter by maintaining we have no jurisdiction over the subject matter. Lest my views be found similarly "confusing," I shall delineate precisely the type jurisdiction to which I refer. In approaching this task I am well aware of Justice Frankfurter's admonishment that "Jurisdiction" is indeed "a verbal coat of too many colors." *United States* v. *L. A. Tucker Truck Lines, Inc.*, 344 U.S. 33, 39 (1952) (dissenting opinion).

Jurisdiction in the sense in which I have used it and shall use it here is the power to hear and determine the controversy presented, in a given set of circumstances. *In re Labor Board*, 304 U.S. 486, 494 (1938). A more general definition is that in 21 C.J.S. Courts § 15 (1940):

> The jurisdiction of a court is in a broad sense its power to hear and determine controversies, and in a more restricted sense its power to adjudicate a particular case.

In *In re Labor Board*, supra, the issue was whether the Court of Appeals was without power to determine a given controversy involving the Labor Board. After the above statement concerning jurisdiction, the opinion continues:

> * * * A court has jurisdiction, in another use of the term, to examine the question whether that power is conferred upon it in the circumstances disclosed, but if it finds such power is not granted it lacks jurisdiction of the subject matter and must refrain from any adjudication of rights in connection therewith. 304 U.S. at 494.

While an appeal had been filed from an order of the labor board, the transcript of record had not been filed by the labor board as required by law. The court found that the Court of Appeals was without power to determine the controversy.

Whether jurisdiction is defined as the power to review only *valid* decisions or whether it is viewed as the power to review only that subject matter which inures from a valid decision, the same result is reached. In support of Judge Almond, it would seem to be the better view that subject matter inuring from "decisions" of illegally constituted board of appeals is beyond our power of review. Thus I have no quarrel with, nor do I find confusion in, Judge Almond's conclusion that decisions by illegally constituted boards are "subject matter" over which we lack jurisdiction to review. And insofar as the jurisdiction in issue here depends on a statute, it may be raised for the first time on appeal "since jurisdiction of subject matter cannot be waived or conferred by the parties." 4 C.J.S. Appeal & Error §§ 234, 242 (1957). Here, of course, an objection was made below.

In principle, I see no distinction between this court and the Federal Circuit Courts of Appeals concerning the fact that each is a court of limited appellate jurisdiction. Congress has provided, 28 U.S.C. 1258, that "The courts of appeals shall have jurisdiction of appeals from all final decisions of the district courts of the United States * * *." Numerous decisions are available to support the proposition

that courts of appeal have both the jurisdiction and the duty to determine whether they have the power to hear and determine the controversy sought to be presented, that the issue of jurisdiction need not be raised by the parties, that the parties cannot confer jurisdiction, and that lack of jurisdiction in the lower court requires that the appeal be dismissed. See 28 U.S.C. Annot. § 1291, notes 7, 8, 12, 13, 16, 17, 255, 256, 294, 327; 28 U.S.C. Annot. § 1331, notes 298–299. The above principles are indeed, in Judge Almond's view, "too well settled" to require the citation of authorities.

The basic consideration, which transcends all other considerations, it seems to me, is that our jurisdiction does not extend to reviewing the merits of decisions rendered by a legally incompetent board of appeals. "Decisions" which as a matter of law are a legal nullity are beyond the scope of our powers of review. See, e.g., Restatement of Judgments § 7, Comment (f).

The majority opinion fails to honor this basic consideration. Instead, it gives controlling effect to technical procedural considerations. To me such considerations are subservient at best, for otherwise, under the guise of restricting appellate review (as appellate courts should lest they be accused of unlawfully expanding their powers of review, 21 C.J.S. Court § 28 (1940)), the majority actually has expanded the appellate review of this court to anything a board of appeals denominates a "decision," regardless of the legality of the board. This conclusion is inevitable as the majority gratuitously demonstrates to the Patent Office that the solution to its dilemma insofar as review by this court is concerned is simply to recognize the Commissioner of Patents as the only one to review and pass on challenges to the composition of boards of appeals.

The majority clearly suggests that by following this course of action there will never be a "decision" by a board as to its own legal competency, and hence no basis for an appellate review of the matter in this court. This, it seems to me, approves the novel proposition that the extent of the Commissioner's authority is to be determined by the Commissioner and he may dictate what we can review notwithstanding the illegality of the board whose decision is appealed. I am unable to reconcile this position with the basic consideration that "Administrative determinations must have a basis in law and must be within the granted authority. * * * An agency may not finally decide the limits of its statutory power. That is a judicial function." *Social Security Board* v. *Nierotko*, 327 U.S. 358, 369 (1946). Also, "The determination of the extent of authority given to a delegated agency by Congress is not left for the decision of him in whom authority is vested." *Addison* v. *Holly Hill Co.*, 322 U.S. 607, 616 (1944). While I recognize the administrative inconvenience which would result from adoption of my views, the question for me is one of principle rather than expediency. It comes down to this: can the Commissioner by a decision so interpret his authority to designate boards of appeal as to divest this court of jurisdiction of this issue in an appeal from a decision of a board allegedly improperly designated by him? My view is that it is beyond the authority of the Commissioner thus to determine or limit the extent of this court's jurisdiction. I am unwilling to accept everything the Commissioner determines as being beyond our jurisdiction merely because it carries the label of Commissioner's decision.

Under the theory of the majority it may well be that some dissatisfied applicant will exercise his right under 35 U.S.C. 145 to go to the District Court, D.C. where review of the Commissioner's action in setting up an illegal board may be gained. However, review here under 35 U.S.C. 141 also is a right given the applicant. According to the majority, review is limited to what the board decided. This seems to limit an applicant's statutory rights and subject him to the delay and expense of multiple proceedings. The majority here would require, as I see it, that an applicant, not desiring a trial de novo in the district court on the merits, but wishing to review on the merits here, prosecute two actions simultaneously. The de novo proceeding in the district court would involve the question of the legality of the board and an appeal here would concern the issue decided by such board. See 35 U.S.C. 141, 28 U.S.C. 1542: Cf. *Two Guys from Harrison-Allentown, Inc.* v. *McGinley*, 273 F.2d 954 (3rd Cir. 1959). It seems to me that the reasoning of the majority seriously impairs an appellant's right of appeal to this court, beyond any limitations I find in the statute, see 28 U.S.C. 1542, "The Court of Customs and Patent Appeals shall have jurisdiction of appeals from *decisions* of: (1) the Board of Appeals." Manifestly, the statute means valid decisions.

Reasons of Appeal

Is our decision on the issue of the composition of the board foreclosed because appellant failed to expressly delineate it in his reasons of appeal? The majority holds that it is. I do not agree. The general rule is that only those errors properly assigned or specified may be considered on appellate review, see *Congress of Indus. Organizations* v. *McAdory*, 325 U.S. 472 (1945); 5 C.J.S. Appeal & Error § 1218 (1958). However, the general rule is ordinarily not applied to questions of jurisdiction. 5 C.J.S. Appeal & Error § 1221 (1958). And "Want of jurisdiction may be regarded as fundamental error which will be noticed, on review, without being assigned as error." 5 C.J.S. Appeal & Error § 1239(b). Thus an appellate court should notice its own want of jurisdiction, see e.g., *White* v. *Crandall*, 105 Fla. 70, 137 So. 272 and authorities cited at 5 C.J.S. Appeal & Error § 1239(b) at fn. 48, or the want of jurisdiction in the lower court, see e.g., *id.* at fn. 49, citing decisions from 16 states.

The majority opinion refers the reader to *In re LePage's, Inc.*, 50 CCPA 852, 312 F.2d 455, 136 USPQ 170, as authority for "our long-established position" concerning the failure to assign questions in the reason of appeal. An examination of the opinion in *LePage's, Inc.*, shows that we at least considered then that jurisdictional matters may be raised "at any time." 50 CCPA at 854, 136 USPQ at 171. Judge Rich at that time was "not at all convinced that the absence of reasons [of appeal] is a 'jurisdictional' defect, depriving us of the power to act if we choose to do so." 50 CCPA at 856, 136 USPQ at 173.

In *In re Gruschwitz*, 50 CCPA 1498, 320 F.2d 401, 138 USPQ 451, cited by the majority as authority, we adhered to the decision in *LePage's, Inc.* Although it is my view that the question of the composition of the board transcends any reasons of appeal, it seems that the present record amply qualifies under the test then advocated by Judge Rich in dissent that: "The really significant intendment of the statute is that we are a court of *review* and are not to act in any

case on *new* grounds which we originate but are to restrict ourselves * * * to passing on the legality of what has been decided below." 50 CCPA at 1508, 138 USPQ at 457.

The Legal Competency of the Board

Returning now to the basic consideration, is the decision here in issue the decision of a legally incompetent board? I recognize the general rule that where a judge or commissioner assumes to act under lawful authority and no objection is made to his authority when he exercises power within the limits prescribed by law, this authority cannot be assailed on appeal. 4 C.J.S. Appeal & Error § 258(h) (1957). The rule is otherwise where there is a want of authority because the judgment is void for want of jurisdiction. *Ibid.* The controlling question in determining whether authority exists is whether the person acting has been selected by the authority designated and in the manner prescribed by law. 48 C.J.S. Judges § 101(e) (1947).

The problem of whether a judge has acted under lawful authority has occurred most often in situations involving special judges, i.e., one who acts by virtue of special appointment. The rule is that where the selection of a special judge is not in accordance with the law there is no judge and the entire proceeding before him is a nullity. See, e.g., *Annoni* v. *Blas Napal's Heirs*, 94 F.2d 513 (1st Cir. 1938). The principle involved is more commonly recognized as the so called "de facto" doctrine. In order that there may be a de facto judge, there must be a de jure office to be filled. *Norton* v. *Shelby County*, 118 U.S. 445 (1886). And where there is no legal authority for the selection of a special judge, a person so attempting to act is neither a judge de jure nor a judge de facto and the proceedings are null and void. 48 C.J.S. Judges § 107 (1947). The necessary consequences are as follows:

> * * * Following the rule that there cannot be a de facto officer if a de jure officer is discharging the functions of the office in question, if the regular judge is presiding and assumes to act in the particular cause, a special judge irregularly appointed, who assumes to act, is not even a de facto judge. * * * *Id.* at p. 1130.

Before considering whether a valid relationship may be established between special judges and special panels, I think it appropriate to consider the Supreme Court's decision in *Glidden Co.* v. *Zdanok*, 370 U.S. 530 (1961) which also decided the companion case of *Lurk* v. *United States*. As my colleagues well know, Judge Jackson, a retired member of this court, was involved in the companion case. He was designated to preside over a criminal trial in the District Court of the District of Columbia and the validity of this designation was questioned in the Court of Appeals, D.C. Certiorari was granted by the Supreme Court (368 U.S. 814, 815) limited to the question "whether the judgment in either was vitiated by the respective participation" of the named judges. 370 U.S. at 533. The Supreme Court's opinion best explains and sets forth the point I wish to make, 370 U.S. at 535–36:

> No challenge to the authority of the judges was filed in the course of the proceedings before them in either case. The Solicitor General, who submitted briefs and arguments for the United States, has seized upon this circumstance to suggest that the petitioners should be precluded by the so-called *de facto* doctrine from questioning the validity of these designations for the first time on appeal.

Whatever may be the rule when a judge's authority is challenged at the earliest practicable moment, as it was in *United States* v. *American-Foreign S.S. Corp.*, 363 U.S. 685, in other circumstances involving judicial authority this Court has described it as well settled "that where there is an office to be filled and one acting under color of authority fills the office and discharges its duties, his actions are those of an officer *de facto* and binding upon the public." *McDowell* v. *United States*, 159 U.S. 596, 602. The rule is founded upon an obviously sound policy of preventing litigants from abiding the outcome of a lawsuit and then overturning it if adverse upon a technicality of which they were previously aware. Although a United States Attorney may be permitted on behalf of the public to upset an order issued upon defective authority, *Frad* v. *Kelly*, 302 U.S. 312, a private litigant ordinarily may not. *Ball* v. *United States*, 140 U.S. 118, 128–12[illegible].

The rule does not obtain, of course, when the alleged defect of authority operates also as a limitation on this Court's appellate jurisdiction. *Ayrshire Collieries Corp.* v. *United States*, 331 U.S. 132 (three-judge court); *United States* v. *Emholt*, 105 U.S. 414 (certificate of divided opinion). In other circumstances as well, when the statute claimed to restrict authority is not merely technical but embodies a strong policy concerning the proper administration of judicial business, this Court has treated the alleged defect as "jurisdictional" and agreed to consider it on direct review even though not raised at the earliest practicable opportunity. E.g., *American Construction Co.* v. *Jacksonville, T. & K.W.R. Co.*, 148 U.S. 372, 387–388.

I fail to see where there is room for argument when the *authority* of a special judge is challenged that the challenge be *timely* or that the de facto doctrine is applicable. The clear question presented was whether the authority designating Judge Jackson was valid and exercised in accordance with law. Stripping the instant appeal to its essentials, the question here is not whether the board acted as a de facto body by virtue of its designation by the Commissioner. The question is whether the Commissioner has authority to designate boards as composed in the instant case. If not, then there can be no exercise of lawful authority by such boards because the law has not created or provided for such boards.

May meaningful distinctions requiring an opposite result be drawn between special federal judges and designated examiners-in-chief; or panels of federal judges and Patent Office boards? I think not. First, consider panels of federal judges and Patent Office boards. It has been established that where the law requires that a controversy be determined by a prescribed panel of federal judges, the judgment of a panel composed otherwise than provided by law must be vacated. *United States* v. *American-Foreign SS. Corp.*, 363 U.S. 685 (1960). Herein Judge Medina participated in an en banc hearing, 28 U.S.C. § 46(c). The decision was rendered after Judge Medina retired. Because the statute provided that a "court en banc shall consist of all active circuit judges of the circuit," the court found that "a retired circuit judge is without power to participate," 363 U.S. at 691, and the judgment was vacated. Significantly, the court noted that the policy of having only active circuit judges determined the major doctrinal trends should be given effect. The competence of Judge Medina was not questioned. Rather, the question was whether the panel was lawfully composed. Here, as discussed infra, there exists a definite policy that temporary examiners-in-chief be designated *only* when necessary in view of the work load and that appeals be heard by examiners-in-chief regularly appointed.

In *Ayrshire Collieries Corp.* v. *United States*, 331 U.S. 132 (1947), a three judge court was empaneled concerning a controversy involving the enforcement of an order of the Interstate Commerce Commission. While three judges participated in the hearing, because of one member's illness only two judges participated in the judgment. The court found that the judgment entered by the two judges was void and without statutory authority. According to the court, "we have no alternative but to vacate the judgment and dismiss the appeal." 331 U.S. at 144. The Commissioner of Patents was faced with the same fact situation concerning a retiring board member after hearing and before decision in *Ex parte Nichols*, 78 USPQ 288 (Com. Pat. 1947). Appellant there argued that in view of the *Ayrshire* decision, "decisions" of 2-member boards were void and without statutory authority. The Commissioner designated a 3-member board to hear the appeal, 78 USPQ 295 (Bd. App. 1947). The parties had no difficulty in appreciating that the issue was whether an appeal would lie from a defect in the board's composition. The solution was to designate a different board.

I find it clear from the decisions in *Ayrshire* and *American-Foreign SS.* that a panel of federal judges, not constituted according to law, acts without authority. Should a panel of the Board of Appeals be treated differently? I think not as this appears to have been settled in the leading case of *Norton* v. *Shelby*, supra. Therein the Supreme Court had before it the question of the legal effect of the actions of a state board of commissioners. The Supreme Court stated it was "relieved from the necessity of passing" on the question of the "lawful existence and authority of the county commissioners," 118 U.S. at 436, as the highest court of the state had determined that the law passed by the state legislature creating the board was null and void. I would inject at this point that this is the question that I maintain is before us: the lawful existence and authority of certain panels of the Board of Appeals. The Supreme Court was faced with the argument that the board was at least de facto in nature prior to the decision of the state court. In answer, the opinion states, 118 U.S. at 441, 444:

But it is contended that if the act creating the board was void, and the commissioners were not officers *de jure*, they were nevertheless officers *de facto*, and that the acts of the board as a *de facto* court are binding upon the county. This contention is met by the fact that there can be no officer, either *de jure* or *de facto*, if there be no office to fill. As the act attempting to create the office of commissioner never became a law, the office never came into existence. Some persons pretended that they held the office, but the law never recognized their pretensions, nor did the Supreme Court of the State. Whenever such pretensions were considered in that court, they were declared to be without any legal foundation, and the commissioners were held to be usurpers.

* * * * * * *

Numerous cases are cited in which expressions are used which, read apart from the facts of the cases, seemingly give support to the position of counsel. But, when read in connection with the facts, they will be seen to apply only to the invalidity, irregularity, or unconstitutionality of the mode by which the party was appointed or elected to a legally existing office. None of them sanctions the doctrine that there can be a *de facto* office under a constitutional government, and that the acts of the incumbent are entitled to consideration as valid acts of a *de facto* officer. * * *

Since the question has been raised that the board is illegally constituted and the Commissioner has no authority to designate such boards, I fail to see how we can hide behind timeliness, abandonment or failure to assign it as error.

One last relationship remains to be examined. Should the result be different because the cases above did not involve a board or panel

as herein involved? The majority opinion infers that we are here dealing with an "invalid appointment" and refers the reader to *United States* v. *L. A. Tucker Truck Lines, Inc.*, 344 U.S. 33 (1952). This is clearly not the situation before the court as no challenge has been raised as to the competence or appointment of any member of the board. We are, to repeat, concerned with the authority of the Commissioner to designate such *boards*, not individual members, and the lawfulness of *boards* so designated.

The decision in *Tucker* has some value but for a different reason. It held that the appointment of a hearing examiner (comparable to a patent examiner?) contrary to certain terms of the Administrative Procedures Act as set forth in the opinion, was not such an irregularity which would deprive the Commission "of power or jurisdiction, so that even in the absence of timely objection its order should be set aside as a nullity." 344 U.S. at 38. Even in the *Tucker* case a *timely* objection would have been honored! Here objection was *not* made in an appellate court for the first time, as in *Tucker*.

Also, it is clear we are not dealing here with persons appointed according to the Administrative Procedure Act; we are here dealing with persons who, by virtue of regular appointment, are appointed by "the President, by and with the advice and consent of the Senate." 35 U.S.C. 3. They are an independent body whose tenure is not controlled by the Commissioner.

I do not therefore find the *Tucker* decision dispositive of the issue raised here. I think we should look for guidance from cases involving persons having more comparable, but higher, stature, i.e., federal judges and not examiners, where the question or issue involved was the *existence* of *authority* to designate *panels* and the lawfulness of the exercise of *power by the panel as an entity*.

I regret that I have been required to delve into the jurisdictional aspect of this case at such length. Whether the fault lies in an inability to articulate succinctly or the complexity of the question, I firmly believe that the majority errs in its reasoning in support of its conclusion that the legality of the board is not before us.

While I do not believe the issue can be avoided, I also believe that the issue is so important that it should be decided and "judicial ingenuity" should not be used to "find a way to escape it." *Clay* v. *Sun Insurance Office, Ltd.*, 363 U.S. 207, 214 (1960) (dissenting opinion).

Interpretation of 35 U.S.C. 7

I will now consider the issue of the validity of the board. I do not agree with Judge Almond that the terms of 35 U.S.C. 7 are unambiguous. A full statement of the rule or principle relied on by Judge Almond is found in 2 Sutherland, Statutory Construction § 4702 (3rd ed. 1943) and reads as follows:

> § 4702. Statutes clear and unambiguous—The existing law.
>
> Although the following rules seem delusive and unsatisfactory to the author, they have been repeated so frequently in the judicial decisions, it is only fair to record them here:
>
> "When the intention of the legislature is so apparent from the face of the statute that there can be no question as to its meaning, there is no room for construction."
>
> "It is not allowable to interpret what has no need of interpretation."
>
> "There is no safer nor better settled canon of interpretation than that when language is clear and unambiguous it must be held to mean what it plainly expresses."

> These rules are, of course, appropriate when the words of a statute are plainly expressive of an intent not rendered dubious by the context of the act. The court in interpreting the act must declare it according to the words of the act for they are in fact expressive of the sense and intent of the act and any other interpretation would thwart that interpretation. * * *
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> * * * * * * * *
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> One who contends that a section of an act must not be read literally must show either that some other section of the act expands or restricts its meaning, that the section itself is repugnant to the general purview of the act, or the act considered *in pari materia* with other acts, or with the legislative history of the subject matter, imports a different meaning. If the language is plain, unambiguous and uncontrolled by other parts of the act or other acts upon the same subject the court cannot give it a different meaning. But the limited meaning of words will be disregarded when it is obvious from the act itself that the legislature intended that it be used in a different sense than its common meaning.

First, I do not find 35 U.S.C. 7 "plainly expressive of an intent not rendered dubious by the context of the act." Second, I find that the main paragraph of section 7 restricts the meaning of the exception stated therein and that the exception, as construed by the Commissioner, is repugnant to the general purview of the section. Further, the legislative history imports the true meaning to be attributed to the exception in section 7.

The rules of statutory construction are numerous and frequently in conflict. Ascertaining the "legislative intent" can be most difficult. As to this latter term, Justice Frankfurter once stated in "Some Reflections on the Reading of Statutes, 47 Col. L. Rev. 528, 538 (1947):

> * * * All these years I have avoided speaking of the "legislative intent" and I shall continue to be on my guard against using it. The objection to "intention" was indicated in a letter by Mr. Justice Holmes which the recipient kindly put at my disposal:
>
> > Only a day or two ago—when counsel talked of the intention of a legislature, I was indiscreet enough to say I don't care what their intention was. I only want to know what the words mean. Of course the phrase often is used to express a conviction not exactly thought out—that you construe a particular clause or expression by considering the whole instrument and any dominant purposes that it may express. In fact intention is a residuary clause intended to gather up whatever other aids there may be to interpretation beside the particular words and the dictionary.
>
> If that is what the term means, it is better to use a less beclouding characterization. Legislation has an aim; it seeks to obviate some mischief, to supply an inadequacy, to effect a change of policy, to formulate a plan of government. That aim, that policy is not drawn, like nitrogen, out of the air; it is evinced in the language of the statute, as read in the light of other external manifestations of purpose. That is what the judge must seek and effectuate, and he ought not to be led off the trail by tests that have overtones of subjective design. We are not concerned with anything subjective. We do not delve into the mind of legislators or their draftsmen, or committee members. * * *

What is the aim of the statute, what is the policy sought to be effected and what do the words mean? Justice Frankfurter further commented:

> Often the purpose or policy that controls is not directly displayed in the particular enactment. Statutes cannot be read intelligently if the eye is closed to considerations evidenced in affiliated statutes, or in the known temper of legislative opinion. Thus, for example, it is not lightly to be presumed that Congress sought to infringe on "very sacred rights." This improbability will be a factor in determining whether language, though it should be so read if standing alone, was used to effect such a drastic change.

As to the meaning of a statute, Professor M. R. Cohen once stated, in "The Process of Judicial Legislation," from "Law and the Social Order" (1933), as follows:

> What is the meaning of a statute: The rule that courts must interpret the meaning of the statute rather than the intention of the legislature is frequently

conceived as if it implied that the words of a statute are sufficient to determine every question that arises under it. This would lead to a revival of the stage of strict law in which the strictly literal meaning of words is followed no matter how unjust or absurd the consequences. Doubtless there are many who still believe juristic interpretation to be a kind of magic whereby a whole body of law is made to spring out of a few words or phrases. But most modern jurists are outgrowing the superstitious awe of the printed word and its magic potency. The meaning of a statute consists in the system of social consequences to which it leads or of the solutions to all the possible social questions that can arise under it. These solutions or systems of consequences cannot be determined solely from the words used, but require a knowledge of the social conditions to which the law is to be applied as well as of the circumstances which led to its enactment. * * *

Thus while I feel justified in relying on traditional rules of statutory "construction" which I believe fully support my conclusions as to the meaning of the exception to section 7, I also draw my conclusions from considerations advanced by the above writers for too often interpretation rests wholly on which rules are applied.

What is the meaning of the terms in 35 U.S.C. 7 "any patent examiner of the primary examiner grade or higher." Further, what is the meaning of the terms, "No more than one such primary examiner shall be a member of the Board of Appeals hearing an appeal." Do the second terms designate a title or individual or do they designate the class defined in the first terms? Is there any connection between the terms used? Should the terms be taken literally or do they mean that patent examiners having a level of expertise substantially equal to or slightly above a primary examiner are singled out for special treatment? In other words, does the statute operate to insure boards having a given level of ability and experience or is it wholly dependent on job titles? If the latter is accepted as being correct, a reorganization of job titles in the Patent Office can insure that nearly all patent examiners would be "qualified" for designation as acting examiners-in-chief. A host of considerations such as the above compel the conclusion that 35 U.S.C. 7 is not "clear on its face."

The foregoing considerations but underscore what seems to me to be the patent ambiguity in the language of the statute before us. As such it seems to me we are required to ascertain, if we can, what the meaning of the words must be. Should the prohibitions in section 7 become but a "name game" in which the ambiguous term "primary examiner or higher" allows the Commissioner, by changing the names and responsibilities of Patent Office personnel, to circumvent the limitations on his authority spelled out in section 7?

The problem requires an initial consideration of the historical background of the present appeal procedure in the Patent Office. Such a consideration aids in understanding the entire question and placing it in its proper frame of reference. When so considered, we find the problem to have been a long standing one. The present controversy viewed in this context is little more than another gambit in what appears to have been a more or less continuing contest between Congress and Commissioners of Patents concerning an independent judicial or quasi-judicial review of the Commissioner's decisions refusing a patent to an applicant. An ably written and carefully documented history of this contest was prepared by now Examiner-in-Chief Federico (who happens to have been the only Presidential appointee on the board here involved) in an article entitled "Evolution of Patent Office Appeals," 22 J.P.O.S. 838–920 (1940). I have drawn freely from this article in the following portions of this opinion. As

Mr. Federico points out, appeals from the actions of the officials charged with the granting of patents were not contemplated by the Patent Acts of 1790 and 1793. Statutory provisions for appeals as such first appeared in the Patent Act of July 4, 1836. The Senate Committee which introduced the bill resulting in the Act stated in its report:

It is obvious that the power [to refuse patents in those cases where patents should not be granted] must, in the first instance, be exercised by the department charged with this branch of the public service. *But as it may not be thought proper to intrust its final exercise to the department, it is deemed advisable to provide for an occasional tribunal to which an appeal may be taken.*[3] [Emphasis added.]

[3] Report of the selection committee to take into consideration the state and condition of the Patent Office, and the laws relating to the issuing of patents for new and useful inventions and discoveries. 24th Congress, 1st Session, Senate Document No. 338, April 28, 1836. Reprinted at 18 J.P.O.S. 854, 858.

The review contemplated by this Act was an appeal to a board of three arbitrators called a "board of examiners." These three "arbitrators" were appointed by the Secretary of State for each case. It is significant to note that in this first appellate procedure, the "arbitrators" were not appointed by nor subservient to the Commissioner of Patents for their authority to act. This authority came directly from Congress through the Secretary of State. These "boards of examiners" were given authority to conduct hearings and, by a majority vote, to reverse the decision of the Commissioner of Patents in whole or in part. Their decision was to govern further proceedings.

The procedure provided by the Act of 1836 proved to be cumbersome and the Commissioner of Patents recommended certain changes in it which were made by Congress in the Patent Act of March 3, 1839. This Act provided that instead of the arbitrators provided in the Act of 1836, an appeal would lay directly to the Chief Justice of the District Court of D.C. He was directed to hear and determine the appeal "on the evidence produced before the Commissioner."

The Act of March 2, 1861 further modified the plan of appeals by providing for an initial appeal within the Patent Office. Section 2 of this Act provided a system of two appeals within the office, one from the examiner to a board of three examiners-in-chief, and another appeal from this board to the Commissioner of Patents.

As pointed out by Mr. Federico in his article:

As a matter of fact this statute merely enacted into law and further developed a practice which had grown up, through necessity, over a period of years. There was an appeal to the Commissioner, and also a board of examiners, for some time before they appear in the law.

Mr. Federico also states:

Thus the Act of 1861 was only the culmination of the development which took place during the preceding years. The Act established by law the board which had grown up in the Office and made it an appellate tribunal. At the same time a separate appeal from the board to the Commissioner was enacted. Previous to the Act the board in effect acted for the Commissioner in an appeal to him and a separate appeal from the board to the Commissioner did not exist except possibly as the Commissioner might personally reconsider a case.

The changed status of the examiners, as a result of the statutory creation of the appeal from their decision should be noted.

Basically, this system of appeals remained in the law until it was further revised by the Act of 1927.

As early as 1870 there was a strong movement for abolishing the appeal to the judges outside the Patent Office. In his report for the year 1869, Commissioner of Patents Fisher summarized the case against what he termed the "now useless and mischievous" appeal to

the courts. Mr. Federico sets forth in his article the case stated by Commissioner Fisher in the form of "ten counts." The "counts" pertinent to the present consideration are 2, 5 and 7 which read as follows:

2. There seems to be no propriety in a summary appeal from an executive to a judicial department; at all events, no such appeal is allowed from decisions of the Commissioner of Pensions, Internal Revenue, Land Office, Indian Affairs, or the Comptrollers of the Treasury, notwithstanding the great pecuniary interests involved in their decisions, and the fact that in no one of those Bureaus is such liberal provision made for appeals within the Office as in the Patent Office.

* * * * * * *

5. The tendency of such a jurisdiction is to extend itself. Accordingly the judges have every year encroached more and more upon the executive duties of the Commissioner. The law gave an appeal in a few cases. Appeals are not taken and sustained in many; until it is asserted that the judge, and not the Commissioner, is the head of the Patent Office, and that he is authorized to interfere and to overrule the Commissioner in any order or rule which the latter may make or attempt to execute.

* * * * * * *

7. If it be said that these matters ought not to rest in the judgment of the Commissioner, the answer is:

a. He is selected because of his supposed familiarity with the business transacted in the Patent Office, and is, therefore, more likely to be right than the judge, who is appointed without reference to mechanical knowledge or learning in patent law.

b. The fear that the Commissioner might err, would demand a further provision for an appeal from the judge, and so on ad infinitum, since both are human.

c. The Commissioner of Patents ought to be as competent to decide questions arising in the conduct of his office as are the heads of other like departments; and

d. An appeal from the Commissioner is in fact provided, and would exist, even if the present appeal were abolished; indeed, even the decision of the judge is not final. It is provided in sec. 10, act of March 3, 1839, that the applicant may file a bill in equity in any circuit court having cognizance thereof, "where patents are refused for any reason whatever, either by the Commissioner of Patents or by the Chief Justice," and the complainant may obtain a decree authorizing the Commissioner to issue the patent.

It is interesting to inject at this point that the complaints thus voiced by Commissioner Fisher have not been stilled by the appeal procedure where actions of the Commissioner of Patents in refusing patents to applicants is subjected to an appellate review outside the Patent Office. Thus, Commissioner Fisher's theory that the Commissioner is "more likely to be right than a judge" can be said to be the philosophy which underlies the recently released report of The President's Commission on the Patent System. Section XIII contains the following:

The Patent Office should be recognized as having technical and legal expertise, important in deciding questions of patentability. While a reviewing court certainly will have legal expertise, and perhaps general technical knowledge, it seldom will possess the particular technical skill in the art with which a Patent Office examiner is equipped. Further, it is only after both the examiner and the Board of Appeals have concurred in the refusal of a claim that the matter comes before a reviewing court. Such concurrence should not be rejected by the court unless the action is, in its judgment, clearly erroneous.

This recommendation should settle the conflict over "scope of review," by defining the court's responsibility to be *review* of the Patent Office decision, rather than substitution of its own judgment. The court would determine only whether the Patent Office had reasonable basis for its decision, not whether a different decision logically could have been reached on the same record. The burden of persuasion would be on the applicant, and the Patent Office decision should not be reversed unless, in view of all of the evidence, the court has a thorough conviction that there was no reasonable basis for the decision.

Congress did not agree with the earlier critics of the appeal procedures and in the Act of July 8, 1870, retained an outside appeal in ex parte cases and provided that the appeal be taken to the Court of the District of Columbia sitting en banc. It made no changes in the internal office appeal procedure.

The resultant appeal procedure became complicated, costly and time consuming and numerous studies were made prior to the Act of March 2, 1927. This Act made a major change in the Board of Appeals which, as outlined by Mr. Federico in his article, was:

Within the Patent Office the two appeals, to the Board of Examiners-in-Chief and from the latter to the Commissioner, were replaced by a single appeal, this single appeal being to a Board of Appeals constituted by the Commissioner, the Assistant Commissioners, and the Examiners-in-Chief. This Board was empowered to hear appeals from the adverse actions of examiners upon applications for patents, and from decisions in interference cases. The act specifies that each appeal shall be heard by at least three members of the Board of Appeals.

From the foregoing, it seems that there has been an insistent public demand which Congress has recognized to provide for some type of independent appeal from the decisions of the Commissioner of Patents which demand seems not to have been shared by all the Commissioners of Patents. Congress must have considered this public demand to be of importance to have persisted in providing for independent appeals even in the face of criticisms such as those voiced by Commissioner Fisher.

One clearly detects in this recital of historical background the persistence of demand for independence of the tribunal designated to hear appeals from the decisions of the Commissioner of Patents refusing patents to applicants. The concept of independence in such appeals even within the Patent Office is culminated and clearly articulated in the Act of March 2, 1927 which provided for presidential appointment of the examiners-in-chief, with the advice and consent of the Senate.

It is against this historical background that we must evaluate the meaning and impact of the terms used in 35 U.S.C. 7. To that end, I shall now consider the history of this provision.

History of 35 U.S.C. 7

Congress in enacting 35 U.S.C. 7 provided, as a matter of general policy, for a review of adverse decisions of examiners upon applications for patents, by a board of appeals consisting of the Commissioner, the assistant commissioners and the examiners-in-chief and provided in this section that:

The examiners-in-chief shall be persons of competent legal knowledge and scientific ability. The Commissioner, the assistant commissioners, and the examiners-in-chief shall constitute a Board of Appeals, which, on written appeal of the applicant, shall review adverse decisions of examiners upon applications for patents. Each appeal shall be heard by at least three members of the Board of Appeals, the members hearing such appeal to be designated by the Commissioner. The Board of Appeals has sole power to grant rehearings.

A reference to 35 U.S.C. 3 shows that each official thus named is an official "appointed by the President, by and with the advice and consent of the Senate." Beginning with the Act of March 2, 1927, Congress provided that boards of appeal must consist entirely of persons whose authority to act depended upon Presidential appointment and Senate confirmation, assuring an independent tribunal.

The first paragraph of section 7 has not been changed in substance

since 1927. It therefore may properly be considered as stating the general policy of Congress in providing for an independent appellate type of review within the Patent Office.

The second paragraph of section 7 is a newer provision and states an exception to the requirements of section 3. It concerns the appointment under special circumstances of acting examiners-in-chief without requiring Presidential appointment and Senate confirmation. Instead, such acting examiners-in-chief are to be designated by the Commissioner under the therein specially stated circumstances. This exception in par. 2 of section 7 thus gives the Commissioner limited authority to name acting examiners-in-chief and limits the use he may make of them in designating particular panels of the Board of Appeals. It becomes necessary, therefore, to examine the history and background of this second paragraph of section 7 to determine whether Congress intended the exception therein stated to take precedence over and change the long standing general plan of independent appellate review we find clearly stated in paragraph 1 of section 7.

The exception provided in par. 2 of present section 7 first appeared in 1945 in H.R. 4080, 79th Cong., 1st Sess. H.R. Rep. No. 1030, 79th Cong., 1st Sess., p. 1, stated the purpose of the bill as follows:

> The purpose of this bill is to increase the size of the Patent Office Board of Appeals by empowering the Commissioner of Patents to designate from time to time, or at any time, one or more primary examiners or law examiners of that office to serve as examiners in chief for periods of time not exceeding 30 days in any calendar year.

In support of the bill, after noting the increased number of appeals to the board, the following appears in H.R. Rep. No. 1030, at p. 2:

> By reason of their training and experience, principal examiners and law examiners are peculiarly fitted to serve as examiners in chief. * * * Also, it is believed that their services on the Board will provide opportunities for them to gain wider knowledge of the practices obtaining in divisions of the Patent Office other than their own, and of the arts and sciences generally as they develop and are exemplified in pending applications for patents, as well as opportunities for them to demonstrate their abilities for future appointments as full examiners in chief.

The pertinent portion of the bill reads:

> Provided, That the primary examiners and the law examiners of the Patent Office shall be authorized to serve as examiners in chief, but no such examiner shall so serve for more than thirty days in any calendar year and then only by direction of the Commissioner of Patents.

The above bill, after passing the House of Representatives, was sent to the Senate where the bill was amended to read as follows:

> That notwithstanding the provisions of section 476 of the Revised Statutes (U.S.C., title 35, sec. 2), the Commissioner of Patents is authorized to designate examiners of the principal examiner grade or higher, having the requisite ability, to serve as examiners in chief and such examiners so designated shall be fully qualified to act as members of the board of appeals constituted by section 482 of the Revised Statutes (U.S.C., title 35, sec. 7): *Provided*, That no such examiner shall so serve for more than ninety days in any calendar year: *And provided further*, That not more than one such examiner shall be among the members of the board of appeals hearing an appeal.
>
> Sec. 2. This Act shall take effect on the date of approval and shall expire three years after such date.

S. Rep. No. 1101, 79th Cong., 2nd Sess., repeated the above statements in H.R. 1030 and expressly stated, at p. 2:

> * * * Cases are heard by three members of the Board of Appeals and the the amended measure provides that not more than one of these shall be a designated examiner.

The above amended bill was subsequently passed by both the Senate and the House of Representatives. See Conf. Rep. No. 2695, 79th Cong., 2nd Sess. (1946).

It is clear from the above, and neither party argues otherwise, that under the above law Congress gave the Commissioner the authority to place only one examiner-in-chief designated by him under the exception to R.S. 476 (35 U.S.C. 2) on any given board of appeals.

The limited nature of the first exception to section 7 is readily apparent. It was of temporary duration and designed to help eliminate the backlog of appeals to the board. Each acting examiner-in-chief was limited as to his period of service and required to sit with two regular board members. Each board hearing an appeal contained a majority of members whose designation was independent of the Commissioner's authority. The policy of an independent review in the Patent Office was preserved.

The above law (60 Stat. 873, 35 U.S.C. 7) expired on August 7, 1949. In the same year S. 1172, 81st Cong., 1st Sess., was introduced. This bill provided for a permanent increase in the number of examiners-in-chief without providing for designated examiners-in-chief. After passing the Senate, the bill was amended in the House of Representatives to provide for designated examiners-in-chief. The finally enacted provision stated:

> Section 482 of the Revised Statutes (35 U.S.C. 7) is amended by adding the following paragraph:
>
> "The Commissioner, when in his discretion considered necessary to maintain the work of the board of appeals current, may designate any examiners of the primary examiner grade or higher, having the requisite ability, to serve as examiner in chief for periods not exceeding six months each, and any examiner so designated shall be qualified to act as a member of the board of appeals. Not more than one primary examiner shall be among the members of the board of appeals hearing an appeal."

This bill was approved March 4, 1950.

H.R. Rep. No. 1617, 81st Cong., 2nd Sess., stated that the purpose of the amendment was to allow the Commissioner to designate examiners-in-chief "from time to time until the appellate work is current and then discontinue the temporary designations." The report also contained the supporting reasons offered with respect to the previous act, quoted supra.

There is no evidence of any indication that Congress intended to change the previous law. The Senate Bill did not provide for designated examiners-in-chief and the House added the provision by amendment, referring to the temporary act passed in 1946. However, whereas the previous law stated only "one such examiner" could serve on a board, the 1950 law stated "not more than one primary examiner" could serve on a board.

In 1952, 35 U.S.C. 7 was enacted. The language in para. 2 was changed to provide that "not more than one such primary examiner" may serve on a board. The preliminary draft did not provide for designated examiners-in-chief. See Proposed Revision and Amendment of the Patent Laws, Preliminary Draft, Comm. on the H.R. Judiciary 4 (1950). In H.R. 9133, 81st Cong., 2nd Sess., it was provided that the Commissioner could designate examiners-in-chief "of the grade GS–13 or higher" and "not more than one such GS–13 grade examiner shall" be on a board. In H.R. 3760, 82nd Cong., 1st Sess., the second bill introduced into Congress, the language was changed to that presently appearing in section 7. H.R. Rep. No. 1923, 82nd

Cong., 2nd Sess. and S. Rep. No. 1979, 82nd Cong., 2nd Sess., commenting on H.R. 7794, 82nd Cong., 2nd Sess., the third bill introduced into Congress, each state that "some changes in language have been made" in section 7. Thus, independent research fails to reveal anything of a definitive nature that Congress intended, except as above pointed out, to change the legal effect of the exception provided in the second paragraph of section 7.

The final legislation concerning section 7 originated in 1958 and 1959. In 1958, S. 1864, 85th Cong., 1st Sess., was introduced which expanded the number of permanent board members from nine to not more than fifteen and also established a new compensation rate for certain Patent Office officials. Concerning the proposed increase in board members in view of the increased number of appeals to the board, H.R. Rep. No. 2557, 85th Cong., 1st Sess., states:

> • • • With this increase [in appeals], it will be necessary not only to continue the practice of designating other examiners to serve temporary tours of duty on the Board of Appeals but also to increase the number so serving. While this measure is highly desirable as a means of adjusting manpower to take care of peak periods of fluctuating workload, it is felt that there should not be such a large number of temporary members. One reason is that these men are removed from their other duties, which disadvantageously affects the work of examination in the divisions from which they are drawn, and of course temporary members could not be as efficient as those serving permanently. It is accordingly proposed that the permanent members of the Board of Appeals be increased by not more than 6, raising the number from 9 to not more than 15. While the data submitted above shows that 15 members may not be sufficient to carry on the work of the Board of Appeals at the present increased level of the filing of appeals, a membership of 15 permanent members will reduce considerably the number of temporary members which need to be assigned, and will allow for the possibility that when the task of reducing the backlog of applications pending before the examiners is accomplished the number of appeals filed may decrease to such an extent as to be capable of being handled by them alone, with possibly only an occasional temporary designation. The bill is so worded that the total number of 15 need not be filled when the workload so warrants.
>
> The provision relating to temporary designations is retained since this is very useful for occasional assistance and also provided a means of testing prospective new members. • • •

Concerning the salary increase the report states:

> • • • Appointments to these positions are recommended by the President and confirmed by the Senate. The duties and responsibilities combined with executive appointment requirements of these positions indicate that salaries in excess of those provided for career civil service employees are appropriate. Further justification for the salaries proposed in the bill is that these positions are unique among professional positions in Government in that they require the combination of the highest level, judicial and scientific attainment for the proper discharge of the responsibilities assigned to them by statute.
>
> The quasi-judicial duties of the members of the Board of Appeals are the most difficult and exacting in the Patent Office. It is required by law that the examiners in chief be scientifically competent and trained in law. Their work has unusually great significance and importance in the technological and industrial development of this Nation. • • •

Of further interest are the comments of Congressman Libonati[9] made in the House concerning the above bill, 104 Cong. Rec., Part 15, at 19,199:

> Members, three in number, sit as a panel, hearing both oral and written argument. The panel studies the brief and arguments, rendering its decision. *No more than one designated member can sit on a panel.* One writes the decision—speaks with the second, then submits to the third person on the panel. This takes a great deal of time with much detail and extended delays. They have the last word—appeals are then taken to the Court of Customs and Patent Appeals and by suit de nova [sic] can be taken to the District Court of the United States for the District of Columbia.
>
> This is a difficult work and the reputation of the Board must enjoy the highest reputation for personal integrity and judicial honesty in an office of first importance in the economy of the Nation. It enjoys the highest kind of confidences and secrets. The finest legal minds of international reputation practice before this tribunal. [Emphasis added.]

[9] Roland V. Libonati of Illinois, at the time a ranking member of the House Judiciary Committee.

The basis for Congressman Libonati's statement that "No more than one designated member can sit on a panel," is found in the testimony of Robert C. Watson, then Commissioner of Patents, who testified before the House Judiciary Subcommittee No. 3, on July 30, 1958. Commissioner Watson was asked to spell out the appeal procedure in the Patent Office, including the selection of panels. Commissioner Watson stated that at that time 9 regular members and 10 designated members constituted the class from which panels were selected. He explained that the panel is comprised of 2 regular members and one designated member and *expressly pointed out that he could not appoint 2 designated members to serve on a panel of 3.* Mr. Sam W. Kingsley, then Personnel Officer of the Patent Office, and Mr. Leo P. McCann, an examiner-in-chief of the board, who also testified, elaborated further as to the necessity of increasing the number of permanent examiners-in-chief.

Commissioner Watson's testimony is reflected in H.R. 2557, supra, wherein figures are set forth indicating the number of persons acting as board members from 1950 through 1957. The figures range from a high of 20.4 (1958) to a low 11.0 (1954). The report states "The number of men serving on patent appeal work during this period averaged 15 per year."

In 1959 a salary bill concerning regular and designated examiners-in-chief was introduced, S. 1845, 86th Cong., 1st Sess., amending section 7. H.R. Rep. No. 1138, 86th Cong., 1st Sess., states in part:

> A member of the Board of Appeals reviews appealed patent cases in any category of the sciences and technological arts which may involve claims where competent definitions of the exact contribution to the art are exceptionally difficult to make. His decisions may involve highly complicated matters, including interpretations of a very advanced, technical character relating to the latest developments in the diverse fields of mechanics, electricity, electronics, chemistry, electrochemistry, physics, atomic physics, drugs, etc. His decisions require exceptional knowledge of, and seasoned experience with, legal precedents, prior decisions of the Board, decisions of the U.S. Court of Customs and Patent Appeals, and decisions of the other Federal courts.
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> • • • • • • •
>
> A study of the duties and responsibilities required of examiners-in-chief, together with the high professional qualification requirements for their executive appointment to those positions, serve to accentuate the inadequacy of Classification Act salaries of only $13,970. *The quasi-judicial duties of the members of the Board of Appeals are the most difficult and exacting in the Patent Office.* It is required that to be eligible for appointment, examiners-in-chief be scientifically competent and trained in the law. *Few of the career employees possessing this combination of professional abilities also possess the high level of judicial judgment required for successful performance of the scientific and legal decisions required of them.* Recommendations to the President for appointments of new members to the Board are made only after temporary detail assignments to determine the professional competence of the proposed appointee. [Emphasis added.]

There can be no question about the need for temporary or acting examiners-in-chief and the practical reality of having them appointed by the Commissioner when the circumstances are such as to require such appointment.

The basic issue here posed, however, is whether in providing for such temporary or acting examiners-in-chief, the meaning of the statute permits the Commissioner to erode its basic concept of an *independent* quasi-judicial review of his decisions. The practical operation of the system since the Commissioner was given this authority has been observed by Clesner and Clesner in their article, The Board of Appeals of the Patent Office, 40 J.P.O.S. 298 (1958), stating:

> * * * Due to the heavy workload there have been instances of primary examiners serving as acting examiners-in-chief for four out of five years. At present the Board consists of more acting members than appointed members. *This defeats the intent of judicial independence the Board may possess from its members being presidential appointees for life.* [Emphasis added.]

The above is all the available information I have found as to the intent of Congress concerning designated examiners-in-chief and the uses to be made of them. In summary, it seems clear that Congress regarded designated examiners-in-chief as a temporary measure to reduce the backlog of appeals and, as such, regarded them to be an exception to the general provisions governing appointments of examiners-in-chief under 35 U.S.C. 3 and the composition of regular boards of appeal under the first paragraph of 35 U.S.C. 7. It also appears that Congress considered that examiners-in-chief designated by the Commissioner should be utilized only when backlog existed and that this practice would cease when the regularly appointed examiners-in-chief could cope with the appeal load. These considerations underlie all the amendments proposed to present section 7 and clearly indicate that the second paragraph of section 7 is but an exception to section 3 and to the first paragraph of section 7. Congress also appears to have been of the view, since the inception of the provision permitting the Commissioner to designate examiners-in-chief, that not all patent examiners of the primary grade or higher would be suitably qualified to serve as examiners-in-chief and this, I think, emphasizes the significance of the Congressional enactment of the second paragraph of section 7 which places very definite limitations on the extent of the Commissioner's authority to use his designated examiners-in-chief on boards of appeal. In addition to the need for eliminating the Patent Office appeal backlog, the stated purpose for utilizing designated examiners-in-chief also appears to have been as a "trying-out," or probationary period, as it were, to ascertain which of the examiners so serving were suitable for further consideration for Presidential appointment as regularly appointed examiners-in-chief. Congress clearly recognized that the duties of an examiner-in-chief were quasi-judicial in nature; that examiners-in-chief must be scientifically competent and trained in the law; and that appointments of new members to the board can best be made after service of the prospective appointee as a temporarily designated examiner-in-chief during which time an evaluation may be made of the professional competence of the proposed appointee. The ultimate responsibility for decision of appeals was, I think, to be vested in those examiners-in-chief whose authority to act was delegated to them by reason of Presidential appointment, and who were thus independent of the Commissioner as the source of their power and authority to act. It seems equally clear that the statute cannot mean that a majority or all of the members of any board of appeals should consist of examiners-in-chief designated by the Commissioner.

All the internal evidence and policy considerations in the foregoing seem to me to clearly establish that Congress did not intend to sanction any scheme of authorizing boards, a majority of whose members were examiners-in-chief designated by the Commissioner. It also seems clear to me that the changes in language made in section 7 do not permit more than one "primary examiner" acting by designation as an examiner-in-chief to serve on any one board.

I shall now consider Assistant Commissioner Reynolds' interpretation of the statute under which any number of examiners-in-chief, acting by designation of the Commissioner, may act on a given board so long as not more than one of them is of primary examiner grade. I shall first consider the statutes. As above set forth, it seems clear that in 1946 Congress intended and provided that but one designated examiner-in-chief could act on any given board of appeals panel. The 1950 provision for designated examiners-in-chief was added by amendment in the House to a Senate sponsored bill without any discussion as to whether a change in law was contemplated. Only a literal reading of the 1950 law in a vacuum supports the conclusion underlying Assistant Commissioner Reynolds' decision that Congress reversed its policy and so changed the limitation that it applied only to "primary examiners" designated as examiners-in-chief and did not apply if the designated examiner-in-chief had a grade "higher" than the primary examiner grade. I cannot agree with Assistant Commissioner Reynolds that Congress intended to so change this limitation in the statute. To do so requires one to ignore and negate the contrary expressions of Congress in 1952 and 1958–59.

In 1952, Congress first employed the expression "such primary examiner" in the statute. I have not been able to ascertain whether such change was made as a "change in English" or whether that phrase was meant to include as a class examiners-in-chief designated by the Commissioner from "primary examiner grade or higher."

The Revisor's note refers to the changes made as "some changes in language" and does not suggest that any substantive changes were made in the section.

One thing which appears clearly is that Congress at all times has considered designated examiners-in-chief, *as a class*, to be a temporary expedient utilizing persons of unproven ability and its recognition that many of them, *regardless of grade*, might be unqualified for Presidential appointment under section 3 as examiners-in-chief.

I shall next consider the precedents which exist as to the construction of section 7. In *Ex parte Beyerstedt*, 103 USPQ 189 (Bd. App. 1952) the board held that section 7 only prohibited more than one primary examiner designated as an examiner-in-chief from acting on a board. This decision arose under the terms of the 1950 law and the opinion of the board does not reveal any investigation as to congressional policy or intent. The decision was joined by two designated examiners-in-chief, with the regular board member writing the opinion.

I also note some forty decisions cited by the solicitor in his brief wherein two designated members sat on the board. No challenge as to the validity of the board was made in those cases. The solicitor argues:

> It is submitted that, since the construction of a statute by an agency charged with its administration is ordinarily given great weight—*U.S.* v. *Amer. Trucking Asso.* 310 U.S. 534—no reason exists for disagreeing with or modifying the

interpretation placed upon the statute by the Patent Office, as exemplified by the Commissioner's decision in the involved application. * * *

In *American Trucking* the Supreme Court *agreed* with the Interstate Commerce Commission's decision that its authority under the statute was *limited* to securing safety of operation. In answer to arguments urging an opposite construction, the court's opinion states, concerning legislative intent, "in fact the evidence points the other way." 310 U.S. at 548. Here, we are presented with an attempt to expand authority, in face of conflicting evidence and statutory limitations, by the construction placed on the statute by Assistant Commissioner Reynolds. Moreover, we are not bound by previous exercises of jurisdiction in cases in which power to act was not questioned. *Brown Shoe Co.* v. *United States*, 370 U.S. 294, 307, 363 (1962).

The solicitor also argues that to hold the board to be improperly constituted would "cast a cloud" upon patents resulting from decisions of other boards similarly constituted. This consequence is at best argumentative and no authorities have been cited for our consideration in determining whether it is relevant to the issue of jurisdiction. As stated earlier, we are here dealing with an issue of jurisdiction as to which we have no choice but to consider this issue. The ultimate consequence of the decisions of such illegally constituted boards is the responsibility of the Commissioner, whose acts gave rise to the problem.

On the question of the effect of a finding of lack of jurisdiction in relation to previous judgments and decisions certain guidelines are found in *Chicot County Dist.* v. *Baxter State Bank*, 308 U.S. 371 (1940). The Supreme Court had previously declared a jurisdictional statute under which the district court had acted to be unconstitutional. *Ashton* v. *Cameron County Dist.*, 298 U.S. 513 (1936). In *Chicot* it refused to set aside a final judgment and decision rendered before the statute was held unconstitutional. While district courts were without jurisdiction to entertain such matters after *Ashton*, all judgments which had become final before *Ashton* were binding on all parties and not subject to collateral attack. Viewed in retrospect, the district court did not have jurisdiction but the court stated, after extensive analysis, "The past cannot always be erased by a new judicial declaration." 308 U.S. at 374. Previous judgments were thus valid.

The solicitor urges that the designation of boards is a matter of "discretion." However, in *Fed. Trade Comm.* v. *Raladam Co.*, 283 U.S. 643, 649 (1931) the Supreme Court stated:

* * * Official powers cannot be extended beyond the terms and necessary implications of the grant. If broader powers be desirable they must be conferred by Congress. They cannot be merely assumed by administrative officers; nor can they be created by the courts in the proper exercise of their judicial functions.

We cannot ignore or merely pay lip service to the fact that examiners-in-chief are appointed by the President with the advice and consent of the Senate and that they must be selected from a class of persons having competent legal knowledge and scientific ability. Compare *Ramspeck* v. *Trial Examiners Conf.*, 345 U.S. 128 (1953); *United States* v. *L. A. Tucker Truck Lines, Inc.*, 344 U.S. 33 (1952).

The safeguards which Congress enacted to insure an independent quasi-judicial type of review by the Board of Appeals must not be ignored. To do so is to legislate by administrative or judicial fiat and this is not a legitimate function either of the Commissioner of Patents

or of this court. Pursued to its logical conclusion, the Commissioner's interpretation of the second paragraph of 35 U.S.C. 7 could create boards of appeal composed entirely of examiners-in-chief designated by the Commissioner of Patents. The only limitation, according to the Commissioner's interpretation, is that not more than one of the so designated examiners-in-chief be of a "primary examiner" grade. It is significant, I think, that the designation of an examiner as "primary examiner" or title of higher grade is determined by the administrative regulations of the Patent Office. The particular name given from time to time to the functions of the members of the examining corps has been determined by the Commissioner by appropriate administrative order. Acting examiners-in-chief under the Commissioner's interpretation could be designated from any class of examiners having a title which suggests that they may have a grade higher than the primary examiner grade. Under the decision of Assistant Commissioner Reynolds a valid board of appeals could be composed of persons having little more expertise than a primary examiner so long as they have a "higher" grade. This could be in name only and perhaps be but remotely associated with the functions and skills required of one who becomes an examiner-in-chief by Presidential appointment. Entire boards could be selected from these "higher" classes of designated examiners-in-chief whose sole authority to act is derived from the Commissioner. What then becomes of the concept that the appeal in the Patent Office should be decided by boards, a majority of whose members are authorized to act by reason of Presidential appointment and Senate confirmation? Throughout the legislative history pertinent to the exception expressed in section 7 it is evident that Congress intended to provide an independent appeal and to this end provided that not more than one examiner of primary grade could be designated on a given panel. The reasons are apparent. The primary examiner has the lowest level of experience and perhaps of expertise of those qualified to serve on the Board of Appeals. Since the appeal is taken from a decision made by another primary examiner it seems both reasonable and logical to require that the appeal board be composed of a majority of members whose qualifications to so act have been determined by the President with the advice and consent of the Senate and who may act independently of the Commissioner. Manifestly, wherein lies an independent review if a majority or the whole of the board lacks expertise, are acting on a trial basis and under the close scrutiny of the Commissioner, and are but a step removed or equal to the title of the person whose decision is under review? Independent review by superiors with expertise is in effect lost. I think the basic requirements of an independent appellate review simple would not be met under the interpretation here advanced by Assistant Commissioner Reynolds in upholding the legality of the board here in question. Further, under his interpretation, the limited authority now vested in the Commissioner would be extended beyond anything I have been able to ascertain was intended by Congress. In fact, my view is that it is contrary to the intent demonstrated.

Finding as I do on the record before us that the board below was improperly constituted in violation of the second paragraph of 35 U.S.C. 7, I would find that no valid decision was rendered on appellant's appeal from the decision of the primary examiner. The purported decision entered by the board in this case is a legal nullity.

It seems to me, therefore, to be our clear duty to dismiss the appeal for we are lacking in jurisdiction to proceed to a consideration of such a decision. *Ayrshire Collieries Corp.* v. *United States*, 331 U.S. 132, 144 (1947).

I would, therefore, dismiss the appeal.

U.S. Court of Customs and Patent Appeals

IN RE APPAREL, INC.

No. 7659. Decided October 20, 1966

[54 CCPA —; 366 F.2d 1022; 151 USPQ 353]

1. TRADEMARK — CONFUSING SIMILARITY — COMPOSITE MARKS CONTAINING "PEACHES 'N' CREAM" FOR CHILDREN'S DRESSES AND "PEACHES AND CREAM" FOR PIECE GOODS AND TOWELLING.

Upon considering a decision of the Trademark Trial and Appeal Board affirming the refusal to register appellant's composite mark containing "Peaches 'n' Cream" for children's dresses on the ground of likelihood of confusion with the registered composite mark containing "PEACHES and CREAM" for piece goods and towelling, *Held* that "• • • we find no fault with the Board's decision • • •."

2. SAME—SAME—OPPOSITION.

"The only observation we would add to it is that where *likelihood* of confusion, mistake, or deception, is as clear as it is in this case—albeit that is admittedly a subjective judgment—we cannot agree with appellant that 'the public interest and the rights of the parties are better served' by passing the application to publication in order to see whether the owner of the reference registration will oppose. Not only does the act impose on the Patent Office and on us the duty to make the subjective judgment but it is intended, we feel, to afford rights to registrants without constantly subjecting them to the financial and other burdens of opposition proceedings. Appellant has not made out the kind of a case in which we feel such a possible burden should be placed on the registrant. The earlier user and earlier registrant would be entitled to the benefit of any doubt on this score. But we have no doubt."

APPEAL from the Patent Office. Serial No. 102,178.

AFFIRMED.

F. M. de Rosa for appellant.

Joseph Schimmel (*George C. Roeming*, of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH and ALMOND, JR., *Associate Judges*

RICH, *J.*, delivered the opinion of the court.

This appeal is from the decision of the Trademark Trial and Appeal Board, 144 USPQ 330 (1964), affirming the rejection of application Serial No. 102,178, filed August 8, 1960, to register, on the Principal Register, a composite mark consisting of the words "Peaches 'n' Cream" appearing over the skirt portion of what purports to be the outline of a child's dress. First use August 10, 1947, is alleged. The goods are "children's dresses."

The reference on which the application was rejected is a registration under the 1905 Act of a mark for "cotton piece goods, linen piece goods, and towelling," Reg. No. 177,366 of December 18, 1923. This registration, to The Carl Company, of Schenectady, N.Y., has been twice renewed and was republished under section 12(c) of the 1946 Act, and under the latter act an affidavit under section 8 has been accepted and an affidavit under section 15 filed. The registered mark is also a composite mark consisting of a rectangular picture showing a hand pouring cream from a pitcher into a dish of cut-up peaches partly submerged, beside which is a bowl of sugar and a half peach, the upper left portion of the rectangle being prominently occupied by the words "PEACHES and CREAM."

The Examiner refused registration under section 2(d) on the ground of likelihood of confusion and wrote an extensive answer fully explaining her reasons. The Board affirmed in an opinion which approved the Examiner's reasons and answered appellant's principal arguments.

[1] Having fully considered appellant's arguments in this court, we find no fault with the Board's decision and affirm it on the basis of the reasoning in its opinion.

[2] The only observation we would add to it is that where *likelihood* of confusion, mistake, or deception, is as clear as it is in this case—albeit that is admittedly a subjective judgment—we cannot agree with appellant that "the public interest and the rights of the parties are better served" by passing the application to publication in order to see whether the owner of the reference registration will oppose. Not only does the act impose on the Patent Office and on us the duty to make the subjective judgment but it is intended, we feel, to afford rights to registrants without constantly subjecting them to the financial and other burdens of opposition proceedings. Appellant has not made out the kind of a case in which we feel such a possible burden should be placed on the registrant. The earlier user and earlier registrant would be entitled to the benefit of any doubt on this score. But we have no doubt.[1]

The decision of the Board is affirmed.

AFFIRMED.

[1] The writer's views as expressed in his concurring opinion in *In re National Distillers & Chem. Corp.*, 49 CCPA 854, 297 F.2d 941, 132 USPQ 271 (1962) (the Merito case), strongly urged upon us in appellant's brief, are from such a very different context as not to be pertinent here.

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

2,512,621, J. H. Emerson, THERAPEUTIC VIBRATOR, **filed** May 9, 1966, D.C., W.D. Mo. (Kansas City), Doc. 16008–1, *Associated Mills, Inc.* v. *Songrand Corporation*. Judgment dismissing complaint with prejudice and all claims which plaintiff may have had against defendant or defendant's customers are waived as the patent has expired, defendant's counterclaim becomes moot, Sept. 21, 1967.

2,571,435, A. L. Flamm, GAS FUELED CIGAR LIGHTER; **2,620,643**, W. I. Nissen, GAS LIGHTER; **2,836,044**, C. Zellweger, LIQUEFIED GAS LIGHTERS; **2,882,940**, same, FILLING VALVES FOR LIQUEFIED GAS LIGHTERS; **2,710,506**, same, VALVES FOR FILLING PYROPHORIC LIGHTERS FOR LIQUEFIED GAS, **filed** Apr. 15, 1964, D.C.N.J. (Newark), Doc. 347–64, *Bernhard Kollisch, doing business as Gebruder Kollisch* v. *Ronson Corporation*. Stipulation and order of dismissal, without costs, Sept. 19, 1967.

2,610,910, A. F. Thomson, NEOPRENE-PHENOLIC ADHESIVE CEMENT, **filed** Oct. 18, 1963, D.C., E.D. Mich. (Detroit), Doc. 24499–C, *Minnesota Mining and Mfg. Co.* v. *Kent Industries, Inc.* Final order that claims 1–10 of the patent, issued Sept. 16, 1952, are invalid and unenforceable dismissing plaintiff's complaint for patent infringement with prejudice, Sept. 15, 1967.

2,613,108, G. F. Kraus, FLUID DISPENSERS; **2,967,643**, Edelstein, Glickstein, INTERMITTENT VALVE ACTUATING ASSEMBLY FOR ATOMIZING DEVICES, **filed** Apr. 27, 1965, D.C., W.D. Tex. (San Antonio), Doc. 3536–C, *Syncro-Mist Controls, Inc. and George F. Kraus* v. *Hunter Products Corporation*. Consent judgment, defendant perpetually enjoined and restrained from directly or indirectly making, using or selling dispensers which are infringements of U.S. Letters Patent Nos. 2,613,108, and/or 2,967,643, Sept. 19, 1967.

2,620,643. (See 2,571,435.)

2,670,665, S. H. Caldwell, OPTICAL SYSTEM FOR PHOTOGRAPHIC COMPOSING APPARATUS; **3,332,617**, Higonnet, Moyroud, TYPE COMPOSING APPARATUS, **filed** Sept. 22, 1967, D.C. Kans. (Kansas City), Doc. KC–2708, *Photon, Inc.* v. *Mission Photo-Composition, Inc.*

2,710,506. (See 2,571,435.)

2,753,694, Trow, Nelson, ICE DISINTEGRATING AND CHIP DELIVERING SPIRAL ICE CHIP PRODUCNG MACHINE; **3,034,311**, M. L. Nelson, ICE MAKING APPARATUS, **filed** Jan. 11, 1967, D.C., W.D. Wis. (Madison), Doc. 67–C–5, *King-Seeley Thermos Co.* v. *Nor-Lake, Incorporated*. Consent judgment, Sept. 19, 1967.

2,791,843, S. Warren, FLASH RECOGNITION TRAINING DEVICE, **filed** July 15, 1966, D.C., N.D. Ill. (Chicago), Doc. 66c1319, *Better Reading Program, Inc.* v. *Reading Improvement Program, Inc.* Stipulation and order dismissing with prejudice, Sept. 20, 1967.

2,836,044. (See 2,571,435.)

2,865,464, R. Gorike, UNIDIRECTIONAL DYNAMIC MICROPHONE, **filed** Sept. 18, 1967, D.C., W.D. Tenn. (Memphis), Doc. C–67–253, *Akustische u. Kino-Gerate Gesellschaft m.b.H.* v. *Mrs. Cora S. Wooten, doing business as W & W Distributing Co. and Gulton Industries, Inc.*

2,882,940. (See 2,571,435.)

2,902,672, I. M. Hart, TIME-CONTROLLED ACTIVATED VEHICULAR SPEED LIMIT SIGNAL, **filed** Sept. 7, 1967, D.C., C.D. Calif. (Los Angeles), Doc. 67–1316–R, *Winko-Matic Signal Co.* v. *Tamar Electronics Industries, Inc., and Econolite Corp.*

3,034,311. (See 2,753,694.)

3,041,430, H. W. Hults, ELECTRIC SWITCHES, **filed** Mar. 3, 1966, D.C., N.D. Ill. (Freeport), Doc. 66–C–9, *Cutler-Hammer, Inc.* v. *Honeywell, Inc.* Dismissed upon stipulation of parties, Sept. 20, 1967.

3,042,994, H. Ruggeberg, ROTARY FILES, **filed** Sept. 14, 1964, D.C., N.D. Ill. (Chicago), Doc. 64c1544, *R & R Carbide Mfg. Co. Inc.* v. *The Metal Removal Co.* Stipulation motion order cause dismissed without prejudice, Sept. 18, 1967.

3,047,196, Levine, Phillips, GARMENT HANGER, **filed** Sept. 20, 1967, D.C., E.D.N.Y. (Brooklyn), Doc. 67–C–900, *Bernard Plastics Molding Corp.* v. *Mr. Hanger Inc.*

3,243,273, C. C. Bland, METHOD AND APPARATUS FOR PRODUCTION OF GLASS BEADS BY DISPERSION OF MOLTEN GLASS, **filed** Sept. 19, 1967, D.C., E.D. Okla. (Muskogee), Doc. 67–176–C, *General Steel Industries, Inc., doing business as Flex-O-Lite Division* v. *Corning Glass Works, Inc.*

3,245,444, C. E. Strombeck, BARK STRIPPING MECHANISM; **3,312,259,** same, **filed** Sept. 20, 1967, D.C. Calif. (San Francisco), Doc. 47876, *Carl Strombeck* v. *John Rycraft et al.*

3,245,719, L. H. Davidson, HEAD REST, **filed** Sept. 14, 1967, D.C., C.D. Calif. (Los Angeles), Doc. 67–1352–FW, *Pacific International Plastics, Violet Davidson* v. *Sterling Plastics Corporation and Sterling Products Co., Inc.*

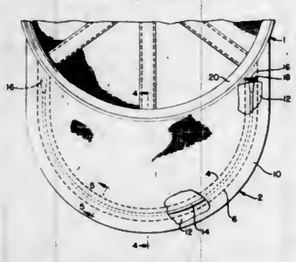
3,312,259. (See 3,245,444.)

PATENTS

GRANTED DECEMBER 12, 1967

GENERAL AND MECHANICAL

3,357,026
CAP BILL STIFFENER
Ralph C. Wiegandt, Lawton, Okla.
(201 Jackson Ave., Lexington, Va. 24450)
Filed July 2, 1965, Ser. No. 469,089
2 Claims. (Cl. 2—195)



1. In combination with a cap having a lower edge and a generally crescent-shaped flexible bill attached at said lower edge, said bill having a covering on the upper and lower surfaces thereof;

curvilinear spaced apart rows of stitching adjacent the outer peripheral edge of the bill securing said bill and said covering together and extending in a continuous manner adjacent said outer peripheral edge forming an elongated pocket between said covering and said bill;

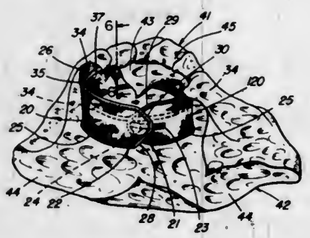
said elongated pocket having ends terminating adjacent to the lower edge of the cap;

means forming an aperture in said covering of the lower surface of said bill intermediate said spaced apart rows of stitching and near one end of said pocket;

an elongated deformable resilient stay inserted through said aperture and into said pocket; whereby:

said stay may be deformed to arcuately shape said bill and said stay may be readily removed from said pocket to thereby facilitate storing and laundering of the cap.

3,357,027
HEAD COVERS
Margaret M. Fell, New York, N.Y.
(1 Brandywyne, Brielle, N.J. 08730)
Filed Mar. 21, 1966, Ser. No. 536,110
7 Claims. (Cl. 2—198)



1. A head cover comprising, in combination,

(A) an elongated strip of sheet material of appreciable width and of sufficient length and longitudinal flexibility to be curled into a head-encircling band with its opposed ends juxtaposed, said strip being curled into such a frame band and having sufficient transverse stiffness to make said band upstandingly self-supporting when a lower circular zone thereof is fitted about the top of a person's head and of sufficient strength to support a decorative cover draped thereover,

(B) means fastening together said juxtaposed ends to maintain at least temporarily the encircling shape of said band,

(C) a cover of flexible sheet material draped over the top of said frame band and having depending side portions,

(a) an elongated cuff comprising a strip narrower than said elongated strip and of similarly appreciable transverse stiffness and longitudinal flexibility as said elongated strip mounted inside the lower circular zone of said band with this lower circular zone of the latter and the bottom edge of said cuff being longitudinally connected together and with said cuff lapping the inside face of said band,

(b) at least the major portion of the top longitudinal edge of said cuff being free of connection to said band inside face whereby an elongated pocket is defined between said cuff and the band inside face,

(c) parts of at least some of said side portions of said flexible cover encompassing the outer side of said band, the connected bottom portions of said band and cuff, the inside face of said cuff, and the top edge of the latter and tucked into said pocket.

3,357,028
GARMENT STAY
Constance A. Laniado, 3725 Henry Hudson Parkway, Riverdale, N.Y. 10471
Filed June 14, 1965, Ser. No. 463,710
5 Claims. (Cl. 2—256)



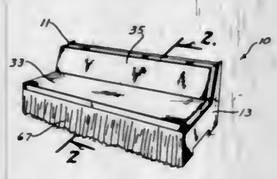
1. A garment stay comprising an oblong body strip of plastic material longitudinally resilient and of substantially rectangular cross section, the obverse and reverse faces of the strip having therein a plurality of transverse grooves perpendicular to the longitudinal median of the strip and spaced apart longitudinally thereof, the surface areas between the grooves on at least one of said faces having thereon a plurality of parallel ribs extending longitudinally of the strip.

3,357,029
TOILET VENTILATING APPARATUS
Walter Schulz, 134 Westmount Ave., Toronto 10, Ontario, Canada
Filed Oct. 1, 1965, Ser. No. 491,913
1 Claim. (Cl. 4—217)



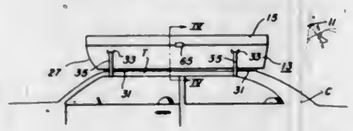
In toilet ventilating apparatus of the kind including a toilet bowl, a seat, said seat having a dished under surface, and air deflecting means comprising rearwardly converging side members depending from the under surface of said seat and discharging air rearwardly between said side members, the improvement comprising: a ventilator casing extending transversely of said bowl behind said seat, said casing having an interior air collecting chamber extending transversely with repect to said bowl and having a face contiguous to and parallel with said seat at the rear thereof, said air collecting chamber having an opening along its front face throughout the horizontal extent of the air discharge area between said converging side members to receive air discharged from said air deflecting means, a cover for said seat, said ventilator casing having hinged connection with said seat and said cover, said air collecting chamber being inclined downwards and rearwards and at points contiguous to the sides of said bowl being formed to provide rearwardly extending discharge members, said ventilator casing having a substantially horizontal member constituting the bottom of said air collecting chamber, said air collecting chamber having a top wall of substantially arcuate cross section inclined downwards into meeting contact with said bottom between said discharge members, a pipe venting into the outer atmosphere, suction means within said pipe, and air conducting means leading from said discharge members to said vent pipe.

3,357,030
FOLDABLE BED
Gary L. George, 208 19th St. N., Northwood, Iowa 50459
Filed Aug. 26, 1966, Ser. No. 575,352
3 Claims. (Cl. 5—41)



1. In a foldable bed,
a supporting frame means including a horizontal disposed frame assembly and frame member disposed thereabove,
a sheet means comprised of a plurality of rigid sheet members secured together by hinge means, said sheet means being movable on said supporting frame means between first and second positions, said sheet means being horizontally disposed on said frame means with all of said hinge means resting on said horizontal frame assembly when in said first position thereby serving as a bed, said sheet means having one of its sheet members in a horizontal position on said frame assembly and a second sheet member extending upwardly therefrom and operatively supported by said frame member when in said second position,
and a cushion means comprised of front, intermediate, and rear cushion members pivotally secured together and being movable between first and second positions on said sheet means, said cushion means being horizontally disposed on said sheet means when said sheet means and said cushion means are in their first positions, said front cushion member being horizontal with said intermediate cushion member, said rear cushion member and said second sheet member parallel to each other and extending upwardly and rearwardly from said front cushion member when said cushion means and said sheet means are in their second positions.

3,357,031
CAMPING AND BOATING OUTFIT
Billy M. Edwards, 2000 St. Elmo Ave., Memphis, Tenn. 38127
Filed June 15, 1966, Ser. No. 557,836
7 Claims. (Cl. 9—1)



1. A camping and boating outfit comprising a base including a bottom panel, end panels attached to and extending upwardly from opposite ends of said bottom panel, side panels attached to and extending upwardly from opposite sides of said bottom panel and interconnecting said end panels adjacent opposite ends thereof; said base being watertight and for selectively providing floating hull means when used for boating and floor and wall means when used for camping; and an upper member removably supported on top of said base, said upper member including a substantially horizontally disposed portion and unfoldable leg portion means for selectively supporting said horizontally disposed portion in spaced relationship above said base, said unfoldable leg portion means including a pair of leg portions at opposite ends of said horizontally disposed portion, and means for securing said leg portions to said base when said horizontally disposed portion is supported in spaced relationship above said base.

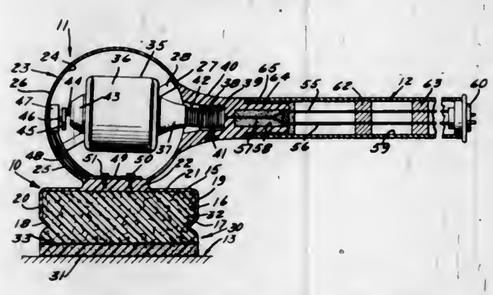
3,357,032
LIFE VEST, CUSHION AND LIKE PNEUMATIC DEVICE
Gurdon S. Worcester, High St., Gloucester, Mass. 01930
Filed Feb. 16, 1966, Ser. No. 527,792
5 Claims. (Cl. 9—338)

1. A pneumatic device comprising an outer waterproof casing of flexible sheet material forming a closed chamber, a filler of spongy material normally tending to hold said chamber expanded with the mass of the filler and a substantial volume of air, valve means operable to open the chamber to the atmosphere and for sealing said chamber against the admission of air into and exhaustion of air from said chamber, said material being resiliently collapsible to permit compaction of said device and depletion of air when said valve means opens said chamber to the atmosphere, said valve means, when closed thereafter, holding said device compacted, and said valve means, when opened, allowing said device to



self-inflate, and mechanical means attached to said casing for compacting substantially all of the filler and thereby expelling substantially all of the air from the casing.

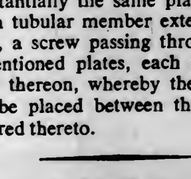
3,357,033
SONIC SURFACE CLEANER
Harold T. Sawyer, Los Angeles, Calif., assignor of seventeen and one-half percent to Vernon D. Beehler, Los Angeles, Calif.
Filed Aug. 17, 1965, Ser. No. 480,310
17 Claims. (Cl. 15—98)



3. A portable appliance for sound energy application to a subject on which work is to be performed comprising a hollow shell of relatively stiff resilient consistency having a chamber therein, said shell having a supporting structure thereon having a junction with the shell, said shell being out of engagement with the subject, a portable power actuated cyclically movable mass in the chamber, a first resilient connection between said mass and said supporting structure in line with the axis of cyclical motion of said mass, a tool member having an attachment to the shell at one location on the shell for application of work energy to the subject, a second connection between the shell and the mass, said second connection having one end thereof in engagement with the shell at the attachment thereof with the tool member in a line substantially radial with respect to said direction of cyclical motion and the other end movably attached to the end of the mass opposite from said first connection whereby to pass energy generated by the mass to said subject.

3,357,034
APPLICATOR PAD
Cora May Clare, 373 Farmington Ave., Hartford, Conn. 06105
Filed Jan. 17, 1966, Ser. No. 520,975
7 Claims. (Cl. 15—104.93)

1. A prefolded applicator pad comprising a generally rectangular sheet including an elongated longitudinaly extending lower edge and having transversely opposite end portions folded inwardly along first and second fold lines inclined inwardly and upwardly from the lower corners thereof, said sheet having the upper corners thereof disposed proximate the center thereof so that two triangular portions overlie the face thereof, said sheet so folded being folded along a longitudinally extending third fold line generally bisecting said sheet, said triangular portions lying generally between the third fold and the generally



underlying face of said sheet, the resultant structure being folded along a fourth fold line extending generally normal to said lower edge and bisecting said sheet, all of the previous folded portions lying between said fourth fold and said underlying face so that a pad is formed having a quadrilateral configuration and including one skew edge, said lower edge and said skew edge defining an extending corner portion.

3,357,035
BRUSH AND ROLLER EXTENSION POLE
Ralph Ficke, 5035 W. 24th Place, Cicero, Ill. 60650
Filed Feb. 8, 1965, Ser. No. 430,914
2 Claims. (Cl. 15—144)

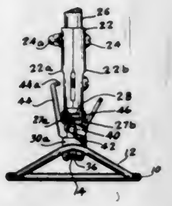


1. A brush and roller extension, comprising a pole, a socket secured to the upper end of the said pole, and a pair of plates one of which is secured to each side of an extension of the said socket by means of a screw having a wing nut thereon and a brush or roller holding mechanism which embodies a second pair of plates adjacent to and in substantially the same plane as the first mentioned plates, a tubular member extending between both pairs of plates, a screw passing through each corner of the second mentioned plates, each screw being secured by a wing nut thereon, whereby the handle of a brush or roller can be placed between the second mentioned plates and secured thereto.

3,357,036
PERMANENT FRAME MOP HEAD WITH ADJUSTABLE HANDLE LOCK
Lynn E. Goldstein and Larry D. Cook, Dallas, Tex., assignors to Texel Industries, Inc., Cleburne, Tex.
Filed Oct. 23, 1965, Ser. No. 503,912
1 Claim. (Cl. 15—147)

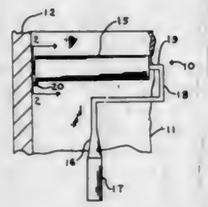
A mop head construction, comprising a frame and a handle bracket, said frame having a substantially rectangular shape and a center member, said center member having a substantially rectangular shape in plan view,

a substantially inverted V-shape in side view wherein the vertex of the V-shape is above the plane of said frame and a cross bar which is positioned at said vertex and which is parallel to a longer side of said frame, said handle bracket being removably attached to said cross bar and being pivotable about said cross bar, said handle bracket being comprised of a lower portion, an upper portion and a hinge pin, said lower portion having a forked clamp member having two slotted guide plates adapted to receive said cross bar and a spring urged pivoted hook which in its rest position extends around said cross bar so as to prevent removal of said cross bar from said slotted guide plates and which may be pivoted



away from said rest position so as to permit removal of said cross bar from said slotted guide plates, said upper portion having a tubular handle receptacle and a pair of opposed extensions, said hinge pin being located by and between said opposed extensions and, when said handle bracket is attached to said cross bar, being located in a plane which is perpendicular to said cross bar, said lower portion of the handle bracket being pivotally secured to said hinge pin, said lower portion additionally having a pivoted locking plate which is adapted to selectively engage and disengage said tubular handle receptacle and which, when so engaged, prevents relative angular movement between said upper portion and said lower portion.

3,357,037
PAINT ROLLER
Charles M. Kaplan, 225 Powell, Clarendon Hills, Ill. 60514
Filed Sept. 27, 1965, Ser. No. 490,400
12 Claims. (Cl. 15—230.11)



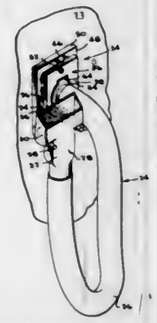
1. A paint roller comprising a rotatable paint-absorbing member for applying paint to a first surface, means for supporting said member, means for actuating said member being connected to and extending beyond one end of said member, and means for preventing said member from contacting a second surface at an angle to said first surface comprising means freely movable in any direction and also freely rotatable in any direction supported within said member and having a portion thereof extending beyond the opposite end of said member for contacting said second surface while paint is being applied to said first surface.

3,357,038
BRUSH APPARATUS
Burr Williamson, Basking Ridge, John L. Voellmicke, Jr., Sussex, and Vello H. Ebrok, Plainfield, N.J., assignors to Danline Manufacturing Company, Kenilworth, N.J., a corporation of New Jersey
Filed Aug. 19, 1966, Ser. No. 573,575
7 Claims. (Cl. 15—183)



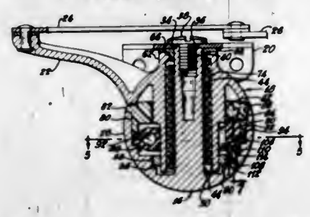
7. Rotary brush apparatus comprising elements which are a cylindrical bristle holder having a cap and throat, and a tuft of bristles inserted in the throat, wherein said elements comprise like materials, and wherein each of said elements is fused into the other.

3,357,039
VACUUM SYSTEM CONTROL
Norman G. Hayward, 6808 Duke Drive, Alexandria, Va. 22307
Filed Nov. 29, 1965, Ser. No. 510,306
2 Claims. (Cl. 15—314)



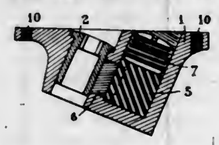
1. In a vacuum system which includes at least one suction duct having a terminal end and an electrical control for said system, a combined nozzle outlet and control comprising:
- a plate assembly mounted adjacent the terminal end of the duct;
- a conduit element connected to the plate assembly and to the terminal end of the duct;
- rod means operatively associated with the conduit element;
- coupling means on the plate assembly for an implement, the implement being positioned for fluid communication and the conduit element and the duct;
- valve means connected to the rod means for selectively opening and closing the conduit;
- electrical switch means operatively associated with the rod means;
- a control lever connected to the rod means;
- spring means connected to the control lever to constantly bias the lever in one direction to a position wherein the switch means is activated and the electrical control operates the system, and wherein the valve means is opened; and
- an implement hanger on the control lever, the engagement of an implement on said hanger moving the lever against the spring bias to deactivate the control and close the valve.

3,357,040
DOOR CLOSER
Robert D. MacDonald, Adrian, Mich., assignor to Cardinal of Adrian, Inc., a corporation of Michigan
Filed Mar. 10, 1965, Ser. No. 438,515
8 Claims. (Cl. 16—51)



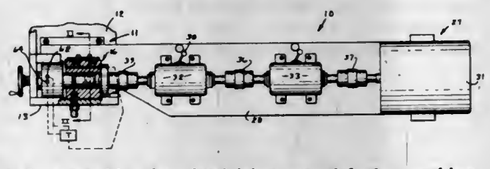
1. A door closer comprising a housing defining a chamber, means for attaching said housing to one of a door and a door jamb, an endless flexible tube in said chamber said tube having an arcuate portion of a predetermined radius, fluid in said tube, a pressure member movable in an arcuate path, said member being capable of engaging and deforming at least a portion of said tube in at least a portion of said path, an arm, means for attaching said arm to the other of said door jamb and said door, means connecting said arm and said pressure member to move said pressure member in its path as the door is opened and closed, the path terminating at one end when the door is in its open position and terminating at the other end when the door is in its closed position, means associated with said door for urging the door toward the closed position, and means forming a restriction in said tube with the length of the tube between said tube portion and said restriction in one direction around said tube substantially exceeding the length of the tube between said tube portion and said restriction in the other direction at least when the door is closed and partially opened, said one direction being the same as the direction said pressure member moves in its path as the door is opened, whereby when the pressure member moves toward said restriction when the door is moved toward the closed position, most fluid is forced through said restriction, whereas when the pressure member moves away from said restriction when the door is moved toward the open position, fluid forced through the tube by said pressure member has a greater tendency to expand that portion of said tube between the pressure member and said restriction in said one direction around said tube to provide less resistance to movement of the door when being opened than when being closed.

3,357,041
BRAKING DEVICE FOR HOLDING A PIVOT PIN AGAINST MOTION
Antoine Brueder, Paris, France, assignor to Societe Anonyme Andre Citroen, Paris, France
Filed Oct. 6, 1964, Ser. No. 401,837
Claims priority, application France, Oct. 9, 1963, 950,061, Patent 1,380,580
4 Claims. (Cl. 16—168)



1. A device for mounting on a frame structure the end of a pivot pin solid with a member to be rotated in relation to said structure, which comprises a body provided with a flange for securing the device to said frame structure, a recess formed in said body under said flange and leading to the outside by means of two apertures formed through said flange, one of said apertures having a plain cylindrical wall adapted to receive the pivot pin, the second aperture being internally screw-threaded, a friction member slidably mounted in said recess and having a part-cylindrical concave face engaging said pivot pin, an elastomer pad, means confining said pad in said recess in resilient engagement with said friction member and adapted to urge said concave face of said friction member against the end of said pivot pin, and a screw engaging said tapped second aperture and adapted to be rotated from the outside of said flange for adjusting the pressure exerted by said elastomer pad against said friction member.

3,357,042
SMALL AREA ROTATING CONE PLASTICIZER
James W. Hendry, Scottsburg, Ind., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed May 28, 1965, Ser. No. 459,673
10 Claims. (Cl. 18—2)

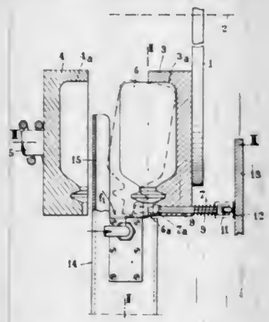


1. In a machine for plasticizing material, the combination comprising:
- a housing;
- a chamber in said housing having a substantially circular cross section;
- an inlet opening and an outlet opening communicating at axially spaced points through said housing with said chamber;
- an annular radially extending ridge on said housing extending into said chamber between said inlet and outlet openings;
- a rotatable shaft snugly disposed in said chamber and means for rotating said shaft, said shaft having an annular radially extending ridge thereon of maximum radius less than the minimum radius of said ridge one said housing and capable of placement in radial opposition thereto, said ridges defining an annular gap therebetween;
- means defining an annular inlet passage for connecting said inlet opening with one end of said gap and means defining an annular outlet passage for connecting said outlet opening with the other end of said gap;
- means for forcing material to be plasticized into said inlet opening and through said gap to frictionally work same between said ridges as said shaft rotates, and
- means for axially moving said shaft relative to said housing for permitting the ridge on said shaft to be positioned radially opposite the ridge on said housing or on opposite axial sides thereof.

3,357,043
DEVICE FOR THE EJECTION AND REMOVAL OF LIGHT OBJECTS MANUFACTURED BY MOLDING
Gilles Doucet, Saint-Jean-Vedas, France, assignor to Georges Lesieur & Ses Fils, Societe Anonyme, Paris, France
Filed Apr. 4, 1966, Ser. No. 539,953
Claims priority, application France, Apr. 12, 1965, 12,844, Patent 1,453,858
1 Claim. (Cl. 18—2)

A rotary molding machine comprising a circular plate, means for rotationally driving said plate about a horizontal axis, a plurality of molds mounted at the periphery

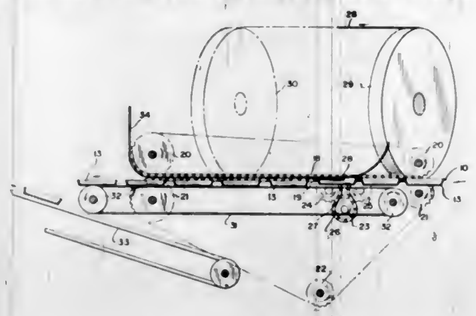
of the plate at regulator intervals, each of said molds comprising a fixed half-mold integral with the plate and a movable half-mold mounted for displacement relative to the fixed half-mold, for each mold a passage extending at right angles to the plane of separation of the half-molds through the fixed half-mold at a position adjacent the lower end thereof, an elongated ejector member slidably mounted in said passage, one end of the ejector member extending outside the mold, a spring biasing the ejector member to an inoperative position with the ejector member not extending into the impression defined by the fixed half-mold, a roller mounted on the end of the ejector member extending outside the mold, a ramp fixedly mounted adjacent to the path of rotation of the molds for periodic engagement with the rollers of the ejector members of the respective molds to urge the ejector member inwardly against the biasing of the spring to an operative position in which the inner end of the ejector member extends into said impression, a suction head fixedly positioned immediately beneath the plane of separation of the half-molds at the rotational position of the half-molds in which the roller of the ejector member of the mold is in engagement with the ramp, means for moving the movable half-



mold from a closed position with respect to the fixed half-mold to an open position as the mold, in its rotation, approaches the suction head, a screen mounted on the suction head and extending upwardly between the half-molds in a position spaced from and facing said impression, and a jet opening into the suction head and directed downwardly with respect to the suction head, said jet comprising means defining a throughpassage which opens externally of the suction head at one of its ends and internally of the suction head at the other of its ends and diverges towards its end openings and converges intermediate its end openings and an external source of compressed gas connected to the external end opening of the throughpassage, whereby during a molding operation, each mold sequentially rotates into a position above the suction head at which position the mold is open and the ejector member is operated by the engagement of the roller at its external end with the ramp to be projected into the impression, thus loosening the molded article from the impression, the screen prevents the molded article from being urged out of alignment with the suction head by the ejector member and the molded article is drawn into the suction head by the negative pressure created therein by the jet.

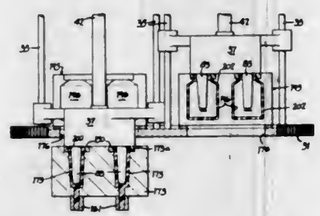
3,357,044
PRODUCTION OF SHAPED ARTICLES
Donald B. Roesner, Chicago, Ill., assignor to American Excelsior Corporation, a corporation of Delaware
Filed Apr. 6, 1966, Ser. No. 540,574
2 Claims. (Cl. 18—19)

1. Apparatus for producing a series of shaped articles from a continuous web of shapeable material, comprising: means for moving said web in a path; means for shaping said web during said movement thereof to produce said articles projecting from said web; means for separating said articles from said web during said movement to produce said series of articles and a continuous web remainder minus said articles, said means for sepa-



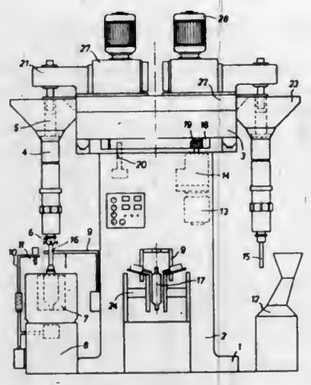
rating comprising a severing member movable continuously in a path arranged transversely to said web path and intersecting said web path; means for conducting said web remainder away from said means for separating; and means for conducting said articles away from said means for separating.

3,357,045
APPARATUS FOR INJECTION BLOW-MOLDING PLASTIC CONTAINERS
Lawrence D. Ninneman, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio
Filed Nov. 2, 1964, Ser. No. 410,343
7 Claims. (Cl. 18—5)



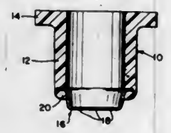
1. In an apparatus for making a plastic container having an injection molded neck and a blow molded body,
a vertically fixed, horizontally oscillatable plate;
means for oscillating said plate to a plurality of arcuately adjusted positions;
said plate having a plurality of apertures therethrough;
a plurality of injection molds carried by said plate for oscillation therewith and vertically aligned with said apertures, respectively;
means for vertically displacing said injection molds relative to said plate;
a single parison mold located beneath the plate in a fixed position and registering with successive apertures as said plate is moved to each of its said adjusted positions, respectively.
each of said injection molds being displaceable through its aligned aperture and into abutment with said parison mold, respectively when said aligned aperture registers with said parison mold,
blow mold sections mounted on said plate for oscillation therewith;
said blow mold sections being horizontally actuatable relative to said plate to a closed position overlying said apertures and to open positions straddling and apertures, respectively, and
means for actuating said blow mold sections.

3,357,046
APPARATUS FOR THE AUTOMATIC CONTINUOUS MANUFACTURE OF FILLED AND CLOSED CONTAINERS
Heinz Pechthold, Mudau, Odenwald, Germany, assignor to Etablissement Bonatex, Vaduz, Liechtenstein
Filed July 7, 1965, Ser. No. 470,122
Claims priority, application Austria, July 7, 1964, A 5,821/64
6 Claims. (Cl. 18—5)

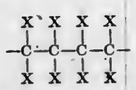


1. In apparatus for the automatic continuous production of filled and sealed containers formed by hollow bodies of thermoplastic material inserted in a mold in moldable condition, which bodies are expanded by the pressure filling method and the walls thereof applied against the wall of the mold, whereafter the molded and filled containers are sealed and removed from the mold, a tube extruder rotatable about a vertical axis, a plurality of stationary working stages each including molding, filling and sealing units disposed around said tube extruder, said units being equipped with conveyer means including tube severing and holding means for transferring sections of the extruded tube into said mold.

3,357,047
NOZZLE FOR SPINNING FIBERS AND METHOD OF MAKING SUCH NOZZLES
Alfred Keil, Wolfen, Kreis Bitterfeld, Heinz Mally, Dresden, and Hans Gruhl and Adolf Wölfl, Pirna, Germany, assignors to Veb Sachsisches Kunstseidenwerk Siegfried Radel, Pirna, Germany
Filed Aug. 20, 1965, Ser. No. 481,371
2 Claims. (Cl. 18—8)

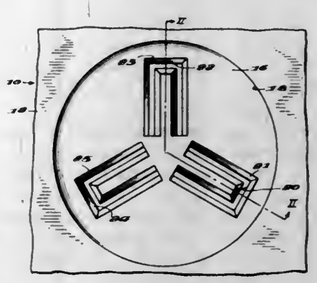


1. A composite nozzle for spinning synthetic fibers, said nozzle comprising a bottom portion made of a metallic material selected from the group consisting of noble metals and noble metal alloys, and a body portion consisting of a polymer material having the general formula



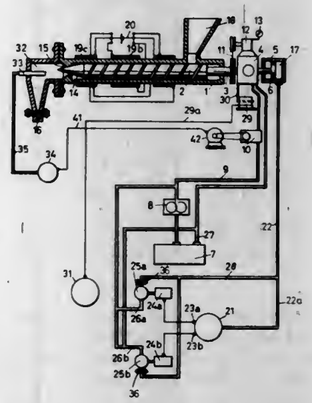
wherein X is partly substituted by fluorine and partly by chlorine, said body portion consisting of a walled shell with the rim of the bottom portion embedded in said wall.

3,357,048
SPINNERETTE
James Stanley Cobb, Jr., Martinsville, Va., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed May 27, 1966, Ser. No. 553,370
3 Claims. (Cl. 18—8)



1. A spinnerette plate having at least one nozzle extending therethrough to a complex orifice defined by at least three separate slots, each slot being U-shaped with a pair of rectilinear legs interconnected by a bight and opening toward the imaginary center of said orifice, said legs having lengths sufficiently great that imaginary arcs swung from the inner ends of adjacent legs of adjacent slots would intersect.

3,357,049
EXTRUDER CONTROL SYSTEM
Wolfgang Spindler, Eichendorffweg 17, Gerlingen, Germany
Filed Dec. 20, 1965, Ser. No. 515,027
Claims priority, application Germany, Dec. 18, 1964, S 94,690
6 Claims. (Cl. 18—12)



1. A system for controlling the flow of molten plastic through the die opening of an extruder,
(1) the extruder comprising
(a) an elongated cylindrical housing having a feed hopper at one end and an extrusion die with an opening at the other end, and
(b) an axially reciprocable, rotatable screw mounted in the housing, a torpedo carried by one end of the screw, a fixed ring arranged near the other end of the housing, the ring and the torpedo defining a constricted annular passage of a diameter varying with the axial position

of the screw, and the extrusion die defining a chamber between the annular passage and the die opening, the molten plastic in said chamber producing a back pressure loading the screw axially in one direction,

(c) an infinitely variable speed drive operatively connected to the screw for rotating the screw, and

(d) a pressure fluid operated piston operatively connected to the screw and loading the screw axially in a direction opposite to said one direction; and

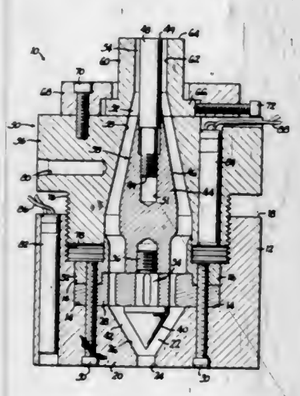
(2) the control system comprising

(e) pressure gage means arranged to measure the back pressure in said chamber,

(f) valve means respectively controlling the pressure fluid flow to and from the pressure fluid operated piston, the valve means being operatively connected to the pressure gage means and being responsive to the pressure measured thereby, and

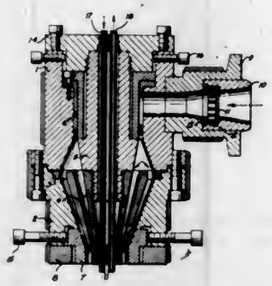
(g) electrical control means responsive to said back pressure and controlling the infinitely variable speed drive for regulating the rotational speed of the drive in response to the measured pressure.

3,357,050
APPARATUS FOR EXTRUDING PLASTICIZED MATERIAL
Donald H. Criss, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio
Filed Mar. 11, 1966, Ser. No. 533,648
7 Claims. (Cl. 18—14)



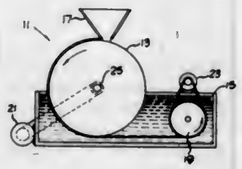
1. In an apparatus for extruding plasticized plastic material, an orifice structure capable of performing a valving function comprising a mandrel having a tapered surface between opposite ends thereof, an annular assembly surrounding said mandrel and defining therewith an annular passage extending through said annular assembly, said annular assembly including a support base having an inlet orifice bore therein at one end of said passage, means at the other end of said passage having an outlet orifice bore therein, means affixing said mandrel to said support base with said mandrel axially aligned with said inlet and outlet bores, and an annular orifice block surrounding said tapered surface of said mandrel and having a similarly tapered interior surface cooperating therewith to define a tapered gap portion of said passage between said inlet and outlet orifice bores, said orifice block threadedly engaging said support base and being axially movable upon rotation of said orifice block relative to said support base such that rotation of said orifice block in one direction relatively moves said tapered surfaces toward each other and rotation of said orifice block in the opposite direction relatively moves said tapered surfaces away from each other, said tapered surfaces thereby providing a variable pressure drop between the ends of said passage to regulate the flow of plasticized material through said passage.

3,357,051
DIE FOR EXTRUSION OF DOUBLE-WALL OF "TUBE-IN-TUBE" TYPE
Jakov Juljevich Zolotarevsky, Moscow, U.S.S.R., assignor to Gosudarstvenny Nauchno-Issledovatelsky Institute Plasticheskykh Mass
Continuation of application Ser. No. 377,980, June 25, 1964. This application Jan. 9, 1967, Ser. No. 608,226
8 Claims. (Cl. 18—14)



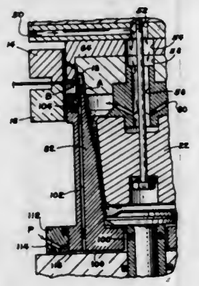
1. A die comprising a mandrel, a bushing encircling the mandrel to define an annular space therebetween, means supporting said bushing and surrounding the same to define a second annular space which encircles the first annular space, said bushing including a lower end portion having a plurality of spaced slots therein establishing communication between the annular spaces in restricted zones, and means for supplying extruded material into said annular spaces to form a tube having spaced walls corresponding to said annular spaces and defining respective conduits adapted for the isolated flow of respective fluids, and bridges connecting said walls in correspondence with said slots.

3,357,052
APPARATUS FOR MAKING MEMBRANES
Kenneth D. Vos, San Diego, Calif., assignor to General Dynamics Corporation, New York, N.Y., a corporation of Delaware
Filed Sept. 2, 1965, Ser. No. 484,515
9 Claims. (Cl. 18—15)



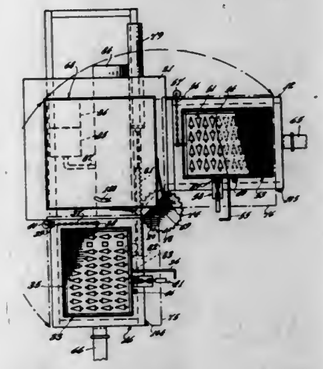
5. In apparatus for continuous casting of a thin porous membrane sheet from a fluid casting solution of organic material, which apparatus includes a cylindrical casting drum having a smooth surface, means rotatably mounting said drum on a horizontal axis, means for establishing a supply reservoir of the fluid casting solution above said drum surface, said reservoir-establishing means having a rear wall and a forward wall spaced apart at their lower portions to provide an opening therebetween, means for spacing said forward wall a predetermined distance above said drum surface so that a thin film of casting solution flows onto said drum surface in the direction toward which said drum rotates, and means for rotating said drum at a predetermined speed, the improvement which comprises said reservoir-establishing means being disposed so the hydraulic head of said reservoir bears directly upon said drum surface through said opening, the bottom of said forward wall being smooth and substantially flat and being located on the uphill side of the crest of said drum so that compressive action occurs at the upper surface region of the applied film between the cylindrical drum surface and the bottom surface of the forward wall, and the height of the rear edge of said bottom surface above said drum surface being at least about twice the height of the forward edge of said bottom surface above said casting drum surface.

3,357,053
APPARATUS FOR CURLING RIMS OF ARTICLES
Wayne B. Lyon, Deerfield, and David Ehlert, Lake Zurich, Ill., assignors to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware
Filed Aug. 27, 1964, Ser. No. 392,409
3 Claims. (Cl. 18—19)



1. Apparatus for forming a rim on a thin-walled thermoplastic container, comprising a mold having a cavity, an upstanding annular projection surrounding an upper margin of the mold cavity, a die block having a mandrel disposed opposite to said mold cavity and being provided with an annular recess encircling said mandrel and aligned with said upstanding projection, means for clamping heated thermoplastic material intermediate of and in a circumferential manner outside the mandrel and mold periphery, means for relatively shifting said mold and mandrel toward each other to thereby draw predetermined areas of the material into the mold cavity and for positioning said annular projection and recess in cooperative relationship, the maximum dimension of said recess being less than said projection whereby to clamp an upper marginal portion of said predetermined drawn areas on substantially opposite sides of said annular projection to seal said article from the remainder of the web and enclose said upper marginal portion within a sealed chamber, means for establishing a positive fluid pressure across said drawn material to expand the same against the inner periphery of the mold and complete the formation of the container, channel means connecting ports formed in the female mold with said sealed chamber upon the expansion of said predetermined drawn areas against the inner periphery of the female mold, the air between said predetermined drawn areas and said female mold is forced through said ports and channel means into said sealed chamber to cause said outer marginal portion to assume a predetermined cross sectional configuration relative to said container axis, said die block adjacent said recess and said annular projection having complementary cutting edges for severing the container and its upper marginal portion from the remainder of the web, the continued movement of at least a portion of said annular projection engaging and curling the severed free end of said upper marginal portion to complete the ultimate rim configuration.

3,357,054
THERMOFORMING APPARATUS
Maurice D. Hartman, Jr., R.D. 1, Harleysville, Pa. 19438
Filed Jan. 4, 1966, Ser. No. 518,642
7 Claims. (Cl. 18—19)

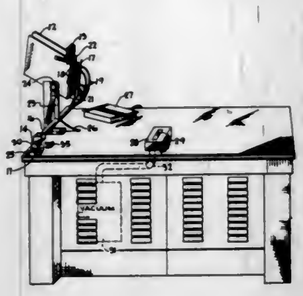


1. Thermoforming apparatus for operation by a single operator, said apparatus comprising a pair of mold stations disposed in angularly spaced-apart relation for access by an operator from a radially inward position, a mold located at each station, a workholding frame mounted at each station for alternate movement of said frames by an operator into and out of operative association with its adjacent mold, pneumatic means connected to said stations for alternately applying a predetermined forming pressure at respective molds, and heater means mounted for swinging movement along an arcuate path between positions in operative relation with respective stations and through an intermediate position between said stations; whereby a workpiece at each station is adapted to be heated and formed while a finished workpiece is being removed from and a new workpiece replaced at the other station by a single operator.

3,357,055
PACKAGING APPARATUS
Edwin W. Swezey, Hackensack, N.J., assignor to Union Camp Corporation, New York, N.Y., a corporation of Virginia
Filed Nov. 1, 1966, Ser. No. 591,160
7 Claims. (Cl. 18—19)

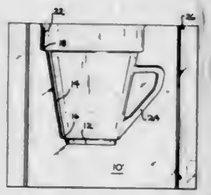
1. Packaging apparatus for enclosing an article in a container comprising a card and a plastic member fitting around an article, said apparatus comprising: a card magazine in which cards are aligned to be presented in order; a heating station to heat said plastic member; a vacuum die having a recess shaped to correspond to the article to be packaged; an arm; pickup means on said arm to grasp a card from said magazine; a shaft connected to said arm to pivot said arm; a pulley attached to said shaft to rotate therewith; a belt engaging said pulley; a first reciprocably operable cylinder and piston connected to said belt to move said belt lengthwise and thereby cause said pulley

and said shaft to rotate; a second reciprocably operable cylinder and piston connected to said first cylinder and piston to move said first cylinder and piston in order to provide additional lengthwise movement of said belt so as to provide additional rotation of said pulley and said shaft; first control means to control relative movement



between said first piston and cylinder to pivot said arm from a first position at said magazine, to pick up a card, to a second position at the heating means; and second control means to control said second piston and cylinder to provide additional movement to move said card from said heating means to a third position onto said vacuum die.

3,357,056
APPARATUS FOR MOLDING PLASTIC ARTICLES
Nathaniel R. Reyburn, Erie, Pa., assignor to Owens-Illinois, Inc., a corporation of Ohio
Filed May 10, 1965, Ser. No. 454,472
1 Claim. (Cl. 18—42)



Apparatus for molding cup-shaped articles comprising a female mold section having a cavity defined by

a bottom portion,

a flaring sidewall portion extending upwardly and outwardly from said bottom portion,

a parallel sidewall portion upwardly and outwardly from said flaring sidewall portion, said parallel sidewall portion being parallel to the axis of said cavity,

a shoulder extending outwardly from the upper end of said flaring sidewall portion and joining said parallel sidewall portion,

a plunger sized to be received in said cavity in a first fully engaged position for molding said outer layer and a second partially engaged position for molding said inner layer, said plunger including

first, second, and third sidewall portions substantially parallel to said female mold section flaring sidewall portion,

said second sidewall portion being upwardly and outwardly from said first sidewall portion and joined thereto by a first outwardly extending ledge,

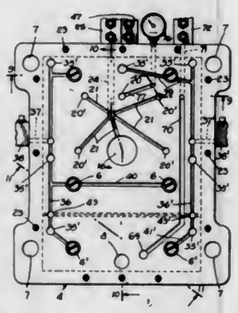
said third sidewall portion being upwardly and outwardly from said second sidewall portion and joined thereto by a second outwardly extending ledge, said third sidewall portion sized to substantially contact said female mold section flaring sidewall portion when the plunger is in the first fully engaged position,

said first outwardly extending ledge at said second partially engaged position being axially below the position of said second outwardly extending ledge at said first fully engaged position,

an upper sidewall portion contoured to be snugly received in the parallel sidewall portion of said female mold section, said upper sidewall portion being upwardly and outwardly from said third sidewall portion and joined thereto by a third outwardly extending ledge,

said third sidewall portion and said third outwardly extending ledge cooperating with the parallel sidewall portion and shoulder of said female mold section to define an overflow receiving chamber when the plunger is in the first fully engaged position and when the plunger is in the second partially engaged position.

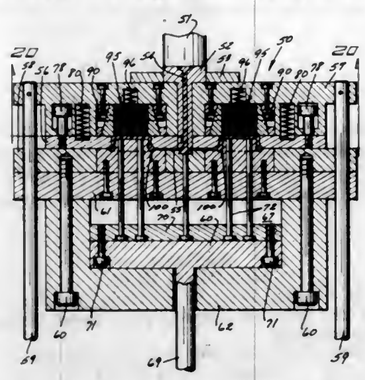
3,357,057
MOLD FOR PRESSURE INJECTED MATERIAL
Harry R. Bucy, 550 N. Brighton St., Burbank, Calif. 91506
Filed Oct. 15, 1965, Ser. No. 496,368
20 Claims. (Cl. 18—42)



1. In a separable mold having a cavity into which molten material is to be injected under pressure, the combination of vacuum producing means carried by said mold and operative to evacuate the mold cavity, and other vacuum producing means carried by said mold operative to create zones of vacuum at every point on said mold between the exterior surface of the mold and the mold cavity at which, with the mold normally closed, air and gas could reach the mold cavity, whereby more complete evacuation of the mold cavity by said cavity evacuating means may be achieved.

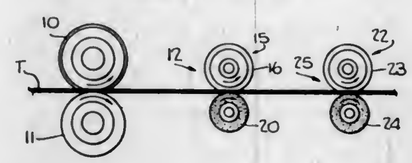
3,357,058
APPARATUS FOR INJECTION MOLDING A BRISTLED PRODUCT
Louis F. Kutik, Fort Lauderdale, Fla., assignor of one-half to Erich W. Gronemeyer, Fort Lauderdale, Fla.
Filed Oct. 31, 1966, Ser. No. 590,849
8 Claims. (Cl. 18—42)

1. In an apparatus for making a bristled product by injection molding, said product having a backing portion and at least one individual bristle integral therewith, the improvements of an injection mold comprising at least three bristle-defining plates, means retaining said plates in face-to-face abutment, at least one of said plates having (1) a height greater than the length of a bristle, (2) a thickness corresponding to one transverse dimension of a bristle, (3) a length at least as great as one complete dimension of the product backing portion, and (4) at least one slot extending completely through the thickness thereof and of a height corresponding to the length



of a bristle, those plates in face-to-face abutment with said at least one plate having planar non-slotted surfaces closing the sides of the slot therein, and means defining an additional cavity having the contour of the backing portion of said product freely communicating with said slot.

3,357,059
FIBER DEBONDING DURING CONVERSION
Joseph R. Godwin, Charlotte, N.C., assignor to Celanese Corporation, a corporation of Delaware
Filed July 13, 1964, Ser. No. 382,261
11 Claims. (Cl. 19—.3)



1. Means for converting a tow to sliver, said means comprising: cutter means mounted to move with the tow in pressure applying relationship with respect thereto; anvil means arranged in opposed relationship with respect to said cutter means so that the tow will be contacted on opposed sides between said cutter means and said anvil means, said cutter means mounted to exert a pressure along a diagonal with respect to the path of movement of the tow and to cooperate with said anvil means to cut said tow into staple fibers; and two pairs of relatively spaced debonding rolls, at least one roll of each pair having a resilient surface, and the other roll of each pair having a helically threaded portion and being mounted so that said helically threaded portion will contact some of said fibers.

3,357,060
ROTARY COTTON GIN
Samuel J. Jennings, Phoenix, Ariz., assignor to Community Gin Company, Scottsdale, Ariz., a partnership
Filed Sept. 16, 1966, Ser. No. 579,903
1 Claim. (Cl. 19—50)

A rotary cotton gin comprising in combination:

(A) a stationary knife,

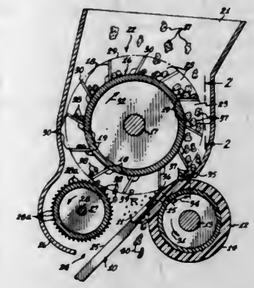
(B) a rotatable gin roll engaging said knife,

(C) a rotary spiked feeding and ginning cylinder,

(D) a series of circumferentially spaced spikes having raw cotton receiving spaces between said spikes fixed in the periphery of said feeding and ginning cylinder,

(E) a raw cotton feed chute having a discharge opening adjacent the periphery of said feeding and ginning cylinder,

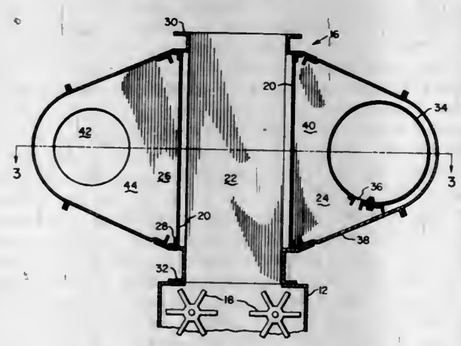
(F) a seed chute adjacent said stationary knife having arranged to receive the ginned seed from said spaces between said spikes of said feeding and ginning cylinder,



(G) a recovery saw cylinder having peripheral saw teeth adjacent the peripheral path of travel of the tips of said spikes of said feeding and ginning cylinder located adjacent said seed chute,

(H) and circumferentially spaced spikes having an egg-shaped transverse cross-section with the small end of said egg-shape pointing in the direction of rotation of said rotary spiked feeding and ginning cylinder.

3,357,061
CONDITIONING HOPPER
Samuel G. Jackson, 2518 Erskine Road, Lubbock, Tex. 79403
Filed July 26, 1965, Ser. No. 474,630
3 Claims. (Cl. 19—66)



1. In a cotton gin having

(a) a battery of gin stands,

(b) a feeder for each gin stand above each gin stand, and

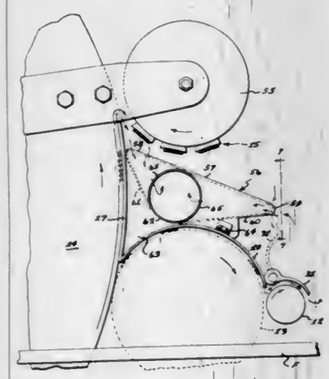
(c) a conveyor above the feeders for conveying and distributing seed cotton to said feeders;

(d) an improved hopper above each feeder and below the conveyor comprising in combination with the above:

(e) two air permeable walls,

(f) means for passing humid air through the permeable walls and through the seed cotton in the hopper,
(g) an inlet air chamber on one side of the hopper,
(h) an outlet air chamber on the other side of the hopper, and
(j) an air pipe extending through the inlet chamber,
(k) said pipe having an adjustable air slot between the air pipe and air chamber to regulate the amount of air passing from the air pipe to the air chamber.

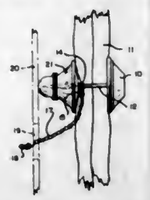
3,357,062
CARDING MACHINE AIR CONTROL MEANS
James Everett O'Neal, Josef Karl Gunter, and Colie Walton Gunter, Durham, N.C., assignors to Gunter & Cooke, Inc., Durham, N.C., a corporation of North Carolina
Filed Sept. 23, 1965, Ser. No. 489,590
5 Claims. (Cl. 19—107)



1. In a carding machine, the combination with a carding cylinder, and a doffer roll operating thereat to doff the cylinder, of arcuate cover plates respectively shrouding said cylinder and doffer roll in advance of the point of doffing but terminating short of abutment to leave a substantial slot therebetween adjacent the doffing point for releasing air pressure generated in advance of said doffing point at the surfaces of said cylinder and doffer roll, a bonnet disposed between said cover plates to enclose a space over said slot and having an outlet opening formed therein at a substantially central position with respect to the width of said carding machine, and means connected at said outlet opening for receiving and carrying off for collection all fly borne by the air released through said slot into the space enclosed by said bonnet, said arcuate cover plate shrouding said cylinder having the edge thereof adjacent said slot relieved concavely from the ends thereof adjacent the sides of said carding machine towards a substantially central position with respect to the width of said carding machine, whereby the air currents incident to said air pressure release have an induced direction away from the sides of said carding machine.

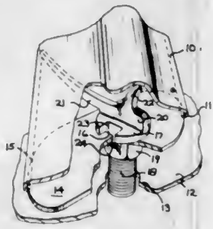
3,357,063
TIE TACK ASSEMBLIES
Casper Melvin Eiben, 124 Dutch Lane, Pittsburgh, Pa. 15236
Filed May 21, 1965, Ser. No. 457,650
2 Claims. (Cl. 24—49)

1. A tie tack comprising an ornamental member adapted to overlie a portion of the face of a necktie and having a pin with a point to pass rearwardly through the necktie, a diametric opening through said pin spaced rearwardly from said ornamental member a distance substantially equal to the thickness of a necktie, a releasable ring



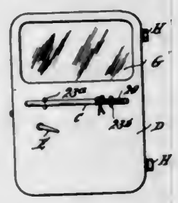
member passing through said opening, and flexible connecting means engaging said ring at one end and having a toggle bar clothing engaging member at the opposite end.

3,357,064
MOLDING CLIP
Robert A. Munse, Perrysburg, Ohio, assignor to The Bishop and Babcock Corporation, Toledo, Ohio, a corporation of Ohio
Filed Feb. 23, 1966, Ser. No. 529,572
3 Claims. (Cl. 24—73)



1. A clip having a biasing spring area particularly suitable in conjunction with moldings of the automotive type having attaching flanges and an upwardly arched central portion, comprising a relatively flat plate including means for engagement with said attaching flanges, a transversely disposed relatively narrow rib integral with and projecting outwardly from the upper side of said plate, means for attaching said plate to an apertured supporting panel, a spring finger rigid with said rib constituting substantially a continuation thereof and projecting laterally thereof for engagement with the molding for biasing said plate, and a resilient tongue integral with said rib for impinging against the under side of said arched portion of the molding.

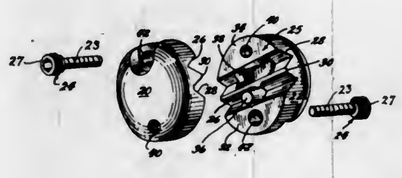
3,357,065
HOLDER FOR POLICE CLUB
John E. Anketell, Fitzwilliam, N.H. 03447
Filed Jan. 24, 1966, Ser. No. 522,536
6 Claims. (Cl. 24—81)



4. In combination, a police club comprising a handle portion and a flexible thong tightly embracing the club adjacent to the inner end of the handle portion, a holder

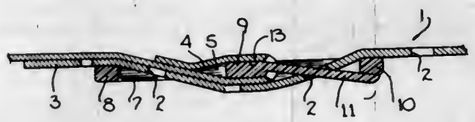
for the club comprising a rigid support, spaced spring clips mounted on the support operative to receive and to hold the club with resilient gripping action, although permitting its removal by the application of sufficient pulling force to the club, and retaining means, cooperable with the thong, to prevent removal of the club from said spring clips except by a person informed as to how to render the retaining means ineffective.

3,357,066
ROPE CLAMP
Donald B. Moritz, Arlington Heights, Ill., assignor, by mesne assignments, to Bliss & Laughlin Industries, Incorporated, Oak Brook, Ill., a corporation of Delaware
Filed Dec. 27, 1965, Ser. No. 516,238
8 Claims. (Cl. 24—125)



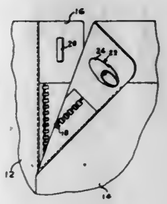
1. A two-part separable rope clamp for fixedly anchoring a twisted rope portion over the length of one full twist thereof, said clamp comprising two juxtapositioned clamping parts adapted to be driven toward each other to clamp the rope portion therebetween, said clamping parts having opposed planar faces, each of said faces being formed with a lineally straight V-groove therein defining a 90° included angle extending thereacross, each groove of each face registering with the groove of the other face to provide a polygonal configuration whose minimal dimension is a little less than the diameter of the rope portion, the registering grooves being adapted for reception therein and therebetween of the rope portion, a rope-engaging tapered stud projecting upwardly from the medial region of the one groove and having a height above said planar face approximately three-fourths of the rope diameter, the other groove being provided with a medially disposed recess of a length three times the diameter of the rope and of a depth greater than the height of the stud by substantially the diameter of the rope said stud being designed for entry into the recess of said other groove when the parts are drawn inwardly toward each other, and means for driving said parts inwardly toward each other.

3,357,067
BELT BUCKLE
Dietrich Baues, Woodside, N.Y., assignor to Guild Arts & Crafts Inc., Farmingdale, N.Y., a corporation of New York
Filed Jan. 19, 1965, Ser. No. 426,528
5 Claims. (Cl. 24—176)



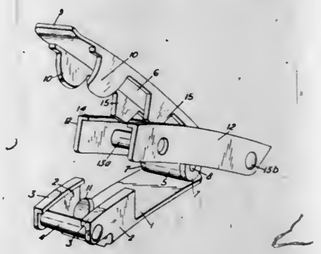
5. A buckle for belts comprising a one piece frame, said frame being of a plastic material having an inherent flexibility to return to an original formed shape, said frame having a pair of side portions, a front portion and a rear portion defining an opening within said portions, and an integral elongated flexible tongue connected to said rear portion within a first plane parallel to said frame, and extending across the opening into bearing contact within a second plane parallel to and spaced from said first plane under a tension force with said front portion.

3,357,068
GARMENT HOOK
Gilbert A. Littell, Lexington, Ky., assignor to Talon, Inc., a corporation of Pennsylvania
Filed Sept. 9, 1965, Ser. No. 486,018
10 Claims. (Cl. 24—227)



1. A sheet metal fastener hook cooperable with an eye member for connecting together overlapping parts of garment apparel comprising:
(a) a flat base plate the lower surface of which is adapted to rest on the upper surface of a garment;
(b) means located in a plane above the upper surface of said base plate and formed integrally to extend along each side edge of said base plate, with each of said means including a prong member located adjacent the forward edge of said base plate; and
(c) a forwardly projecting tongue member lying in a plane spaced above said base plate and integrally connected to said forward edge of said base plate along an axis extending from one prong member to the other.

3,357,069
BUCKLES FOR BRACELETS AND THE LIKE
Albert Edward Gazeley, San Po Kong, Kowloon, Hong Kong, assignor to Stelux Manufacturing Company Limited, San Po Kong, Kowloon, Hong Kong
Filed Oct. 14, 1966, Ser. No. 586,698
Claims priority, application Great Britain, Aug. 31, 1966, 38,875/66
5 Claims. (Cl. 24—232)



1. A fastener for a wrist band or bracelet comprising a loop member, a releasable clasp member adapted to interlink with said loop member, said clasp member including a plate-member and a catch-member pivoted together and adapted to open and close about said pivot, said clasp member incorporating spring claws adapted to engage opposite sides of a tongue for interlocking said plate-

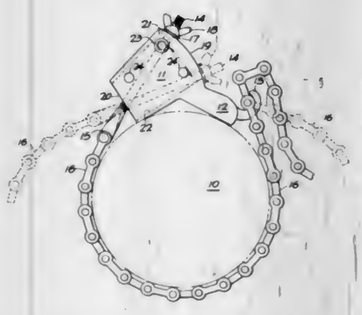
member and catch-member in closed positions, and said fastener having side walls which substantially conceal said engaging tongue and spring claws when the clasp member is closed.

3,357,070
ACCESSORIES FOR HAIRDOS AND ARTICLES OF APPAREL
Harriet L. Sloan, 1204 Riverside Ave., Streator, Ill. 61364
Filed Mar. 11, 1966, Ser. No. 533,469
3 Claims. (Cl. 24—255)



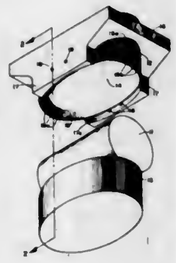
1. An accessory device for forming and retaining hairdos and articles of apparel in predetermined configuration and position comprising a sheet-like member of flexible plastic-like material, there being a plurality of slits extending through the material and projecting radially from a point located substantially centrally of said member, said slits providing a plurality of substantially triangularly shaped coplanar fingers having their apexes at said point, and such plastic-like material having a flexibility such that said fingers firmly grasp an object when inserted through said member while the member is bent in one direction and permitting ready removal of said object from said member by bending of said member in the opposite direction causing the fingers to project in an opposite direction.

3,357,071
INDICATOR HOLDING CLAMP
Fred J. Cannell, 2818 Idlewood Ave., Youngstown, Ohio 44511
Filed June 9, 1966, Ser. No. 556,318
3 Claims. (Cl. 24—281)



1. An indicator holding clamp comprising a hollow body member having elongated openings in its opposite ends, one of said ends being bowed outwardly lengthwise, the elongated opening therein running lengthwise thereof, an arm extending from said hollow body member, a hook on the end of said arm, a section of link chain arranged to be selectively engaged on said hook, a tension bolt pivotally secured to one end of said section of link chain, said tension bolt positioned through said hollow body member and means on said bolt engaging said bowed end of said hollow body member for moving said tensioning bolt relative thereto and a post mounted on said hollow body member and extending perpendicularly with respect thereto for receiving the said indicator.

3,357,072
RELIEVED SKIRTED DIE
Richard A. Sutphin, Greenhills, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
Filed Oct. 14, 1964, Ser. No. 403,797
3 Claims. (Cl. 25—7)

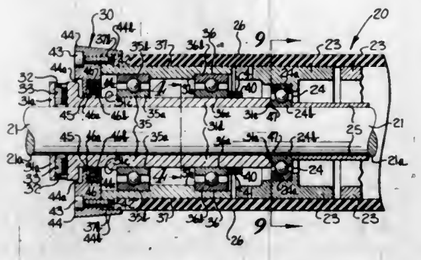


1. In a die pair for stamping a blank of plastic material into a pin-die shaped article, said die having in combination:
- a pair of mating die halves each having a cavity bounded by a land, said lands being adapted to substantially contact one another in use,
- means for restricting the extrusion of surplus plastic material whereby substantially all of such extrusion occurs between specific corresponding minor portions of said lands during the period of final deformation of said plastic material,
- the improvement which comprises relief means for reducing the hold time and force required to complete the extrusion and separation of said surplus plastic material, said relief means comprising a pluraltiy of passageways in said die halves extending to the enclosure formed by said cavities during the said period of final deformation, said passageways interconnecting said enclosure with the exterior of the die pair to establish a path of unimpeded egress therefrom in the full impression position, said passageways having a cumulative cross sectional area of at least about .0036 square inch and each having a minimum cross sectional area of about .0007 square inch in which the width to height ratio does not exceed about 3:1.

3,357,073
CURVED ROLL
William R. Eury, Charlotte, N.C., assignor to American Cloth-Strait Company, Charlotte, N.C., a corporation of North Carolina
Filed May 10, 1965, Ser. No. 454,395
9 Claims. (Cl. 26—63)

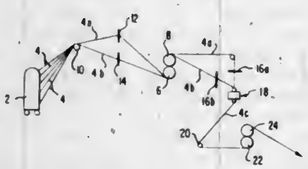
1. An expander roll for flexible sheet material such as textile fabric, comprising an elongate, longitudinally curved shaft, a series of cylindrical intermediate roll sections rotatably mounted along the medial portion of said shaft, an elongate tubular sheath of resilient, flexible fluid-impervious material surrounding said intermediate roll sections and extending outwardly beyond opposite ends thereof, but terminating in inwardly spaced relation to the ends of said shaft, and a pair of end assemblies

removably mounted on said shaft at opposite ends of said series of intermediate roll sections for supporting opposite end portions of said tubular sheath and for sealing opposite ends of said tubular sheath to prevent the entry of liquids, harmful chemicals and the like into the interior of said sheath and the escape of lubricant and contaminants therefrom, each of said end assemblies comprising a cylindrical tubular mounting member including at least a portion intermediate the ends thereof having an uninterrupted external cylindrical surface, an end segment rotatably mounted on said mounting member and being snugly positioned within one end portion of said



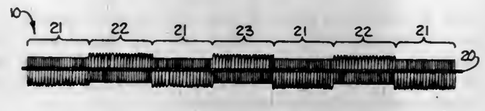
tubular sheath to support the same and provide a sealing area therebetween, and an end cap rotatably mounted on said mounting member and being connected to said end segment for rotation therewith and sealingly engaging the adjacent end of said sheath; said end cap having a running seal of resilient, elastomeric material sealingly engaging said uninterrupted cylindrical surface of said mounting member, said mounting member and end segment and end cap being interconnected as a module for positioning on or removal from said shaft as a unit, and said mounting member being releasably connected to said shaft exteriorly of said end segment and end cap.

3,357,074
APPARATUS FOR THE PRODUCTION OF FLUID ENTANGLED NON-WOVEN FABRICS
William T. Allman, La Vale, Md., William A. Burn, Jr., Rock Hill, S.C., and James H. Winger, Charlotte, N.C., assignors to Celanese Corporation, a corporation of Delaware
Filed Dec. 28, 1965, Ser. No. 516,858
3 Claims. (Cl. 28—1)



1. Apparatus for use in the production of non-woven fabrics having substantial widthwise strength comprising:
- fluid jet means provided with a fiber passageway having an elongated transverse cross section and with fluid passageways communicating with said yarn passageway at a zone between the inlet and outlet ends of said fiber passageway;
- means for feeding a plurality of fiber-containing strands in sheet form toward the entrance end of said fiber passageway at a first rate;
- oscillatable reed means disposed between said feed means and the entrance end of said fiber passageway;
- means for oscillating said reed means widthwise of the advancing strands to vary the inclinations of the strands with respect to the longitudinal axis of the fiber passageway in said fluid jet means and with respect to each other;
- means for flowing fluid at high velocity through said fluid passageways, into said fiber passageway, and out the outlet end of said fiber passageway to entangle fibers from adjacent strands; and
- take-up means for moving the sheet containing the entangled fibers away from the fluid jet means at a rate slower than said first rate.

3,357,075
METHOD OF MAKING PILE FABRIC
Marvin A. Law, Spray, N.C., assignor to Fieldcrest Mills, Inc., Spray, N.C., a corporation of Delaware
Filed Sept. 9, 1965, Ser. No. 486,157
10 Claims. (Cl. 28—72)



1. A method of modifying a pile fabric having at least one pile surface including certain shrunken piles of reduced height relative to other piles, and wherein said shrunken piles include a shrunken fiber component restraining the piles at said reduced height; said method comprising shearing the upper end portions of said other piles and then treating said shrunken piles to modify the shrunken fiber component thereof to nullify the restraint on the piles to permit them to extend to a greater height than they did during the shearing of said other piles.

3,357,076
YARN AND FABRICS HAVING STRETCH PROPERTIES
Emmett F. Greenwald and Eugene E. Neff, Charlotte, N.C., assignors to Celanese Corporation, a corporation of Delaware
No Drawing. Filed Dec. 27, 1965, Ser. No. 516,675
10 Claims. (Cl. 28—72)

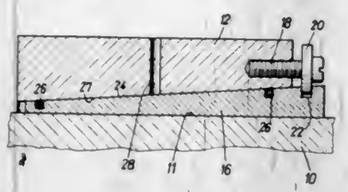
1. Method for making a composite yarn having stretch properties which comprises wrapping an unextended, non-heatset elastic core strand with at least one wrapping strand composed of undrawn synthetic filamentary material, extending said wrapped yarn in an amount sufficient to draw said undrawn material, at least partially relaxing said extended wrapped yarn, and heatsetting said composite yarn in its partially relaxed state.

5. Method for making a stretch fabric which comprises wrapping an unextended, non-heatset elastic core strand with at least one wrapping strand composed of undrawn synthetic filamentary material, forming said wrapped yarn into fabric material, subjecting the fabric to an extending force sufficient to draw said undrawn material, at least partially relaxing said extending force thereby allowing said fabric to at least partially contract from its extended direction, and heatsetting said fabric in its partially contracted state.

3,357,077
MEANS FOR CLAMPING RELATIVELY SLIDABLE MACHINE TOOL-MEMBERS TO EACH OTHER
Hans G. Rohs, 9 Richard Wagnerstrasse, 7324 Rechberghausen, Germany
Filed Sept. 14, 1966, Ser. No. 579,415
Claims priority, application Germany, Sept. 16, 1965, B 83,764
4 Claims. (Cl. 29—1)

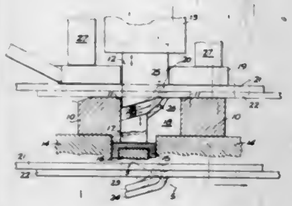
1. In a machine tool, a base member provided with a guideway, a slide member mounted on said guideway for relative movement, and means for clamping said members

to each other, said means comprising a clamping shoe interposed between said members, coupling means for connecting said clamping shoe to one of said members for common relative movement lengthwise of said guideway, said shoe being slidable on the other one of said mem-



bers, the abutting faces of said shoe and of said one of said members being provided with an outer seal surrounding substantial portions of said faces, at least one of said portions being provided with a port for connection with a source of fluid under pressure.

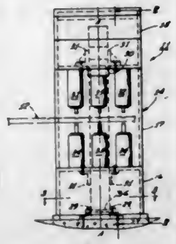
3,357,078
APPARATUS FOR PUNCHING INTERLOCKING TABS IN STEEL STRIPS
Floyd J. Moltchan, 4450 Lake Park Road, Youngstown, Ohio 44512
Filed Aug. 1, 1966, Ser. No. 569,144
4 Claims. (Cl. 29—21.1)



1. Apparatus for punching interlocking tabs in superimposed steel strips consisting of a die, said die having a cutting edge in the shape of said tabs, and a punch registrable with said die, said punch having a cutting edge in the shape of said tabs, a portion of said die having a forming surface, a portion of said punch having a matching forming surface, said forming surfaces arranged to move the metal of said tabs formed thereby to superimposed shapes of a size smaller than the areas from which they were formed.

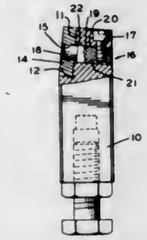
3,357,079
FLOATING C YOKE
Edwin A. de Voss, Torrance, Calif., assignor to Northrop Corporation, Beverly Hills, Calif., a corporation of California
Filed Aug. 18, 1966, Ser. No. 573,367
5 Claims. (Cl. 29—34)

1. In a machine adapted to simultaneously effect drilling and riveting operations on a workpiece, comprising:
(a) major and minor frame members each including base, overhead and back portions defining throat portions;
(b) first upper and lower means mounted on said base and overhead portions of said major frame member, respectively, and at least said upper or lower means including riveting and actuating means functioning to effect a riveting operation when said actuating means is actuated;
(c) second upper and lower means mounted on said base and overhead portions of said minor frame member, respectively, and at least said second upper or lower means including actuator and drilling means functioning to effect a drilling operation when said actuating means is actuated;



(d) and said major and minor frame member being secured together so that corresponding portions thereof have a juxtapositioned relation with respect to each other and so that deflections of said major frame member, resulting from a riveting operation performed thereon, will not be transmitted to said minor frame member.

3,357,080
INDEXABLE INSERT TOOL HOLDER
Victor Milewski, Birmingham, Mich., assignor to The Valeron Corporation, Detroit, Mich., a corporation of Michigan
Filed June 21, 1965, Ser. No. 465,586
6 Claims. (Cl. 29—96)

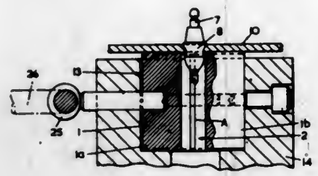


1. An indexable insert tool comprising a tool body having a shouldered seat, an indexable insert having a central hole extending normal to said seat, a locking pin recess in said holder aligned with said central insert hole in assembled condition, a locking pin seated in said recess extending into said central insert hole, said locking pin having a clearance relative to said recess terminating at a fulcrum for engagement of said body, said locking pin having a square cross section configuration in the portion extending within the tool body, and means for actuating said locking pin to produce leverage forcing said indexable insert against the shoulder of said seat.

3,357,081
METHOD FOR INSERTING INSERTS THROUGH SOLID BODIES
Harry Thomas Prestige, Dartford, England, assignor to J & S Engineers Limited
Filed Mar. 19, 1962, Ser. No. 180,742
Claims priority, application Great Britain, Mar. 23, 1961, 10,752/61
18 Claims. (Cl. 29—155)

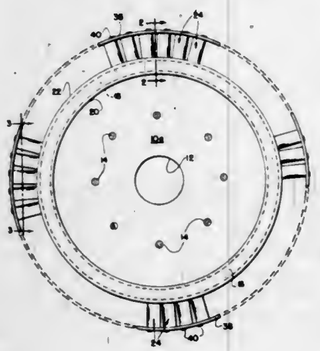
1. The method of inserting into a sheet of material an insert made at least partially of a material more elastic than that of said sheet, which method comprises the steps

of placing an end of said insert comprising said elastic material near one side of said sheet and exerting pressure on said insert in the direction of said sheet while sealingly confining the material of said insert against both flow laterally of said insert and flow away from said sheet, and supporting an area on the other side of said sheet which encircles an area in alignment with said insert, thus forcing a first portion of said insert through



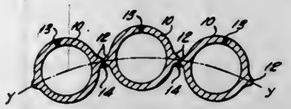
said sheet to form a hole therein, while leaving a second portion within said hole, said supported area extending inwardly toward the center of the area in alignment with said insert so far that it prevents the formation of a hole as large in all its transverse dimensions as the original cross-section of at leat one of said portions, whereby said last mentioned insert portion is compressed in cross-section as it enters said hole.

3,357,082
METHOD OF MAKING A TURBINE WHEEL
Walter E. Beaney, New London, Conn., assignor to The Whiton Machine Company, New London, Conn., a corporation of Connecticut
Filed Feb. 13, 1963, Ser. No. 258,199
1 Claim. (Cl. 29—156.8)



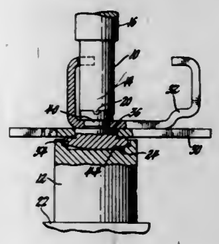
A method of making a turbine wheel from two flat sheet metal discs, and a plurality of solid blade members having an arcuate cross section which is constant throughout their lengths, said method comprising the steps of stamping said discs to form axially offset peripheral portions, which portions are defined in part by a peripherally extending outer wall, notching said wall at peripherally spaced intervals, notching each of said blade members adjacent one of its respective ends and forming a cylindrical post-like projection on the opposite end, inserting the notched end of said blade members into the notches in one of said discs, placing the other disc over said one disc so that the notches in both discs cooperate in surrounding said blade members and so that said discs abut one another throughout substantially all of their central portions, spot welding said central portions to one another, providing a circular band with openings to receive said post-like projections, and finally securing said band to said blade members by peening over said post-like projections.

3,357,083
METHOD OF MAKING WELDED TUBES HEAT EXCHANGERS WITH INTEGRAL FINS
Helmut Wiehn and Karl Zech, Oberhausen, Rhineland, Germany, assignors to Babcock & Wilcox, Limited, London, England, a corporation of Great Britain
Filed Apr. 6, 1965, Ser. No. 445,981
2 Claims. (Cl. 29—157.3)



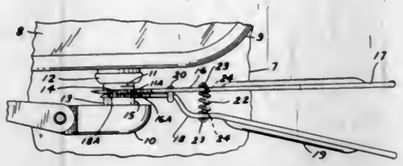
1. The method of making a tube comprising the steps of forming one surface of a metal strip with a pair of outwardly projecting integral wedge-shaped fins at positions spaced so that the fins will be generally diametrically opposed upon shaping the strip into tubular form, forming the opposite surface of the strip with an arc-shaped groove below the base of each fin, shaping the metal strip to generally tubular form with the fins on the outside and the edges of the strip closely opposed in a continuous longitudinal seam, and weld uniting the opposed seam edges the width of each groove corresponding to the width of the base of the associated fin and the radius of each groove corresponding to the inside radius of the finished tube.

3,357,084
MACHINE FOR ASSEMBLING MEMBERS AND PROVIDING A CONTROLLED AMOUNT OF TOLERANCE BETWEEN THE MEMBERS
Albert J. Colautti, Windsor, Ontario, Canada, and Donald H. Suszko, Warren, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 11, 1965, Ser. No. 494,606
3 Claims. (Cl. 29—200)



1. A riveting machine adapted for assembling members together with a headed rivet which extends through apertures in said members, said machine comprising:
a punch upsetting said rivet on one side of said members being assembled together;
and an anvil including means for supporting the head of said rivet around its perimeter and having a cavity formed therein to receive the center portion of said rivet head upon its being displaced by said punch, said cavity allowing said head to be dished under the action of said punch and then to be sprung back a controlled amount after the rivet has been released from the action of said punch and said anvil.

3,357,085
TOOL FOR REMOVING WIPER BLADE ARM
Marcus Martin, 216 Orchard Drive, Monroe, Mich. 48161
Filed Aug. 6, 1965, Ser. No. 477,914
1 Claim. (Cl. 29—239)



A windshield wiper tool of the character described comprising a pair of pivoted levers lying on opposite sides of a common plane, terminating at one end in hand grips and at the other end in thin, flat members, each having a cut out portion for receiving the spindle of a windshield wiper mechanism, one of said levers being longer than the other, the cut out portion of the shorter lever being of less depth and wider than the cut out portion of the longer lever, the hand grip portions of said levers being curved and the levers being provided with pairs of depending apertured ears extending in the same direction, there being a pivot pin extending through said ears and spring means for biasing said hand grips, whereby to normally hold the flat portions of said levers tightly together.

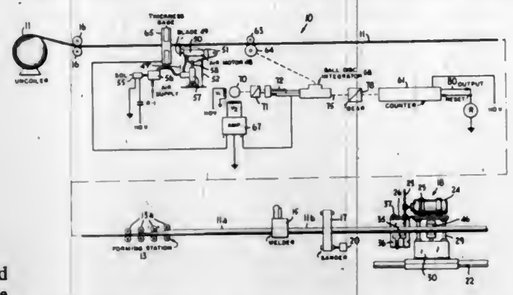
3,357,086
FISHHOOK THREADER
Edward Paul Hood, 3 Court Square, Rutland, Vt. 05701
Filed June 10, 1966, Ser. No. 556,719
9 Claims. (Cl. 29—241)



1. A fishhook threader comprising a funnel having a larger end and a smaller end, a trough having an inner end receiving the smaller end of the funnel, means fixing the funnel relative to the trough, said trough having side walls, opposed resilient and deformable detent blocks affixed to the inner surfaces of the trough side walls, said blocks being spaced from each other crosswise of the trough.

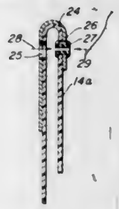
3,357,087
MASS FLOW COMPUTER AND CONTROL DEVICE
Peter J. Barnikel, New London, and Robert P. Freedman, Ledyard, Conn., assignors to General Dynamics Corporation, New York, N.Y., a corporation of Delaware
Filed July 21, 1965, Ser. No. 473,803
15 Claims. (Cl. 29—407)

1. A process for the manufacture of articles, each of a substantially equal volume comprising the steps of transporting a product to a forming station wherein the product is shaped into an article, severing the formed article to length after recognition of an identification mark indicating the length of the article to be severed, said mark being provided in the following manner: sensing the product to develop a plurality of signals representative of characteristics of the product passing a reference position, said signals when integrated being representative of the volume of said



product, integrating the characteristic signals to develop a signal, and totalizing the integrated signal and comparing the total against a predetermined number representative of the desired volume to generate the identification mark after coincidence.

3,357,088
METHOD OF ATTACHING A HANGER TO AN ELONGATED FLEXIBLE TUBE WALL
John J. Hoffman, South Bend, Ind., and Warren R. Hafstrom, Stevensville, Mich., assignors to Whirlpool Corporation, a corporation of Delaware
Original application Oct. 2, 1964, Ser. No. 401,149. Divided and this application Aug. 26, 1966, Ser. No. 577,570
1 Claim. (Cl. 29—432)

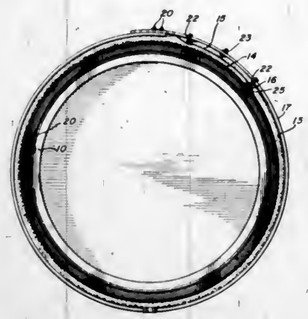


The method of attaching a hanger to an elongated flexible duct of closed circumference having a reinforcing strip therewith, comprising: cutting an opening in the duct and reinforcing strip, then bending the duct and reinforcing strip substantially 180° into U-shape to align a portion of said duct and reinforcing strip with said opening, then attaching a perforating grommet to said portion by applying force to an end of a tool through said opening and simultaneously to the other side of the grommet on the exterior of the grommet, then bending the duct and reinforcing strip to align another portion of the duct and reinforcing strip with said opening, then attaching another grommet to said other duct and reinforcing strip edge portion in the same manner, and attaching said hanger in said openings.

3,357,089
APPARATUS FOR WRAPPING MULTIPLE-LAYER VESSELS
Lyle Vernon Larsen, Elmhurst, Ill., assignor to Chicago Bridge & Iron Company, Oak Brook, Ill., a corporation of Illinois
Filed Nov. 20, 1964, Ser. No. 412,807
11 Claims. (Cl. 29—446)

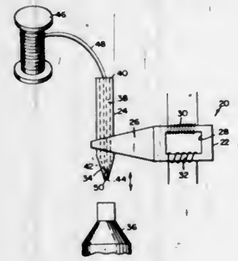
1. Apparatus for tightly wrapping a layer of sheet metal on a tubular metal body, comprising expandable fluid-pressure applying means to be placed about a tubular

body and that can at least partially overlay a metal sheet layer wrapped around the outside of the body, and a body-encircling essentially nonstretchable metal backing means for wrapping around the body and supporting the



fluid-pressure means to effect a tightening of the sheet layer against the body as the fluid-pressure means is expanded and the backing means resists the forces so developed and directs the same against the layer of sheet metal.

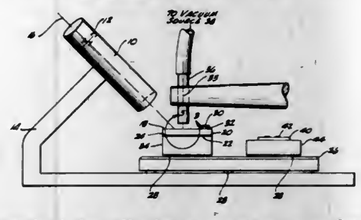
3,357,090
VIBRATORY WELDING TIP AND METHOD OF WELDING
Paul Tiffany, Beverly, Mass., assignor to Transitron Electronic Corporation, Wakefield, Mass., a corporation of Delaware
Filed May 23, 1963, Ser. No. 282,711
7 Claims. (Cl. 29—470)



4. A method of securing a ball to a body of a semiconductor device comprising the steps of
- providing a quill of a vibratory welder with a seat formed in its tip,
- establishing a low pressure region about the seat for picking up a ball in the seat,
- utilizing the low pressure at the seat to pick up a ball and thereafter conveying the ball in the seat to the body of the device,
- and thereafter vibrating the quill to weld the ball to the body.

5. A quill and vibrator for a vibratory welder comprising
- an elongated body,
- a transducer secured to the quill for vibrating it,
- a passage extending through the body,
- a restricted region in the passage of relatively small diameter adjacent the tip of the body,
- and a seat extending inwardly from the end of the tip and immediately adjacent the restricted region, said seat being shaped to engage a ball to be welded by the vibratory welder.

3,357,091
DEVICE FOR ALIGNING TWO OBJECTS AND FOR MOUNTING ONE TO THE OTHER
Karl H. Reissmueller, Tustin, Rudolf F. Zurcher, Newport Beach, and Manfred W. Reissmueller, Costa Mesa, Calif., assignors to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed July 21, 1965, Ser. No. 473,610
8 Claims. (Cl. 29—470)



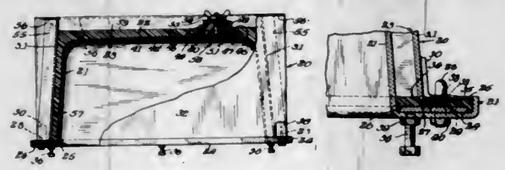
6. A method for aligning a pattern on a first object with a pattern on a second object, comprising:
- positioning said first object on a plate having a second surface mirror and a plain surface spaced therefrom with the pattern in contact with the plain surface of the plate;
- focusing the reticle of a microscope on the plain surface of the plate by reflection from said second surface;
- aligning the pattern of said first object with the focused reticle;
- moving said first object vertically from in contact with the plate;
- moving said second object into the field of view of said microscope and positioning it with the pattern thereon in a plane passing through the principal focus of the microscope;
- aligning the pattern on said second object with the reticle; and
- moving said first object into contact with said second object,

whereby the patterns on said objects are brought into contact in a predetermined orientation.

3,357,092
METHOD OF MAKING A PLASTIC SINK MOLD
Laurence N. Nelson, Adrian, Mich., assignor to Kewaunee Manufacturing Company, Adrian, Mich., a corporation of Michigan
Filed Feb. 4, 1963, Ser. No. 255,810
7 Claims. (Cl. 29—476)

1. A method of fabricating a mold for hollow casting an open-ended receptacle or the like, which comprises the following steps: fabricating an interior mold from a single sheet metal blank which forms the complete interior mold, said sheet metal blank notched and shaped so that when formed includes the interior surface of the hollow casting with a peripheral channel integrally formed therewith, and welding the seams of the contiguous sides of the interior mold forming an interior mold in the shape of a frustum of a pyramid and the channel at the lower peripheral edge of the sides of the interior mold, welding the diagonal seams of the contiguous sides of the mold and the contiguous corresponding portions of the channel so that a peripheral channel is integrally formed with the sides of the interior mold at the bottom edge thereof, assembling locating pins for detachably mounting a complementally formed exterior mold thereto, said sides of the exterior mold being spaced from the interior mold to provide the thickness of the hollow casting, said locating pins adapted for supporting a gasket means including an annular intermediate ring complementally formed to be received in the peripheral channel, assembling jacking screws within the channel and contiguous to the juncture of the peripheral edge of the interior mold to the channel, said exterior mold in the form of an open-ended frustum

of a pyramid formed by welding together the four sides of the mold to form a ring with an interior profile the shape of the exterior of the hollow casting, said four sides of the mold having the corners overlapped and fitted together around the interior mold, utilizing spacers the thickness of the wall of the hollow casting, and welding the sides of the mold together so that the hollow casting made from the mold will have the correct thickness of the walls even though the dimensions of the interior mold vary slightly, after the outside sides of the exterior mold are welded and while still clamped in position, locating the position of the locating pins in the channel of the interior mold which are assembled with relation to corner angles welded to the bottom corners of the exterior mold, said intermediate ring formed to fit over the interior mold and into the channel formation and provided with clearance holes in each corner so that the intermediate ring will fit down over the locating pins and rest on the bottom of the channel, said parts indexed so that in subsequent reassembly of the parts for fabricating a hollow



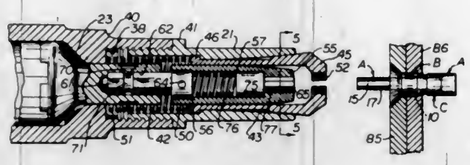
casting, the parts are correctly located the same as during fabrication, with the exterior mold detached from the locating pins of the interior mold, pouring a sufficient quantity of silicone rubber within the channel of the interior mold to almost fill the channel, setting the intermediate ring in place upon the locating pins and permitting the intermediate ring to settle into the silicone rubber to become completely encapsulated in the silicone rubber, setting the exterior mold in place on the locating pins which permits the bottom peripheral edge of the exterior mold to set into the silicone rubber forming a peripheral groove for the peripheral edge of the exterior mold within the silicone rubber and indentations for the respective corner brackets, permitting the silicone rubber of the gasket to cure, after curing is complete the exterior mold is lifted off the interior mold and the gasket seal is removed from the channel at the bottom of the interior mold, and said gasket permits the interior and exterior molds to be repeatedly used for molding hollow castings therefrom.

3,357,093
SOLDERING WITH SOLDER FLUX WHICH LEAVES CORROSION-RESISTANT COATING
James E. Webb, Administrator of the National Aeronautics and Space Administration, with respect to an invention of Albert J. Bauman, Sierra Madre, Calif.
No Drawing. Filed May 21, 1965, Ser. No. 457,879
12 Claims. (Cl. 29—495)

1. A method of soldering metal in which a corrosion-resistant coating is provided, which comprises applying molten solder to the metal in the presence of a fluxing agent which is a hydrazine monoperfluoro alkanoate.

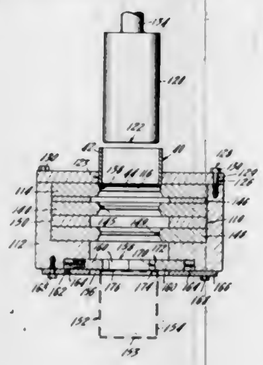
3,357,094
BLIND FASTENER
Paul W. Mouck, Euclid, Ohio, assignor to The National Screw & Manufacturing Company, Cleveland, Ohio, a corporation of Ohio
Filed Dec. 4, 1964, Ser. No. 416,060
11 Claims. (Cl. 29—509)

1. The method of driving a blind fastener comprising an internal or blind member having external threads and a driving connection at the accessible or nonblind side of an external or nonblind member threaded thereon and comprising a head having an outer abutment surface engageable with the accessible side of a structure with which the fastener is employed, which method comprises positioning the fastener in a preformed hole in a structure, threadedly engaging threads of the internal or blind



member and frictionally engaging the accessible or nonblind side of the head of the external or nonblind member with a non-rotatable member, and rotating the internal or blind member while the external or nonblind member is held stationary by said frictional engagement to move a part of the fastener into engagement with the inaccessible or blind side of the structure.

3,357,095
METHOD OF MANUFACTURING A CONTAINER BY CASTING AND WORKING
Albert Joseph Klein, Arlington Heights, Ill., assignor to American Can Company, New York, N.Y., a corporation of New Jersey
Filed Oct. 1, 1963, Ser. No. 313,000
12 Claims. (Cl. 29—528)



1. A method of manufacturing a cup-shaped one-piece metal container with a relatively thin side wall and bottom, comprising the steps of:

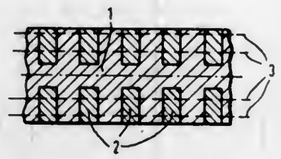
molding a cup-shaped blank from a pool of molten metal, the bottom and side wall of said blank having a predetermined thickness, the metal of said blank having an as-cast grain structure;

placing the bottom of said blank over and in alignment with a female ironing die assembly;

bringing a punch, aligned with said die assembly, into the cavity of said blank, said punch fitting snugly within said blank; and

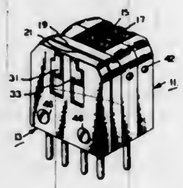
forcing said blank through said die assembly whereby the side wall of said blank is elongated and substantially reduced in thickness in each die of said ironing die assembly without any substantial change in the thickness of said bottom.

3,357,096
PROCESS FOR THE PRODUCTION OF A TUBE FOR THE BUNDLED GUIDANCE OF AN ELECTRON BEAM
Eugen Achter and Paul Kahl, Munich, Germany, assignors to Siemens & Halske Aktiengesellschaft, Berlin and Munich, Germany, a corporation of Germany
Filed Sept. 29, 1965, Ser. No. 491,460
Claims priority, application Germany, Sept. 30, 1964, S 93,461
4 Claims. (Cl. 29—592)



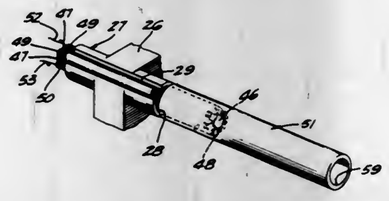
1. A process for the production of a tube consisting alternately of soft-magnetic and non-magnetic rings, which tube, for the bundled guidance of an electron beam, at least partially encloses such an electron beam, comprising the steps of forming annular grooves in a cylinder of soft-magnetic material, entirely filling said grooves with a non-magnetic material, and thereafter processing said cylinder to form a tube with the desired internal and external diameters.

3,357,097
PROCESS FOR MAKING COMBINATION MAGNETIC HEAD
Paul H. Schulte, D–9 Gardenia, San Francisco Urb., Rio Piedras, Puerto Rico
Filed Nov. 1, 1963, Ser. No. 320,889
4 Claims. (Cl. 29—603)



1. A method of making separate erase and record-playback heads having magnetic housings indexable together for precise gap alinement comprising the steps of: peripherally inwardly flanging a blank of material having magnetic permeability along the edges thereof; outwardly embossing said blank on its back wall to an edge thereof to comprise a housing; associating two housings in opposed relation with the flanges confronting each other and the bosses extending outwardly of the housings with non-magnetic material between the flanges in alinement with the bosses to form an enclosure about flux producing means to comprise an erase head; peripherally flanging a blank of material having magnetic permeability along three edges thereof; embossing outwardly a portion of the peripheral flange along one edge thereof; partially cutting and forming pole pieces from the material with integral connection maintained at the edge of said portion; the cutting and forming disposing the pole pieces in alinement with the slots from which they are cut to comprise a housing; disposing flux producing means on the pole pieces; associating a pair of said last mentioned housings to contain said flux producing means; filling the housing enclosure formed by the association with epoxy resin; curing said resin; finishing off the said embossed portions of said last mentioned housings to disconnect the pole pieces from the housings to comprise a record-playback head; and associating the erase head and record-playback head with the bosses of the former employed in the slots of the latter.

3,357,098
METHOD OF MAKING A HEATING ELEMENT
Alvis R. Knowles, Torrance, and Valdemar Lovicz, Redondo Beach, Calif., assignors to Eldon Industries, Inc., Hawthorne, Calif., a corporation of California
Original application Dec. 31, 1962, Ser. No. 248,458, now Patent No. 3,233,637, dated Feb. 8, 1966. Divided and this application Mar. 18, 1964, Ser. No. 356,349
20 Claims. (Cl. 29—614)



10. The method of making a heating element comprising the steps of: placing a ceramic core in a fixed longitudinal cylindrical bore of a fixture, said core having a plurality of fins extending outwardly thereof in a radial direction defining longitudinal grooves therebetween, said fixture having a longitudinal slot therethrough of a size approximately the same as that of each of said grooves, said core being placed in said fixture with a groove therein in alignment with said fixture slot; placing a first length of wire in a first of said core grooves; rotating said core in said fixture bore until a second empty groove falls into alignment with said fixture slot; placing said wire in said second empty core groove; holding a hollow ceramic cylinder adjacent a certain end of said core with the bore of said cylinder in alignment with the bore of said fixture; moving said wire wrapped core out of said fixture bore and, at the same time, into the bore of said cylinder whereby said wire wrapped core is circumferentially secured by both the ceramic cylinder and the fixture until the complete transfer of the wire wrapped core into the ceramic cylinder is effected; and sealing the ends of said ceramic cylinder shut with said wire wrapped core positioned therein and with the ends of said wire extending outwardly of said cylinder.

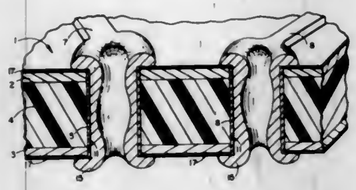
3,357,099
PROVIDING PLATED THROUGH-HOLE CONNECTIONS WITH THE PLATING RESIST EXTENDING TO THE HOLE EDGES
Richard A. Nagy, Fullerton, and Joe C. Mericle, Los Angeles, Calif., assignors to North American Aviation, Inc.
Filed Oct. 29, 1962, Ser. No. 233,686
5 Claims. (Cl. 29—625)

1. A process for manufacturing an electrical pattern on a substrate comprising drilling holes through a metal clad insulative substrate according to a selected pattern,

resist printing a circuit pattern on said metal cladding, said circuit pattern defining the circuit lines to be plated and being defined by said resist printing extending to the outer edges of said drilled holes,

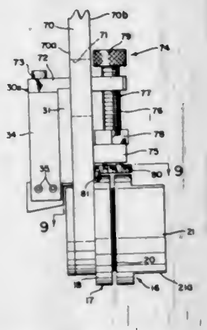
electroless deposition of a metal film on the inner circumference of said holes,

first electroplating with a low throwing power solution said circuit lines to be plated, said inner circumference of said holes having an electrodeposited metal film on the inner circumferences thereof, and the edges of said holes to be plated, thereby forming concentric terminal areas electrically connecting said plated lines and said plated hole inner circumferences, second electroplating on top of said first electroplating, and



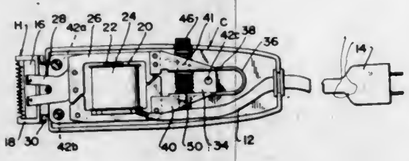
removing unplated resist printing and unplated metal cladding.

3,357,100
TUBE CUTTING TOOL
Fred A. Lennon, Chagrin Falls, and Emery J. Zahuranec, Solon, Ohio, assignors to Crawford Fitting Company, Solon, Ohio, a corporation of Ohio
Filed Mar. 4, 1966, Ser. No. 531,887
6 Claims. (Cl. 30—98)



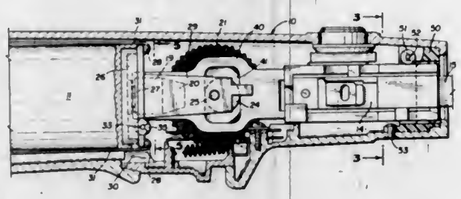
1. A tube cutting tool comprising:
a platform;
an aperture formed in said platform;
clamping means for holding a tube, said clamping means being received in the aperture in said platform and comprising a body member having a passage therethrough,
said body member having one end thereof projecting through the aperture in said platform,
retaining means secured to said one end of said body member,
collet means in the passage in said body member adapted to be contracted about a tube, and
nut means adjustably carried on said body member in operative engagement with said collet means whereby said collet means may be contracted to secure a tube in said body member,
means for securing said platform to said clamping means for rotation thereabout,
cutting tool means,
means supporting said cutting tool means on said platform for movement relative to said platform, said supporting means including a shaft rotatably supported on said platform,
said shaft having threads over at least a portion of its length to impart longitudinal movement to said tool means,
a tool holder operatively connected to said shaft and supporting a tool, and
longitudinal guide means on said platform supporting said tool holder on either side along its length for movement relative to said platform.

3,357,101
HAIR CLIPPER
Dhu Aine J. Davis, Wheaton, Ill., assignor to Hermetic Coil Co., Inc., a corporation of Connecticut
Filed Mar. 14, 1966, Ser. No. 534,004
7 Claims. (Cl. 30—210)



1. In an electric tool having an electromagnetic motor for reciprocating a movable portion of the tool in relation to a fixed portion thereof, the improvement which comprises a unitary frame having a forward section mounting the fixed portion of the tool, a body section behind said forward section and mounting the electromagnet of the electromagnetic motor, an integral spring loop extending away from said body section at a point remote from said forward section, and an armature arm extending from said spring loop in juxtaposition to said body section adjacent the core of said electromagnet for reciprocating movement toward and away from said electromagnet, said armature arm being adapted to mount the movable portion of the tool for reciprocating movement in relation to the fixed portion of the tool.

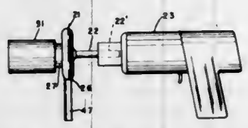
3,357,102
POWER OPERATED KNIFE
Harvey Korshak, Skokie, Ill., assignor to Scovill Manufacturing Company, Waterbury, Conn., a corporation of Connecticut
Filed Sept. 1, 1965, Ser. No. 484,370
5 Claims. (Cl. 30—272)



1. In a power operated knife having a housing, a motor, motor shaft, a pair of driver bars, a pair of blade carriers connected to the bars, and a pair of knife blades having tangs mounted in the carriers, mechanism between the motor and driver bars for reciprocating the driver bars, carriers and blades comprising
(a) a pinion fixed on the motor shaft,
(b) a gear assembly including a transversely extending shaft, and an integral bevel gear, hub and cranks at opposite ends of the hub mounted on the transverse shaft,

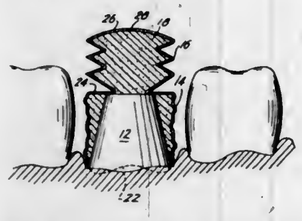
(c) a gear bracket connected to the motor comprising a back plate extending transversely of the housing and radially of the motor shaft between the motor and the pinion, and a pair of arms extending forwardly from the back plate and spaced apart to receive the gear assembly between the arms and with the transverse shaft mounted in the arms and the pinion meshing with the bevel gear,
(d) a hook ended leaf spring overlying the motor and engaging the back plate of the bracket, and
(e) means on the driver bars engaged by said cranks for imparting reciprocatory movement to the driver bars when the bevel gear is rotated by the pinion.

3,357,103
ROUTING DEVICE
Leland S. Sturlaugson, Park River, N. Dak. 58270
Filed Oct. 21, 1965, Ser. No. 499,836
3 Claims. (Cl. 30—276)



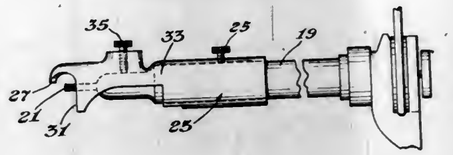
1. A dehorning device adapted to be attached to a power drill, said device comprising a rotary blade, said blade having an elongated shaft forming a stem with one end of said stem adapted to be attached to a power drill, said blade having an annular disc mounted coaxially to the other end of said stem and an elongated strap portion spaced below said disc portion and extending laterally across the rotational axis of said stem and disc, a pair of upwardly extending strap portions extending upwardly from the opposing outer edges of said strap portion with the upper ends of said upwardly extending strap portions fixed to said disc member, said laterally extending strap portion and upwardly extending strap portions having cutting edges with the cutting edges of said laterally extending strap portion inclined downward away from the one end of said stem, a slidably mounted spring biased sleeve adapted to surround said blade and limit the depth of the cut of said blade, a screw mounted on the center axis of said lateral strap portion to initiate the cut of said blade.

3,357,104
DENTAL IMPRESSION HOUSING
Louis L. Greene, 14 Woodland Place, Great Neck, N.Y. 11021, and Norman A. Greene, 154 Highridge Road, New Rochelle, N.Y. 10804
Filed May 21, 1965, Ser. No. 457,646
18 Claims. (Cl. 32—17)



1. A dental impression housing comprising a body having side walls and an open bottom, and a compressible bellows forming an upward extension of said body, said bellows being made of a thin readily bendable material, the bellows being downwardly compressible to force impression material into the body portion.

3,357,105
DEVICE FOR USE IN PROSTHETIC DENTISTRY
Arthur J. Krol, San Francisco, Calif., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan
Filed Feb. 10, 1965, Ser. No. 431,587
4 Claims. (Cl. 32—40)



1. A guiding device for use with a rotary cutting tool having a cylindrical cutting portion and a cylindrical holding portion, said device comprising:
a clamping portion having means thereon for adjustably affixing said guiding device to said holding portion of the cutting tool,
a guiding portion comprising guiding surfaces at substantially right angles to one another, said guiding portion being attached to said clamping portion and spaced therefrom in a direction substantially axially to said cutting portion of said cutting tool when said clamping portion is affixed thereto, and
means for adjusting said guiding surfaces with respect to said cutting portion of said cutting tool, said means including:
a necked attachment between said guiding portion and said clamping portion, and
an adjustment screw for selectively springing said necked portion to pivot said guiding surfaces with respect to said clamping portion.

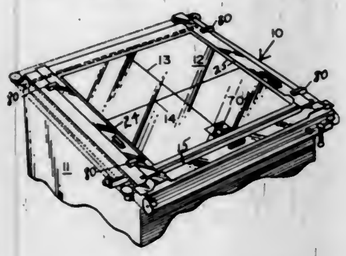
3,357,106
LEVELING ROD DEVICE
Fredric H. Schneider, 4521 Merrill Ave., Oakland, Calif. 94619
Filed Jan. 18, 1967, Ser. No. 610,107
10 Claims. (Cl. 33—74)



1. A leveling rod device comprising an elongated backing member, a template strip translatably carried on and along said backing member, means at the opposite ends of said backing member for furling the opposite ends of said strip and maintaining same in coils, a plurality of measurement marker elements removably secured to the exposed face of said strip at predetermined spaced-apart

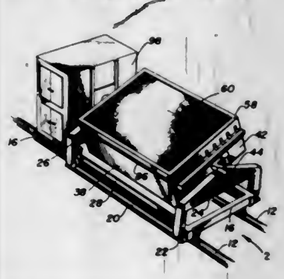
positions, an index point carried on a first of the furling means at a position displaced from said backing member by a distance equal that between said first furling means and the corresponding end of said backing member, and a target marker element carried on the face of said strip at a predetermined position.

3,357,107
THREE-WAY LAYOUT CENTERING TABLE WITH DIMENSIONAL CORRECTION
Burl Flower, 8852 SW. 17th Terrace, Miami, Fla. 33165
Filed Oct. 22, 1965, Ser. No. 501,819
5 Claims. (Cl. 33—184.5)



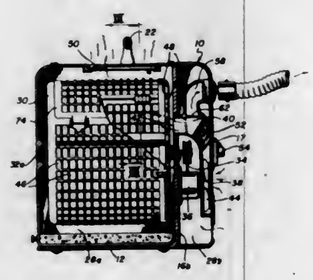
2. A layout centering apparatus comprising a substantially rectangular wall, a plurality of pulleys mounted about said wall, endless belt means forming loops engaging said pulleys, a pair of elongated rules positioned on said wall in substantially parallel relation, means securing said rules to said endless belt means whereby movement of one of said rules a certain distance compels a simultaneous movement in a direction toward or away from each other of a substantially equal distance of the other rule, means mounted on said other of said rules releasing said last named rule from said endless belt means whereby upon movement of said one of said rules, said other of said rules will remain stationary, a scale secured at one end to either of said pair of elongated rules and extending beyond the center of said rectangular wall and adjustable means cooperatively engaging said scale for correcting said scale for the thickness of a marking device being used in connection with said apparatus.

3,357,108
MOBILE DIELECTRIC DRYING APPARATUS WITH ENERGY SOURCE COUPLING MEANS
William N. Bennett, Franconia, N.H., assignor to Fitchburg Paper Company, Fitchburg, Mass., a corporation of Delaware
Continuation of applications Ser. No. 435,196, Feb. 25, 1965, and Ser. No. 440,210, Mar. 16, 1965. This application May 11, 1966, Ser. No. 549,389
27 Claims. (Cl. 34—1)



1. A drying apparatus comprising: a supporting framework; an energy source connected to said supporting framework; supporting member means coupled to said supporting framework; housing means rotatably mounted upon said supporting member means, said housing means capable of being rotated through a complete circular path about an axis through said supporting member means; a first plurality of electrodes connected to said housing means; plate means mounted within and insulated from said housing means; a second plurality of electrodes connected to said plate means; a grounding terminal; and coupling means for coupling said housing means to said ground terminal and said second electrodes to said energy source, said coupling means providing said coupling regardless of the degree of rotation of said housing means.

3,357,109
PORTABLE DRYER
Walter B. Harvey, 28 Brown Drive, Walpole, Mass. 02081
Filed Aug. 17, 1965, Ser. No. 480,318
3 Claims. (Cl. 34—91)

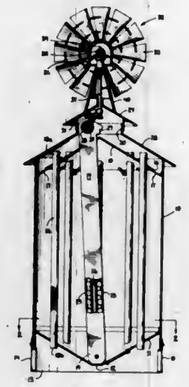


1. A portable clothes and hair dryer combination comprising: a housing adapted to be carried in a convenient manner; a partition dividing the interior of said housing into first and second chambers; a substantially cylindrical foraminous basket journaled for rotation within said first chamber; access doors in said housing and basket permitting the interior of said basket to be filled with clothes to be dried; an inlet opening in said housing adjacent said second chamber; an air duct in said second chamber leading from said inlet opening to a first outlet extending through said partition into said first chamber; a second outlet extending through said housing into said second chamber; a fan for drawing air from the exterior of said housing through said inlet opening into said duct; a motor in said second chamber driving both said basket and said fan; an exhaust opening in said housing leading from said first chamber; a hair dryer detachably connected to said second outlet; heater means in said duct for heating air being drawn therethrough by operation of said fan; and, damper means in said duct for alternately directing air flowing therethrough from said first outlet to said second outlet.

3,357,110
CRIB FOR DRYING GRAIN
Kermit H. Burgin, R.R. 1, Box 212, Boone County, near Whitestown, Ind. 46075
Filed June 2, 1965, Ser. No. 460,777
1 Claim. (Cl. 34—102)

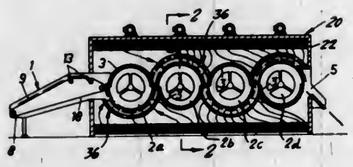
Means for drying grain in a crib comprising:
an enclosing cylindrical wall defining a cylindrical vessel of constant diameter from top to bottom;
an inverted conical lower floor closing off the lower end of the wall;
a conical top floor across an upper portion of the wall and having an annular opening between its periphery and said wall;

a grain elevator disposed approximately centrally of the wall and said floors;
said elevator having a grain pickup at said lower floor and discharging centrally over said top floor allowing the grain to flow under influence of gravity over the top floor downwardly to said opening adjacent the inner side of said wall during the elevator pickup of grain at the center of the lower floor;
power means operating said elevator;



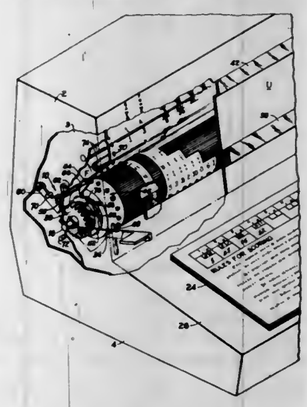
said lower floor being spaced above the bottom of said wall to provide an air space therewithin under the floor;
a plurality of perforate walled tubes having lower end portions extending downwardly to said lower floor and opening into said air space, and having upper end portions extending through said top floor discharging thereabove;
said wall having air inlet openings therethrough below said lower floor; and
said grain travelling along the outer sides of said tubes during movement of the grain set up by said elevator.

3,357,111
MATERIAL GUARDING AND GUIDING MEANS FOR SIEVE DRUMS
Gerold Fleissner and Richard Wiedermann, Frankfurt am Main, Germany, assignors to Fleissner G.m.b.H., near Frankfurt am Main, Germany
Filed May 6, 1965, Ser. No. 453,579
Claims priority, application Germany, May 20, 1964, F 42,929
8 Claims. (Cl. 34—115)



1. A device for treating materials which are air impermeable such as veneers, comprising a plurality of drums rotatably mounted in a row with each drum in a row being arranged adjacent the next successive drum in a position for receiving materials to be treated from the surface of the previous drum, each drum having a perforated curved surface and having fan means associated therewith for pulling a treatment fluid through the perforations and for urging materials to be treated to adhere to the surface of the drum overlying the perforations by the movement of the treatment fluid, fixed baffle means inside each of said drums closing off the perforations over a portion of the interior periphery of the drum, adjacent drums in a row having said baffle means located in a complementary opposite manner to cover lower and upper portions of successive drums in a row so that the material to be treated will be carried on the surface of the drum and will be lifted from one drum to the next by action of said baffle means to discontinue the inflow of treatment fluid through the perforations of one drum as the material approaches the next drum, said next drum having said baffle means located to cause the inflow of treatment fluid at the location of the first drum and thereby to urge the material to the next drum and the transfer of material from the first drum to the next drum in succession at such location, means for directing material to be treated to the first drum in a series for subsequent transfer over a portion of the surface of each drum in a row, discharge means in said housing for receiving the material from the last drum when directing it out of the housing, and guarding and guiding means bearing downwardly over all of said drums in the entire areas having the exposed perforations including a plurality of laterally spaced thin guiding elements bearing on the veneers to hold them adjacent the exterior periphery of said drum for maintaining a material to be treated in association with the drum and extending around the periphery of said drum in spaced relationship thereto and permitting free access of the treatment fluid to the veneer surface whereby the treatment can be uniformly effected.

3,357,112
BOWLING SCORING TRAINER
Carter L. Burgess, Pelham Manor, and Gregory L. Laserson, Scarsdale, N.Y., assignors to American Machine & Foundry Company, a corporation of New Jersey
Filed May 12, 1965, Ser. No. 455,123
13 Claims. (Cl. 35—9)



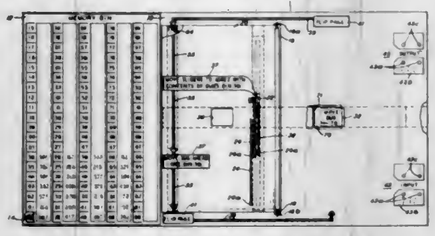
1. A device of the type described comprising a first source of indicia representing the ball by ball and frame by frame pinfall results for each frame of a bowling game, a second source of indicia representing the correct ball by ball and frame by frame score of the pinfall results for each frame of the same game, a surface on which a player can make appropriate entries of ball by ball and frame by frame pinfall results from information obtained from said first source of indicia and compare his entries and frame scores with information obtained from said second source of indicia, a shutter for

masking said first source of indicia, means for moving said shutter to sequentially display the ball by ball and frame by frame pinfall results of each successive frame, operating mechanism for said second source of indicia, and means for actuating said mechanism after each movement of said shutter to display to said player the correct ball by ball entries and correct score entry of the next preceding frame.

3,357,113
DEVICE FOR TEACHING COMPUTER OPERATION AND PROGRAMMING

David W. Hagelbarger, Morris Township, Morris County, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Aug. 24, 1965, Ser. No. 482,227
20 Claims. (Cl. 35—13)



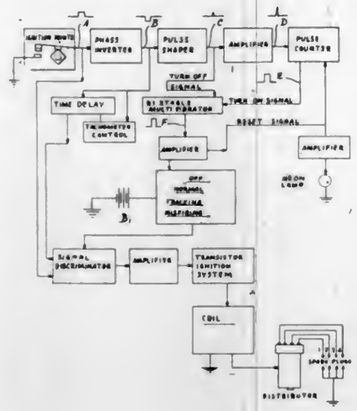
1. In combination in an educational device,
memory means for storing a plurality of multidigit numbers at a respective plurality of address locations,
and control means distinct from and physically removed from said memory means and the number representations stored therein, said control means being adapted to be manually moved into first and second registrations each spaced apart from said storing means,
said control means including first manually movable means settable for displaying, when said control means is in said first registration, a replica of a designated one of the multidigit numbers stored by said memory means,
said control means further including second movable means responsive to the setting of said first means and adapted to be physically moved thereby for displaying, when said control means is in said second registration, a decoded version of the designated multidigit number.

3,357,114
IGNITION MISFIRE AND TRACKING SIMULATOR

Sam J. Green, Temperance, Mich., assignor to Champion Spark Plug Company, Toledo, Ohio, a corporation of Delaware

Filed Jan. 17, 1966, Ser. No. 521,162
8 Claims. (Cl. 35—13)

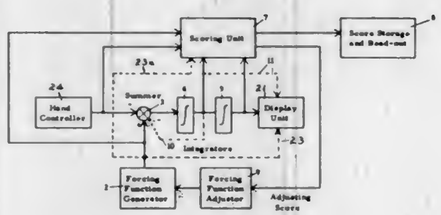
1. A device for use with an ignition system for causing selected amounts of ignition misfire or for simulating selected amounts of ignition tracking comprising, in combination, an electrical pulse counter for connection to the points of the ignition system, control means associated with said pulse counter whereby said pulse counter may be programmed to pass a signal after the receipt of a predetermined number of pulses from said ignition points, a time delay device for connection to said points for delaying the pulses received therefrom by predetermined amount, a signal discriminator operably connected to said ignition points, said time delay device, said pulse counter and the coil of said ignition system, and a function selector operably connected to said signal discriminator whereby, when said selector is in a first position, said signal discriminator will pass pulses from said points to said coil for normal ignition, and whereby, when said selector is in a second position, said signal discriminator will pass a delayed pulse to said coil after passing said predetermined number of pulses set by said counter from said points to said coil, thereby simulating ignition tracking through delayed ignition, and whereby, when said selector is in a third position, said signal discriminator will prevent passage of a pulse to said coil after passing said predetermined number of pulses set by said counter from said points to said coil, thereby causing ignition misfire.



3,357,115
PSYCHOMOTOR PERFORMANCE TESTING APPARATUS

Charles R. Kelley, Panorama City, Calif., assignor to Dunlap and Associates, Inc., Darien, Conn., a corporation of Delaware

Filed Apr. 25, 1966, Ser. No. 544,938
22 Claims. (Cl. 35—22)

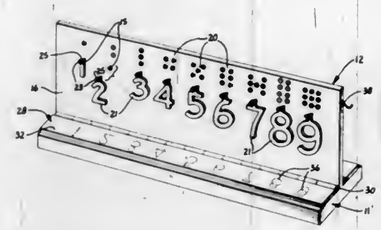


1. A psychomotor performance testing apparatus comprising a movable hand controller having freedom of movement in at least one plane; a signal channel, one for each plane of movement, each channel transmitting signals representative of the position of said hand controller in a respective plane; a forcing function generator generating disturbance signals of controllable characteristic; means combining said disturbance signals into at least one of said signal channels to obtain a derived signal; at least one indicator for each of said planes of freedom of movement to indicate deviation of applied signals from a predetermined datum, said indicators being responsive to said derived signals and displaying deviations of said derived signals from said datum; means measuring a characteristic of the deviation from said datum of each indicator and deriving at least one deviation signal representative thereof; and means applying at least one of said deviation signals to said forcing generator to control said forcing function generator to change the characteristics of said disturbance signal in accordance with the characteristic of the deviation from said datum.

3,357,116
MATHEMATICS TEACHING DEVICE

Marycarol P. Bazacos, 6 Thomas Lane, Chico, Calif. 95926

Filed Apr. 16, 1965, Ser. No. 448,813
1 Claim. (Cl. 35—31)



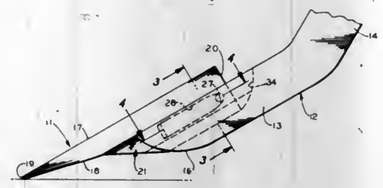
A mathematics teaching device comprising:
a backboard having a display face,
means supporting said backboard,
a plurality of sets of indicia on said face of said backboard, the number of said indicia in each said set corresponding to the value of a removable numeral to be placed adjacent said indicia,
a set of removable numerals to be placed on the face of said backboard,
and attachment means by which said numerals may be placed on the face of said backboard, each in proximity to one of said sets of indicia, and
which further comprises correction means, said correction means comprising a rigid leaf, a hinge attaching said leaf to said backboard, said leaf in its normally closed position exhibiting a blank upper face, said leaf in its raised position exposing its underside face, said underside face having answer numbers thereon corresponding to the number of indicia in a set appearing adjacent said answer number when said underside face is exposed.

3,357,117
RESILIENT RETAINING MEANS FOR DIGGING IMPLEMENT BLADES

Gerald A. Petersen, Sunnyvale, Calif., assignor of one-half to Anita E. Petersen, Saratoga, Calif.

Filed Dec. 14, 1964, Ser. No. 418,073
12 Claims. (Cl. 37—142)

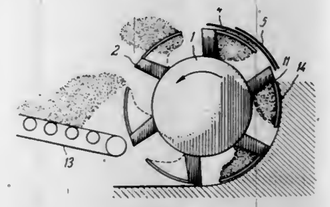
1. In earth digging equipment, a blade holder member, a blade member and a resilient retainer for said members, a first of said members formed with a recess having at least one first wall, a second of said members formed with an extension complementary to said recess and having at least one second wall facing and in close proximity to said first wall, said extension sliding longitudinally into said recess, at least one said wall formed with a longitudinaly extending groove and a transverse hole, said retainer fitting in said hole and being compressed into said groove to frictionally restrain longitudinal relative movement of said members, said recess and said extension being T-shaped in cross-section having a leg and transverse feet and one said wall extending along said leg, said hole normal to said leg, said extension being completely enclosed within said recess, the walls of said recess surrounding said leg and said feet, said groove having a cross-sectional area substantially less than the initial uncompressed cross-sectional area of said retainer, said groove being substantially wider in a direction transverse to the direction of insertion of said blade member in said blade holder member than the depth of said groove, whereby the compressed shape of said retainer provides an extend surface of frictional contact between said members.



3,357,118
OPERATIVE CUTTER UNIT FOR A WHEEL EXCAVATOR

Dmitry Isaakievich Taranov, Donetsk, U.S.S.R., assignor to Gosudarstvenny Donetsky Mashinostroitelny zavod, Donetsk, U.S.S.R.

Filed Aug. 21, 1964, Ser. No. 391,107
4 Claims. (Cl. 37—190)



1. An operative cutter unit for a wheel excavator comprising: a cutter wheel, buckets secured to said cutter wheel, each of said buckets being composed of a closed bend forming a cutting lip spaced from the wheel, a bowed, substantially U-shaped frame having the free ends thereof pivotally attached to said closed bend adjacent said cutting lip, said U-shaped frame extending rearwardly from said cutting lip with respect to the direction of rotation of said cutter wheel, said U-shaped frame thus forming an open side in said bucket for discharge of excavated material, interlinked flexible, elements having the ends thereof secured to both said closed bend and said U-shaped frame to form a flexible bottom for said bucket, means for maintaining said U-shaped frame at a preselected distance from said cutter wheel, and said unit including means for preventing discharge of excavated material through said open side in said bucket within a preselected zone.

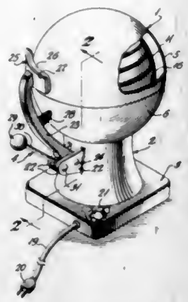
3,357,119
ELECTRIC IRONING DEVICE

Rita M. Nimeskern, 412 1st St. SE., Washington, D.C. 20003

Filed Mar. 11, 1966, Ser. No. 533,511
9 Claims. (Cl. 38—99)

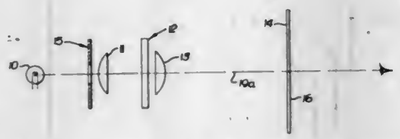
1. A spherical iron of the character described, comprising, a hollow spherically-shaped member, including

an ironing surface, means positioned within said member for heating the ironing surface, a weighted base member, a pedestal formed on the spherically-shaped member con-



necting said member to the weighted base member; and a presser arm assembly, incorporating a pressure head, operatively supported on the pedestal.

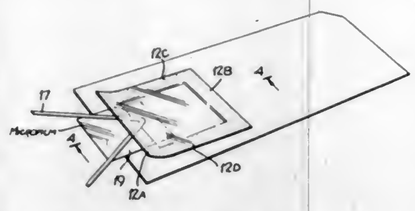
3,357,120
INDICIA PROJECTION ASSEMBLY
William Pennington and Ying-Nien Yu, Los Angeles, Calif., assignors to Digital Systems Company, Los Angeles, Calif., a partnership
Filed July 8, 1965, Ser. No. 470,422
20 Claims. (Cl. 40—28)



20. In combination, a light projection system for directing light in multiple generally parallel spaced discrete paths, a light mask containing an array of areas, light in said paths being concentrated at the mask by said projection system, each area including multiple light passing and interrupting symbol zones, and actuator means connected to displace the mask in relation to said paths to bring selected symbol zones in different of said areas into said paths thereby to pass the light in accordance with an informational symbol sequence, the spacing of adjacent light paths at the mask being substantially greater than the overall transverse dimension of individual of said zones.

3,357,121
SUSPENSION TYPE LOCK-IN APERTURE CARD
Isidore Dorman, Whitestone, N.Y., assignor to NB Jackets Corporation, Long Island City, N.Y., a corporation of New York
Filed Oct. 21, 1965, Ser. No. 500,015
3 Claims. (Cl. 40—158)

1. A suspension-type lock-in aperture card comprising a card having a rectangular aperture, transparent top and bottom panels formed of flexible sheet material disposed on opposing faces of said aperture to form a chamber, said panels having dimensions larger than that of said aperture to define marginal end and side borders overlying the edges of said aperture, and means adhering all of the borders of said panels to card edges, the end border of said top panel having an adhesive-free triangular area therein to admit a tool having a triangular tip for raising said end border to provide an opening for inserting a film strip in said chamber, the apex of said triangular



area being contiguous with said aperture whereby when said end border is adhered to said card edge, said strip is effectively sealed within said chamber.

3,357,122
TWO-COMPONENT ANIMAL TAG
Norman J. Hayes, Cody, Wyo., assignor to Perma Manufacturing Co., Cody, Wyo., a corporation
Filed Oct. 23, 1965, Ser. No. 503,034
11 Claims. (Cl. 40—301)



1. A two-component tag for livestock, including a connector adapted to be attached to an ear or the like of an animal and a tag body adapted to be attached to the connector to depend therefrom, wherein said connector comprises:

a pair of arms connected at one end by a connecting section;

one of said arms being adapted to be threaded from its opposite end through a slit in an animal's ear or the like to place the connecting section in the slit and permit the arms to extend and depend therefrom at each side of the ear;

the other of said arms including a hook at its opposite end adapted to hold the tag body, said tag body having a hole therein adapted to engage said hook; and

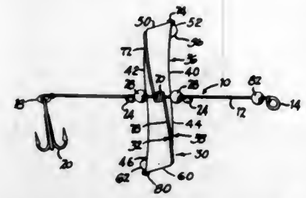
said one arm extending around in spaced relation to said hook and in the opposite direction to said hook; and

said tag body being provided with an additional hole for engaging said one arm, simultaneously with engagement of said first hole with said hook.

3,357,123
FISH LURE
John Kurlovich, 32225 MacKenzie Ave., Garden City, Mich. 48135
Filed Jan. 18, 1965, Ser. No. 426,021
4 Claims. (Cl. 43—42.2)

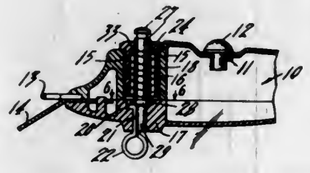
1. A fishing lure comprising a longitudinal member, a trolling spinner formed of a single sheet of material and comprising two substantially oppositely extending blades arranged on different angles, one of said blades being inclined with its leading edge being lower than its trailing

edge and the end thereof being inclined inwardly toward one of said edges of the spinner and the other of said blades being inclined with its leading edge being higher than its trailing edge and the end thereof being inclined



inwardly toward the opposite edge of the spinner and means positioned transverse to and pivotally connected to said longitudinal member and having a portion connected to each end of the spinner.

3,357,124
FISHING LURE
David I. Stepacoff, 280 Hobart St., Perth Amboy, N.J. 08861, and Zoltan Klein, 221 Reeves Drive, Beverly Hills, Calif. 90212
Filed Apr. 26, 1965, Ser. No. 450,721
4 Claims. (Cl. 43—42.09)



1. A fishing lure used in trolling, comprising a watertight hollow body, an opening for introducing a liquid into said body for weighting thereof, means for closing said opening, a well extending into the body of the lure and having internal threads, said well having an opening at the upper portion of the body and a shoulder at the lower portion thereof, said shoulder having a notch therein, a plug having exterior threads adapted to be screwed into said well, a plunger extending downwardly through an opening in said plug and adapted for slidable movement therein, said plunger having a flange at its lower end adapted to bear against said shoulder, a stem extending downwardly from said flange to fit within an opening in said shoulder and the lower portion of said well, a compression spring surrounding said plunger, the lower end of said spring bearing against said flange and the upper end bearing against the lower surface of the top of said plug, a hook ring having an upwardly etxending shaft terminating in a right angle turn and extending up through said opening in the lower end of said well, the right angle turn of said upwardly extending shaft adapted to fit snugly in said notch in the shoulder and said shaft fitting snugly in said opening in said shoulder against the stem of said plunger.

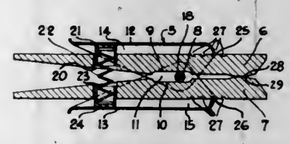
3,357,125
WEEDLESS FISHHOOK WITH IMPROVED GUARD
Thomas J. Jester, Box 7A, Nelson Rte., Searchlight, Nev. 89046
Filed Aug. 26, 1965, Ser. No. 482,746
7 Claims. (Cl. 43—43.4)

1. In combination, a weedless fishhook embodying a shank provided at one end with a return-bent hook terminating in a barbed bill and at the other end with an eye, a pressure and pull responsive yieldable weed guard carried by said shank; diagonally bridging the usual gap between the barbed hook and shank, said guard being normally yieldingly closed, and a fishing line leader extending through said eye and oriented with said shank and barbed bill and having a portion thereof extending generally at



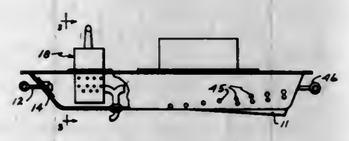
right angles to and operatively connected directly to an intermediate point along the length of said guard and affording the fisherman a means of positively retracting said guard and clearing the hook the moment he senses the strike of a fish, whereby the opening action of the guard is not wholly dependent, as usual, upon the biting of the fish to depress and open the guard.

3,357,126
OUTRIGGER CLIP
Harold A. Klieves, 4450 NE. 22nd Ave., Pompano Beach, Fla. 33064
Filed Mar. 7, 1966, Ser. No. 532,252
8 Claims. (Cl. 43—43.12)



1. A line holding clamp device comprising:
(a) a first pair of pivoted jaw members biased together,
(b) a second pair of jaw members placed outwardly from said first pair of jaw members,
(c) said second pair of jaw members gripping said first pair of jaw members, and
(d) means for adjusting said second pair of jaw members relative to said first pair of jaw members.

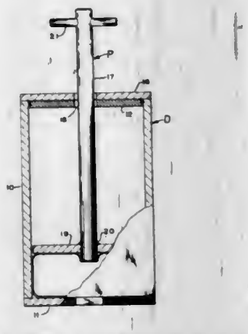
3,357,127
COMBINATION CATCH AND LIVE BAIT CONTAINER
Eugene W. Barradale, 18 Maplewood Drive, New Monmouth, N.J. 07748
Filed Oct. 5, 1965, Ser. No. 493,061
2 Claims. (Cl. 43—55)



1. A floatable boatlike structure for live bait and a catch of fish that may be stored and retained in a fresh condition which includes a boatlike hull, said hull pro-

vided with a plurality of perforations to be submersible, said hull having a panel secured therewith and a floatation plate retained within said hull to provide partial floatation, said panel provided with an opening to receive a removable perforated live bait box positioned within said hull, said panel provided with a chute like opening to provide easy access to one area of said haul for fish that are caught, said hull provided with a tow eye bolt for towing said hull behind another boat, said hull provided with a scoop tube terminating in a double ended Y shaped outlet directed, one end of said outlet to supply a fresh flow of water to said bait box within said hull and the other end of said outlet directed to provide water over the catch of fish that may be stored, said hull designed with a flat bottom to permit planing when said hull is towed at sufficient speed to lift itself out of the water and said hull provided with a keel to assist in maintaining said hull on a steady course when towed.

3,357,128
TOY DETONATOR BOX
John R. Geiser, 11261 Lafayette, Northglenn, Colo. 80233
Filed Oct. 19, 1964, Ser. No. 404,723
7 Claims. (Cl. 46—194)



1. In combination with a toy balloon, a toy detonator adapted to burst said toy balloon under pressure and with an explosive report, and comprising:

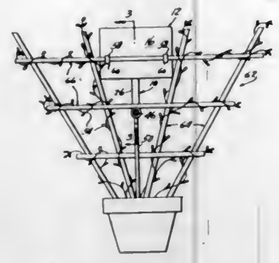
(a) a boxlike container receiving said toy balloon in inflated condition and having an aperture at its base substantially smaller than the diameter of the balloon; and,

(b) a plunger at the top of the container extending therein and having a piston at its bottom, within the container, adapted to normally rest upon said inflated toy balloon therein; said plunger being adapted to be pressed into the container whereby the piston presses against the balloon to press it downwardly into the container under increasing pressure until rupture of the balloon occurs at the aperture.

3,357,129
PLANT WATERING SYSTEMS AND CONTROL MEANS THEREFOR
George W. Torrence, 829 N. Dupont St., Wilmington, Del. 19805
Filed June 17, 1966, Ser. No. 558,422
7 Claims. (Cl. 47—38)

1. Means for supplying plant life growing in soil disposed in a receptacle with a supply of liquid comprising a liquid-receiving reservoir, rigid means supporting said reservoir in an elevated position above said receptacle, a conduit having an end thereof in open communication with said reservoir and its other end juxtaposed relative to said plant life, and valve means interposed between said ends of said conduit,

and wherein said supporting means comprises said conduit, and said other end is embedded in said soil,



and auxiliary support means for said reservoir, said auxiliary support means including members each having a pair of ends with lower ends of said members secured in said receptacle and their upper ends being juxtaposed relative to said reservoir, and means mounted on said reservoir for connection with said upper ends of said members.

3,357,130
METHOD FOR PROTECTING PLANTS IN A SALT-CONTAINING ENVIRONMENT
Justin H. Reinhart, Jamesburg, N.J., assignor to Olin Mathieson Chemical Corporation, New York, N.Y., a corporation of Virginia
No Drawing. Filed Aug. 27, 1964, Ser. No. 392,582
1 Claim. (Cl. 47—58)

The method of protecting plants from the injurious effects of a salt-containing environment which comprises applying to said plants and their environment an effective amount of a compound selected from the group consisting of 3-(o-chlorophenoxy)-1,2-propanediol; 3-(o-tolyloxy)-1,2-propanediol; 3-(m-chlorophenoxy)-1,2-propanediol; 1-(o - tolyloxy) - 2 - propanone; 2,3,4 - trichlorophenoxyethoxyethoxy ethanol; 2,3,4 - trichlorophenoxyethoxy ethanol; 2,3,4,5 - tetrachlorophenoxyethoxy ethanol; 2,3 - dichlorophenoxyethoxyethoxy ethanol; pentachlorophenoxyethoxyethoxy ethanol; 2,4,5 - trichlorophenoxyethoxyethoxyethyl phenyl carbamate; 2,4,5 - trichlorophenoxyethoxyethyl phenyl carbamate.

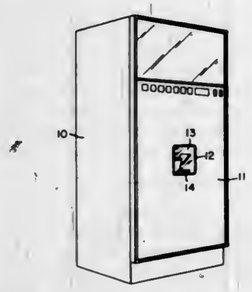
3,357,131
METHOD FOR PROTECTING PLANTS IN A SALT-CONTAINING ENVIRONMENT
Justin H. Reinhart, Jamesburg, N.J., assignor to Olin Mathieson Chemical Corporation, New York, N.Y., a corporation of Virginia
No Drawing. Original application July 9, 1963, Ser. No. 293,840, now Patent No. 3,298,816, dated Jan. 17, 1967. Divided and this application Aug. 27, 1964, Ser. No. 392,583
1 Claim. (Cl. 47—58)

The method of protecting plants from the injurious effects of a salt containing environment which comprises applying to said plants and their environment an effective amount of a compound selected from the group consisting of hexamethylene bis(dimethyl-2-propynyl)ammonium bromide; hexamethylene bis(dodecyldimethyl) ammonium bromide; 3-benziloyloxy)propyl dimethylethylammonium bromide; cetyldimethylethylammonium bromide; dimethylbenzyl-(higher alkyl)-ammonium chloride; 2-(benziloyloxy)ethyldiethylmethyl ammonium bromide; [2-(N-benziloyl-N-ethylamino)ethyl]diethylmethyl ammonium bromide; diethyl[2-(N-benziloyl-N-benzyl) aminoethyl]-methylammonium bromide; 2-pyridinethiol-1-oxide, dimethylstearylamine salt; 2-pyridinethiol-1-oxide, distearylamine salt; 1,1-dimethyl-1-benzylhydrazinium chloride; 1-(2-hydroxyethyl)-2-n-alkyl-1 (or 3)-benzyl-2-imidazolinium chloride; 1-hydroxyethyl-2-heptadecenyl-1-benzyl-2-imidazolinium chloride; 1-hydroxyethyl-2-heptadecenyl-3-benzyl-2-imidazolinium chloride; and N,N'-bis(tetramethylene)-1,8-diazacyclotetradecane dibromide, said compound dispersed in a substantial amount of a suitable extending agent.

3,357,132
METHOD OF PROTECTING PLANTS IN A SALT-CONTAINING ENVIRONMENT
Justin H. Reinhart, Jamesburg, N.J., assignor to Olin Mathieson Chemical Corporation, New York, N.Y., a corporation of Virginia
No Drawing. Filed Aug. 27, 1964, Ser. No. 392,584
4 Claims. (Cl. 47—58)

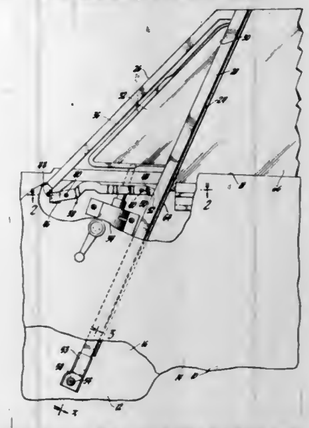
1. The method of protecting plants from the injurious effects of a salt-containing environment which comprises applying to said plants and their environment an effective amount of a compound selected from the group consisting of monoisopropanolamine; 1-(2-diethylaminoethyl)-1-isopropyl-3,3-diphenylurea hydrochloride and thiosalicylic acid.

3,357,133
AUTOMATIC CONTROLLED DOOR FOR A VENDING MACHINE
Knud J. Helsing, Longmeadow, Mass., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 13, 1965, Ser. No. 495,478
3 Claims. (Cl. 49—25)



1. A vending machine comprising a cabinet, a recess in a wall of said cabinet to which an article to be vended is moved during vending, a movable access door mounted on said wall to have a normal position closing said recess, door moving means including first means responsive to the positioning of an article being vended in said recess for moving said door to an open position, second means responsive to removal of an article being vended from said recess for moving said door to the normal closed position, said door moving means comprising a cable secured to said door, a lever attached to said cable and movable in one direction to move said cable in a direction to open said door and movable in the opposite direction to move said cable in the opposite direction to close said door, rotatable means connected to said lever to move said lever in said one direction during a portion of one revolution thereof and to move said lever in said opposite direction during the remainder portion of one revolution thereof, said first means being responsive to rotate said shaft for the first portion of one revolution thereof to thereby move said door to the open position, and said second means being responsive to rotate said shaft for the remainder portion of one revolution thereof to thereby move said door to the normal closed position.

3,357,134
VEHICLE BODY
Donald R. Genord, Harper Woods, and James D. Leslie, Birmingham, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 23, 1965, Ser. No. 503,894
4 Claims. (Cl. 49—144)



1. In combination with a vehicle body having a closure mounted thereon for pivotal movement about an axis between open and closed positions with respect to a body opening defined by the upper edge portion of the closure and a body header, a window movable between open and closed positions with respect to the body header, an elongated window guide member extending between the closure and the body header, means mounting the guide member intermediate the ends thereof on the closure for pivotal movement about an axis transverse of the pivotal axis of the closure, the guide member having a channel receiving a side edge portion of the window for guiding movement of the window between its open and closed positions and the window being movable with the guide member upon movement of the guide member about its pivotal axis, biasing means adjacent one end of the guide member biasing the one end of the guide member outboard with respect to its pivotal axis to bias the other end of the guide member inboard with respect to its pivotal axis and with respect to the body header, sealing means on the body header having a channel for receiving the upper edge portion of the window in the closed position thereof and the closed position of the closure, and means on the body engageable with the other end of the guide member upon movement of the closure from open to closed positions, the engagement of the other end of the guide member with the body means swinging the other end of the guide member outboard about the guide member pivotal axis against the biasing means to move the other end of the guide member outwardly and upwardly with respect to the body header and position the guide member channel in registry with the sealing means channel, the window being movable with the guide member to swing the upper edge portion of the window outwardly and upwardly to a position within the sealing means channel when the window is in closed position and the closure moves from open position to closed position.

3,357,135
WINDOWS
William Hallam Russ and Henry Ernest Evans, Slough, England, assignors to N. V. Appleton (U.K.) Limited, Slough, England, a British company
Filed June 1, 1965, Ser. No. 460,128
6 Claims. (Cl. 49—390)

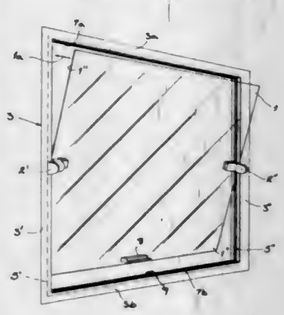
1. A window assembly comprising two upright side frame members, a window pane extending between the

side members and attached thereto for pivotal movement about a transverse axis at the centre of the height of the pane, and releasable means for restricting rotation of the pane at at least two positions in the range of pivotal movement, the releasable means, in respect of the first



position which is intermediate in the range of pivotal movement, restricting only further pivotal movement of the pane away from its closed position and, in respect of the second position, restricting pivotal movement of the pane in both directions.

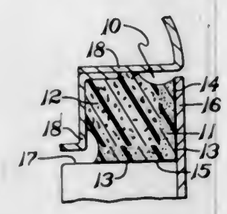
3,357,136
SEALING STRIP FOR PIVOTAL WINDOWS AND ASSEMBLY INCORPORATING SAME
Roger H. Marantier, Paris, France, assignor to Glaces de Boussois, Paris, France, a corporation of France
Filed Feb. 28, 1966, Ser. No. 530,577
Claims priority, application France, Feb. 26, 1965, 7,186
7 Claims. (Cl. 49—392)



1. A sealing arrangement for a pivotal assembly having a generally planar frame and a generally planar movable part swingably mounted in said frame for pivotal movement into and out of the plane of said frame, said movable part having at least one edge extending transversely to its pivotal axis and parallel to a corresponding portion of said frame in a closed condition of said assembly,

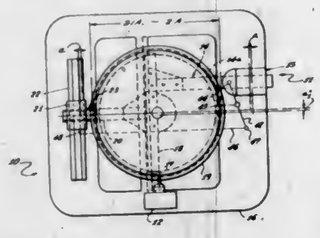
said sealing arrangement comprising a sealing member of a resilient material interposed between said frame portion and said edge and provided with a base, connecting means extending from said base for securing same to said frame portion, at least one continuous longitudinal tongue extending from said base away from said connecting means and adapted to bear continuously against said edge in all positions of said movable part, said tongue being flattened thereby in said closed condition of said assembly, a pair of flanges laterally spaced from and flanking said tongue while projecting beyond said tongue for engagement with opposite faces of said movable part on opposite sides of said edge, and means enabling selective deflection of said flanges by said movable part.

3,357,137
WEATHER STRIP
Michael W. Lombardi, Derby, and Joseph M. Kapusta, Ansonia, Conn., assignors to The B. F. Goodrich Company, New York, N.Y., a corporation of New York
Filed Aug. 2, 1965, Ser. No. 476,360
4 Claims. (Cl. 49—475)



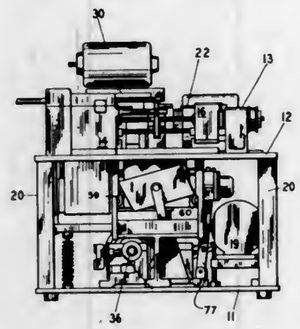
2. In combination, a flexible resilient weather strip mounted to the inner peripheral face of an automobile door or trunk lid for bridging the space between the automobile door or trunk lid and the automobile body when the automobile door or trunk lid is closed, said weather strip comprising a resilient open-cell cellular material component adjacent the inner peripheral face of the automobile door or trunk lid to which the weather strip is mounted and a resilient closed-cell material sealing component which is in sealing engagement with the automobile body when the door or trunk lid to which the weather strip is mounted is closed and latched.

3,357,138
ATTACHMENT FOR GRINDING SPLIT POINTS ON DRILLS
Robert E. Young, Lynwood, Calif., assignor to Northrop Corporation, Beverly Hills, Calif., a corporation of California
Filed Mar. 15, 1965, Ser. No. 439,610
9 Claims. (Cl. 51—5)



1. In a machine embodying a frame having a head mounted thereon adapted to have drill bits mounted therein while a pointing operation is performed thereon and including structure slideably mounted on the frame, an abrasive wheel and cutting means adapted to recondition the wheel whereby the diameter of the latter is reduced the combination with structure making possible drill point splitting operations to be effected on said machine comprising: track-like means mounted on said slideable structure and extending generally radially of said wheel; adjustable means movably mounted on said track-like means; said adjustable means adapted to receive previously pointed drill bits therein in a predetermined relation with respect to said wheel; and mechanical means adapted to transmit movements of said cutting means to said adjustable means whereby said predetermined relation is maintained during and after a wheel recondition operation.

3,357,139
HELIXING MACHINE
Joseph Nicholas Ianuzzi, Ernest James Bryner, and Jerry L. Wight, Bradford, Pa., assignors to Sigma Engineering Service, Inc., Custer City, Pa., a corporation of Pennsylvania
Filed May 26, 1964, Ser. No. 370,179
4 Claims. (Cl. 51—50)



1. A machine for forming helixes on the periphery of cylindrical bodies comprising

means to rotate said bodies on said machine,

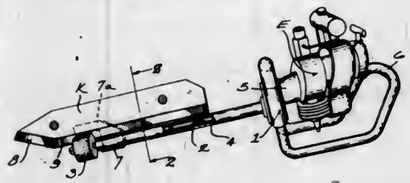
means on said machine to inscribe helical insiginia in the outer periphery of said cylindrical bodies,

and means responsive to the electrical properties of said bodies for stopping the path of said bodies when the overall electrical characteristics of said bodies have reached a predetermined value,

said means for rotating said bodies comprises collet members receiving the ends of said bodies and adapted to receive wires attached to the ends of said bodies extending generally parallel to said bodies,

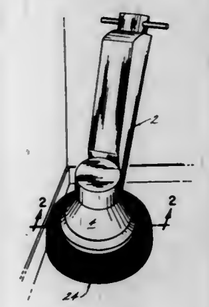
and means on said collet members engaging said wires for ejecting said bodies from said collet members.

3,357,140
KNIFE SHARPENER FOR FORAGE HARVESTERS AND THE LIKE
Donald J. Huhn, West Bend, Wis., assignor to Gehl Bros. Manufacturing Company, West Bend, Wis., a corporation of Wisconsin
Filed Sept. 10, 1965, Ser. No. 486,329
4 Claims. (Cl. 51—173)



4. A portable knife grinder comprising a self contained power unit having a support frame, a drive shaft extending from the frame for a length of about two feet, a grinding wheel of a diameter of about two inches and fixed to the outer end of the drive shaft for rotation therewith at a speed of in the neighborhood of 9,000 r.p.m., a tubular member surrounding the drive shaft and fixed at one end to the frame of the power unit, a knife guiding bracket welded to said tubular member adjacent the outer end thereof and having a portion extending generally radially from the tubular member, said radially extending portion being straight and flat and adapted to lay against one side of a knife being sharpened, said wheel and radially extending portion defining a pocket into which the knife edge being sharpened is inserted and can be moved axially therein, and a handle on one side of the portable grinder and located generally at the juncture of said tubular member and said power unit.

3,357,141
BASEBOARD AND FLOOR CLEANING APPARATUS AND BRUSH THEREFOR
Truman W. Annis, Jr., 71 S. Main St., Manchester, Conn. 06040
Filed Jan. 30, 1964, Ser. No. 341,310
34 Claims. (Cl. 51—176)

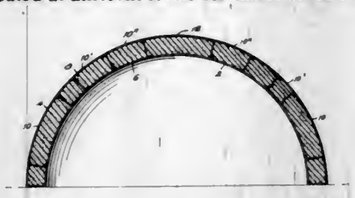


1. In a floor machine of the type having a generally vertical brush drive shaft and a brush housing, the combination therewith of a baseboard-floor brush member disposed at the lower end of said brush housing and having a core portion and a multiplicity of flag portions of flexible abrasive material extending radially outwardly from said core portion about the periphery thereof, said flag portions extending radially outwardly of said brush housing and therebelow for cleaning of baseboards and extending downwardly to the lower surface of said core portion for contact with and cleaning of floors, said core portion being drivingly engaged with said drive shaft for rotation thereby with said flag portions rotating radially outwardly of said housing for the cleaning of baseboards, as said floor machine is moved adjacent thereto.

3,357,142
FOAM PLASTIC SHELTER
Jack F. Furrer, Wayland, and George E. Murray, Lexington, Mass., and Charles N. Gardner, Suitland, Md., assignors to the United States of America as represented by the Secretary of the Army
Filed Oct. 31, 1963, Ser. No. 320,583
4 Claims. (Cl. 52—2)

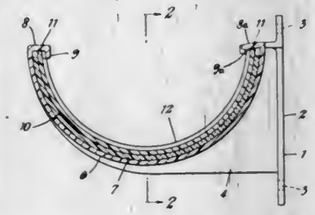
1. An article of manufacture comprising a structure adapted to form a shelter, said structure comprising flexible members forming inner and outer walls of the shelter when said shelter is erected, spacer means connecting said inner and outer walls and being sufficient in number and properly spaced to maintain said walls in generally parallel spaced apart relationship when the shelter is erected, said walls being pre-cut in patterns such that

the structure assumes a shelter-like form when inflated, a plurality of apertures for insertion of agents which will foam, inflate and thereby erect the shelter, said apertures being located at different levels for insertion of the agents



in layers to foam and rigidify at successively higher levels, and means adjacent to the top of the shelter to vent the space between the walls during inflation to permit escape of entrapped air or gases.

3,357,143
SNAP FITTED PLASTIC GUTTERING JOINT
Ronald Curtis Bayes, Ware, and David Harold Sands, Ashford, Kent, England, assignors to The Ruberoid Company Limited, London, and Chemidus Plastics Limited, Ashford, Kent, England, British companies
Filed May 27, 1965, Ser. No. 459,341
Claims priority, application Great Britain, May 27, 1964, 2,888/64
6 Claims. (Cl. 52—11)



1. A guttering assembly comprising:

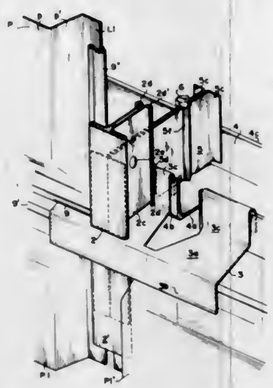
a one-piece plastic union bracket consisting of a substantially semi-cylindrical seating portion, a wall plate portion for mounting said union bracket on a wall and a bracing means extending between said wall plate portion and said seating portion, said seating portion having end portions of larger radius than the central portion of said seating portion, said seating portion having a pair of inwardly extending lips extending substantially the entire length of the upper edges of said seating portion, downwardly extending ears extending downwardly from the inner ends of said lips, one of said ears extending the full length of its associated lip and defining therewith a first channel, the other ear extending only a part of the length of its associated lip at the central portion thereof and defining a second channel;

a substantially semi-cylindrical plastic gasket seated in each end portion;

two lengths of substantially semi-cylindrical plastic guttering extending into said seating portion at the opposite ends thereof and having their adjacent ends spaced apart and overlying the central portion of said seating section, said lengths each overlying and sealingly contacting one of said gaskets and extending therebeyond into sliding contact with the central portion of said seating portion, one of the upper edges of said lengths of guttering extending into said first channel for being held in place thereby; and

a flexible plastic bridging member of substantially semi-cylindrical cross section disposed within said central portion of said seating portion overlying and engaging the adjacent ends of said lengths of guttering and bridging the space therebetween, the upper edges of said bridging member extending to said channels for being retained in place thereby.

3,357,144
EXTERNAL SHEATHING OR CURTAIN WALL
Pierre Andre Chauveau, Paris, France, and Guy Samour, deceased, late of Paris, France, by Maurice Louis Samour, executor, Paris, France, assignors to Constructions Metalliques Fillod S.A., Paris, France
Filed Mar. 27, 1964, Ser. No. 355,510
Claims priority, application France, Mar. 27, 1963, 929,352, Patent 89,205
13 Claims. (Cl. 52—97)



1. An external sheathing or curtain wall for the framework of a building having horizontally extending framework components including a horizontal support having an upwardly projecting flange, a plurality of panels having longitudinal and vertical dimensions equal to multiples of a common modulus, each panel including a vertical outer wall bounded by an inwardly diverging peripheral flange terminating in a peripheral lip substantially parallel to said outer wall, said plurality of panels including upper and lower panels having adjacent horizontal edges at about the level of said horizontal support, a horizontal deflector having a downwardly opening U-shaped flange along its inner edge interlocking with said flange of said horizontal support, a downwardly and outwardly sloping shelf portion extending under the lower lip of an upper panel and a downwardly extending flange overlapping the upper lip of a lower panel, vertically extending posts each having a web portion extending between the vertical edges of two adjacent panels and oppositely extending flange portions overlying vertically extending lips of said panels, and means for securing each said post to said horizontal support, said shelf portion of said deflector extending under the lower ends of said posts to deflect outwardly any water entering between said panels and said posts.

3,357,145
CURTAIN WALL CONSTRUCTION ALLOWING VERTICAL AND HORIZONTAL EXPANSION
Abraham Grossman, 9339 Rhea Ave., Northridge, Calif. 91324
Filed Jan. 9, 1964, Ser. No. 336,824
22 Claims. (Cl. 52—235)

1. A curtain wall construction having vertical columns of mullions joined together with horizontal members for retaining and supporting wall panels, comprising:

at least one of the horizontal members having front and rear flanges joined together by a web;

at least one of the mullions having a recess which receives an end portion of said one horizontal member and slidably engages said front and back flanges thereof so that the horizontal member is restrained from forward or rearward movement with respect to the mullion;

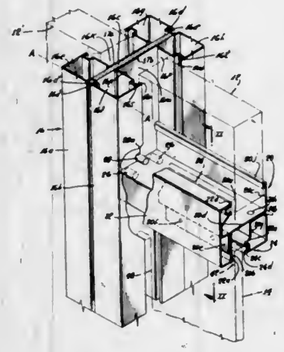
said horizontal member having an end which is spaced from said mullion so as to allow for expansion of the horizontal member;

support means operatively connected to said mullion and slidably engaging a bottom side of said horizontal member web and supporting said end portion so that the horizontal member can slide on said support means when expanding or contracting;

restraining means operatively connected to said mullion and slidably engaging a top side of the horizontal member web so as to restrain upward movement of the horizontal member;

said mullion and an adjacent mullion in a column having their opposed ends spaced from one another so as to allow for expansion thereof;

the adjacent mullions each having a forward hollow portion, a rear portion, and a web portion extending therebetween and substantially co-extensive in length therewith, the hollow portion, the web portion and the rear portion forming the mullion recess of said one mullion and a similar recess for the adjacent mullion;



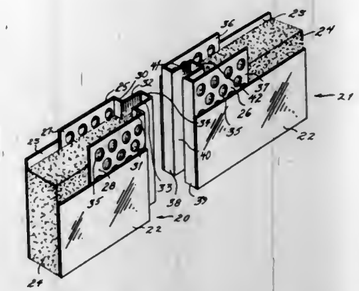
a sleeve disposed within the forward hollow portion of the adjacent mullions and bridging the space between the mullions, said sleeve being supported by and sealed to the upper mullion of the adjacent mullions and slidably engaging the lower mullion thereof;

a sealing element disposed within the recesses of the adjacent mullions and bridging the space between the mullions, said sealing element being supported by and sealed to the upper mullion of the adjacent mullions and slidably engaging the lower mullion thereof;

at least a portion of the top of the web portion of the lower mullion of adjacent mullions being sloped downwardly as it extends from said rear portion of the mullion toward the forward hollow portion thereof;

a portion of the bottom of the web portion of the upper mullion of adjacent mullions being notched to provide an abrupt change in the slope of said bottom web portion, said change in slope being sufficient to cause water traveling along the bottom of the web portion to drip therefrom at a location above the web portion of the adjacent mullion where the change in slope occurs.

3,357,146
BUILDING PANEL SPLICING
John T. Gartrell, Pottsville, Pa., assignor to Birdsboro Corporation, Birdsboro, Pa., a corporation of Pennsylvania
Filed Feb. 19, 1964, Ser. No. 345,920
2 Claims. (Cl. 52—309)



1. In a splice for sandwich type panels having spaced outer skins and an inner core bonded to the skins, a metal tongue strip extending longitudinally of a first panel and having first sides extending along the panel between the core and in contact with the skin, first perforations in the sides, first bonds extending through the perforations and securing the skin, side, and core, first inwardly directed transverse flanges integral with the sides, first webs extending from the first transverse flanges and forming the sides of a tongue, and a first transversely extending closure section at the end of the first webs and forming the end of the tongue, and a metal groove strip extending longitudinally of a second panel in abutting relation to the first panel and having second sides extending along the second panel between the core and in contact with the skin, second perforations in the second sides, second bonds extending through the second perforations and securing the skin, side, and core, second inwardly directed transverse flanges integral with the second sides, second webs extending from the transverse flanges and forming the sides of the groove and a second transversely extending closure section at the end of the second webs and forming the end of the groove; each of the first inwardly directed transverse flanges extending in abutting relationship to one of the second inwardly directed transverse flanges, and each of the first webs extending in abutting relationship to one of the second webs.

3,357,147
LIGHTWEIGHT FORAMINOUS FLOOR PANEL AND CAST-IN-PLACE CONCRETE
Samuel Lerner, Pawtucket, R.I., assignor of fifty percent to Sylvia Amatruda, New Haven, Conn.
Filed Apr. 13, 1965, Ser. No. 447,711
21 Claims. (Cl. 52—326)

1. A light-weight structural floor panel adapted to be disposed in side-by-side relationship to define a given floor system, the improvement comprising:

a sheet of undulating foraminous material,

said undulating material defining a plurality of alternately spaced peaks and valleys wherein said peaks and valleys are disposed in parallel,

a foraminous strip of material extending longitudinally of each valley,

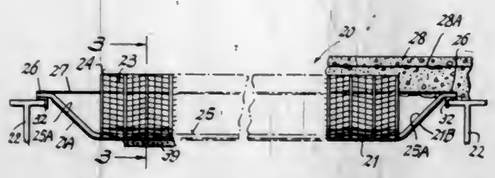
each of said strips being supported between the sides of adjacent peaks intermediate the height thereof,

said undulating sheet having opposed longitudinally extending terminal marginal portions for permitting contiguous engagement of adjacent panels when dis-

posed in side-by-side relationship in a given floor system,

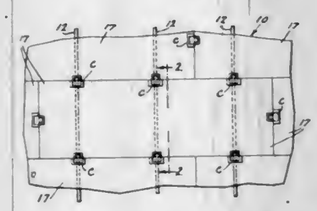
a tension member disposed at the bottom of each valley,

said tension member extending longitudinally the length of its associated valley,



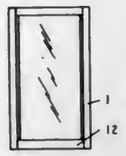
said tension member having connected upwardly extending end portions for supporting the ends of said undulating material on a suitable supporting structure so that a substantial portion of the panel thickness is disposed below the top of the supporting structure, said connected upwardly extending end portions of said tension members are outwardly inclined so that said end portions act in shear in supporting said panel between building structures for enhancing the strength and loading characteristics of said panel when placed in operation.

3,357,148
CONSTRUCTION CLIP
Henry C. Turner, Doylestown, Pa., assignor to CFE, Inc., Hammonton, N.J., a corporation of New Jersey
Filed Oct. 15, 1965, Ser. No. 496,397
4 Claims. (Cl. 52—357)



1. A construction clip for securing panels to studding of angular configuration including at least one flange having opposed front and rear faces comprising an elongated, flat base, a first pair of spaced apart confronting tongues projecting in one direction generally perpendicularly from opposite side edges of the base, a second pair of spaced apart tongues projecting generally perpendicularly in a direction opposite said one direction from said base, said pairs of tongues defining a pair of diametrically opposed pockets for supporting panels in coplanar relation, means defining a cutout recess having at least one side edge portion in one side edge of said base disposed inwardly from the outer terminal ends of the base, at least one tongue of said first pair and said second pairs of tongues projecting from said one side edge of the base being bifurcated to define aligned gaps in said tongues, a side edge portion of each gap being aligned with the side edge portion of said recess in said base thereby to properly orient said clip relative to the studding, the cutout recess in said base confronting the front face of the flange of the studding in the assembled position of the clip and a portion of each of said tongues engaging the rear face.

3,357,149
DOOR STRUCTURES
Alex M. Johnston, 4802 Pinehurst, Garland, Tex. 75040
Filed June 15, 1966, Ser. No. 559,047
1 Claim. (Cl. 52—627)



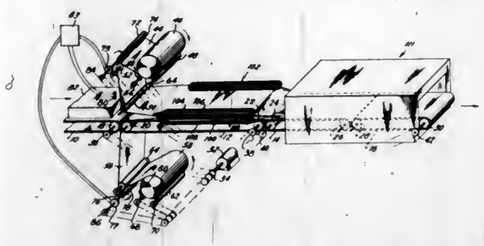
In a door structure of the character described including four separate members arranged into a rectangular framework surrounding a flat sheet wherein the vertical and horizontal framing members are provided with glass retaining recesses and wherein the outside dimensions of the glass retaining portion of the vertical member is the same or slightly less than the inside dimension between the outer walls of the horizontal member; and wherein the inside dimension of the glass retaining portion of the vertical member is greater than the outside dimension of the glass retaining portion of the horizontal member, a mechanical corner joint between the square cut end of the horizontal member, and the side of the vertical member, the glass retaining portions of the vertical member being provided with two horizontal slots receiving the horizontal walls of the horizontal member, allowing the square cut end of the horizontal member to contact the main wall of the vertical member, the outside walls of the horizontal member passing around the outside of and containing the glass retaining portions of the vertical member, and the glass retaining portion of the horizontal member passing into and being contained by the glass retaining recess of the vertical member.

3,357,150
PROCESS FOR THE PREVENTION OF THE EVAPORATION OF ACTIVE INGREDIENTS ON THE BASE OF PHOSPHORUS-CONTAINING COMPOUNDS
Wolfgang Behrenz, Wuppertal-Elberfeld, Wolfgang Czerch, Leverkusen, and Otto Telle, Cologne-Stammheim, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed July 11, 1963, Ser. No. 294,225
Claims priority, application Germany, July 28, 1962, F 37,452
4 Claims. (Cl. 53—5)

1 A process for preventing the evaporation of active ingredients comprising phosphorus containing compounds which comprises enclosing the active ingredients in polyvinyl chloride having no plasticiser additives.

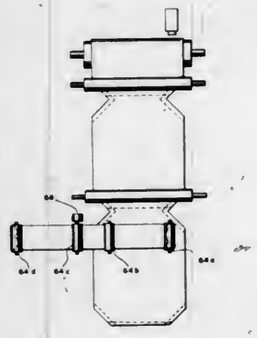
3,357,151
ARTICLE PACKAGING
Alfred C. Monaghan, Warren Township, Plainfield, N.J., assignor to Weldotron Corporation, Newark, N.J., a corporation of New Jersey.
Filed Aug. 4, 1965, Ser. No. 477,214
8 Claims. (Cl. 53—28)

1. Means for wrapping an article, comprising: first means for continuously advancing the article in the machine direction; second means for continuously providing two webs to two opposite surfaces of the article respectively; third means for intermittently weakening the two webs along the cross-web axis; fourth means for continuously joining the two webs together in the machine direction to form a tube; said first means including means for tensioning the webs after the two webs have been joined together to rupture the webs where they have been



weakened to separate the article and the adjacent web portions from the remainder of the webs following the article.

3,357,152
CORNER CUT THERMOPLASTIC BAG
Eugene W. Geigel, Springfield, Mass., assignor to Monsanto Company, a corporation of Delaware
Filed Oct. 21, 1963, Ser. No. 317,572
4 Claims. (Cl. 53—29)



1. A method of packaging materials in an improved thermoplastic bag which comprises triangularly cutting at opposite edges, sealing the cut edges and transversely sealing a continuous uniformly flattened tube of thermoplastic film at predetermined intervals along its length, transversely severing the tubular film adjacent each transverse seal to form a bag blank sealed at one end, transferring said bag blank to a filling station and filling said bag blank with the material to be packaged.

3,357,153
PROCESS AND APPARATUS FOR HEAT SHRINKING FILM
James S. Shaffer, Spartanburg, S.C., assignor to W. R. Grace & Co., Duncan, S.C., a corporation of Connecticut
Filed July 23, 1965, Ser. No. 474,247
4 Claims. (Cl. 53—30)

1. Apparatus for heat shrinking thermoplastic film comprising:

(a) an inverted U-shaped housing having vertical side walls and a horizontal top wall forming an open-ended chamber,

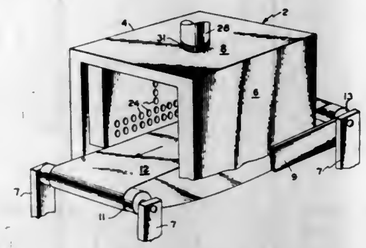
(b) an aperture in the central portion of said top wall,

(c) a multiplicity of small apertures in the lower portion of each of said side walls, said multiplicity of apertures constituting the majority of the exit area through the walls of said inverted U-shaped housing,

(d) a casing spaced apart from said housing exteriorly of said chamber forming an annulus with said housing for the passage of air therethrough,

(e) means for heating air within said annulus, and

(f) means for conveying product through said chamber,



(g) and means for blowing air positioned above the aperture in said top wall and within said annulus so as to propel air in series through said annulus, through said small apertures into said chamber and through said aperture in said top wall.

3,357,154
DEVICE FOR DEPOSITING ARTICLES
Otto Florian, Vienna, Austria, assignor to Werner & Pfleiderer, Stuttgart-Feuerbach, Germany, a company of Germany
Filed Aug. 17, 1965, Ser. No. 480,417
Claims priority, application Austria, Aug. 20, 1964, A 7,205/64
12 Claims. (Cl. 53—59)

1. A device for depositing articles on a receiver in a substantially uniformly spaced relationship, said device comprising, in combination:

a uniformly driven endless conveyor including a substantially rectilinear portion for placing thereon in lengthwise random spaced distribution articles to be deposited;

an article receiving base stationarily supported below said rectilinear conveyor portion substantially parallel thereto and extending at least part of the length thereof;

a guide means at one end of the rectilinear conveyor portion to guide the conveyor along a return path below said rectilinear portion;

support means supporting said guide means, said support means being displaceable parallel to said rectilinear conveyor portion between an initial position above one end of the base and an end position above the other end of the base;

electric drive means coacting with said support means for displacing the same opposite to the direction of travel of said conveyor portion;

and control means supported on said support means for displacement in unison therewith, said control means being controlled by each article arriving on the conveyor in a predetermined position in reference to the guide means and controlling the drive means to activate the same, each activation of the drive means displacing the support means and the guide means supported by the same through a predetermined distance toward the end position above the other end of said base;

whereby articles successively arriving in said predetermined position in reference to the guide means fall from the conveyor upon the base therebeneath, lengthwise spaced from each other by said predetermined distance.

3,357,155
MACHINE FOR PACKING COMPRESSIBLE MATERIALS INTO CONTAINERS
Eben H. Carruthers, Warrenton, Oreg. 97146
Original application July 23, 1962, Ser. No. 211,727, now Patent No. 3,213,587, dated Oct. 26, 1965. Divided and this application Sept. 17, 1965, Ser. No. 488,142
5 Claims. (Cl. 53—124)



1. A machine for packing products in cans comprising, in combination: a pair of chambers mounted in vertical alignment with each other, the lower of said chambers being a metering chamber and the upper of said chambers being a filling chamber; means for applying a substantially constant pressure on the product in said filling chamber to force the product into the metering chamber under a constant pressure so that the size of the metering chamber accurately reflects the weight of product in the metering chamber; means for cutting the product along a plane defined by substantially the top of said metering chamber; and means for transferring the product to a can.

3,357,156
WRAPPING ATTACHMENT FOR PACKAGE PRODUCTION
Stefan W. Glogowski, Livonia, Mich., assignor to Diamond International Corporation, New York, N.Y., a corporation of Delaware
Filed Feb. 25, 1965, Ser. No. 435,209
8 Claims. (Cl. 53—378)

1. A wrapping-and-conveyor attachment for use in a package production line in which a partially wrapped package having untucked wrapper ends is moved longitudinally through the atachment and the untucked ends are folded beneath a tray forming a part of the package, comprising:

an elongated support frame means;

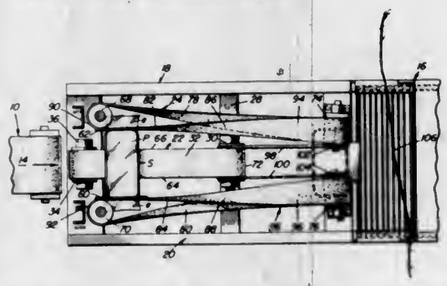
first endless conveyor journalled on said frame means and having an upper, substantially horizontally disposed run extending longitudinally from one end of said frame means and terminating intermediately of said frame means;

a pair of oppositely disposed, folding-conveyors journalled on said frame means and including opposed flat inner runs disposed in flanking, spaced relation from respective opposite side margins of the first endless conveyor at said one end,

said inner runs of said folding-conveyors converging inwardly beyond the terminal end of said first conveyor into intersecting relation with respect to a longitudinal projection of the longitudinal path of travel defined by said first conveyor,

said inner runs of said folding-conveyors extending substantially the length of said frame means,

said folding-conveyor inner runs including an intermediate twist and having a substantially vertical portion extending to an intermediate portion of said first conveyor and merging into a substantially horizontally disposed portion continuing from the terminal end of said first conveyor; and supplemental folding means extending in a generally vertical plane between the inner surface of the substantially vertical portion of said folding-conveyors and the adjacent side margin of said first conveyor, whereby the untucked wrapper ends of the package will be oriented substantially parallel to the inner surface of said vertical portions of said fold-conveyors,



said horizontal portion of said folding-conveyor extending beyond said terminal end of said first conveyor whereby packages disposed on said upper run of said first conveyor are moved thereby into engagement with the intermediate twist of said folding-conveyors and untucked ends of a wrapper are folded beneath the tray forming part of the package and the substantially horizontally disposed portion of said folding-conveyor belts solely maintain the folds and solely convey the package away from the terminal end of said first conveyor.

3,357,157
METHOD OF FRACTION COLLECTING OF SAMPLES FROM A GAS CHROMATOGRAPHIC SYSTEM
John F. O'Donnell, Wellesley Hills, Mass., assignor to Abcor, Inc., Cambridge, Mass., a corporation of Massachusetts
Filed Apr. 4, 1966, Ser. No. 539,837
10 Claims. (Cl. 55—23)

1. A process of separating a material into two or more gas fractions by chromatographic means and recovering at least one of the fractions so separated which process comprises:

(1) introducing a material into a chromatographic column containing separatory material therein for separating the material so introduced into two or more gas chromatographic fractions;

(2) introducing a carrier gas into the chromatographic column;

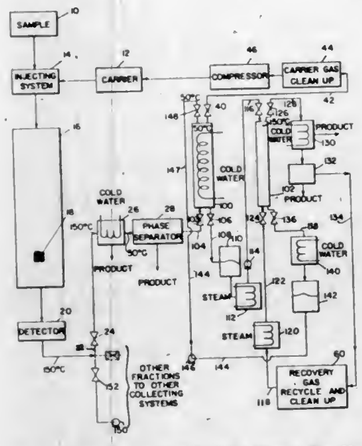
(3) withdrawing from the chromatographic column a gas effluent stream comprising carrier gas and a gas fraction to be recovered;

(4) introducing the gas effluent stream into an absorption zone, which zone is maintained at a temperature of from about the temperature of the gas effluent stream withdrawn from the chromatographic column to a temperature of 250° C. less than this temperature;

(5) contacting the gas effluent stream in the absorption zone with a liquid absorbing stream whereby at least a part of the gas fraction is absorbed in the liquid stream;

(6) withdrawing a fraction-lean gas effluent stream from the absorption zone;

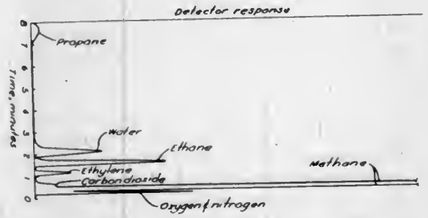
(7) withdrawing a fraction-rich liquid effluent stream from the absorption zone;



(8) recovering the gas fraction from the liquid effluent stream;

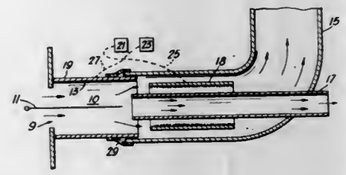
(9) withdrawing and recycling to the absorption zone at least a part of the liquid effluent stream from which the gas fraction has been recovered.

3,357,158
PROCESS AND AGENTS FOR MAKING CHROMATOGRAPHIC SEPARATIONS
Oscar Le Roy Hollis, Lake Jackson, Tex., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed June 1, 1965, Ser. No. 460,331
16 Claims. (Cl. 55—67)



1. In a process of chromatographically separating substances which process comprises passing vapors of said substances in admixture with a carrier gas through an elongated chromatographic column having a stationary sorbent phase, the improvement which consists in using as the stationary phase an insoluble, cross-linked, finely divided, microporous organic polymer consisting essentially of polymerized moieties of a divinyl monomer selected from the group consisting of monocyclic divinyl aromatic hydrocarbons and ethylene glycol dimethacrylate and copolymers thereof and containing at least 20 percent by weight of at least one of said divinyl monomers, and not more than 80 percent by weight of at least one monoethylenically unsaturated monomer copolymerizable therewith selected from the group consisting of monocyclic monovinyl aromatic hydrocarbons, N-vinyl pyridine and N-vinyl pyrrolidone, said microporous polymer having a surface area of at least 50 square meters per gram and being in the form of particles of sizes between 5 and 500 microns.

3,357,159
DUST CONCENTRATOR
John W. Drenning, Baltimore, Md., assignor to Koppers Company, Inc., a corporation of Delaware
Filed Sept. 6, 1966, Ser. No. 577,262
5 Claims. (Cl. 55—112)

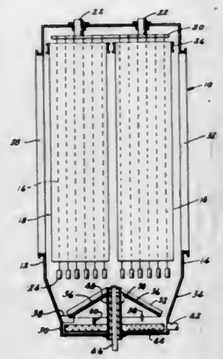


1. An electrostatic precipitator apparatus for removing particles from a gaseous stream containing said particles through the action of a discharge electrode and a collector electrode, whereby as said gaseous stream flows past said discharge electrode, said particles are charged and are diverted radially toward the periphery of the stream whereby the particle concentration increases in the outer portion of the stream while the particle concentration decreases in the inner portion of the stream, the improvement comprising: said collector electrode being constituted of first and second cylinders of differing diameters concentrically disposed about said discharge electrode, said second cylinder being disposable within said first cylinder, means for separating said inner and outer stream portions into independent streams, and selection means for selectively employing a surface of said first and second cylinder as said collector electrode.

3,357,160
LIQUID TRANSPORT AND MIXING SYSTEM FOR DUST
Russell A. Denbroeder, Bloomfield, Mich. (5420 Van Ness, Bloomfield Hills, Mich. 48013)
Filed Dec. 28, 1965, Ser. No. 516,894
1 Claim. (Cl. 55—120)

In combination, an electrostatic precipitator comprising an upright multi-walled casing having a substantially square plan cross section; an inlet in one of the casing walls for admitting particle-laden gas into the casing; an outlet in another casing wall for discharging clean gas out of the casing; vertically disposed ionizer electrodes and collector electrodes arranged in the casing to intercept gas flowing from the inlet to the outlet, whereby solid particles are caused to precipitate onto the collector electrodes; said electrodes being spaced from one another to define vertical passages for allowing precipitate to fall into the lower portion of the casing; a sump having a circular plan cross section disposed below the rectangular casing; a convergent particle-guiding duct connecting the lower portion of the casing with the upper portion of the sump; the diameter of the sump being only slightly less than the side-to-side dimension of the precipitator whereby the convergent duct is steeply sloped for easy guidance of particles into the sump perimeter; flushing liquid supply means fluidly communicating with said sump for admitting liquid to

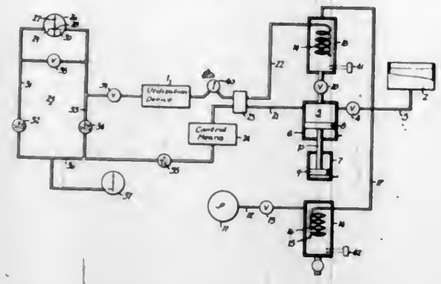
the sump; means at the perimeter of the sump for discharging liquid from the outer perimeter of the sump; a conical particle-distributing shed overlying the central portion of the sump; said shed having a downwardly-outwardly sloping upper surface whereby particles deposited on the shed upper surface are directed toward the outer perimeter of the sump; the diameter of the shed being only slightly less than the diameter of the sump whereby all of the precipitate will enter the sump immediately adjacent its outer perimeter; the aforementioned liquid discharge means being located below the level of the shed, whereby the shed will be entirely above the sump liquid level; rotary agitator means centrally arranged in the sump for mixing precipitated particles with the sump



liquid; said agitator means having a diameter approximately that of the sump whereby to effectively reach the sump perimeter where the particles are deposited; powered scraper means arranged to rotate about the axis of the shed, said scraper means being located to traverse the shed upper surface whereby to push particles toward the shed surface perimeter a tubular support projecting upwardly within the sump beneath the central portion of the shed; a sleeve surrounding the tubular support; a drive shaft extending upwardly within the tubular support to a driving connection with the sleeve; and said scraper means being connected with an upper portion of the sleeve, and said agitator means being connected with a lower portion of the sleeve.

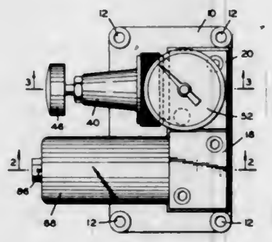
3,357,161
LIQUID PURIFYING SYSTEM
Louis Starr and Allan L. Kaplan, Oak Park, and Lewis J. Cox, Pontiac, Mich., assignors, by mesne assignments, of one-half each to said Starr and said Kaplan, Oak Park, Mich.
Filed Sept. 9, 1966, Ser. No. 578,322
9 Claims. (Cl. 55—189)

1. A purifying system for removing gaseous impurities from a liquid for filling a utilization device, said purifying system including in combination, liquid supply means for supplying liquid to be purified, an accumulator coupled to said supply means to receive liquid therefrom and to expose such liquid to vacuum conditions therein, a trap, first conduit means coupling said trap to said accumulator for transmitting vacuum therebetween and for discharging into said trap gaseous impurities removed from said liquid in said accumulator, second conduit means for coupling said accumulator to said utilization device for applying vacuum from said accumulator to said utilization device, means separate from said first and second conduit means for coupling said accumulator to said utilization device for supplying purified liquid from said accumulator to said utilization device, and a vacuum pump coupled to said trap for evacuating said trap, and also for evacuating said accumulator via said



first conduit means and said utilization device via said second conduit means.

3,357,162
PRESSURE REGULATOR FILTER DEVICE
George Doig, Highland, Mich., assignor to Numatics, Incorporated, Highland, Mich., a corporation of Michigan
Filed May 10, 1965, Ser. No. 454,546
1 Claim. (Cl. 55—210)



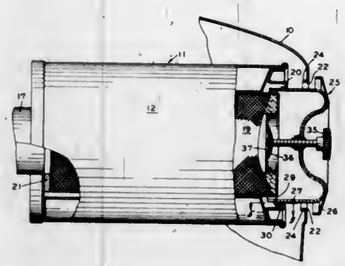
In a pneumatic system including a pressure source and a pneumatically operated device, the pressure at the source being higher than that intended for use at the operating device, that improvement which comprises:

(a) a mounting plate having a raised platform providing a surface for mounting thereon a pressure regulator and an expansion and filter device, said mounting plate and said platform having an entrance port and an outlet port passing therethrough with both of said ports opening onto said mounting surface;

(b) a pressure regulator mounted on said surface and having an inlet passage and an outlet passage, said inlet passage being connected with said entrance port;

(c) and an expansion and filter device mounted on said surface adjacent said pressure regulator, said device comprising a base; a dome-like member mounted on said base providing an expansion chamber; a cylindrical filter element mounted on said base and within said chamber and spaced from said dome-like member; and common means for mounting both said dome-like member and said filter element on said base, said base having a bore connecting the interior of said filter element with said outlet port, said mounting plate and said platform having a cross-passage extending from said pressure regulator to said base, one end of said cross-passage being connected with said pressure regulator outlet passage, said base having a passage connecting said chamber exterior of said filter element with the other end of said cross-passage, wherein a pressure source connection and a connection to said operating device respectively at the entrance and outlet ports of said mounting plate will place said pressure regulator and said expansion and filter device in series between said entrance and outlet connections.

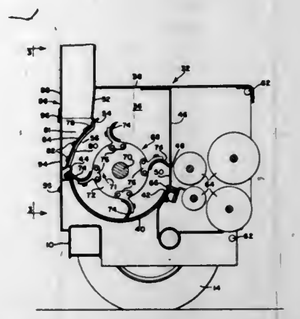
3,357,163
AIR CLEANER ASSEMBLY FOR TRACTORS
Edgar P. Burger, Detroit, and Bertram G. Burnside, Birmingham, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed June 14, 1965, Ser. No. 463,605
3 Claims. (Cl. 55—385)



1. In a motor vehicle including an air cleaner comprising a tubular body having a first open end defining an opening and a second end provided with an axial outlet and an inlet in the sidewall of the body, a porous tubular filter element positioned generally axially within the body and having an open end communicating with the air cleaner outlet and the other end of the filter element being closed, gasket means extending about the outlet between the body and the filter element, and a sheet metal housing covering the air cleaner, the improvement comprising: an opening in the sheet metal housing spaced from and aligned with the opening in the open end of the body, the opening in the open end of the body being sufficient in size to admit the filter element, the opening in the housing being at least as large as the opening in the open end of the body to permit insertion of the filter element through the housing and into the open end of the body; a cover comprising joined first and second portions, the first portion being positioned axially outward of the housing and covering the opening therein and the second portion extending axially inward from the first portion and having a cylindrical sidewall provided with latching elements, the body including a radially inwardly extending wall extending about the opening thereof having means for engagement with the elements of the cover, and a shaft mounted on the cover and extending axially thereof and mounted for inward axial movement to force the filter element inwardly of the body to cause the gasket to seal about the outlet opening and hold the elements of the cover in engagement with the radially inwardly extending wall of the body to prevent fortuitous unlatching of the cover from the body.

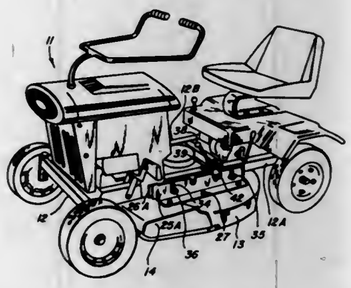
3,357,164
FORAGE HARVESTER
John J. Hennen, Ottumwa, Iowa, assignor to Deere & Company, Moline, Ill., a corporation of Delaware
Filed May 12, 1965, Ser. No. 455,213
5 Claims. (Cl. 56—16)

1. In a harvester having a mobile frame adapted to advance over a field, a cutter housing on the frame and having an outlet and an inlet, means on the frame for moving the crop from the field through said inlet, and a cylinder type rotary cutter means in the housing for reducing and accelerating the crop in the housing, the combination therewith of an arcuate, plate-like grate mounted over the housing outlet coaxial with the cutter means and



having a plurality of apertures elongated in a transverse direction relative to the axis of rotation of the cutter means and through which the accelerated crop is impelled by the cutter means.

3,357,165
CUTTER SUSPENSION APPARATUS FOR MOWER
Donald G. Thon, Cleveland, Ohio, assignor to the M. F. & D. Company, a corporation of Ohio
Filed Jan. 18, 1965, Ser. No. 426,267
12 Claims. (Cl. 56—25.4)



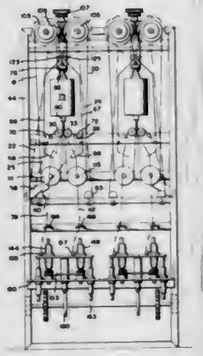
1. Apparatus for raising and lowering a rotary cutter mechanism relative to the frame of a mower, the frame having a pair of spaced and longitudinally extending frame members, the mower having a motor carried by the frame and a motor-driven shaft extending downwardly along an axis disposed generally vertically intermediate the frame members, comprising in combination, a support member disposed in a generally horizontal plane below said frame and carrying the said rotary cutter mechanism, a cutter-revolving shaft journaled on said support member extending from the support member to drivingly engage said rotary cutter mechanism, power-transmitting means interengaging said motor-driving shaft and said cutter-revolving shaft and arranged to transmit rotative force from the motor-driven shaft to the cutter-revolving shaft and to permit limited up and down movement of the cutter-revolving shaft relative to the motor-driven shaft while in interengagement with the power-transmitting means, a first pivot means and second pivot means having axes extending transversely of the frame and spaced longitudinally of the frame, said first and second pivot means being carried on said frame members, an operating lever extending radially of said first pivot means, rotative means operatively engaged to said lever means to be rotated by

the swinging of the operating lever in an arc, first crank arms carried by each of said first and second pivot means adjacent opposite sides of said frame to be swung in arcs upon the axes of said pivot means, said rotative means being operatively connected to at least one of said first crank arms to cause the same to swing on its axis upon rotation of the rotative means by said lever, connecting means operatively connecting said first crank arms to cause all the first crank arms to swing in unison upon the swinging of said at least one of said first crank arms by said rotative means, second crank arms engaged to each of said first crank arms adjacent opposite sides of said frame to be simultaneously swung in arcs on the respective axes of the first crank arms by the swinging of the first crank arms, link means operatively connecting said second crank arms and said support member to raise and lower the support member and the rotary cutter mechanism carried thereby by the swinging of said second crank arms, said link means each having a first end pivotally connected to the free end of one of said second crank arms and a second end pivotally connected to the said support member at spaced locations below and corresponding with said second crank arms to permit the vertical raising and lowering of the support member by the second crank arms without swinging about the axes of said second pivot means, biasing means operatively connected to said frame and first crank arms for urging said crank arms in a rotational direction moving the link means in a direction toward raising the said support member and the rotary cutter mechanism carried thereby relative to the frame, detent means associated with said operating lever and carried by said frame for retaining the said lever in selected positions for selectively determining the elevation of the support member and rotary cutter mechanism carried thereby relative to said frame, and guard means carried by said support member on opposite sides of said frame at locations laterally outwardly of said first and second crank arms to guard the first and second crank arms from lateral intrusion at said locations into the space between the frame and support member.

3,357,166
APPARATUS FOR THE PRODUCTION OF CHENILLE

Donal E. McCarthy, Alexandria, Va., assignor to United Merchants and Manufacturers Inc., New York, N.Y., a corporation of Delaware

Filed Sept. 20, 1966, Ser. No. 580,631
10 Claims. (Cl. 57—24)

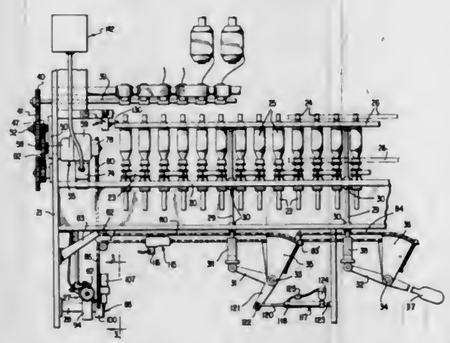


1. An apparatus for the production of chenille yarn comprising a hollow rotary spindle, a cone-shaped supply of weft thread mounted on said spindle, a housing having an open and a closed end extending over said supply for confining weft threads therein as they are unwound from said supply, a brake and guide ring mounted in close proximity to the open end of said housing for limiting the outward travel of said unwinding threads and for directing the same to a forming member which is moving from the said closed end to the said open end, said member comprising a composite tape section formed by the face-to-face juxtaposition of two endless tapes, said composite tape section passing through the said hollow rotary spindle.

3,357,167
AUTOMATION SYSTEM FOR SPINNING FRAMES

Coy V. Jones, Sr., Greer, S.C., and Walter Engels, Tryon, N.C., assignors to Southern Machinery Company, Greer, S.C., a corporation of South Carolina

Filed May 11, 1966, Ser. No. 549,218
24 Claims. (Cl. 57—54)



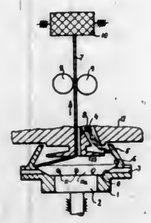
1. In a spinning frame of the class having a movable ring rail which is biased upwardly and adapted to be oscillated during a gradual upward movement to build bobbins, cooperating builder motion and ring rail lift means operable to cause oscillation and gradual elevation of the ring rail to build the bobbins, electrical control means operated by the ring rail when the ring rail reaches the full bobbin position to sense the fullness of the bobbins, means operable subsequent to said sensing and connected with the builder motion and lift means to automatically release the ring rail from the control of the builder motion and allow it to shift upwardly to a tip bunch applying position near the upper tips of the bobbins, and electrical time delay means interconnected with said electrical control means and second-named means for delaying the operation of the second-named means from the instant of said sensing so that the ring rail may shift to the tip bunch applying position from the largest practical bobbin diameter.

3,357,168
SPINNING CHAMBER AIR OUTLET

Vratislav Zlevor, Usti nad Orlici, Karel Zavadsky, Hnatnice, Miloslav Kubovy, Dolni Dobrouc, and Josef Stary and Erik Jirasek, Usti nad Orlici, Czechoslovakia, assignors to Vyzkumny Ustav Bavlnarsky, Usti nad Orlici, Czechoslovakia

Filed Dec. 7, 1966, Ser. No. 599,941
Claims priority, application Czechoslovakia, Dec. 7, 1965, 7,333/65
6 Claims. (Cl. 57—58.89)

1. A rotary spinning chamber having an inlet for fibers and air, and a wall formed with a plurality of escape openings for air and fibers driven outward by the centrifugal force, wherein said escape openings are spaced from each other such a predetermined distance that one end of a fiber blown toward said wall cannot enter an escape opening when the other end of the fiber has entered another escape opening whereby clogging of said

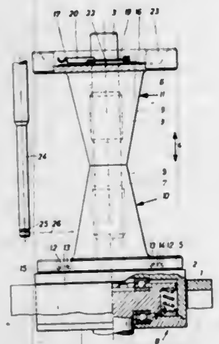


escape openings by fibers having the ends thereof located in two escape openings is prevented.

3,357,169
TAKE-UP REEL FOR A FLYER TWISTING MACHINE OR A CABLE-MAKING MACHINE

Max Bigiel, Rennweg, Germany, assignor to Maschinenfabrik Memmingen Ingenieur Theodor Otto, Rennweg, Germany, a corporation of Germany

Filed Nov. 19, 1965, Ser. No. 508,656
Claims priority, application Germany, Apr. 3, 1965, M 64,776
5 Claims. (Cl. 57—70)

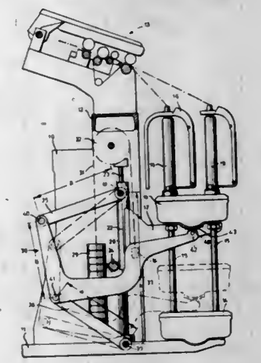


1. In a twisting or cable making machine, a frame movable upwardly and downwardly and rotatable about a substantially vertical axis, brake means for the frame, a reel adapted to be mounted on said frame, a spindle on the frame for guiding said reel and having an end projecting beyond said reel, and a flyer movable about a circular path around the reel during rotation and upward and downward movement of the frame and reel for paying out the material, said reel including two complementary sections, each section having a body portion, a flange at one margin thereof and a free margin, means for securing the marginal flange of one of said sections to said frame, the free margin of the other of said sections being in contact with the free margin of said one section, a pair of flaps pivotally mounted on the marginal flange of said other section for movement to engage and disengage said projecting end of said spindle for retaining said other section against said one section and preventing axial displacement of said other section and permitting the removal of said other section from the spindle respectively and tension means cooperable with said flaps for holding said flaps in engagement with said projecting end of said spindle.

3,357,170
DRAWING FRAME WITH MEANS FOR COUNTERBALANCING THE WEIGHT OF THE BOBBIN CARRIAGE RAIL

Willi Pfeifer, Eislingen (Fils), Germany, assignor to Zinser-Textilmaschinen Gesellschaft mit beschraenkter Haftung, Ebersbach (Fils), Germany

Filed May 19, 1966, Ser. No. 551,379
Claims priority, application Germany, May 20, 1965, Z 11,547
15 Claims. (Cl. 57—99)

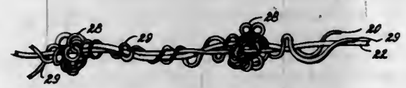


1. In a drawing frame, in combination, support means; a bobbin carriage rail mounted on said support means for rectilinear reciprocating movement in vertical direction; moving means operatively connected to said bobbin carriage rail for reciprocating the latter in said direction; counterbalancing means providing a force at least partly counterbalancing the weight of said bobbin carriage rail and parts connected thereto; and transmission means transmitting the force of said counterbalancing means to said bobbin carriage rail and comprising a lever system tiltably mounted on said support means and including a support lever and an abutment member carried by said support lever and engaging said bobbin carriage rail, said lever system being constructed and arranged so that said abutment member will, during movement of said bobbin carriage rail, carry out a rectilinear movement in a direction coinciding with the direction of movement of said bobbin carriage rail.

3,357,171
VARIABLE DENIER WRAPPED YARN

Preston F. Marshall, Walpole, Mass., assignor to The Kendall Company, Boston, Mass., a corporation of Massachusetts

Filed Feb. 25, 1966, Ser. No. 530,218
6 Claims. (Cl. 57—160)



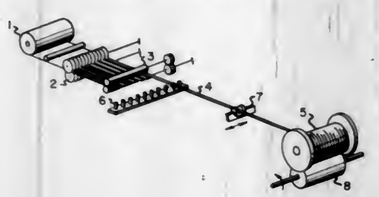
1. The method of producing a composite yarn characterized by randomly-distributed thick and thin segments which comprises

loosely associating at least one wrapping strand with at least one core strand,

frictionally displacing said wrapping strand axially along said core strand to form randomly-spaced slubs and nubs,

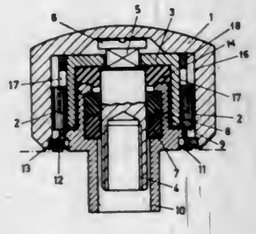
and stabilizing said slubs and nubs against further displacement.

3,357,172
METHOD FOR MAKING PAPER YARN
Cyril G. Evans, Spartanburg, S.C., assignor to Deering Milliken Research Corporation, Spartanburg, S.C., a corporation of Delaware
Filed Oct. 16, 1964, Ser. No. 404,355
17 Claims. (Cl. 57—165)



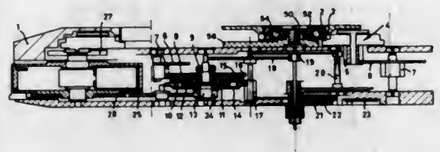
1. A process for the preparation of a light weight paper yarn comprising slitting a paper having a basis weight of from about 8 lbs. to about 35 lbs. to a width not greater than ¼ of an inch, said paper having a fiber orientation in the machine direction of at least 80% and having an extensibility in excess of 4%, moistening the slit paper and then forming a yarn by carrying out an operation selected from the group consisting of folding operations and twisting operations.

3,357,173
CONTROL DEVICE FOR A TIMEPIECE IN A CASE
Rodolphe Wyssen, Geneva, Switzerland, assignor to Fabrique de Couronnes Boninchi S.A., Geneva, Switzerland, a company of Switzerland
Filed Dec. 9, 1966, Ser. No. 600,597
Claims priority, application Switzerland, June 14, 1966, 8,575/66
4 Claims. (Cl. 58—63)



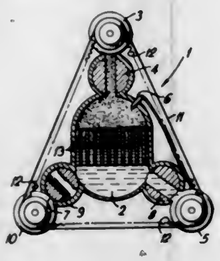
1. A control device for transmitting a unidirectional rotational movement to a timepiece mechanism housed in a case, said control device comprising:
(A) a manually operable button having an internal hollow portion defined by a wall,
(B) a socket penetrating into said hollow portion and having a wall lying adjacent said wall of said button, there being a space between said wall of the socket and said wall of the button,
(C) a stem mounted in said socket and mechanically coupled to said socket for rotation therewith,
(D) a plurality of roller members disposed in said space between said adjacent walls of said button and said socket,
(E) a plurality of stricture members formed on one of said adjacent walls, and forming a narrowing of said space,
(F) said stricture members being oriented in such a way that when the button is rotated in one direction said button drives the socket by wedging said roller members between said stricture members and the wall adjacent to said stricture members, and when the button is rotated in a direction opposite to said one direction said button does not wedge said roller members and hence does not drive said socket.

3,357,174
WATCH WITH AUTOMATIC WINDING
Fred Guyot, La Chaux-de-Fonds, Switzerland, assignor to Fabriques des Montres Zenith S.A., a company of Switzerland
Filed Nov. 30, 1965, Ser. No. 510,653
Claims priority, application Switzerland, Dec. 10, 1964, 15,938/64
6 Claims. (Cl. 58—82)



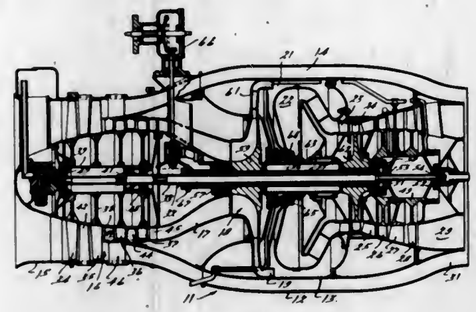
1. A self-winding watch wound by an oscillating mass comprising:
(A) a motor spring and a conventional center wheel;
(B) a going train having conventional members including a first and a last member;
(C) a differential driven by said oscillating mass and operatively connected to said motor spring and to said train, said differential being disposed after said spring and before said last member of said train, said differential directly driving said going train and said motor spring; said differential having a transmission ratio such that the same acts in a reducing capacity during the winding of said motor spring and in a multiplying capacity during the driving of said going train by said motor spring so that said spring will absorb the difference between the energy produced by said mass and the energy consumed by said watch.

3,357,175
METHOD AND APPARATUS FOR POWER GENERATION
Jacob Fischbach, 3439 Knox Place, Bronx, N.Y. 10467
Filed Jan. 23, 1967, Ser. No. 621,380
14 Claims. (Cl. 60—39.06)



10. A method of power generation comprising the steps of the introducing a compressible fluid into a chamber under pressure, introducing of a liquid fuel into said chamber, introducing an atomized fuel into said chamber, maintaining said fuels in substantially segregated relationship until ignition, igniting said atomized fuel and compressed fluid to explosion, said ignition igniting said liquid fuel to explosion and channelling the force of said combustions.

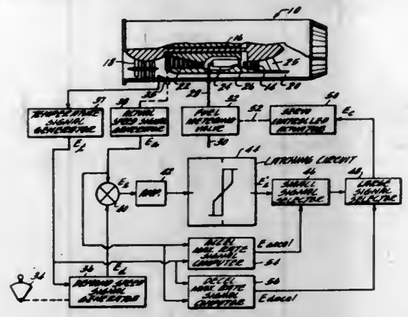
3,357,176
TWIN SPOOL GAS TURBINE ENGINE WITH AXIAL AND CENTRIFUGAL COMPRESSORS
Sam B. Williams, Walled Lake, Mich., assignor to Williams Research Corporation, Walled Lake, Mich., a corporation of Michigan
Filed Sept. 22, 1965, Ser. No. 489,149
2 Claims. (Cl. 60—39.16)



1. In a gas turbine engine, a multistage low pressure axial compressor, a high pressure centrifugal compressor, a connecting passage between said compressors, a diffuser extending outwardly from the exit of said centrifugal compressor, an annular combustion chamber rearwardly of said pressure compressor, the outer diameter of said combustion chamber being less than the diameter of said diffuser, a compressed air chamber surrounding said combustion chamber, said diffuser having apertured vanes connecting said compressed air chamber with an air bleed chamber, an air bleed connection leading outwardly from said air bleed chamber, said diffuser having an axially directed exit leading to said compressed air chamber, a first-stage turbine, a shaft connecting said first-stage turbine to said centrifugal compressor, the inner diameter of said combustion chamber being closely adjacent said shaft, the size of said combustion chamber in an axial direction being substantially less than the distance between its inner and outer diameters, a fuel conduit leading to the inner portion of said combustion chamber, a latter-stage turbine, and a shaft connecting said last mentioned turbine with said axial compressor, said second shaft being within and rotatable independently of said first shaft.

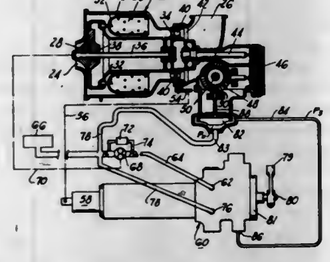
3,357,177
GAS TURBINE ENGINE FUEL CONTROL SYSTEM
Jack E. Cornett, Cincinnati, Ohio, assignor to General Electric Company, a corporation of New York
Filed June 2, 1966, Ser. No. 554,838
5 Claims. (Cl. 60—39.28)

1. A control system for a gas turbine engine comprising,
means for changing the power output of the engine,
means responsive to relatively small differentials between desired and actual power outputs for controlling the power changing means as a function of such differential,
means, operative upon the differential between actual and desired power exceeding a given relatively small differential, for controlling the power changing means at a maximum rate consistent with safe operation of the engine to obtain said desired power output, said maximum rate control means being operative until the desired power output has been at least substantially reached, and



means for removing said maximum rate control means and substituting said differential controlling means as the means for controlling operation of the power changing means upon the power output having been changed to a desired value at a maximum rate.

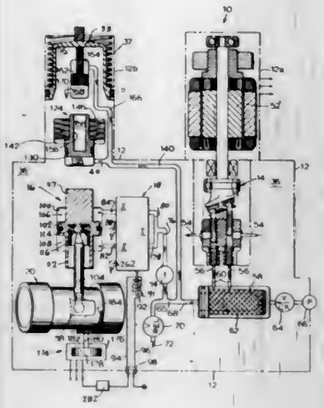
3,357,178
ACTUATOR FOR TURBINE STATOR BLADES
Robert Everett Meyers, South Bend, Ind., assignor to The Bendix Corporation, a corporation of Delaware
Filed May 6, 1966, Ser. No. 548,254
7 Claims. (Cl. 60—39.25)



1. A fluid servo powered actuator comprising:
casing means defining a chamber;
fluid pressure responsive means slidably carried in said chamber and responsive to a variable fluid pressure;
valve means for controlling said variable fluid pressure to vary the position of said fluid pressure responsive means accordingly;
lever means operatively connected to said valve means for actuating the same;
a movable control member;
first and second rotatable cam means operatively connected to and actuated by said movable control member;
cam follower means operatively connected to said lever means and engageable with said first rotatable cam means;
resilient means operatively connected to said lever means for loading the same to urge said cam follower means into engagement with said first rotatable cam means;
fluid pressure respsonsive means responsive to said variable fluid pressure and engageable with said second rotatable cam means for imposing a force load thereon which varies as a function of said variable fluid pressure;

said first and second cam means being contoured in reverse relative senses so that the torque generated on said second cam means acts in opposition to the torque generated on said first cam means to effectively nullify the latter torque.

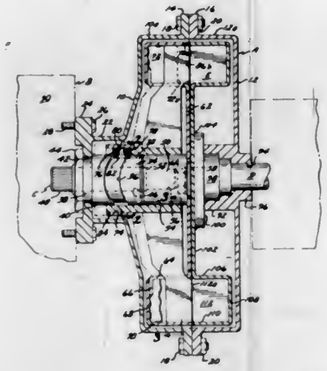
3,357,179
ACTUATION SYSTEM
Douglas F. Gourlay, Closter, and Harold J. Straut, Wayne, N.J., assignors to General Precision Inc., Little Falls, N.J., a corporation of Delaware
Filed Jan. 14, 1966, Ser. No. 520,560
5 Claims. (Cl. 60—52)



1. A hydraulic actuation apparatus comprising:
a constant-flow pump;
a fluid actuator with a pair of chambers;
a flow-control valve for shifting the flow between said chambers having a feed passage connecting to said pump and having a pair of supply passages connecting respectively to said chambers and having a return passage;
a reservoir connecting to said valve return passage and connecting to said pump; and
a load-sensing pressure regulating servo valve having a sensor connecting to said supply passages and automatically sensing the difference in pressures in said chambers due to an actuator-load reaction thereon and having a regulator coupled to said sensor and connecting to said feed passage and connecting to said reservoir.
whereby the fluid pressure in said feed passage and the power input is varied in linear proportion to said actuator-load reaction and the power output, at substantially constant supply flow.

3,357,180
SYNCHRONIZED FLUID COUPLING
Lawrence M. Sanders, Renton, Wash.
(121 E. 10th St., Dallas, Tex. 75203)
Filed Jan. 21, 1966, Ser. No. 522,221
7 Claims. (Cl. 60—54)

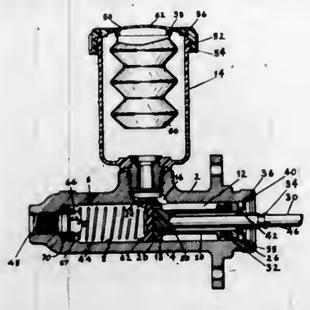
1. A fluid coupling for an internal combustion engine having one or more equally spaced power strokes per revolution, and a driving shaft projecting therefrom, comprising in combination:
(a) a hollow rigid fluid holding housing having an apertured forward wall and an apertured rear wall, with said driving shaft extending rearwardly into said housing;
(b) first means for holding said housing in a fixed position relative to said engine;
(c) a tubular cam disposed in a fixed location in said housing, which cam has a circumferentially extending slot formed on the exterior surface thereof, and through which cam said driving shaft extends rearwardly;
(d) a driven shaft that extends forwardly into said housing through said apertured rear wall and in coaxial alignment with said driving shaft;
(e) adjacent forward and rear rotatable members disposed in said housing and rigidly connected to said driven and driving shafts respectively;
(f) a plurality of cups that extend rearwardly from the periphery of said rear members;
(g) a plurality of forwardly extending cups mounted on the periphery of said forward member;



(h) a tubular sleeve rotatably and slidably mounted on said cam;
(i) a cam follower mounted on said sleeve that movably engages said cam slot;
(j) a plurality of circumferentially spaced, radially extending movable vanes that project outwardly from said sleeve to positions adjacent said forwardly extending cups, which vanes are capable of moving rearwardly and forwardly relative to the rear extremities of said forwardly extending cups; and
(k) means for rotating said movable vanes and said sleeve during rotation of said driving shaft, which sleeve and vanes as they rotate are moved forwardly by said follower to positions where the fluid coupling between said rearwardly extending cups and said forwardly extending cups and vanes are progressively lessened during each power stroke of said engine to transmit power smoothly from said driving to said driven shaft during the entire firing cycle of said engine.

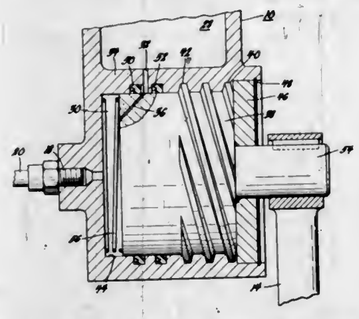
3,357,181
MASTER CYLINDER MORE PARTICULARLY FOR HYDRAULIC BRAKES
René Thirion, Paris, France, assignor to Societe Anonyme D.B.A., Paris, France, a company of France
Filed July 2, 1965, Ser. No. 469,127
Claims priority, application France, July 3, 1964, 980,667
4 Claims. (Cl. 60—54.6)

1. A master cylinder adapted more particularly for control of hydraulic brake systems comprising a bore, a piston located in said bore, a sealing cup associated with the front portion of said piston, a working chamber located in said bore ahead of the piston, a reservoir, a passage which in the release position of the said piston connects the reservoir with the said working chamber, a recess in the piston, a push rod connected to the control pedal and adapted to engage the bottom of the said recess, a stop collar secured at the outer end of the cylinder bore, a sleeve mounted on the said push rod and projecting outside the cylinder bore in the piston release position, a flange on the sleeve having an outer diameter larger than that of the diameter of opening in said stop collar, an interlock between the said sleeve and the said push rod



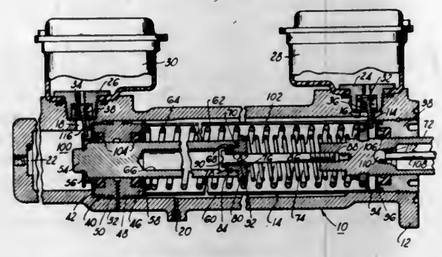
realized outside of the cylinder bore in a position in which, on the one hand, the sealing cup is located at a predetermined distance at the rear of the passage through which a communication is established between the reservoir and the working chamber in the piston release position and, on the other hand, the flange on the said sleeve takes abutment onto the said stop collar.

3,357,182
SCREW TYPE MASTER CYLINDER ASSEMBLY
Gerald B. Jacoby, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 23, 1965, Ser. No. 503,743
3 Claims. (Cl. 60—54.6)



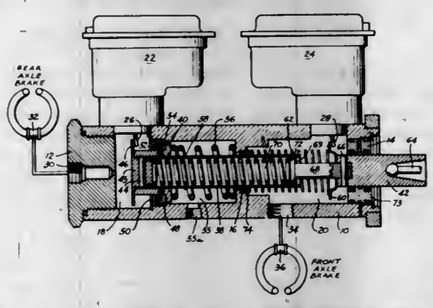
1. An hydraulic master cylinder comprising: a housing including a force developing chamber and a fluid storage chamber selectively communicating therewith; rotatable piston means translationally movable in said force developing chamber and including helical type screw portions formed on the periphery thereof; said force developing chamber defining a bore having complementary helical type screw portions in the wall thereof cooperatively engaging said piston screw portions; and actuator means pivotally carried by said rotatable piston means for exerting a torque force on said rotatable piston means for spiralling said piston means linearly forward in said force developing chamber to develop a fluid pressure in said force developing chamber, said fluid storage chamber including means for compensating for a fluid lack in said force producing chamber by gravity flow thereinto when said piston means is in a poised position.

3,357,183
MASTER CYLINDER
Darwin Krieger, St. Joseph, Mich., assignor to The Bendix Corporation, a corporation of Delaware
Filed Oct. 10, 1966, Ser. No. 585,541
8 Claims. (Cl. 60—54.6)



1. A master cylinder having a primary chamber and a secondary chamber with a primary fluid displacing means and a secondary fluid displacing means with means to operatively connect said primary and secondary means so that they may be operated to generate separate fluid pressures from said primary chamber and said secondary chamber, said means to operatively connect said displacement means being characterized by the following members comprising combinations:
a first spring retainer affixed to said primary means;
a second spring retainer operatively connected to said secondary means;
a spring operatively arranged between said first and said second retainers;
an adjusting means for preloading said spring, which adjusting means is operatively connected to said primary means so as to be variable in length; and
a means to operatively connect said adjusting means to said second means including a snap ring between a groove in a bore internally of said secondary fluid displacing means within which a head of said adjusting means is slidable and a groove in said second spring retainer to permit independent pressurization of said primary chamber and said secondary chamber and maintain a pulling connection between said primary and secondary means for return of same upon depressurization of said primary and secondary chambers.

3,357,184
BRAKE PROPORTIONING MEANS
Robert R. Hager, South Bend, Ind., assignor to The Bendix Corporation, a corporation of Delaware
Filed Jan. 17, 1966, Ser. No. 521,091
12 Claims. (Cl. 60—54.6)



1. In a fluid pressure system, a fluid pressure developing cylinder including a means to proportion the displacement of a fluid therefrom comprising:
a first fluid pressure developing means in said cylinder;

a second fluid pressure developing means concentric with said first means;
a first stop means in said cylinder arranged to locate a forward face of said second means adjacent a forward face of said first means;
a second stop means on said first means to limit the rearward motion of said second means with respect to said first displacing means; and
a resilient means biasing said second means against said first stop means in opposition to fluid pressure in said master cylinder created by said first means which upon yielding to fluid pressure permits telescoping of said first and second pressure developing means to maintain the pressure developed until said second stop means picks up said second means to thereafter move said first and second means in unison in said cylinder so that pressure buildup is more gradual.

3,357,185
OPERATION OF REACTION MOTORS
Richard Alden Crooker, Denville, Andrew Fung Lum, Dover, and Frank James Loprest, Chester, N.J., assignors to Thiokol Chemical Corporation, Bristol, Pa.
No Drawing. Filed Feb. 20, 1963, Ser. No. 260,947
5 Claims. (Cl. 60—214)

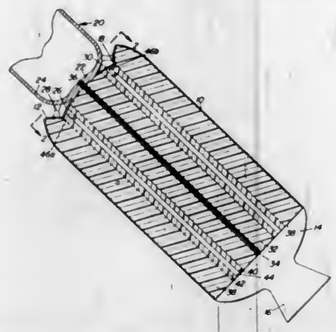
3. A method of operating a liquid bipropellant reaction motor which comprises continuously and separately introducing into a combustion zone of said motor pentaborane and a mixture of hydrazine, lower alkyl hydrazine and as an oxidant, a hydrazine salt, said mixture containing 0.1% to 10% of said hydrazine salt sufficient to react with the carbon of said alkyl hydrazine to form carbon monoxide, and contacting said pentaborane and hydrazine mixture in said combustion zone to cause them to react to form a hot gas stream for driving said motor.

3,357,186
HIGH ENERGY PROPULSION METHOD USING ALUMINUM AND WATER
Robert K. Multer, R.D. 1, Colts Neck, N.J. 07722
No Drawing. Filed Oct. 6, 1964, Ser. No. 401,977
4 Claims. (Cl. 60—219)

1. The method of creating force in a reaction motor process by ejecting the product of chemical reaction consisting of chemically reacting solid aluminum as a fuel with water as an oxidizer wherein the reactants are present in the ratio of two aluminum atoms to three molecules of water and wherein about 1700 kilocalories per kilogram of product are released.

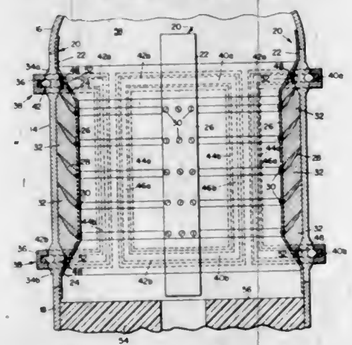
3,357,187
DUCTED ROCKET MOTOR
Coleman M. Whitlock, Jr., Camp Hill, Pa., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed Mar. 14, 1966, Ser. No. 533,977
3 Claims. (Cl. 60—250)

1. A rocket motor comprising a tubular casing, an aft end closure joined to said casing, at least one thrust nozzle fixedly mounted on said aft end closure, a forward end closure fixedly joined to said casing and formed with a circular perforation that is coaxial with the longitudinal axis of said casing, a support member the periphery of which is evenly spaced from the edge of said perforation so as to form an annular opening in the forward end of said rocket motor, a plurality of struts fixedly connecting said support member to said forward end closure, an annular, combustible barrier positioned within said opening, a first rod-shaped solid propellant charge of fuel material axially disposed within said casing with the forward end thereof fixedly mounted on said support member, a second solid propellant charge of fuel material disposed around said first charge in spaced relation therewith and bonded at its peripheral surface to said casing, a third solid propellant charge of fuel and oxidizer materials disposed around said first charge and bonded at its inner surface thereto, a fourth solid propellant charge of fuel and oxidizer materials disposed around said first and third charges and bonded at its peripheral surface to said second charge, the inner surface of said fourth charge being spaced from the peripheral surface of said third charge to provide an annular passage therebetween which extends



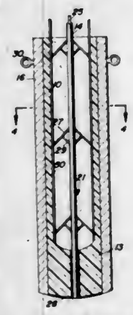
longitudinally of said casing and the forward end of which is adjacent said barrier, said charges being substantially longitudinally coextensive, and means carried by said rocket motor and adapted to ignite said third and fourth charges whereby said rocket motor is accelerated to a predetermined velocity by combustion thereof and whereby said barrier is burned so that atmospheric air is permitted to flow through said opening and between said first and second charges.

3,357,188
THRUST REVERSING APPARATUS FOR ROCKET MOTORS
Andrew J. Giger, Los Alamos, N. Mex., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed Mar. 15, 1966, Ser. No. 534,330
4 Claims. (Cl. 60—254)



1. In a rocket motor, the combination comprising:
a tubular casing;
a plurality of support members longitudinally disposed within said casing and spaced apart circumferentially thereof, said support members being fixedly connected to said casing at longitudinally spaced points thereon and formed so that they are spaced inwardly from said casing between said points;
a plurality of annular vanes disposed between said casing and said support members and spaced apart longitudinally thereof, said vanes being fixedly attached to said support members and inclined in a forward direction relative to said casing; and
separating means mounted on said casing for removing at least a portion of the wall thereof adjacent said vanes at a selected time.
2. The combination defined in claim 1 wherein:
said separating means comprises a plurality of explosive charges evenly spaced around said casing, each of said charges including a pair of circumferentially extending segments respectively disposed adjacent the forward and rearmost of said vanes and a pair of longitudinally extending segments respectively joined to the ends of said circumferentially extending segments; and
a plurality of continuous grooves each formed in the wall of said casing adjacent the segments of a respective one of said charges.

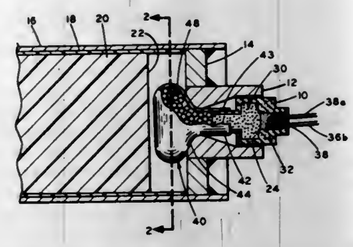
3,357,189
A PRECAST HOLLOW CORE CHARGE FOR A ROCKET MOTOR AND METHOD FOR CASTING SAME
Howard J. Whelan, Bountiful, Utah, assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed Sept. 8, 1965, Ser. No. 485,764
6 Claims. (Cl. 60—255)



2. A solid propellant rocket motor comprising, in combination, a casing, a solid propellant, prefabricated hollow core centrally positioned in said casing, said core having inner surfaces comprising the ignition surface of said motor, and an apparatus in said chamber for supporting said chamber walls, said apparatus comprising a hollow central tube extendible longitudinally within said core, a movable rod in said tube, a plurality of movable members laterally disposed from said tube contacting said ignition surfaces, at least one articulating means disposed on said tube and connected to said members, said tube and said rod for moving said members, said tube having at least one slot for passing a portion of said articulating means therethrough to connect to said rod, said members movable in response to vertical motions of said rod relative to said tube, and holding means for fixing said rod in position prior to and after movement thereof with respect to said tube.

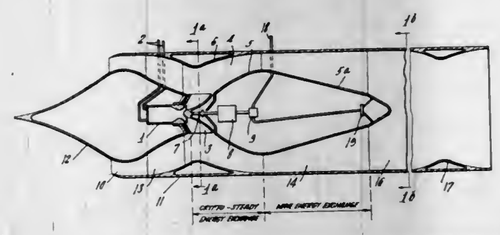
3,357,190
DEVICE FOR IGNITING A COMBUSTIBLE MATERIAL
Herbert W. D. Cassidy, and John Paul King, Elkton, Md., and Jules J. Schwartz, Wilmington, Del., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed July 28, 1965, Ser. No. 475,419
4 Claims. (Cl. 60—256)

1. An ignition device comprising:
an initiator adapted to discharge a high temperature gas from an outlet thereof at a predetermined time;
a gas impermeable inflatable bag fixedly secured to said initiator so that said gas discharged from said outlet is received therein;
a deflagrating material confined within said bag and adapted to be ignited by said gas discharged from said initiator; and



means for actuating said initiator, whereafter gas from said initiator is discharged into and inflates said bag, said deflagrating material is ignited by said gas from said initiator, and said bag is ruptured after being inflated to a predetermined limit.

3,357,191
PROPULSION MEANS
Felix Berner, 70 Essex St., Lynnfield, Mass. 01940
Filed Oct. 20, 1964, Ser. No. 405,302
14 Claims. (Cl. 60—269)



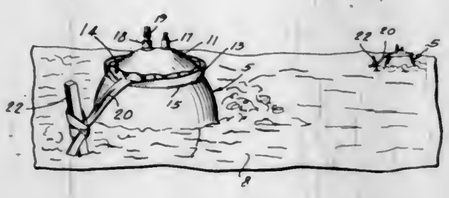
1. Means for the exchange of momentum or mechanical energy between a first fluid medium and a second fluid medium having a lower initial mechanical energy per unit mass than the first fluid medium comprising the combination of first means adapted to enable said first fluid medium to act on the second fluid medium in a fashion similar to the action of rotor blades in turbo compressors and downstream thereof a second means adapted to enable said first fluid medium to act on the second fluid medium in a fashion resembling the compressive action of pistons in piston compressors or pushing elements in positive displacement pumps, said first means comprising a passage having an inlet for said second medium and a moving assembly adapted to direct a progressive pattern of said first medium against said second medium, and said second means comprising a passage having charge-defining walls providing an entry to the passage located in a region through which said pattern of said first medium repeatedly passes while substantially coherent and distinct from said second medium, said charge-defining walls shaped and positioned to intercept in an alternate manner a distinct charge predominantly of said second medium, and upon passage of said progressive pattern through said region a distinct charge of predominantly said first medium, said passage and said first means cooperatively related to permit said charges to proceed successively down said passage whereby an effective exchange of momentum or mechanical energy can take place.

3,357,192
BREAKWATERS
George Hibarger, Mead, Okla. 73449
Filed July 18, 1966, Ser. No. 565,903
13 Claims. (Cl. 61—5)



1. A floating breakwater including: a main body comprising a plurality of longitudinal parallel rows of annular members, said annular members having central apertures whose central horizontal axes extend perpendicularly relative to said rows, said annular members being adapted to float partly submerged in vertical positions, and an elongate flexible member interwoven through the annular members of each pair of adjacent rows holding the annular members of adjacent rows in longitudinally overlapped relation, overlapped portions of annular members of each row closing at least partially the central apertures of the annular members of an adjacent row.

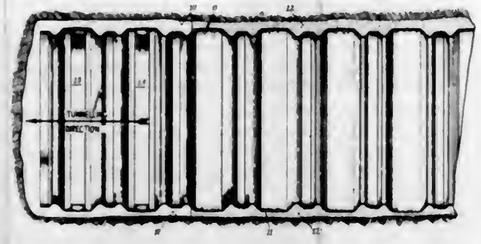
3,357,193
TEMPORARY CLOSURE DEVICE FOR BLASTING HOLES AND THE LIKE
Daniel F. Fitzgibbon, Jr., Cary, Ill., assignor to Vibration Measurement Engineers, Inc., Evanston, Ill., a corporation of Illinois
Filed Feb. 4, 1966, Ser. No. 525,168
2 Claims. (Cl. 61—35)



1. A method of closing a blasting hole or the like which comprises:
- inserting into the hole an elongated inflatable container of a normal diameter smaller than the hole so as to fit freely into the hole,
- maintaining an end portion of the container projecting outwardly from the hole,
- inflating the container and thereby distending it into tight engagement with the surrounding wall defining the hole, and
- leashing said projecting end portion of the container against accidental dropping of the container into the hole.

3,357,194
LINER PLATE
Christopher L. Fisher, Winnipeg, Manitoba, Canada, assignor to Armco Steel Corporation, Middletown, Ohio, a corporation of Ohio
Filed May 27, 1965, Ser. No. 459,306
6 Claims. (Cl. 61—45)

1. A prefabricated ring and lagging liner plate comprising a generally rectangular sheet of material arcuately curved along its longitudinal axis, said sheet in transverse cross section having a substantially flat central portion, of substantial width, a corrugation on each side of said central portion, each said corrugation being substantially narrower than said flat central portion, and a fastening flange on the outer edge of each said corrugation, said



fastening flanges having different radii of curvature and being substantially parallel to said flat central portion, said sheet in transverse cross section also having a neutral axis passing through said corrugations.

3,357,195
LIQUEFIED GAS TANKER
George R. Knight, Jr., Port Washington, N.Y., Norman W. Penney, Ridgewood, N.J., and Thomas F. Bridges, Port Washington, N.Y., assignors to John J. McMullen, Montclair, N.J.
Filed Apr. 25, 1966, Ser. No. 544,980
3 Claims. (Cl. 62—55)

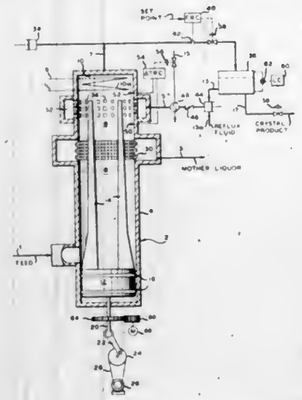


1. A tanker comprising a hull having a cargo section, a plurality of cargo tanks supported by said hull and having cargo housing sides extending upwardly above the structural top of said hull, insulation provided on at least the top and upper sides of the tank above the hull top, and covering means covering the top and being connected to the hull to protect the tank from the weather and wherein said covering means comprises a continuous flashing and a continuous flexible expansion joint having one edge rigid with the hull and its other edge coupled to the flashing to enable the tank to expand and contract generally vertically without restraint.

3,357,196
HEATED MELT RECYCLE RESPONSIVE TO TEMPERATURE DIFFERENTIAL OF CRYSTAL MASS
Dennis L. Dutcher, Bartlesville, Okla., and Philip G. Kirmser, Manhattan, Kans., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed Jan. 13, 1965, Ser. No. 425,134
14 Claims. (Cl. 62—58)

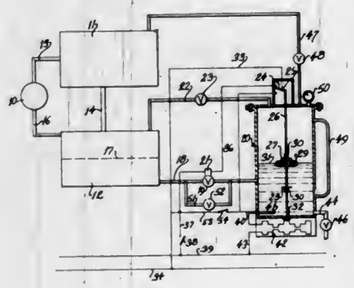
1. In a process for separating a component from a liquid mixture containing at least two components which comprises introducing said mixture into a freezing zone, freezing said mixture in said freezing zone so as to crystallize at least a portion of one of the components of said mixture, passing the resulting slurry of crystals and mother liquor into a filtering zone, withdrawing mother liquor from said filtering zone, passing crystals from said filtering zone to a reflux zone wherein a crystal mass is established, passing crystals from said reflux zone to a melting zone, melting crystals in said melting zone, and withdrawing melt from said melting zone, the improvement which comprises recycling a stream comprising a portion of the melt withdrawn from said melting zone through a heating zone to said reflux zone, establishing

a signal representative of the temperature differential between the upstream and downstream portions of said crystal mass in said reflux zone, and controlling the temperature of the stream of said melt recycled to said reflux zone by adjusting the amount of heat applied to said stream in said heating zone responsive to said signal so



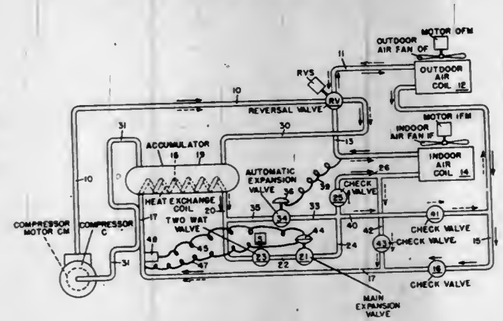
that as said temperature differential decreases below a predetermined level the amount of heat applied to said stream in said heating zone is increased and as said temperature differential increases above said predetermined level the amount of heat applied to said stream in said heating zone is decreased.

3,357,197
PROCESS AND APPARATUS FOR PURGING REFRIGERATION SYSTEM
John L. Massengale, 404 St. Charles Ave. SW., Birmingham, Ala. 35211
Filed June 3, 1966, Ser. No. 555,118
10 Claims. (Cl. 62—77)



1. The process of purging a closed refrigeration system having a condenser and an evaporator and containing a volatile refrigerant mixed with a polluting agent miscible with and having a higher boiling point than said refrigerant, which comprises:
- (a) transferring said liquid refrigerant mixed with said polluting agent from the evaporator to a closed separator chamber,
- (b) controlling the flow of successive quantities of said refrigerant mixed with polluting agent to the separator chamber so that said flow is restrained after the liquid in the separator chamber rises to a predetermined level and said flow is commenced after the liquid in the separator chamber drops to a predetermined level,
- (c) heating said refrigerant mixed with polluting agent in the separator chamber after the liquid therein rises to said predetermined level to a temperature to volatilize said refrigerant and leave said polluting agent as a liquid so that the liquid in the separator chamber drops to said predetermined level to commence the transfer of another quantity of liquid refrigerant mixed with said polluting agent to the separator chamber,
- (d) transferring the volatilized refrigerant from the separator chamber to the evaporator, and
- (e) removing the polluting agent from the separator chamber after the volatilized refrigerant has been separated therefrom.

3,357,198
AIR COOLING AND DEHUMIDIFICATION SYSTEMS
James R. Harnish, Staunton, Va., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 20, 1966, Ser. No. 558,735
14 Claims. (Cl. 62—173)

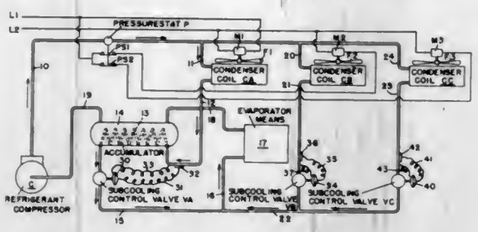


1. An air conditioning system comprising a refrigerant compressor; a condenser coil; a main expansion valve; an air cooling evaporator coil, and accumulator means connected in series in the order named in a refrigeration circuit; an automatic expansion valve connected to said condenser and evaporator coils; flow control means for permitting refrigerant to flow from said main expansion valve into said evaporator coil, and for preventing refrigerant from flowing from said main expansion valve into said evaporator coil, and means for causing said flow control means to permit refrigerant to flow from said main expansion valve into said evaporator coil when air cooling with normal air dehumidification is required from said evaporator coil, and for causing said flow control means to prevent refrigerant from flowing from said main expansion valve into said evaporator coil when more than normal air dehumidification is required from said evaporator coil.

3,357,199
MULTIPLE CONDENSER REFRIGERATION SYSTEMS
James R. Harnish, Staunton, Va., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Apr. 19, 1966, Ser. No. 543,680
12 Claims. (Cl. 62—181)

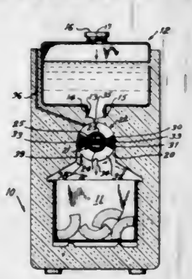
1. A refrigeration system comprising a refrigerant compressor, first and second condenser coils, means including a discharge gas tube connecting said coils to the discharge side of said compressor, an accumulator, a heat exchange coil arranged to heat liquid within said accumulator, a liquid tube connecting said first condenser coil to said heat

exchange coil, evaporator means, a first expansion valve connected to said heat exchange coil and to said evaporator means, a second expansion valve connected to said second condenser coil and to said evaporator means, means for adjusting said first expansion valve to supply refrigerant to said evaporator means at the rate at which



refrigerant is condensed within said first condenser coil, means for adjusting said second expansion valve to supply refrigerant to said evaporator means at the rate at which refrigerant is condensed within said second condenser coil, means connecting said evaporator means to said accumulator, and a suction gas tube connecting said accumulator to the suction side of said compressor.

3,357,200
PORTABLE ICE MAKER
Myles F. Connors, New Suffolk Ave., P.O. Box 1227, Mattituck, N.Y. 11952
Filed Sept. 9, 1966, Ser. No. 578,264
8 Claims. (Cl. 62—349)



1. In a portable ice making machine having a cabinet, a reservoir for water and having a stationary central refrigerant cylindrical tubular element and a selectively rotatable multi-fin ice cube making element disposed about said stationary element, the improvement comprising dividing said central refrigerant element into a pair of semi-cylindrical tubes one tube adapted for refrigerant use to freeze ice in the multi-fin element and the other and opposite tube adapted for heat use upon the selectively rotated multi-fin to release the ice cubes formed.

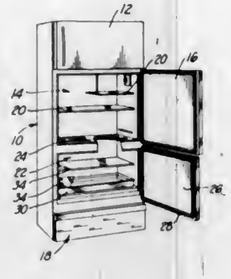
3,357,201
APPARATUS FOR STORING VEGETABLES
Mitsunobu Toyama, 1551 Verde Vista Drive, Monterey Park, Calif. 91754
Filed Sept. 19, 1966, Ser. No. 580,261
6 Claims. (Cl. 62—382)

1. In an apparatus for minimizing deterioration of vegetables during prolonged refrigerated storage, the combination of:

(a) a refrigerating apparatus having a refrigerated compartment and means for maintaining the temperature in said refrigerated compartment within a temperature range of from about 34° F. to about 38° F.;

(b) a vegetable-storage compartment separated from said refrigerated compartment by a wall having a high coefficient of heat conductivity so that it conducts heat freely from said vegetable-storage compartment to said refrigerated compartment;

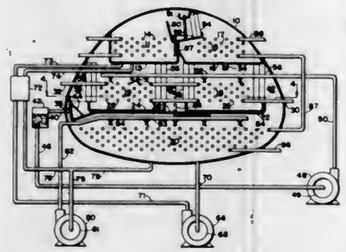
(c) said vegetable-storage compartment being substantially sealed relative to said refrigerated compartment so as to substantially prevent the passage of water vapor from said vegetable-storage compartment to said refrigerated compartment;



(d) a tray within said vegetable-storage compartment and adapted to be filled with water to a predetermined level so as to maintain the air in said vegetable-storage compartment substantially saturated with water vapor; and

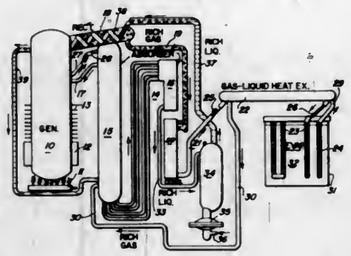
(e) at least one vegetable-storage rack within said vegetable-storage compartment.

3,357,202
ABSORPTION REFRIGERATING MACHINE
John L. M. Holman, Onalaska, James M. Porter, La Crosse, and Robert P. Novak, Mindoro, Wis., assignors to The Trane Company, La Crosse, Wis., a corporation of Wisconsin
Filed Jan. 18, 1966, Ser. No. 521,379
6 Claims. (Cl. 62—476)



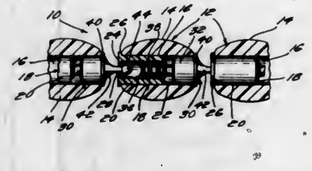
1. An absorption refrigerating machine comprising a first chamber operating at high pressure, a generator in said first chamber, a condenser in said first chamber, said condenser being in fluid flow communication with said generator to condense refrigerant vapor from said generator, a second chamber operating at a low pressure, an absorber in the lower portion of said second chamber, two evaporators in said second chamber and arranged above said absorber, said evaporators being spaced from each other to provide a first downwardly extending passageway between said evaporators for the flow of refrigerant vapor downwardly from said evaporators to said absorber, said evaporators being spaced from the walls of said second chamber to provide separate additional passageways between said evaporators and said absorber for the flow of refrigerant vapor from said evaporators to said absorber, means for circulating an absorbent solution from said absorber to said generator and from said generator to said absorber and means for conducting refrigerant liquid from said condenser to said evaporators.

3,357,203
ABSORPTION REFRIGERATION SYSTEM
Stanford W. Briggs, West Lafayette, Ind., assignor to Whirlpool Corporation, a corporation of Delaware
Filed June 10, 1966, Ser. No. 556,755
7 Claims. (Cl. 62—489)



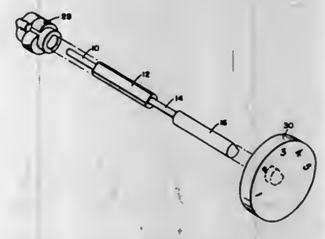
1. A two-pressure absorption refrigeration system subject to operating and shut-down periods, comprising: a generator on the high pressure side of said system in which absorption liquid rich in dissolved refrigerant is heated to generate refrigerant vapors; liquid conduit means for conveying rich liquid from the low pressure side of said system to said generator during said operating periods; liquid trap means in said conduit means exteriorly of said generator for entrapping a supply of rich liquid during said operating periods and retaining said supply exteriorly of said generator during said shut-down periods; energizable pressure applying transfer means operatively associated with said conduit means for causing said conveying during said operating periods; and passage means providing operating communication between said trap means and energizable transfer means during said shut-down periods for substantially immediate transfer of said supply to said generator on initiating the next subsequent operating period.

3,357,204
DETACHABLE BEAD HAVING TWO PART INSERT
Albert Davis, Cranston, R.I., assignor to Best Plastics, Inc., Providence, R.I., a corporation of Rhode Island
Filed Feb. 15, 1965, Ser. No. 432,562
4 Claims. (Cl. 63—2)



1. A bead comprising a body portion having a bore extending therethrough, a first part snugly received in one end of said bore and having a male connector member extending therefrom to a point outside said one end of said bore, a separate and distinct second part snugly received in the other end of said bore and having a female socket located at the extremity of said other end of said bore, said female socket being adapted to snap-receive the male connector member of another similar bead, and cooperating means on the inner ends of said first and second parts for securing said parts directly to each other within the bore of said body portion, said parts further having outwardly projecting portions positioned just outside of opposite ends of said bore, said portions contacting the exterior bead surface at opposite ends of the bore thus preventing axial movement of said assembled parts with respect to said bore.

3,357,205
SHAFT FOR ELECTRICAL SWITCH AND METHOD OF MAKING
Calvin J. Holtkamp, Mansfield, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 11, 1965, Ser. No. 494,355
8 Claims. (Cl. 64—1)



1. A control shaft comprising:

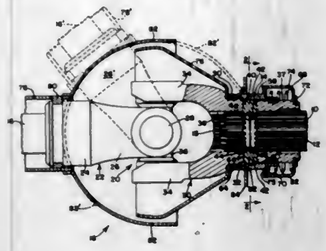
first, second and third lengthwise extending portions; said first and third portions being of non-circular transverse cross section, in part at least, to mate with a correspondingly cross-sectionally shaped member, said cross-section of said first and third portions including one surface area symmetrical to the longitudinal axis of the portion, and a remaining surface area which is substantially flat whereby the longitudinally extending center line of mass of said first and third portions is offset from the respective longitudinal axis;

said second portion including a length thereof torsionally strained beyond its elastic limits to effect angular displacement of said first and third portions to positions in which their said flat surface areas are out of registering alignment, and in which their said longitudinal axes are aligned.

3,357,206
POWER TAKE-OFF SHAFT COUPLING
Craig E. Christie, Cedar Falls, Iowa, assignor to Deere & Company, Moline, Ill., a corporation of Delaware
Filed Sept. 30, 1965, Ser. No. 491,616
3 Claims. (Cl. 64—6)

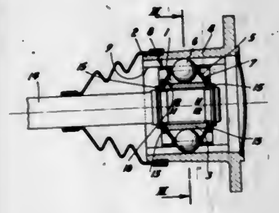
1. A mechanism for coupling an implement drive shaft to an externally splined tractor power take-off shaft, having an annular recess near its terminal end, comprising: a universal joint having a first yoke connected to the implement drive shaft and a second yoke including a hub portion having an axial splined socket adaptable to receive the splined power take-off shaft and at least one radial opening between said socket and the hub exterior; a locking element radially movable in each opening between a locking position, wherein it is engageable with the said splined shaft recess to prevent relative axial movement between the yoke and splined shaft, and an unlocking position, wherein it disengages said recess permitting said relative axial movement; a retaining member slidable on the periphery of said hub between a first position, wherein it moves each locking element to its locking

position, and a second position, wherein it permits radial movement of each locking element to its unlocking position; a split ring substantially coaxial with said socket and operably connected to each locking element for radial



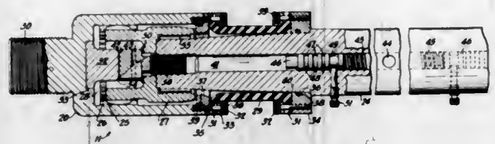
compression as each locking element moves to its locking position, biasing each element toward its unlocking position; and a second spring means operably extending between said second yoke and the retaining member for biasing the retaining member toward its first position.

3,357,207
UNIVERSAL BALL JOINT
Michel Orain, Courbevoie, Hauts-de-Seine, France, assignor to Societe Glaenzer Spicer Societe Anonyme, Yvelines, France
Filed Feb. 10, 1966, Ser. No. 526,592
Claims priority, application France, Mar. 10, 1965, 8,668
14 Claims. (Cl. 64—8)



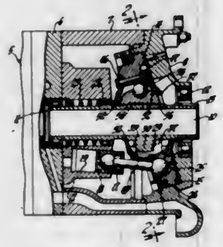
1. An axially fixed universal ball joint arranged between a driven shaft and a driving shaft, comprising: a boss integral with said driving shaft, convex flanks provided on said boss, a plurality of running tracks provided externally on said boss, said running tracks having a substantially semi-circular cross-section and being parallel to the longitudinal axis of said shaft; a cylindrical barrel integral with said driven shaft, a plurality of running tracks, equal in number to and having the same cross-section as, the said plurality of tracks on said boss, provided internally on said barrel, to form a plurality of pairs of ball trackways, a ball arranged for rolling and sliding movement in each said trackway, means to hold said balls in said trackways, said means comprising a first concave washer arranged on one side of and adapted to contact the set of balls and one of said flanks and a second concave washer arranged on the other side of and adapted to contact the set of balls and the other of said flanks, a spherical zone provided in the bore of said barrel, a first operative spherical surface situated on the periphery of said first washer and having its centre in the bore of the barrel and a first operative spherical surface situated on the periphery of said second washer and having its centre in the bore of the barrel, located in the said spherical zone provided in the bore of said barrel, and a second operative spherical surface situated on that side of each washer in contact with said convex flank, and further washers located on said driving shaft for holding said concave washers in contact with the said balls and flanks, respectively.

3,357,208
SHAFT COUPLING
Theodore W. Chase, Baltimore, Md., assignor to Koppers Company, Inc., a corporation of Delaware
Filed Feb. 7, 1966, Ser. No. 525,546
6 Claims. (Cl. 64—9)



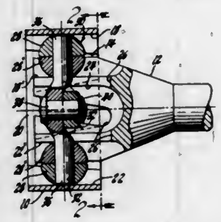
1. A coupling for connecting an eccentrically rotating shaft to a concentrically rotating shaft comprising:
a sleeve adapted to be attached to said eccentrically rotating shaft;
a sleeve adapted to be attached to said concentrically rotating shaft;
each of said sleeves having internal gear teeth therein;
a spindle having external gear teeth at its ends for engagement with a respective sleeve;
means surrounding said spindle for sealing the juncture of said spindle and sleeves from external environment;
said spindle having an opening extending axially therethrough;
a pair of freely movable opposed pistons in said opening;
an aperture extending transversely of said opening and located between said pistons whereby ambient pressure acts through said opening on said pistons to bias said pistons apart;
a lubricant between said pistons and said teeth whereby movement of said pistons exerts a pressure on said lubricant; and
means for additionally biasing said pistons apart including compression spring abutting both of said pistons.

3,357,209
UNIVERSAL JOINT FOR A HYDROSTATIC TRANSMISSION
James J. Mooney, Jr., Indianapolis, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 13, 1965, Ser. No. 513,185
2 Claims. (Cl. 64—21)



1. In a device for converting rotary motion to or from reciprocating motion through a universal joint subject to substantial thrust forces, the universal joint including an inner race having axial grooves, an outer race having axial grooves each corresponding to an inner race groove to form corresponding groove pairs, a plurality of torque transmitting balls each received within a corresponding groove pair to drivingly interconnect the inner and outer races, a plurality of positioning shoes each mounted on one of the races and axially engaging one of the balls, and locating means mounted on the other race and operable to locate the shoes to position the balls in the homokinetic plane during joint angulation, the improvement comprising a convex cam surface formed on each shoe on each axial side of the ball and a plurality of followers universally mounted on the locating means and each having a concave surface substantially matingly engaging a positioning shoe cam surface to distribute the thrust forces transmitted between the inner race and the outer race over a substantial bearing area.

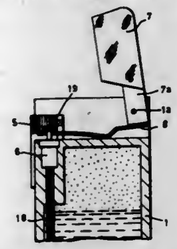
3,357,210
CONSTANT VELOCITY UNIVERSAL JOINT
Walter C. Dean II, Granby, Conn., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 27, 1965, Ser. No. 516,577
6 Claims. (Cl. 64—21)



1. A constant velocity universal joint comprising a first member having at least four circumferentially spaced grooves, a second member spaced from the first member and having circumferentially spaced grooves each complementary to a first member groove and crossed with respect thereto, and torque-transmitting means including a spider having at least a pair of crossed arms relatively rotatable about a common axis and torque-transmitting elements positioned by the arms in the grooves, the first member, second member and torque-transmitting means being axially movable relative to each other.

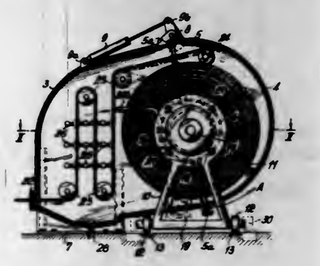
3,357,211
GAS LIGHTER
Joseph Franz Heri, Bienne, Switzerland, assignor to Manufacture Samao S.A., Bienne, Switzerland, a firm
Filed Mar. 8, 1965, Ser. No. 437,899
1 Claim. (Cl. 67—7.1)

In a gas lighter comprising a gas container, a combustion nozzle fed by said container to produce a flame, a valve biased by a spring into closed position and communicating with said nozzle for controlling the flow of gas through said nozzle and adapted to be shifted between an open and a closed position, means urging the valve into its closed position, a flame extinguisher including an arm pivotally secured to the container provided adjacent its pivotal axis with an outer short transverse surface and an inner longitudinal surface, said flame extinguisher being adapted to be shifted between a collapsed position capping the nozzle to extinguish the flame and a raised position releasing said valve, the provision of an elastic blade provided with a transverse line of fold secured to the container, one end of which is slightly raised and is adapted to engage the flame extinguisher at a point adjacent its pivotal axis selectively along the transverse and along the longitudinal surface of said flame extinguisher arm thereby to urge the flame extinguisher into either of its above-mentioned positions, means permanently securing the other end of the blade over said valve, the shifting of the flame extinguisher into either position



shifting the corresponding end of the blade to make the latter rock round its transverse line of fold to raise and open said valve against said elastic blade for the raised position of the flame extinguisher and to release said valve for the collapsed position of the flame extinguisher.

3,357,212
PROCESSING CHAMBER FOR WEB MATERIAL, ESPECIALLY WIDE TEXTILE MATERIAL
Günter Schiffer, Krefeld, Germany, assignor to Joh. Kleinewefers Sohne Maschinenfabrik, Krefeld, Germany
Filed Aug. 12, 1965, Ser. No. 479,244
Claims priority, application Germany, Aug. 17, 1964, K 53,773
2 Claims. (Cl. 68—8)

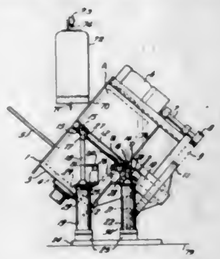


1. In combination with a carriage for supporting web material, axle means supported by said carriage, rotatable core means supported by said axle means and adapted to receive and support web material, chamber means surrounding said core means and comprising side walls having susbtantially axially aligned openings therein, said axle means extending through said openings, said carriage being arranged outside said chamber means, sealing means axially displaceably mounted on said axle means, and means yieldably pressing said sealing means against said side walls for sealing said openings, said chamber means including a plurality of interconnected section means selectively movable relative to each other for opening and closing said chamber means.

3,357,213
WASHING AND CENTRIFUGING MACHINE
Heinz Herbertz, Aachen, Germany, assignor to H. Krantz, a firm
Filed Oct. 31, 1966, Ser. No. 590,701
Claims priority, application Germany, Nov. 24, 1965, K 57,706
6 Claims. (Cl. 68—210)

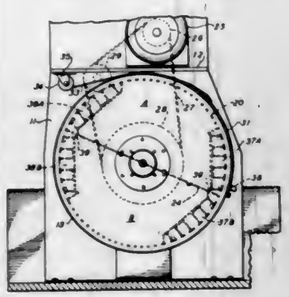
1. In a washing and centrifuging machine for laundry and textile articles of the type having a swinging cylindrical receptacle having a top side and a bottom side,

a motor drive shaft axially mounted in said bottom side, a rotary drum positioned within said receptacle driven by said shaft, said drum having a closed bottom side connected to the shaft and a top side having a central filler and discharge opening, said top side of the receptacle also having a central opening to permit access to the central filler and discharge opening of the drum and to permit charging and discharging of the rotatable drum, said receptacle being held with its axis horizontal during washing and centrifuging, with its axis inclined upwardly through the top during charging and with its axis in-



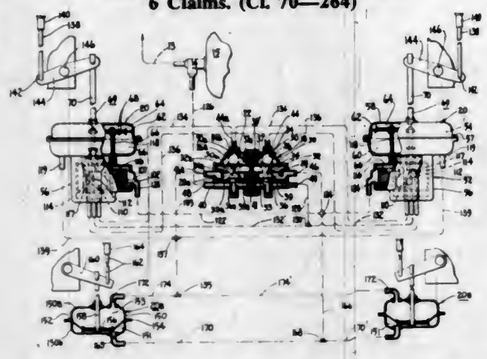
clined downwardly through the top wall during discharge; the combination therewith of a mounting arrangement consisting of guides positioned alongside of and spaced outwardly from the receptacle, sliding members positioned on the top and bottom sides of the guides and connected to slide thereon in response to inclination of said receptacle, means including said sliding members for moving the receptacle to and from operating, charging and discharging positions in which its axis is respectively horizontal, inclined upwardly through the top side and downwardly through the top side.

3,357,214
LAUNDRY MACHINE
John P. Chenderlin, Cincinnati, Ohio, assignor to McGraw-Edison Company, Elgin, Ill., a corporation of Delaware
Filed June 14, 1966, Ser. No. 557,479
5 Claims. (Cl. 68—210)



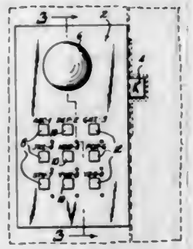
1. In a laundry machine: the combination of an external casing, a work-treating drum in said casing mounted for rotation on a horizontal axis, a diametrical partition wall in said drum dividing the drum into two equal compartments, a pair of peripheral doors on said drum for each of said compartments positioned at opposite sides of the compartment, and a single side door on said external casing to provide unloading egress from the upper one of the compartments when a peripheral door thereof is in registration with said side door opening and to provide loading access to the lower one of said compartments when a peripheral door thereof is in registration with said side door opening.

3,357,215
VEHICLE DOOR LOCKING SYSTEM
William C. Riester, Williamsville, and Raymond D. Page, Eggertsville, N.Y., assignors to Trico Products Corporation, Buffalo, N.Y.
Filed Dec. 7, 1964, Ser. No. 416,258
6 Claims. (Cl. 70—264)



1. In a fluid operated door locking system for automotive vehicles including a plurality of doors, a plurality of latch-lock mechanisms each disposed in a door of said vehicle, a plurality of fluid actuated power units and manually manipulatable mechanical means for operating each of said latch-lock mechanisms; each of said power units comprising movable means operatively connecting the power unit to the latch-lock mechanism for actuation of the latch-lock mechanism by the power unit, valve means operatively connected to said movable means responsive to operation of any one of said manually manipulatable mechanical means for effecting actuation of all of said power units, said valve means including fluid pressure feedback responsive means operable to effect resetting of all of said power units for a subsequent latch-lock operation in response to actuation of said power units.

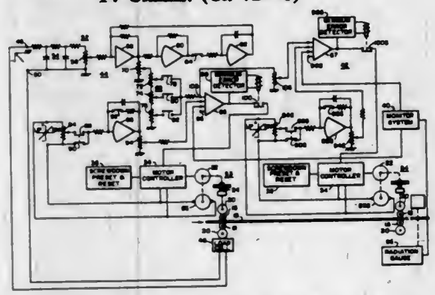
3,357,216
COMBINATION LOCK
Coleman P. Cook, Suite 320, 1250 Connecticut Ave. NW., Washington, D.C. 20036
Filed Dec. 9, 1965, Ser. No. 512,660
9 Claims. (Cl. 70—313)



1. In a combination lock having a retractable bolt and means normally holding said bolt against retraction, the improvement comprising; a plate mounted for movement in the plane containing its edges and having means for releasing said bolt for retraction when said plate moves in one direction; at least one opening through said plate and a slot of less width than said opening and extending therefrom in the direction of movement of said plate; a member extending through said opening in a direction substantially perpendicular to said plate; means for moving said member in said opening through a selected number of discrete steps; the dimension of said member in a direction transverse to said slot being greater than the width of said slot; tangential groove means in said member at a

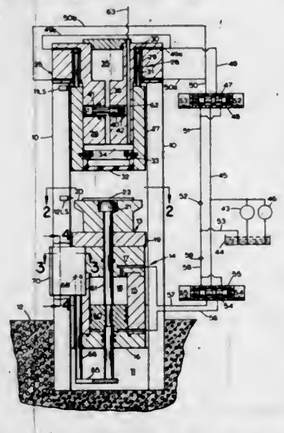
predetermined position therealong whereby movement of said member through a predetermined number of said discrete steps will place said groove means in said plane, and in alignment with said slot to permit said plate to slide past said member in a latch releasing direction with said slot embracing said member at said groove means.

3,357,217
SLAVE GAUGE CONTROL SYSTEM FOR A ROLLING MILL
John W. Wallace, Williamsville, N.Y., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 12, 1965, Ser. No. 455,111
14 Claims. (Cl. 72—8)



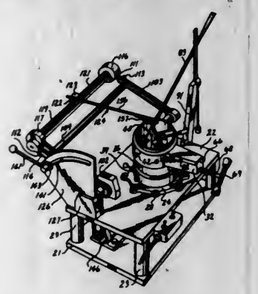
14. A gauge control system for a tandem rolling mill having at least a prior roll stand and a subsequent roll stand with each of the stands having variable position screws for controlling the respective stand roll openings, said system comprising means for generating a signal dependent upon roll force at the prior stand in accordance with a predetermined relationship, a slave gauge control subsystem generating a gauge correction signal for controlling the screw position at the subsequent stand, and means for transmitting to said slave subsystem at least a portion of the roll force dependent signal generated at the prior stand.

3,357,218
HYDRAULIC PRESS
Charles L. Mitchell, Cincinnati, Ohio, assignor to The Cincinnati Milling Machine Co., Cincinnati, Ohio, a corporation of Ohio
Filed Feb. 24, 1965, Ser. No. 434,810
19 Claims. (Cl. 72—28)



1. A hydraulic press for forming a workpiece blank, the press comprising in combination:
(a) means including a flexible diaphragm defining a fluid chamber,
(b) means to introduce fluid under pressure into the chamber,
(c) a plunger,
(d) means to draw the plunger and diaphragm together to form a workpiece therebetween, and
(e) means to produce a series of discrete signals for control of the pressure in the pressure chamber during formation of the workpiece.

3,357,219
MAINTENANCE OF GOLF CLUB IRONS
James T. Hunter, Phoenix, Ariz., assignor of twenty-five percent to Wilbert G. Anderson
Filed May 3, 1965, Ser. No. 452,623
13 Claims. (Cl. 72—35)



1. In a golf club maintenance apparatus,
(a) means defining a flat surface,
(b) means for clamping a club head face against said surface, whereby to cause said golf club shaft to be projected at an angle to said head,
(c) means adjustable to indicate loft and lie angles of said golf club,
(d) means for imparting relative rotating movement between said club face and surface on the one hand and said indicator arm through an arc equivalent to the design loft of the club head,
(e) whereby the lie of the club may be read directly from the scale on said indicator arm and the loft determined by the space relation between said arm and the golf club shaft.

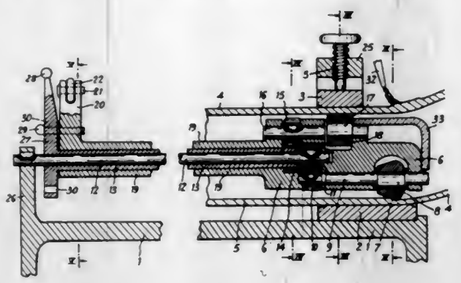
3,357,220
PROTECTION AND LUBRICATION OF METALS AT HIGH TEMPERATURES
Robert H. Dalton and Peter Grego, Corning, N.Y., assignors to Corning Glass Works, Corning, N.Y., a corporation of New York
No Drawing. Filed July 10, 1964, Ser. No. 381,930
7 Claims. (Cl. 72—42)

1. A method of metal working which comprises the steps of (A) applying a vitrifiable, foamable coating to a metal body, (B) heating the coated metal body to the desired metal working temperature, thereby softening and foaming the coating to produce a protective foamed glass coating and (C) subjecting the metal body to a shaping operation whereby the foamed glass coating serves as a lubricant.

3,357,221
METHOD OF BENDING TUBES AND MACHINE THEREFOR
Sigismond Wilman, 1–3 Rue d'Evreux, Courbevoie, France
Filed Dec. 18, 1962, Ser. No. 245,460
Claims priority, application France, Oct. 1, 1962, 910,914; Dec. 5, 1962, 917,595
1 Claim. (Cl. 72—69)

Method of bending tubes consisting in cold thinning the wall of the tube on the side thereof on the outer arc of

curvature, over a 160° portion of the tube periphery providing an elongation thereof, heating the opposite side of the tube periphery on an arc of 160° at a temperature of 1000° C. whereby a small width on both sides of the tube are neither thinned down nor heated on the transverse plan of thinning during the thinning of the tube, and



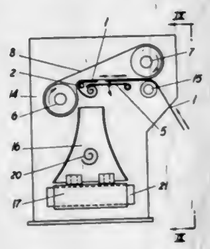
said cold thinning of the tube being carried out at regular intervals on the tube during longitudinal displacement thereof in two successive periods by pressing semi-circular grooves in the tube in the first period and thereafter compressing the semi-circular excrescences on the tube produced between two successive grooves during the second period for smoothing the external surface of the tube.

3,357,222

METHOD OF FORMING A SPIRAL OF RESILIENT MATERIALS, A MACHINE AND A MACHINE INSTALLATION FOR THE SAME

Francisco Goldberger Konstandt, Seestrasse, Weggis, Lucerne, Switzerland

Filed Jan. 6, 1965, Ser. No. 424,885
Claims priority, application Great Britain, Jan. 15, 1964, 1,790/64
17 Claims. (Cl. 72—146)



1. A machine for producing spirals of resilient materials which are already in the form of a strip, comprising means for feeding and guiding the strip to bending means, bending means formed by at least one roller which curls the incoming strip, an abutment plate for progressively unbending the curled strip, and delivery means of the formed spiral which pass same standing upright on its edges onto a collecting device.

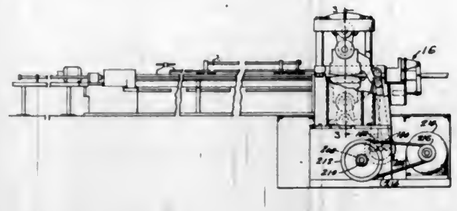
3,357,223

TUBE REDUCING MACHINE

Albert F. Tremblay, Toledo, Ohio, assignor to Kent-Owens Machine Company, Toledo, Ohio, a corporation of Ohio

Filed May 28, 1965, Ser. No. 459,661
4 Claims. (Cl. 72—189)

1. A tube reducing machine comprising a stationary frame, a pair of opposed large diameter dies, means for movably connecting the upper die to an upper portion of said frame, means for movably connecting the lower die to a lower portion of said frame, lever means extending from each of said dies, crank arms connected to each



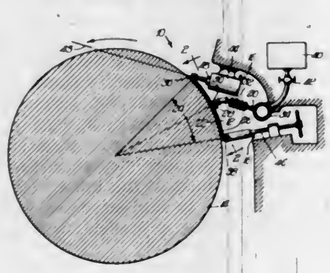
of said lever arms and extending a common direction transversely of a path of a tube to be moved between said dies, and a crankshaft for driving both of said crank arms.

3,357,224

ROLL COOLING

Herman E. Muller, Portage, Ind., assignor to Inland Steel Company, East Chicago, Ind., a corporation of Indiana

Filed Feb. 26, 1965, Ser. No. 435,630
10 Claims. (Cl. 22—201)



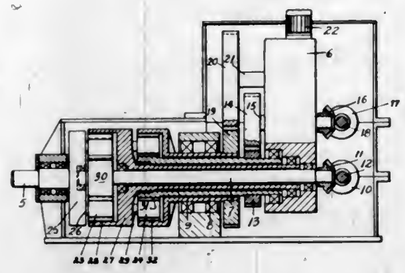
1. Apparatus for water-cooling a roll in a hot strip mill comprising: a flexible shoe mounted adjacent the working surface of said roll, said shoe having a smooth and continuous inner surface which is coextensive in area with and overlies a substantial acute arcuate segment of said roll surface and is substantially coextensive in length with the working axial length of said roll, said shoe being adapted to allow said inner surface to be evenly spaced from said roll surface, and said shoe having reinforced longitudinal axial edges; force means connecting with said shoe and adapted to controllably hold said inner surface of said shoe evenly spaced from said roll surface, said force means including piston means acting against at least one of said reinforced edges along a line non-perpendicularly chordal to said roll surface; cooling water supply means providing for continuously injecting cooling water between said inner surface and said roll surface under pressure including water aperture means in said shoe and movable water connection means communicating with said aperture means, said water aperture means extending centrally substantially the entire length of said inner surface; said shoe and said force means being adapted to forcibly confine said cooling water to flow circumferentially of said roll in a thin film of even thickness and even velocity between said inner surface and said roll surface in continuous intimate heat transferring contact with said roll surface and to control said thickness of said film to maintain a condition of optimum efficiency heat removal and dynamic thermal equilibrium.

3,357,225

CONTINUOUS ROLLING MILLS, PARTICULARLY DRAWING REDUCING MILLS

Dietrich Grube, Ratingen-Tiefenbroich, Germany, assignor to Schloemann Aktiengesellschaft, Dusseldorf, Germany

Filed July 2, 1964, Ser. No. 379,857
Claims priority, application Germany, July 4, 1963, Sch 33,498
4 Claims. (Cl. 72—249)



1. In a drive means for a mill of the continuous stretch-reducing rolling mill type having a plurality of successive roll stands, a common variable speed prime mover and a common constant speed prime mover for all of said roll stands, a drive gearing assembly for each said roll stand, a common constant speed driving shaft extending from said constant speed prime mover to adjacent each said roll stand, a common variable speed driving shaft extending from said variable speed prime mover to adjacent each said roll stand, each said drive gearing assembly comprising an output shaft adapted to drive the rolls of the corresponding roll stand, a first summation drive means driving said output shaft, and including a first and second input means whose speeds are to be summed, and an output means connected to said output shaft, bevel gear means connecting said first input means to said common variable speed driving shaft to be driven thereby, a second summation drive means, having an output means, and two input means, the output means of said second summation drive means being connected to drive said second input means of said first summation drive means, bevel gear means providing a constant speed driving connection from said constant speed driving shaft, a variable speed driving connection driven by said constant speed driving connection, said constant speed and said variable speed driving connections being connected one to each of said two input means of said second summation drive means, and means to vary the speed of said variable speed driving connection.

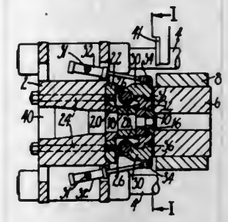
3,357,226

METAL EXTRUSION PRESS WITH DIE-ASSEMBLY LOCKING MEANS

Donald N. Snell and Robert Kenneth Valks, Dorset, England, assignors to The Loewy Engineering Company Limited, Bournemouth, England, a company of Great Britain

Filed Mar. 12, 1965, Ser. No. 439,256
Claims priority, application Great Britain, Mar. 19, 1964, 11,701/64
8 Claims. (Cl. 72—253)

1. A metal extrusion press, having a stationary platen, a billet container, movable along the press axis, and a carrier for a die-assembly, said carrier being arranged between platen and container and supported for rotation about an axis parallel to the press axis, and in which retractable means are provided for holding said carrier against movement along the press axis in the direction of said container, said means comprising a plurality of retractable latches mounted on pivots and symmetrically disposed around and with respect to a plane passing



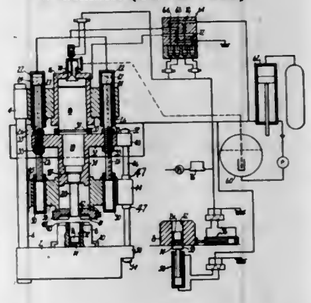
through the press axis and engaging said carrier at points on the container side of said carrier.

3,357,227

HYDRAULIC PRESS

Arthur R. Walker and Peter J. H. Hall, Bournemouth, England, assignors to The Loewy Engineering Company Limited, Bournemouth, England, a company of Great Britain

Filed Feb. 26, 1965, Ser. No. 435,580
Claims priority, application Great Britain, Feb. 27, 1964, 8,115/64
5 Claims. (Cl. 72—253)



1. A hydraulic press comprising first and second movable systems, said first movable system including a main hydraulic unit and a main pressing tool attached to the ram of said unit, and said second system including an auxiliary tool co-axial with said main tool, auxiliary hydraulic units having cylinders and pistons attached to said first movable system, secondary cylinders attached to said second movable system, extensions from said pistons depending into said secondary cylinders and having a diameter smaller than the diameter of said pistons, the space in said secondary cylinders being connected by ducts to the space in the cylinders of said auxiliary units above their pistons, the cylinders of said auxiliary unit being double acting, with that part of their pistons passing through the cylinders of said auxiliary unit having a larger diameter than that part of the extensions of said pistons which depend into said secondary cylinders, and means for arresting the movement of said second movable system before the first movable system has finished its stroke.

3,357,228

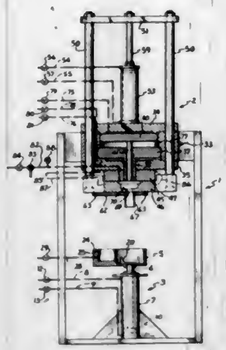
METHOD AND MEANS FOR MAKING METAL FORGINGS

George Harrison, Berwyn, and Nelson K. Harrison, Riverside, Ill., assignors to Imperial-Eastman Corporation, Chicago, Ill., a corporation of Illinois

Original application Sept. 1, 1961, Ser. No. 146,391, now Patent No. 3,228,073. Divided and this application June 8, 1965, Ser. No. 462,277
11 Claims. (Cl. 72—344)

1. In combination with a machine for punching metal including a punch and a die having a hole of a shape

that is a counterpart of the cross section of the punching end of the punch and in the path of movement thereof, a counterpunch surrounding the punch, the punch making a snug sliding fit in the counterpunch and reenforcing the punching end thereof against radially inward collapse,



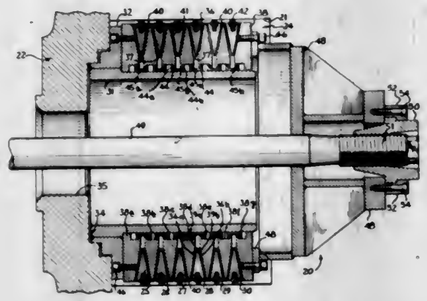
means for moving the punch in its punching operation, means controlled by movement of the punch for moving the counterpunch, and means for disabling said last means whereby the continued movement of the punch becomes ineffective to cause further movement of the counterpunch.

3,357,229

APPARATUS FOR FORMING A BEADED SHELL

Hans R. Luedi, Highland Park, Ill., assignor to Grotnes Machine Works, Inc., Chicago, Ill., a corporation of Illinois

Filed Feb. 9, 1965, Ser. No. 431,388
6 Claims. (Cl. 72—393)



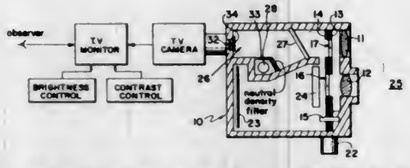
1. An expanding apparatus for forming at least three beads in a hollow shell wherein the average net axial strain produced in the shell during bead formation is minimized, comprising, in combination, frame means adapted to slidably receive said shell, a plurality of axially spaced annular carrier plates carried by said frame means with freedom for axial movement relative thereto, each of said plates having tapered surfaces in an axial face thereof, facing corresponding tapered surfaces on adjacent plates, said tapered surfaces defining wedge-shaped recesses between adjacent pairs of said plates, die units disposed between and carried by said plates, said die units each comprising a plurality of arcuate die segments having tapered sides complementary to the tapered surfaces on adjacent plates, and means for compressing said plates axially together so that said die segments are cammed radially outward on said tapered surfaces to deform beads in said shell, and so that said die segments move axially towards adjacent sets of die segments so as to control axial strain in said shell during formation of said beads.

3,357,230

METHOD AND APPARATUS FOR CALIBRATING CAMERA PHOTOMETER

Jeremy M. Topaz, Brighton, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

Filed Dec. 9, 1964, Ser. No. 417,037
2 Claims. (Cl. 73—1)



1. A method for indicating the condition of photometric balance in a comparison photometer of the type employing a target having, in a common field, two portions illuminated individually by two different light sources whose relative intensity can be controlled for equalizing the brightness of said two portions and attaining photometric balance comprising the steps of:

(a) monitoring said target with a television camera for producing a video signal that includes a component whose frequency is functionally related to the orientation of the target relative to the raster of the camera and the geometry of said two portions;

(b) adjusting the relative brightness between said two sources; and

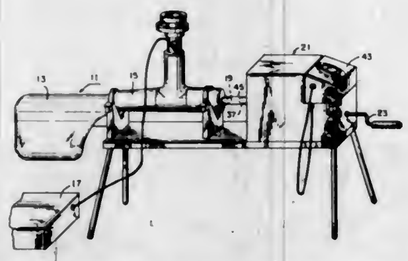
(c) detecting when the adjustment in relative brightness is such that said component is a minimum whereby such adjustment provides photometric balance.

3.357,231

WIND SPEED TEST SYSTEM

Gilbert J. Till, 1012 Burnt Tavern Road, Point Pleasant, N.J. 08742, and Thomas J. Talarovich, 843 Main St., Freeland, Pa. 18224

Filed July 23, 1965, Ser. No. 474,527
1 Claim. (Cl. 73—3)



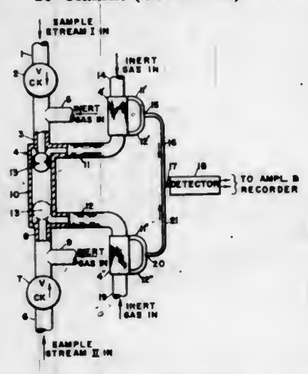
Means for testing the accuracy of a wind speed indicating device which includes an impeller mounted on a shaft forming part of said wind speed indicating device and an indicating meter that registers in wind speed of miles per hour caused by the rotational speed of said impeller shaft; said means comprising a wind speed simulator that includes a manually operated rotatable shaft, a tachometer and means for indicating on said tachometer a simulated wind speed including a revolvable ferrous gear secured to the last mentioned shaft and an electro-magnetic pickup device slightly spaced from said ferrous gear whereby the magnetic field created by said magnetic pickup is distorted by movement of said ferrous gear to generate an A.C. voltage and which is rectified to be read on said tachometer in wind speed of miles per hour and further including a coupling means between the respective shafts of said wind indicating device and said shaft supporting said ferrous gear whereby mutual rotation of said shafts is effected.

3,357,232

ANALYZING APPARATUS WITH PRESSURE-ACTUATED FLUID VALVING SYSTEM

James L. Lauer, Penn Wynne, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

Filed Aug. 21, 1964, Ser. No. 391,133
10 Claims. (Cl. 73—23)



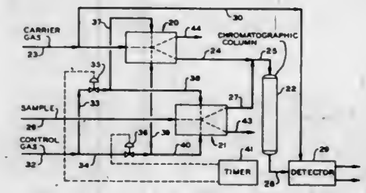
1. In apparatus for analyzing gaseous streams, analyzer having an inlet; a two-position switching valve having a body to which are coupled first and second inlet conduits and first and second outlet conduits; means providing separate gaseous streams for said first and second inlet conduits, respectively; means in said valve body, and automatically actuated by pressure variations occurring therein, for isolating said first inlet conduit from said first outlet conduit in one position of said valve and for isolating said second inlet conduit from said second outlet conduit in the other position of said valve; means coupling said first outlet conduit to the inlet of said analyzer, and means coupling said second outlet conduit to the inlet of said anlayzer.

3,357,233

FLUID CONTROL SYSTEM FOR ANALYZERS

Lewis B. Roof, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Oct. 5, 1964. Ser. No. 401,403
3 Claims. (Cl. 73—23.1)



1. In an analyzer comprising a column adapted to contain a material that selectively retards passage therethrough of individual constituents of fluid mixtures to be analyzed, a source of carrier gas, a fluid sample source, and means communicating with the outlet of said column to detect changes in composition of the effluent from the column; a system to introduce carrier gas and sample into the column comprising:

first and second members, each having a ffuid inlet passage which joins first and second diverging outlet passages, and first and second control passages which communicate with the junction of the inlet and outlet passages in directions so that the introduction of fluid into said first control passage directs fluid from said inlet passage to said second outlet passage and the introduction of fluid into said second control passage directs fluid from said inlet passage to said first outlet passage;

first conduit means communicating between said carrier gas source and the inlet passage of said first member;

second conduit means communicating between said sample source and the inlet passage of said second member;

third conduit means connecting the second outlet passage of said first member and the first outlet passage of said second member with the inlet of said column;

fourth conduit means communicating with the second control passage of said first member and the second control passage of said second member to introduce fluid simultaneously therein;

fifth conduit means communicating with the first control passage of said first member and the first control passage of said second member to introduce fluid simultaneously therein;

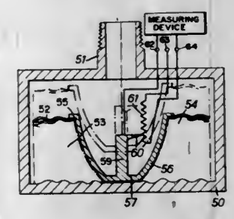
sixth conduit means to introduce a fluid, a first valve connecting said sixth conduit means to said fourth conduit means, a second valve connecting said sixth conduit means to said fifth conduit means, and control means to open and close said first and second valves selectively.

3,357,234

GASEOUS DENSITOMETER

Sheldon S. Thaler, Spring Valley, N.Y., assignor to Simmonds Precision Products, Inc., Tarrytown, N.Y., a corporation of New York

Filed Dec. 30, 1965, Ser. No. 517,757
1 Claim. (Cl. 73—30)



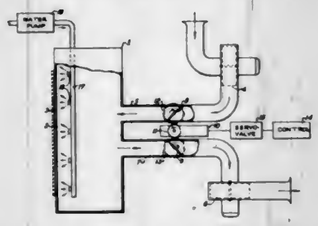
In an apparatus for the determination of the density of a first mass of a gaseous medium, an annular shaped bellows having an outer diameter which is substantially constant under all conditions of pressure and temperature and an inner diameter which varies, said bellows confining a known second mass of the same gaseous medium in such a manner that it can expand and contract, means for communicating the pressure and temperature of the first mass to said second mass, a bowl-shaped member having an outer surface which conforms substantially to the space defined by the internal form of said bellows in the smallest configuration thereof, said bellosw being secured to said member, measuring means for determining the volume of said known second mass and said pressure and temperature including a projection upstanding within

said bowl-shaped member, a potentiometer winding mounted to extend within said bowl-shaped member, and a potentiometer contact on said projection and slidable along said potentiometer winding.

3,357,235
TESTING APPARATUS FOR APPLYING RAPIDLY FLUCTUATING AIR PRESSURE ON TEST SPECIMENS

Sukeyoshi Saito, 1094 7-chome, Kamimeguro, Meguro-ku, Tokyo, Japan

Filed July 26, 1965, Ser. No. 474,728
Claims priority, application Japan, Aug. 11, 1964, 39/44,730
3 Claims. (Cl. 73—37)

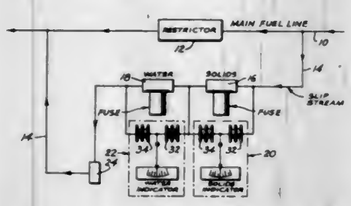


1. A testing apparatus for applying an air pressure fluctuating rapidly on test specimens, said apparatus comprising an air pressure chamber provided with an opening for mounting a panel to be used as a test specimen, a supply tube for feeding air to said chamber and an exhaust tube for exhausting air from said chamber, said supply tube and the exhaust tube respectively including a valve for opening and closing the respective tube, means interlocking said valves such that there is always a phase difference of 90° between their positions, a hydro motor connected to said valves to drive the same and thereby control the relative opening and closing of the tubes, a servo valve coupled to said motor to operate the same, and means coupled to the servo valve for controlling the same.

3,357,236
CONTAMINATION INDICATOR

Walter Kasten, Madison Heights, Mich., assignor to The Bendix Corporation, Madison Heights, Mich., a corporation of Delaware

Filed June 9, 1965, Ser. No. 462,704
6 Claims. (Cl. 73—61)

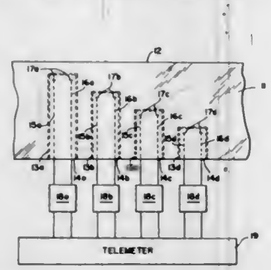


1. An indicator device for indicating the amount of contamination in a quantity of fuel by measuring the rate of differential pressure increase across a filtering element which traps the contaminants in the fuel flowing therethrough comprising a housing having upstream and downstream pressure ports communicating respectively with the upstream and downstream sides of said filtering element, a semi-cylindrical retention trough located in said housing, said retention trough having serrations formed thereon, first and second pressure sensing bellows located in said housing and having the open ends thereof communicating respectively with said upstream and downstream pressure ports, a non-rotatable drum having a cam surface formed on one end thereof, said drum being fixedly connected to the closed ends of said first and second bellows and axially movable therewith as the pressure differential between the upstream and downstream pressure ports increases, a rotatable reed barrel located on said drum and movable axially therewith, said reed barrel having a plurality of axially extending slots disposed at predetermined angular positions thereabout, drive means for rotating said reed barrel at a speed which is directly proportional to the flow of fuel through said filtering element, and a plurality of indicator reeds located in said slots and having graduated contamination indicating scales which are proportionally exposed upon movement of said reed barrel relative to said reeds, said reeds having one end thereof adapted for engaging the serrations of said retention trough during one-half of each complete revolution of the reed barrel to thereby permit relative axial movement between said reed barrel and the reeds in engagement with said serrations upon axial movement of said drum, said reeds having the other end thereof adapted for continuously engaging the cam surface of said drum to reset said reeds to a zero indication after disengagement thereof from said trough.

3,357,237
ABLATION SENSOR

Peter J. Le Bel, Newport News, Va., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed June 17, 1965, Ser. No. 464,880
10 Claims. (Cl. 73—86)



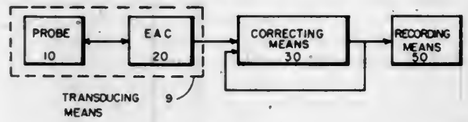
1. An ablation sensor for sensing when the char layer interface of a charring ablation material has recessed to a predetermined level comprising: a first wire embedded in said ablation material such that its first end is at said predetermined level and such that its second end is protruding out of said ablation material; a second wire embedded in said ablation material such that its first end is at said predetermined level close to the said first end of said first wire and such that its second end is protruding out of said ablation material; and electrical circuit means connected to the said second ends of said first and second wires for detecting when the char layer interface electrically connects together the said first ends of said first and second wires thereby indicating that the char layer interface has recessed to said predetermined level.

3,357,238
SURFACE PROFILE GAUGE

Victor J. Musante, New Hyde Park, N.Y., Charles Ellis, Andover, and George Geier, Teaneck, N.J., assignors to Keuffel & Esser Company, Hoboken, N.J., a corporation of New Jersey

Filed Jan. 8, 1964, Ser. No. 336,539
4 Claims. (Cl. 73—105)

1. A surface profile gauge for measuring surface irregularities in a line comprising a probe having a pair of sensing feet with one foot spaced from the other a fixed distance, a reflecting means mounted on the probe with the face thereof substantially perpendicular to a line drawn between the feet, means to move the probe over a surface to be gauged at a definite rate of speed, an auto-collimator for directing light to said reflecting means, said auto-collimator including sensing means to indicate the deflection of the light in accordance with the position of the feet of the probe and the extent of deflection of

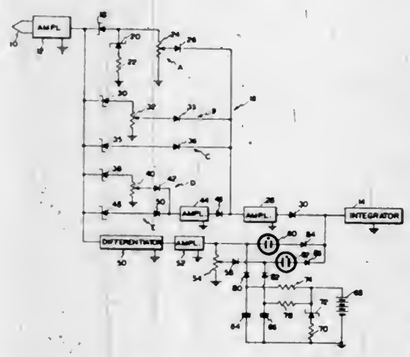


the beam of light in accordance with the relative displacement of the feet transverse to a line joining the feet, correcting means to store the information of the displacement for a period of time equal to the time required for the probe to move a distance for the trailing foot to reach the point previously occupied by the leading foot, and means to continuously record and compare the information whereby a profile of the gauged object can be accurately made.

3,357,239
GAS TURBINE ENGINE LIFE INDICATOR

Rudolph Hohenberg, Trumbull, Conn., assignor to Avco Corporation, Stratford, Conn., a corporation of Delaware

Filed Aug. 10, 1965, Ser. No. 478,722
8 Claims. (Cl. 73—116)



1. A system for determining the exhausted life of an internal combustion engine as a function of an operating parameter and time, said engine having a life expectance characteristic which is a function of said operating parameter, the combination comprising:

means for continuously generating signals proportional to the instantaneous level of said engine operating parameter;

an integrator for summing the signals applied thereto;

impedance means coupling said signals to said integrator, said impedance having impedance versus signal magnitude characteristics which approximate the reciprocal of said life expectancy characteristic,

whereby the summation of said signals in said intergator is approximately proportional to the exhausted life of said engine;

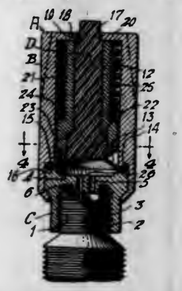
means derviving from said signals additional signals proportional to the rate of change of said parameter;

and means when said additional signals exceed a predetermined magnitude for coupling said additional signals to said integrator, whereby said additional signals are also summed by said integrator.

3,357,240
PRESSURE INDICATOR

Roy G. Bordwick, Piscataway, N.J., assignor to Engler Instrument Company, Jersey City, N.J., a corporation of New Jersey

Filed Dec. 27,1966, Ser. No. 604,959
1 Claim. (Cl. 73—146.8)



A pressure indicator comprising a casing having a first section and a second section each having one end connected to one end of the other and providing a chamber between them, the other end of the first section having a central opening leading outwardly from said chamber, the second section having its other end formed for connection to a pressure container and being provided with a passage for gas under pressure from said container into said chamber, an indicator rod formed of resilient material and having attached to one end thereof a flexible and elastic sealing flange, said flange having a circumferential rim portion clamped between the first-mentioned ends of said casing sections, said indicator rod being reciprocable in said chamber with the opposite end of the rod slidable in and extendable outwardly through said opening in the first casing section and being actuated in one direction by gas under pressure entering said casing through said passage, said indicator rod having a shoulder intermediate its ends, a rigid sleeve telescopically mounted on said rod and having an interior shoulder abutting said shoulder on the rod and also having an exterior ledge, one end of said sleeve being disposed closely adjacent the juncture of said flange and the rod to be abutted by said flange upon expansion of the flange under gas pressure in excess of a predetermined maximum pressure and the length of said sleeve providing for abutment of the other end of the sleeve with said other end of the first casing section upon such expansion of the flange, the portion of said sleeve between the first mentioned end and said ledge having a loosely slidable contact with the walls of said chamber, thereby to limit movement of the indicator rod outwardly of the casing under influence of the gas pressure and at the same time to positively limit stretching of the flange for preventing bursting or blow-out of the flange under shock pressures, and a compression spring of predetermined strength interposed between said ledge and the second-mentioned end of the first casing section normally biasing said indicator rod toward the first-mentioned end of the second casing section.

3,357,241
FAULT SENSING DEVICE FOR CONTINUOUSLY MOVING WEB

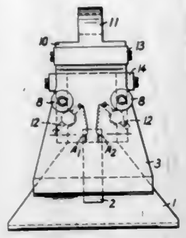
Walter Francis King III, University Park, Pa., assignor to Licentia Patent-Verwaltungs-G.m.b.H., Frankfurt am Main, Germany

Filed Jan. 25, 1965, Ser. No. 427,707
Claims priority, application Germany, Jan. 24, 1964 L 46,874
12 Claims. (Cl. 73—159)

1. A sensing device for detecting the presence of unevennesses in the surface of web material, comprising, in combination:

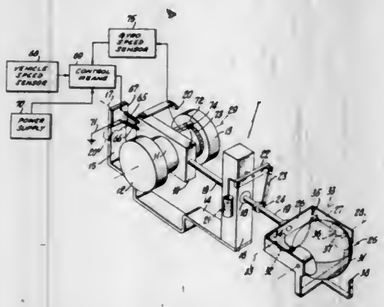
(a) support means;

(b) elastic means having two spaced-apart leaf spring portions; said elastic means, at one end thereof, being secured to said support means, and, at the other end thereof, being in contact with the surface of the web material; and



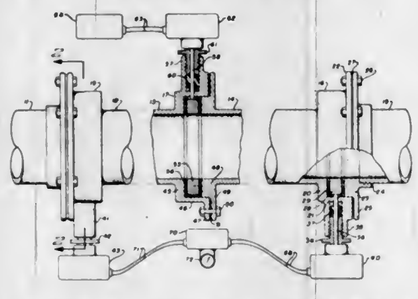
(c) strain gauge means arranged on one leaf spring portion of said elastic means for measuring changes in elongation of said elastic means as the result of unevennesses in the surface of the web material.

3,357,242
ROLL-STABILIZED PLATFORM
Charles Robert Bonnell and Kenneth L. McMillen, Wichita, Kans., assignors to Electronic Communications, Inc., a corporation of New Jersey
Filed Apr. 11, 1966, Ser. No. 541,659
9 Claims. (Cl. 73—178)



1. A roll-stabilizable platform for a flight instrument or the like, comprising a frame including bearing means adapted for fixed orientation with the bearing axis in a plane passing through and substantially aligned with the flight axis; non-pendulous gyroscope means having a single degree of freedom and including a gimbal pivotally supported by said bearing means, a variable-speed electric motor and a rotary inertial mass journaled for continuous rotation in said gimbal, said bearing axis being perpendicular to the axis of inertial-mass rotation; vehicle-speed sensing means connected to control the speed of said motor in accordance with sensed vehicle speed; frame-referenced centering means connected to said gimbal to supply restoring torque urging to a centered orientation the axis of inertial-mass rotation, the restoring torque of said centering means being such as to substantially balance the gyro-precession torque with a balancing torque directly proportioned to the angle by which the gimbal and frame depart from the centered orientation, the pivotal support of said gimbal providing gimbal freedom with respect to the frame for relative rotation comprehending at least the anticipated range of bank attitudes with respect to said centered orientation, the centered reference of said centering means to the frame being such as to establish a horizontal orientation for the axis of inertial-mass rotation when in straight flight, said centering means including two electrically conductive spring elements in electrically insulated relation to each other and symmetrically preloading said gimbal to the centered orientation, said spring elements forming part of said means connected to control motor speed in accordance with sensed vehicle speed; and support means for an instrument or the like carried by said gimbal and constituting a roll-stabilizable platform, said platform utilizing said gyroscope means as its only gyroscopic stabilizing means; whereby when banking in substantially level flight at a bank angle substantially normal to the instantaneous acceleration vector, said platform is essentially roll-stabilized.

3,357,243
FLOW METERS
Henry J. Woodcock, 305 Raleigh Ave., Hampton, Va. 23361
Filed Apr. 1, 1965, Ser. No. 444,878
3 Claims. (Cl. 73—194)



1. A meter for measuring the rate of flow of liquid through a conduit comprising an elongated barrel adapted to be connected into a conduit and having a bore of uniform cross-sectional area, resonant rings formed of resilient material set into said barrel at spaced apart locations along said barrel and having their inner surfaces flush with the surface of said bore, said resonant rings dimensioned and tempered to have a predetermined natural frequency, means effective to impart a cyclic impulse signal to a first one of said resonant rings which completely encircles the fluid medium passing through the barrel whereby vibrations due to said impulse signal are uniformly transmitted around the periphery of the fluid medium, means effective to pick up from a second one of said resonant rings which completely encircles the fluid medium and uniformly receive said vibrations around the periphery of the fluid medium due to the cyclic impulse signal transmitted from said first one of said resonant rings to said second one of said resonant rings through the body of liquid between said resonant rings, means effective to pick up the cyclic impulse signal at a location spaced from said second one of said resonant rings, and means effective to compare the signals picked up at the spaced apart locations.

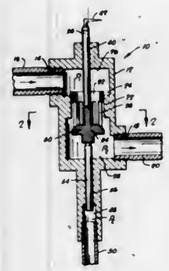
3,357,244
FLOW INDICATOR
Charles L. English, 2204 E. 25th Place, Tulsa, Okla. 74114; Marcia K. English, executor of said Charles L. English, deceased
Filed Nov. 12, 1964, Ser. No. 410,581
4 Claims. (Cl. 73—208)

2. Apparatus for indicating fluid flow through a conduit, comprising:

a body having a chamber formed therein with a first end and a second end, an inlet connected with the conduit and in communication with the first end of said chamber, and an outlet connected with the conduit and in communication with the second end of said chamber;

an orifice member movably disposed in said chamber to cause a pressure drop in fluid flowing from the first to the second end of said chamber, said orifice member including a flow orifice adapted to be opened and closed upon movement of said orifice member;

a rod-member connected with said orifice member and extending through said body adjacent the first end of said chamber to indicate the position of said orifice member; and

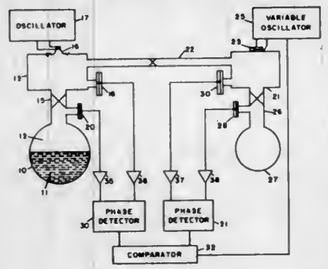


means for exerting a constant force on said orifice member urging said orifice member toward the first end of said chamber to maintain a constant pressure drop in the fluid flowing through said chamber, said means compising:

a source of constant pressure fluid connected with said body; and,

a second rod member movably mounted in said body adjacent the second end of said chamber and having a first end in engagement with said orifice member and a second end exposed to said source of constant pressure fluid.

3,357,245
SYSTEM FOR VOLUMETRIC ANALYSIS
Richard L. Wolfrum, Inglewood, Calif., assignor to Acoustica Associates, Inc., Los Angeles, Calif., a corporation of New York
Filed Apr. 14, 1965, Ser. No. 448,032
14 Claims. (Cl. 73—290)



5. A system for gauging the contents of a container by acoustically sensing the ullage volume comprising:

(a) means to introduce first sound waves into said container through a first isolating resistance;

(b) means to sense the phase shift of said first sound waves imposed by the ullage volume in said container;

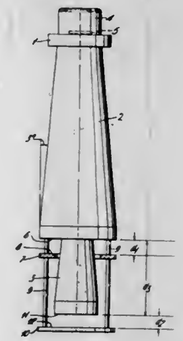
(c) means to introduce second sound waves into a reference volume through a second isolating resistance;

(d) means to sense the phase shift of said second sound waves imposed by said reference volume;

(e) means to determine the difference between the phase shift imposed on said first sound waves and the phase shift imposed on said second sound waves; and,

(f) means to change the frequency of said second sound waves so that said difference approaches zero whereby the frequency of said second sound waves can be calibrated to serve as a gauge for the contents of said container.

3,357,246
MULTI-STAGE ULTRASONIC PROBE
Richard John Stearn, Bletchley, and Anthony Charles Richardson, Richmond, England, assignors to The British Petroleum Company Limited, London, and Atkins Laboratories Limited, Surrey, England, both corporations of England
Filed Aug. 2, 1965, Ser. No. 476,493
Claims priority, application Great Britain, July 31, 1964, 30,280/64
10 Claims. (Cl. 73—290)

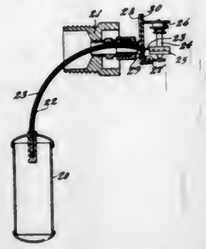


1. A multi-stage ultrasonic probe for detecting predetermined liquid levels which comprises a head including means for transmitting and receiving ultrasonic waves, first and second stage portions capable of conveying ultrasonic waves, and first and second reflector plates spaced beyond the first and second stage portions respectively and remote said head, the ratio of the distance between the base extremity of the first stage portion and the first reflector plate to the distance between the base extremity of the first stage portion and the base extremity of the second stage portion being less than the ratio of the velocity of sound in the liquid the level of which is to be determined to the velocity of sound in the material of the second stage portion.

3,357,247
LIQUID PHASE DETECTORS OR CONDENSATE INDICATORS
Charles Robert Bardes, Lafayette Hills, and James W. Williams III, Lansdale, Pa., assignors to Yarway Corporation, Philadelphia, Pa., a corporation of Pennsylvania
Filed June 28, 1965, Ser. No. 467,208
7 Claims. (Cl. 73—306)

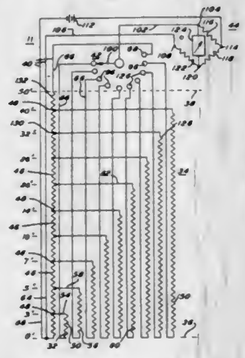
1. A rotatable drum having a hollow interior which may contain liquid, means for rotating the drum at a rate at which the liquid is distributed by centrifugal force over the radially outer portion of the drum interior, and a liquid detector for the interior of the drum comprising a sensing element located inside the drum in the radially outer portion of the drum interior, actuated by the pres-

ence of a body of liquid within the drum, mounted on the drum and rotating with it, motion transmitting means for transmitting such activation to a point outside the drum,



and indicator means outside the drum responsive to said transmission means, thereby indicating the presence or lack of a body of liquid within the drum.

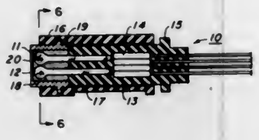
3,357,248
TEMPERATURE INDICATING APPARATUS
George H. Tyson, 301 4th Ave., Haddon Heights, N.J. 08035
Filed Oct. 23, 1964, Ser. No. 405,933
14 Claims. (Cl. 73—342)



1. A temperature sensing means for indicating the average temperature of a liquid in a container between selected levels comprising a plurality of series connected temperature sensitive resistance elements having a bottom end and extending upwardly along a predetermined length and having junctures at respective predetermined locations along said length, and a plurality of temperature sensitive resistance units each having one end connected with a respective juncture of said resistance elements and providing a conductive cross section to length ratio of at least 200 circular mills per foot of length between its said first and second ends whereby erro in temperature sensing due to Joule heating of the unit is reduced.

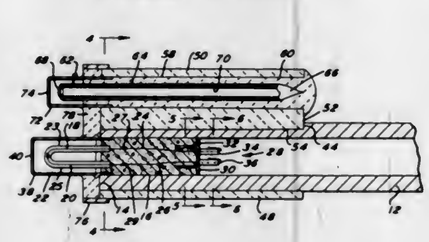
3,357,249
TEMPERATURE SENSOR
Tayeb Bernous, Fairport, Thomas P. Redding, Penfield, and Edward A. Schwartz, Fairport, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Jan. 3, 1966, Ser. No. 518,209
2 Claims. (Cl. 73—351)

1. Apparatus for sensing the surface temperature of a rotating cylinder including
temperature responsive means,
a thermally insulating first support means encompassing a portion of said temperature responsive means,
a thermally conductive cap member positioned to encompass the end of said temperature responsive means and constituting an extension for said first support means,
a tubular second support means of a thermally insulating material having an internal surface to fixedly position said cap member with respect to said first support means and having an external surface constituting a bearing surface for being slidingly retained within a bracket adjacent the cylindrical surface to be sensed,



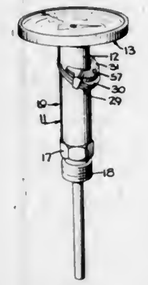
a thermally conductive grease within said cap in contact with the face of said cap and said temperature responsive means,
electrical contacts connected to said temperature responsive means adapted to be connected to an electrical control circuit,
and spring biasing means adapted to urge said temperature responsive means, said first and second support means and said cap towards the external surface of a cylinder to be sensed with the face of said cap in sliding contact with the cylinder.

3,357,250
TEMPERATURE DETECTOR AND SAMPLING DEVICE
Marvin J. Lowdermilk, Haddonfield, N.J., assignor to Electro-Nite Co., a corporation of Pennsylvania
Filed Apr. 12, 1965, Ser. No. 447,229
5 Claims. (Cl. 73—354)



1. Expendable apparatus for sampling and simultaneously indicating the temperature of molten metal in a bath having a temperature in excess of 500° F. comprising a hollow tube of heat insulating expendable material, an expendable thermocouple unit fixedly supported by said tube at one end thereof, an evacuated sampling vessel for receiving a sample of hot molten metal while the temperature of the metal is being detected by the thermocouple unit, means mounting said vessel on said one end of said tube, said mounting means including a heat insulating refractory body surrounding said vessel for the major portion of the length of said vessel, said refractory body also extending around a substantial portion of said thermocouple unit, said thermocouple unit and vessel being substantially shorter than said tube, the hot junction of said thermocouple unit being supported beyond one end of said tube and refractory body, said vessel having an inlet end projecting beyond said one end of said tube and refractory body and having a closed end in said body, said vessel inlet end being closed and protected from the molten metal by a means adapted to be melted by the bath to permit entry of a sample of the bath into the vessel.

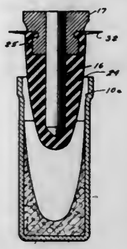
3,357,251
ADJUSTABLE DIAL THERMOMETER
Henry Harrison, Locust Valley, N.Y., assignor to Moeller Instrument Company, Inc., Richmond Hill, N.Y., a corporation of New York
Filed July 16, 1965, Ser. No. 472,642
28 Claims. (Cl. 73—363.7)



1. An apparatus comprising a housing having jointed elongated portions, each of said portions having a longitudinal axis, one of said portions being rotatable about its longitudinal axis with respect to another of said portions; a drive means; a first means connected to one end of said drive means and having a first axis parallel to the longitudinal axis of said one of said housing portions supported by said housing; a driven rotatable means connected to the other end of said drive means; a second means having a second axis supported by a different portion of said housing in parallel relation to the longitudinal axis of said different housing portion; a second rotatable means movable with respect to said second means; first bendable torsion coupling means joining said first means with said second means, and second bendable torsion coupling means joining said driven rotatable means to said second rotatable means; said jointed housing adapted to adjust the direction of the axis of said second means and to set the angular position of said second means around its axis without changing the position of said second rotatable means with respect to said second means.

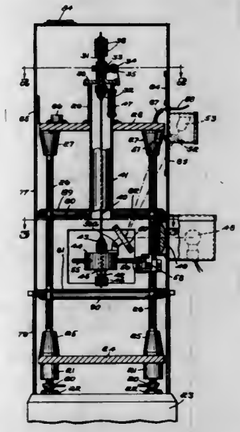
3,357,252
TEMPERATURE RESPONSIVE FORCE TRANSMITTING DEVICE
Sergius Vernet, Yellow Springs, Ohio, assignor to Antioch College, Yellow Springs, Ohio, a corporation of Ohio
Filed May 4, 1966, Ser. No. 554,258
13 Claims. (Cl. 73—368.3)

1. A temperature responsive force transmitting device comprising:
a casing having a side and an end wall and containing an expansion material;
a guide member forcibly fitted within one end of said casing and being held axially stationary therein by the force fit between the guide and the casing, said guide having a depending portion spaced from the side wall of said casing,
a seal extending across the interior of said casing having a lip interposed between said depending portion of said guide and the said side wall of said casing and being held in position substantially only by the force exerted on said lip by said depending portion of the guide and the side wall of the casing;
a power member guided for movement within said guide and bottoming on said seal;



wherein said lip is firmly maintained between said side wall of said casing and said depending portion of said guide and wherein a portion thereof completely fills said recess.

3,357,253
DEVICE AND METHOD FOR MEASURING GRAVITATIONAL AND OTHER FORCES
Erwin J. Saxl, Harvard, Mass. 01451
Filed Feb. 2, 1965, Ser. No. 432,068
9 Claims. (Cl. 73—382)

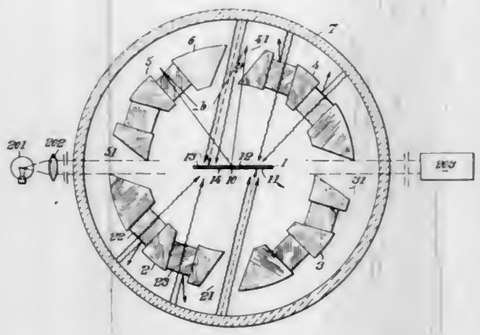


1. A force measuring device comprising a body adapted to oscillate under the influence of a force to be measured with a period related to said force, a timing device, means responsive to movement of said body for actuating said timing device to measure individually the periods of successive oscillations of said body, and means for restoring said body to a condition of predetermined potential energy at the beginning of each of its oscillations.

3,357,254
PRESSURE MEASURING DEVICE
Robert Evrard, Champigny-sur-Marne, France, assignor to Laboratoires d'Electronique et de Physique Appliquees L.E.P., Paris, France
Filed Apr. 5, 1965, Ser. No. 445,566
Claims priority, application France, Apr. 9, 1964, 970,310
6 Claims. (Cl. 73—398)

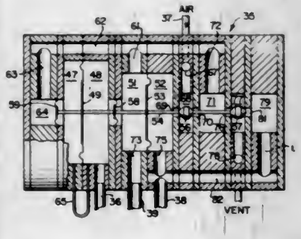
1. A device for measuring low gas pressure comprising, in a vessel in which the gas pressure is the one to be measured, an element within said vessel which is rotatable about an axis of symmetry thereof and is located within a

cylindrical cold and thick screen constituted of separate parts defining apertures therebetween, said device also comprising at least one hot surface external to said screen, said surface imparting to the gas molecules which strike it a greater velocity after the impact than before and emitting infra-red rays in all directions, said apertures being so oriented that the median plane of the aperture forms with the radial plane passing through the generatrix of the screen and the axis of symmetry a given acute angle,



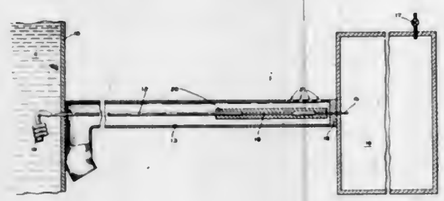
said screen parts comprising windows constituted of a material transparent to infra-red rays, said windows being so orientated that the median plane of said windows forms with the radial plane passing through said generatrix of said cylinder and said axis of symmetry an acute angle having a sign opposite of the first mentioned acute angle, and means responsive to rotation of said element caused by impact of the gas molecules for measuring the pressure of the gas within said vessel.

3,357,255
FLUID PRESSURE SYSTEM LEAK DETECTOR
Blake Reynolds, Riverside, Conn., assignor to Texaco Development Corporation, New York, N.Y., a corporation of Delaware
Filed June 29, 1965, Ser. No. 467,930
4 Claims. (Cl. 73—407)



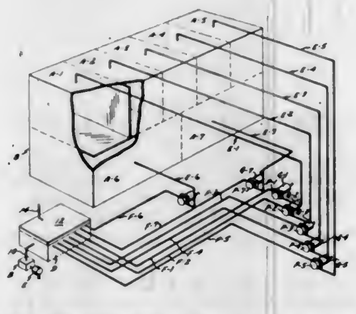
1. In a fluid pressure system, a fluid pressure differential amplified which comprises:
(a) a first pressure responsive diaphragm,
(b) means for applying a pressure difference across said diphragm,
(c) a second pressure responsive diaphragm of smaller area than said first pressure responsive diaphragm,
(d) rigid connecting means between said pressure responsive diaphragms,
(e) a source of fluid under pressure, and
(f) means for supplying said fluid under pressure preferentially to either side of said second pressure responsive diaphragm and for releasing fluid under pressure preferentially from the opposite side thereof in response to movement of said diaphragms to counterbalance and nullify response by said first diaphragm to said pressure difference.

3,357,256
SAMPLING LINE FOR CRYOGENIC LIQUID MIXTURES
Robert J. Burch, Chatham, N.J., assignor to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York
Filed Aug. 16, 1965, Ser. No. 480,073
5 Claims. (Cl. 73—421)



1. A sampling line for a liquefied gas mixture contained within a vessel, comprising,
(a) means forming a refrigerated zone external of the vessel,
(b) means forming a flow path for the flow of liquid from the vessel through said refrigerated zone and into a vaporization zone,
(c) means to increase the linear velocity of the liquid within said refrigerated zone, and
(d) means forming a thermal barrier between the refrigerated and vaporization zones.

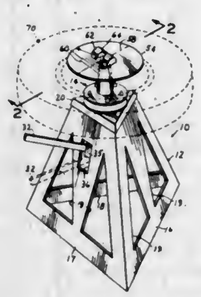
3,357,257
GAS SAMPLING AND DETECTING SYSTEM
Eldon C. Herndon, Fullerton, Calif., Robert F. Du Ree, 6519 Loma Vista Ave., Bell, Calif. 90201, and William A. Thralls, Hacienda Heights, Calif.; said Herndon and said Thralls assignors to said Du Ree
Filed Jan. 28, 1966, Ser. No. 523,709
7 Claims. (Cl. 73—421.5)



1. A gas detecting system for use in determining the presence of the leakage of a gas not common to the ambient atmosphere in any one of a plurality of confined spaces, including:
(a) an enclosed box, the interior of which is vented to the ambient atmosphere;
(b) a first conduit connected to the interior of said box;

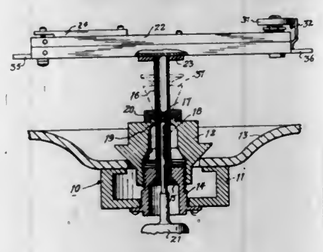
(c) second conduit means connected to the interior of said box;
(d) electrically operated gas detecting means for detecting gases not common to the ambient atmosphere, which means renders an alarm when said gas is present;
(e) an electrically operated air pump, the suction of which is connected to said first conduit, with the discharge thereof being connected to said gas detecting means;
(f) first electrically operated air pump means, the discharge of which is connected to said second conduit means;
(g) a plurality of third conduits connected to the suction of said first electrically operated air pump means, with each of said third conduits being in communication with a separate one of said confined spaces; and
(h) an electrical circuit connected to a source of electric power, said gas detecting means, said pump and said first pump means, with said first pump means discharging streams of air and any gas which may have leaked thereinto from said confined spaces to the interior of said box where said streams combine to define a mixture of air and any of said gas that may be comingled therewith, and with a first portion of said mixture being withdrawn from said box by said pump and delivered to said gas detecting means for detection of any of said gas in said first portion, with the balance of said mixture in said box being progressively vented to the atmosphere as the pressure of said mixture in said box rises above the pressure of the ambient atmosphere.

3,357,258
STATIC WHEEL BALANCER
William B. Snider, P.O. Box 5658, Midwest City, Okla. 73110
Filed May 6, 1965, Ser. No. 453,724
1 Claim. (73—483)



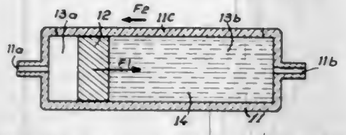
A wheel balancing device, comprising: three side members integrally joined in upwardly converging relation to form a triangular shaped stand; a centrally apertured cap overlying the upper end of said stand; a housing connected in depending relation to the lower surface of said cap around the aperture therein and within said stand, said housing having opposing walls; a vertically disposed rod positioned within said housing and having a pointed end portion projecting upwardly above said cap; a handle projecting into said housing through one said side member, said handle being pivotally connected, intermediate its ends, with said opposing walls of said housing and pivotally connected at its innermost end with said rod for vertical movement of the latter in response to vertical movement of said handle; a vertically disposed hollow column having an upwardly converging outer wall surface and having its lower end portion open and freely surrounding said rod, said column having a balance point in the form of a conical recess in its upper end portion on its longitudinal axis, the pointed end of said rod being of smaller diameter than the diameter of the conical recess; a bubble level coaxially mounted on the upper end of said column; a wheel supporting flange having a central aperture surrounding and removably engageable with the outer converging wall surface of the column; a plurality of upstanding lug bolt hole engaging pins secured to said wheel supporting flange; a centrally bored plate coaxially supported by the upper end of said column, said plate having a center line scribed on the upper surface thereof and a plurality of weight indicating scales extending transversely across the center line intermediate its ends, and having a pair of radial lines scribed thereon spaced 120° apart on respective sides of that portion of the center line intersected by the weight indicating scales; and a balance weight indicator slidably positioned transveresly of the center line on the upper surface of said plate, said weight indicator comprising a semicylindrical member having a lateral recess medially its ends defining spaced-apart aligned edge portions at one side of said weight indicator for selective cooperation with the weight indicating scales.

3,357,259
AUTOMOBILE WHEEL BALANCER
Lloyd E. Hansen, 210 Seville Way, San Mateo, Calif. 94402
Filed Feb. 8, 1965, Ser. No. 431,086
2 Claims. (Cl. 73—484)



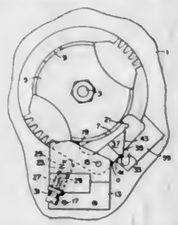
1. In a static wheel balancing device, the combination of a stationary vertically extending spindle, a wheel supporting means balanced upon said spindle having an upstanding centrally disposed tubular shaft with an internal cup bearing above the plane of a wheel carried thereupon with which the upper end of said spindle engages, an elongated laterally extending spirit level supporting means mounted at its center upon the upper end of the tubular shaft of said wheel supporting means for relative rotation in a plane parallel to the plane of a wheel upon said support, a first tangentially disposed spirit level carried by said level supporting means in a plane perpendicular to the axis of said level supporting means, a second radially extending spirit level at one end of said supporting means having an axis at a right angle to said first spirit level and operable to obtain an initial balance of a wheel, a third coaxially aligned radially extending spirit level carried by said level supporting means adapted and arranged to indicate the point where a further lack of weight may still cause an unbalance in a wheel being balanced, means for adjusting the inclination of said third spirit level upon said level supporting means to a level position, and a calibrated scale carried by said last means for indicating the weight to be added at an indicated point as determined by said first tangentially disposed spirit level to establish a true balance in the wheel.

3,357,260
FLUID SYSTEM FOR MEASURING IMPULSES
Bernard Detalle, Villemomble, France, assignor to Societe d'Etude de la Propulsion Reaction, Villejuif, Hauts-de-Seine, France, a French company
Filed July 15, 1964, Ser. No. 382,868
4 Claims. (Cl. 73—503)



1. A device for measuring the time integral of a force comprising a hollow cylinder, a body of incompressible fluid within said cylinder, a calibrated orifice in one base of said cylinder in contact with said fluid within said cylinder, means for applying force to said fluid within said cylinder including a second orifice arranged in the vicinity of the other base of said cylinder and through which said force applying means transfers a force to said fluid, whereby fluid will flow through said calibrated orifice at a rate proportional to said force, and means connected with said calibrated orifice for measuring the quantity of fluid displaced through said calibrated orifice by said force applying means during a predetermined time interval.

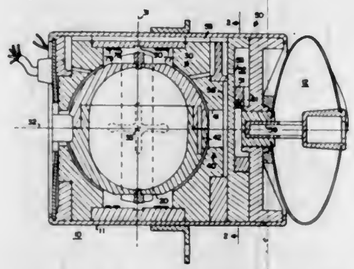
3,357,261
SWITCHING DRUM CATCH AND TRIP DEVICE
Dolty R. Self, Hatch, N. Mex., assignor to the United States of America as represented by the Secretary of the Army
Filed Feb. 8, 1966, Ser. No. 526,337
3 Claims. (Cl. 74—1.5)



1. A catch and trip device including: support means; a shaft rotatably mounted relative to said support means and biased for rotation in one direction; a catch plate mounted on said shaft and having stop members at the periphery thereof and located directly opposite each other; a mounting block mounted on said support means and adjacent said catch plate; a catch arm pivotably mounted intermediate its ends on said mounting block; said catch arm having cam surface means on one end for coaction with said stop members for actuating said catch arm to a latching position, the other end of said catch arm having a catch surface for coacting with said stop members for holding said catch plate in a latched position; means biasing said catch arm toward an unlatched position; and means holding said catch arm in the latching position against said biasing means.

3,357,262
CONTROL APPARATUS
Bernard F. Bickman, Minneapolis, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed July 28, 1965, Ser. No. 475,382
7 Claims. (Cl. 74—5)

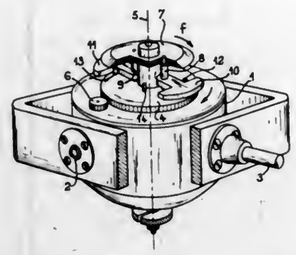
1. A gyroscope comprising:
housing means;
a rotor within said housing means;
hydrostatic bearing means within said housing means;
a source of high pressure fluid integral with said housing means;
fluid driving means for rotating said rotor about a spin axis;
means including valve means for connecting the fluid source to said hydrostatic bearing means and to said fluid driving means, said valve means including a timing member rotatably mounted within a chamber in said housing means, said chamber having a first port in communication with said hydrostatic bearing means and a second port in communication with said fluid driving means, said timing member being biased in a first position whereby said first port and said second port are in communication with said fluid source, the fluid flow through said hydrostatic bearing means being effective to hydrostatically support said rotor for rotation about three intersecting axes including said spin axis, the fluid flow through said fluid driving means being effective to rotate said rotor about said spin axis at a predetermined angular velocity, the flow of fluid from said source through said chamber causing said timing member to be rotated to a second position whereby only said first port is in communication with said fluid source, said timing member being rotated to the second position only after said rotor has been rotated to the predetermined angular velocity; and



electrical signal generator means including a support member mounted upon said rotor for rotation relative thereto about said spin axis, a pair of wiper elements pivotally mounted upon said support member for rotation about the second axis of the three axes relative to said rotor, said signal generator including a resistance element rigidly mounted upon said housing means and circumscribing the third axis of the three axes, said resistance element adapted to be connected to a source of voltage, said wiper element slideably engaging said resistance element, the rotation of said rotor about the third axis relative to said housing causing said wiper element to slide along said resistance element whereby said signal generator provides an electrical output signal indicative of the direction and magnitude of rotation of said rotor about the third axis.

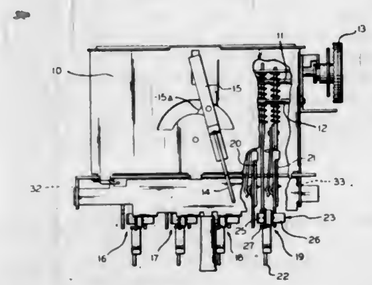
3,357,263
ERECTORS OF VERTICAL GYROSCOPES
Pierre Andre Chombard, Boulogne-sur-Seine, France, assignor to Societe Francaise d'Equipements Pour la Navigation Aerienne, Neuilly-sur-Seine, Hauts-de-Seine, France, a joint-stock company
Filed Aug. 5, 1965, Ser. No. 477,552
Claims priority, application France, Sept. 7, 1964, 987,353
3 Claims. (Cl. 74—5.44)

1. In an erector of a vertical gyroscope of the kind comprising at least two unstable pendulums arranged about a common shaft parallel to the spin axis of the rotor of said gyroscope, said shaft being rigidly fixed to the casing of said rotor, and a driving device rotating at low speed and in the same direction as said rotor about said common shaft, said driving device comprising a plurality of push-rods, one per unstable pendulum, adapted to drive said pendulums in rotation with said device, said push-rods being symmetrically disposed about



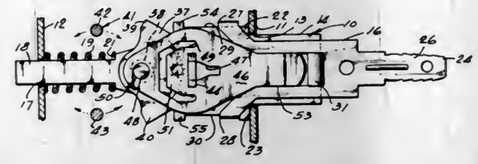
said common shaft, the improvement in which each said pendulum is pivoted about an individual shaft whose axis is parallel to the spin axis of said rotor, said shaft being rigidly fixed to said driving device, and in which said driving device further comprises one stop member per unstable pendulum, said member being adapted to limit the pivotal movement of its associated pendulum about its individual shaft.

3,357,264
TUNER ACTUATING MECHANISM
Gilead H. Newman, Des Plaines, Ill., assignor to TRW Inc., Cleveland, Ohio, a corporation of Ohio
Filed Jan. 24, 1966, Ser. No. 522,433
6 Claims. (Cl. 74—10.27)



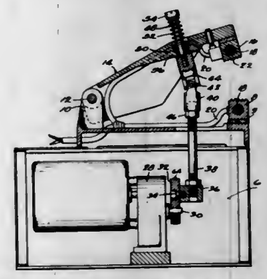
1. A radio tuner including:
a housing;
a tuning mechanism positioned within said housing;
a plurality of push-button slides positioned within said housing, each of said slides having a portion extended from said housing for receiving a push-button;
a plurality of actuating devices positioned within said housing adjacent each of said slides for selectively engaging said tuning mechanism; and
means selectively connecting each of said slides to certain ones of said plurality of actuating devices which are adjacent each of said slides, said means causing a certain group of actuating devices to be selectively engageable with said tuning mechanism for selectively tuning the radio to a certain group of radio stations when said means is in one position, and causing a different group of actuating devices to be selectively engageable with said tuning mechanism for selectively tuning the radio to a different group of radio stations when said means is in another position.

3,357,265
ACTUATING DEVICE
Alvin E. Thompson, Prospect Heights, Ill., assignor to TRW Inc., Des Plaines, Ill., a corporation of Ohio
Filed Jan. 18, 1966, Ser. No. 521,255
2 Claims. (Cl. 74—10.33)



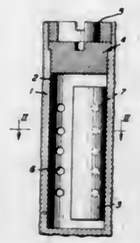
1. A resettable actuating device for initially sensing a particular position of a movable element and thereafter moving the element back to the particular position when displaced therefrom by actuation of said actuating device, including:
a main slide member;
an extension slide member mounted on said main slide member for slidable movement relative thereto;
a cam pivotally connected to said main slide member for engagement with the element to be moved;
a substantially stiff spring having an extended portion formed at one end thereof and further having a gripping portion, said spring being mounted on said main slide member, said spring including a C-shaped aperture defining said gripping portion; and
a protuberance carried by said extension slide for selectively engaging the extended portion of said spring, whereby when said protuberance is in engagement with the extended portion of said spring, the gripping portion of said spring is urged against said cam for holding the cam in a fixed position.

3,357,266
HEAVY DUTY BAR-TYPE SEALER HAVING MOTOR-OPERATED JAW MEANS
Wilbur H. A. Techtmann, Belgium, and Arthur E. Pohl, Milwaukee, Wis., assignors to Techtmann Industries, Inc., Milwaukee, Wis., a corporation of Wisconsin
Filed Nov. 3, 1965, Ser. No. 506,212
3 Claims. (Cl. 74—42)



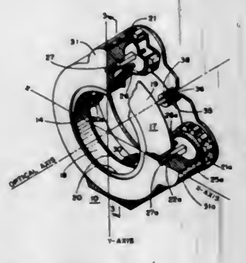
1. A jaw type sealer having a movable jaw and a supporting arm therefor, crank means for the operation of the movable jaw, and a motion transmitting connection between the crank means and the movable jaw including universally jointed members, one of which has a connecting rod bearing on the crank means and the other of which is in thrust engagement with the under side of the supporting arm of the movable jaw, an extension guide from said last mentioned member which projects beyond said arm and is provided with a spring seat, and spring means connected with said seat for yieldably transmitting motion from said guide to said arm.

3,357,267
VIBRATOR
Esref I. Halilovic, D. Tucovica 141, Branko P. Radisic, Lole Ribara 2, and Petar Lj. Miljkovic, D. Tucovica 141, all of Belgrade, Yugoslavia
Filed Aug. 4, 1965, Ser. No. 477,230
8 Claims. (Cl. 74—87)



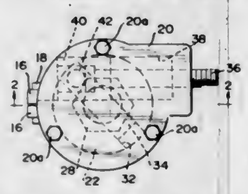
1. A vibrator comprising a casing enclosing an inner elongated chamber, and a vibrating body which is substantially shorter than said chamber and is freely movable therein, said casing having a plurality of inlet openings the axes of which form acute angles with the radii of said chamber intersecting said axes at the circumference of said chamber, said casing further having a plurality of outlet openings having axes extending transversely to the flow of a fluid entering the chamber through the inlet openings, the last-mentioned axes forming acute angles with the radii of said chamber intersecting them at the circumference of said chamber, wherein said vibrating body has the shape of a spiral in cross-section.

3,357,268
OPTICAL CELL
Theodore L. Richter, Rochester, N.Y., assignor to General Dynamics Corporation, a corporation of Delaware
Filed May 1, 1964, Ser. No. 364,127
5 Claims. (Cl. 74—89.15)



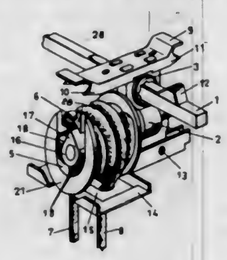
1. An optical cell comprising
(a) a frame,
(b) a ring member for supporting an optical unit therein,
(c) said frame having a tapered opening for retaining said ring member along the periphery thereof,
(d) spring means connected to said frame and said ring member for resiliently urging said ring member towards the large end of said opening at one given point on said ring member,
(e) first and second control means connected between said frame and said ring member along two transverse axes on said frame for resiliently forcing said ring member toward the small end of said opening, and
(f) said first and second control means including means disposed respectively along different ones of said two transverse axes coacting with said spring means for selectively unbalancing the forces on said ring member to tilt said ring member in the direction of the greatest force on said ring member.

3,357,269
VALVE OPERATOR
Donald G. Fawkes, Chicago, Ill., assignor to Henry Pratt Company, a corporation of Illinois
Filed May 25, 1966, Ser. No. 552,783
7 Claims. (Cl. 74—89.15)



1. An operator for a valve having a closure requiring approximately 90° of valve shaft turning between open and closed positions, comprising: a housing secured to the valve in a position to receive one end of the valve shaft therein; a rotatable member disposed within the housing and secured to the valve shaft in a manner insuring turning of the valve shaft and rotatable member together about the axis of the valve shaft, the rotatable member having means forming a slideway disposed radially of the axis of said valve shaft; a force transmitting member slidably received within the slideway in a manner permitting free movement of the force transmitting member therein in a radial direction to the axis of said valve shaft while imparting rotary movement to said rotatable member and valve shaft; an operating rod journalled in said housing for axial movement in a path adjacent said slideway transverse to and spaced from the axis of said valve shaft; and means connecting said operating rod to said force transmitting member in a pivotal manner so that axial movement of said operating rod causes said force transmitting member to move in said slideway and impart rotary movement to said rotatable member and said valve shaft.

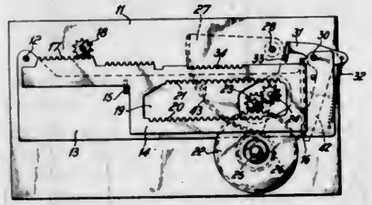
3,357,270
DRIVING UNIT FOR THE TILT ROD OF A VENETIAN BLIND
Robbert Ernst Spangenberg, Spijkenisse, Netherlands, assignor to Hunter Douglas International Ltd., Montreal, Quebec, Canada, a corporation of Canada
Filed June 21, 1965, Ser. No. 465,689
Claims priority, application Netherlands, June 23, 1964, 64—7,121
6 Claims. (Cl. 74—89.22)



1. A driving mechanism for the tilt rod of a Venetian blind, comprising a driving shaft actuated by means of a control cord, which by means of a transmission gear

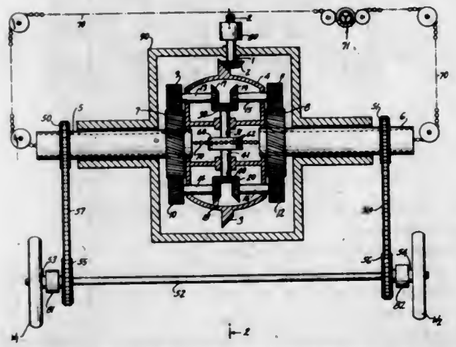
is coupled with the tilt rod and on one end of which a pulley provided with side flanges is mounted, the cord portions depending from the pulley being guided through a guide, one of the side flanges comprising two recesses spaced apart in circumferential direction, each of said recesses adjoining one of two recesses for the control cord provided in the cylindrical part of the pulley, said last mentioned recesses extending axially of the hub of the pulley and having different axial lengths.

3,357,271
STAMPING OR FRANKING MACHINE LOCKING ARRANGEMENTS
Hans Nirenberg, Frankfurt am Main, Germany, assignor to Telefonbau und Normalzeit G.m.b.H., Frankfurt am Main, Germany, a joint-stock company
Filed July 19, 1965, Ser. No. 472,795
Claims priority, application Germany, July 23, 1964, T 26,655
4 Claims. (Cl. 74—98)



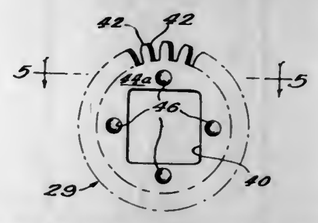
1. A locking arrangement for a franking machine having a pivotably mounted support, a rack carried by said support, and drive means for moving said rack relative to said support, said locking arrangement comprising latch means pivotably mounted on said support and movable into an engaged position in which said latch means retains said rack, and actuating means for moving said latch means into said engaged position on movement of said rack into an end position by said drive means, said actuating means comprising abutment means associated with said drive means and movable therewith, and a lever arm pivotably mounted on said support and extending into the path of movement of said abutment means, said lever arm being connected to said latch means.

3,357,272
APPARATUS FOR DELIVERING POWER
David Dana Roberts, 41—34 43rd St., Long Island City, N.Y. 11104
Filed Oct. 23, 1965, Ser. No. 503,376
23 Claims. (Cl. 74—710.5)



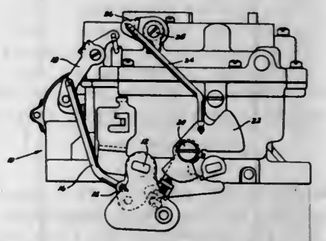
1. In a differential transmission adapted for driving first and second output shafts and having a driven spider, a bevel gear rotatably carried by said spider and first and second gears in mesh with said bevel gear and coupled to respective output shafts, said first and second gears being operatively driven by said spider via said bevel gear for driving the output shafts, an improvement comprising an independent drive means in direct driving engagement with the bevel gear for positively driving the latter in rotation at controlled speeds to vary speeds of rotation of the first and second gears and thereby modify the speeds of the output shafts which are driven by the bevel gear.

3,357,273
ANTI-BACKLASH GEAR AND ASSEMBLY
Donald H. Larson, Arlington Heights, and Werner H. Wachowiak, Rolling Meadows, Ill., assignors to Warwick Electronics Inc., a corporation of Delaware
Filed Apr. 13, 1966, Ser. No. 542,272
8 Claims. (Cl. 74—440)



1. An anti-backlash gear, comprising: a gear member having a generally toothed peripheral edge and a generally centrally located opening for assembling the gear member on a shaft, said gear member having a plurality of recesses in one face and a plurality of slightly misaligned projections on the other face so that when two such gear members are assembled in facial juxtaposition with the projections of one member extending into the recesses of the other member, the teeth of the peripheral edge are slightly misaligned relative to each other.

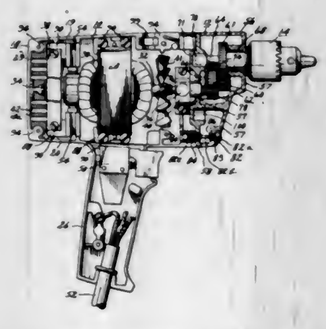
3,357,274
CONNECTOR ROD LINKAGE
August J. Dapoz, St. Louis, Mo., assignor to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Filed Jan. 13, 1966, Ser. No. 520,483
5 Claims. (Cl. 74—469)



1. In combination a drive member, a driven member and a connecting link between said members, each of said members being provided with a cylindrical aperture, said connecting link being provided at at least one end with a hooked portion, said portion being in said aperture whereby said member and said link will move in unison, said portion being further provided with a swaged tip of reduced thickness, and tip having a trim line and a locator, said locator being adapted to prevent withdrawal of said portion from said aperture when said link is in

operating position, the distance from said trim line to the extreme end of said locator being less than the diameter of said aperture and said locator being formed with a side which is parallel to said trim line.

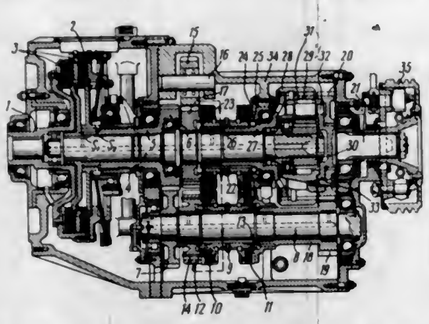
3,357,275
POWER TOOL
James Green, Jr., Spencerport, and Robert Gresens, Rochester, N.Y., assignors to General Electric Company, a corporation of New York
Filed June 25, 1965, Ser. No. 467,057
8 Claims. (Cl. 74—606)



1. An electrically powered tool comprising: a power unit housing, drive means positioned within said power unit housing including a drive shaft, a gear on one end of said shaft, a first bearing for supporting the end of said shaft which is remote from said gear, a second bearing in said power unit housing supporting the end of said shaft carrying said gear, a hub formed on the end of the second bearing adjacent the gear with the hub outer diameter being concentric with the second bearing inner diameter, means for securing said bearings in said power unit housing for supporting said shaft for rotation, a tool head housing separable from said power unit housing adapted to cooperate with said power unit housing, gear means positioned within said tool head housing to engage and be driven by said drive shaft gear, tool work output means driven by said gear means, an intermediate plate forming a wall of said tool head housing to be aligned with said power unit housing adjacent said gear, an aperture formed in said plate to snugly receive said hub, said aperture being accurately positioned so that said gear extends into said tool head housing to properly engage said gear means, and fastening means for releasably securing said intermediate plate to said power unit housing while said shaft and hub extend through said aperture, said fastening means having loose tolerances in a plane parallel to said plate so that the fastening means does not precisely position the plate in said plane and the plate is primarily located within said plane only by said hub and said aperture.

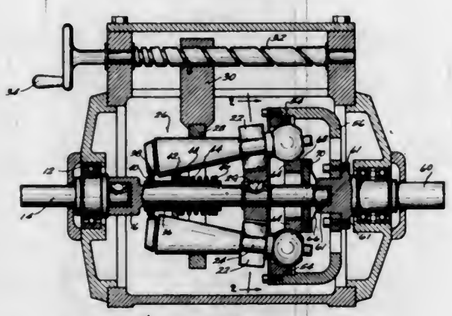
3,357,276
TRANSMISSION AND ITS CONTROL
Vasily Andreevich Vavulo, Marat Dmitrievich Girko, Vladimir Kuzmich Masjukov, Boris Efimovich Mitin, and Igorj Sergeevich Tsitovich, Minsk, U.S.S.R., assignors to Belorussky Politekhnichesky Institute, Minsk, U.S.S.R.
Filed Jan. 28, 1965, Ser. No. 428,698
4 Claims. (Cl. 74—740)

1. A transmission and its control comprising: a case and a gearing case put together; an input shaft and an output shaft arranged in line; a mainshaft and a hollow drive shaft arranged in said gearing case so that said mainshaft, hollow drive shaft and input shaft are in line, said hollow drive shaft and said mainshaft being coaxial; a countershaft parallel to said mainshaft and hollow drive shaft; bearings intended to carry said shafts and mounted in said cases; at least two friction means arranged so that they can be engaged to transmit torque between said shafts; means for engaging and releasing said friction means; gears interconnecting said shafts and rotatably mounted on at least one of said shafts; sliding coupling members arranged to lock solid each of said rotatably mounted gears to its particular shaft; means to shift said coupling members into engagement with



said rotatably mounted gears; an epicyclic gear train which has its planet carrier in constant connection with said output shaft, its sun gear in constant connection with said mainshaft and its ring gear so arranged that it can be separately connected to said mainshaft and to said gearing case; a sliding coupling member arranged to separately connect said ring gear to said mainshaft and to said gearing case; means to shift said sliding coupling member in order to separately connect said ring gear to said mainshaft and to said gearing case.

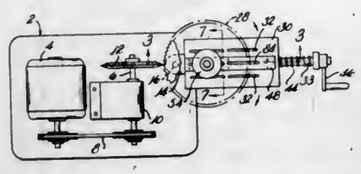
3,357,277
VARIABLE SPEED PLANETARY FRICTION GEAR TRANSMISSION
Richard E. Alsch, Lannon, Wis., assignor to Graham Transmissions, Inc., Menomonee Falls, Wis., a corporation of Delaware
Filed July 14, 1966, Ser. No. 565,234
5 Claims. (Cl. 74—796)



1. A variable speed transmission comprising:
an input shaft;
a drive spider mounted on the shaft;
a plurality of inclined planetary tapered rollers rotatably mounted in the spider for rotation about the shaft axis and their own axes;
a non-rotatable control ring encircling and contacting the rollers;
means for moving the ring axially of the rollers and shaft;

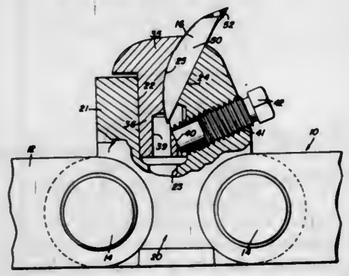
a drive member fixed with respect to each roller and presenting spherical surfaces;
a ring-type outer race engaged by the drive members and driven thereby;
an inner race-half contacting the drive members; and
a driven shaft connected to one of the races.

3,357,278
APPARATUS FOR SHARPENING SAWS OR THE LIKE
Robert M. Bond, 973 Shadybrook Road, Akron, Ohio 44312
Filed Oct. 19, 1965, Ser. No. 497,634
7 Claims. (Cl. 76—43)



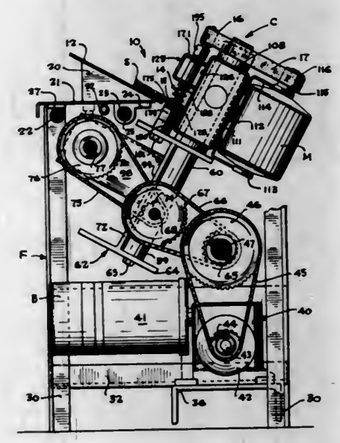
1. Apparatus to sharpen disc saws or the like including a grinding wheel having a double bevel periphery providing faces making less than a ninety degree angle with each other, a base, means supported on the base and driving the grinding wheel to leave the front and both sides thereof open for placement of the saw in sharpening relation to the grinding wheel, a support plate, means pivotally securing the support plate to the base at right angles to the axis of the grinding wheel, and lying beyond the periphery of the grinding wheel on the side opposite the support means, means slidably mounted on the support plate for rotatably holding a saw disc for sliding movement to and from the grinding wheel in a plane containing the axis of the grinding wheel or in a position tilted left or right out of said plane, means for limiting the sliding movement of said slidable mounted means, to thereby control the depth of the cut on the saw by the grinding wheel, and means to retain the support plate at an angle to present a selected edge of each saw tooth substantially parallel with a selected bevel face of the grinding wheel.

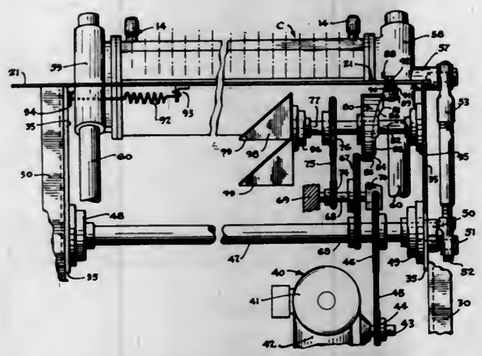
3,357,279
METHOD OF MANUFACTURING A CUTTER OR DRILL BIT WITH REPLACEABLE CUTTING EDGE
Elmer M. Stolz, Sanford Ave., Nokomis, Ill. 62075
Filed Apr. 20, 1965, Ser. No. 449,602
6 Claims. (Cl. 76—101)



1. A method of restoring the worn blade portion of a cutter bit of the type having an elongated metal body with a blade portion of a relatively harder metal than that of said body and homogeneously bonded to the latter which comprises the steps of supporting said body with its cutting face resting upon the supporting surface of a jig and with the worn blade portion overhanging a flat recess in said jig supporting surface, homogeneously bonding to said worn blade portion replacement material of a relatively harder metal than that of said body until the worn portion is restored and the replacement material projects into the jig recess and forms a flat cutting face positioned laterally beyond the cutting face of said body, and fusing the projecting portion of said replacement material smoothly into said body along the junction of their cutting faces while retaining the recess formed contour of the remote end of the replacement material cutting face, thereby producing a smoothly contoured, slightly concave cutting face on said bit.

3,357,280
PERFORATING APPARATUS
Wallace L. Holloway and Paul C. Holloway, Springfield, Mo., assignors to Drilco, Inc., Forsyth, Mo., a corporation of Missouri
Filed Mar. 16, 1965, Ser. No. 440,221
2 Claims. (Cl. 77—22)

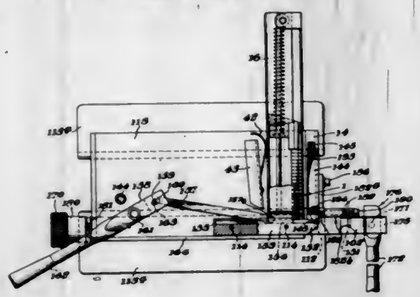




1. In a perforating machine for simultaneously perforating a stack of sheet material with a first series of holes and additional series of holes interspaced between the first series of holes, a frame means, supporting means on said frame means for said stack of sheet material, a plurality of drill elements each adapted to form a hole in said stack of material, driving means to rotate adjacent ones of said drill elements in opposite directions to prevent twisting of the stacked sheets, indexing means adapted to impart indexing movement to said support means trans-

versely on said frame means in order to re-position said stack of material beneath said drills, reciprocating means for reciprocating said drill elements and said support means relative to one another to move said drill elements into engagement with said material and to remove said drill elements from said material, and cyclic control means for causing cyclic operation of said indexing means and said reciprocating means for the different series of said holes.

3,357,281
DRILLING JIGS
James William Stephens, 22 Caxton Hill Industrial Estate, Ware Road, Hertford, England
Filed Oct. 11, 1965, Ser. No. 494,809
Claims priority, application Great Britain, Jan. 11, 1965, 1,157/65
1 Claim. (Cl. 77—62)

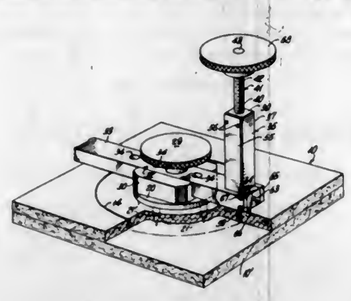


In a wire hole drilling jig for drilling chordwise across the corner of a workpiece, wherein a holder for a chevron shape guide blank comprises a body plate having mounted thereon,

(i) a drill guide having a drill guide hole,
(ii) means for feeding a blank to said guide in a position for drilling therethrough,
(iii) means including a pair of workpiece gripping jaws positioned adjacent the guide for holding the corner of the workpiece in line with the drill guide hole through the guide, one jaw being relatively fixed and the other relatively adjustable and constituted by slidable jaw plate, the improvement which comprises:
(iv) a draw bar passing through the plate,
(v) spring means housed in the body plate and carried by the draw bar to apply pressure on the slidable jaw plate to open the latter in relation to the fixed jaw,
(vi) a screw adjustment on one end of said draw bar controlling the spring means to predetermine an open position between the jaws according to the size of the workpiece to be gripped therebetween, and
(vii) means including a cam lever carried on the opposite end of said draw bar and movable to cause its cam to displace the slidable jaw into workpiece gripping position.

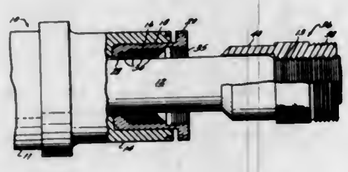
3,357,282
HOLE FORMING APPARATUS
Milton Liberman, 65 Sewane Road, East Rockaway, N.Y. 11518
Filed July 15, 1965, Ser. No. 472,168
11 Claims. (Cl. 77—77)

1. Apparatus for forming holes in materials such as ceiling tile and the like comprising a central pedestal, an arm pivotally secured centrally of the pedestal for rotation in the plane thereof, and a cutting assembly carried by said arm, said assembly including a housing, a slidable blade carrier within said housing, a blade secured to said blade carrier and extending from said housing, a threaded rod threadably engaging said housing and rotatably secured to said blade carrier, said rod extending from said



housing and having a knob fixedly secured to the outer end thereof, said knob being grasped by the operator to rotate said arm thereby gradually feeding said blade outwardly of said housing as the arm is rotated.

3,357,283
APPARATUS FOR REPLACEMENT OF SEALS
Howard M. Geyer, Dayton, Ohio, and James C. Frewin, Schenectady, N.Y., assignors to General Electric Company, a corporation of New York
Filed July 1, 1966, Ser. No. 562,405
7 Claims. (Cl. 81—8.1)



1. For use in combination with an actuator of the type which is energizable to selectively displace a piston rod extending therefrom towards extended and retracted positions and which includes a seal surrounding said rod,
means for replacing said seal comprising,
a collar detachably connectable to said piston rod,
said collar having thereon means selectively connectable with said seal for extracting said seal upon energization of said actuator to extend said rod,
said collar further having means selectively engageable with said seal for compressing said seal when said actuator is energized to retract said piston rod,
whereby the force of said actuator is employed for replacement of said seal.

3,357,284
TORQUE WRENCH
William E. Van Hoose, 4117 Brompton Ave., Bell, Calif. 90201
Filed Apr. 5, 1966, Ser. No. 540,277
12 Claims. (Cl. 81—52.5)

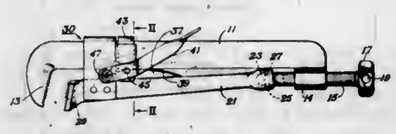
1. A torque wrench comprising an elongated hollow housing including a stop element and an axially adjustable fulcrum mounting therein, a torque transferring element secured to one end of said housing which is adapted to be turned on an axis normal to the axis of said housing, a handle lever pivotally mounted on said axially adjustable fulcrum mounting within said hollow housing that is located remote from said torque transferring element,

said handle lever extending generally axially within said housing, a resilient element mounted within said housing, one end of which bears against said stop element therein at a location remote from the pivotal mounting of said handle lever, a bearing having camming sides sloping away from said handle lever and resiliently engaged by the end of said resilient element closer to said handle lever, a camming element on the end of said handle lever



which is biased against a camming side of said bearing that is in the direction of rotation when said wrench is turned to apply torque and will ride up on top of said bearing under a predetermined amount of camming pressure causing an audible signal and a jerking movement of said handle, and means for varying the compression of said resilient element so as to be able to adjust the amount of predetermined camming pressure desired between said bearing and said camming element.

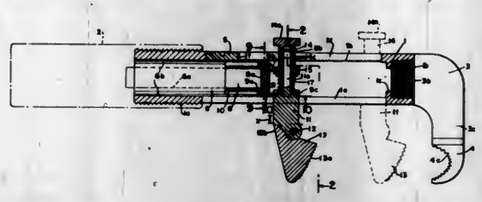
3,357,285
WRENCHES
Adolphus G. Adair, 3100 Ave. N, Fort Worth, Tex. 76105
Filed Aug. 3, 1966, Ser. No. 569,936
6 Claims. (Cl. 81—93)



1. A wrench comprising an elongated wrench body having a jaw formed on one end and a threaded aperture formed on the opposite handle end, with said aperture and said body being substantially parallel; a threaded fastener member rotatably carried by said threaded aperture; carriage means secured to said body for reciprocal movement and for transverse movement with respect to the longitudinal axis of said body; an arm member extending along the substantial length of said body and having one end region secured to said carriage means, with said end region having a jaw rigidly formed thereon to oppose the jaw of said wrench body and with the opposite end region of said arm being pivotally and rotatably secured to one end of said fastener member; biasing means mounted between said body and said arm to urge the jaw thereof transversely away from said wrench body.

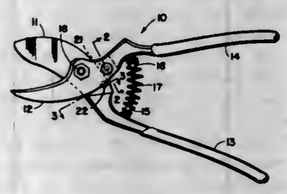
3,357,286
PIPE WRENCH HAVING RACK AND SLIDABLE CATCH JAW ADJUSTMENT MEANS
Carroll E. Pooler, Jr., 51669 Oil Center Station, Lafayette, La. 70501
Filed Aug. 4, 1966, Ser. No. 570,273
13 Claims. (Cl. 81—145)

1. A pipe wrench comprising a tubular base having slots in its upper and lower walls intermediate its ends; a fixed jaw head mounted at the front end of the base having a lateral extension; a laterally disposed fixed jaw mounted on said extension; a block mounted in the rear end of the tube having an axial bore therein; a plunger slidable in said bore; a second head on the inner end of the plunger slidable within said tube; means for normally projecting said second head forwardly of the tube; a movable jaw base carried by the second head and having a neck slidable in the slot in the lower face of the tubular base; a movable jaw eccentrically pivoted on said movable jaw base opposite said fixed jaw; said tubular base having serrated teeth on the underside of its upper wall at opposite sides of the slot therein; a post on said movable jaw base extending upwardly through the slot in the upper face of the tubular base; a knob axially slid-



able on the upper end of the post and extending through the said upper slot and having a toothed head thereon below the slot provided with teeth adapted to engage those of the tubular base; means for normally yieldably raising the knob to engage the teeth of the base with those of the toothed head; means for locking the knob in depressed position to maintain said teeth disengaged, permitting the spring to slam the movable jaw when retracted towards the fixed jaw to clamp an article therebetween; said means for raising the knob comprising a spring around the post interposed between the top of the movable jaw base and the underside of the toothed head.

3,357,287
LATCHING MEANS FOR TOOLS HAVING PIVOTED MEMBERS
Rudolph J. Wertepny, Sr., West Orange, N.J., assignor to J. Wiss and Sons Co., a corporation of New Jersey
Filed June 2, 1966, Ser. No. 544,712
6 Claims. (Cl. 81—322)

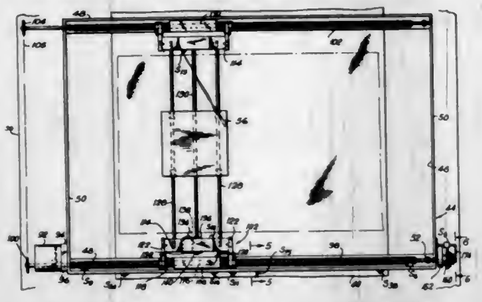


1. Latching mechanism for a tool having a pair of pivotal members comprising a pin, one of said members having a hole, said pin being slidable in said hole, an enlargement at one end of said pin, the other of said members having a hole positioned to register with said first-mentioned hole when said members are in a closed position, said second-mentioned hole being adapted to slidably receive said enlargement when said holes are in register and said pin is pushed in the direction of said second-mentioned hole, a shoulder in said second-mentioned hole, said enlargement being adapted to abut against said shoulder when in said second hole and said members are slightly swung in opposite directions about their pivot, and spring means for retracting said pin for disengaging said enlargement from said shoulder when said members are swung towards each other about said pivot.

3,357,288
AUTOMATIC POSITIONING DIE ATTACHMENT FOR DIE PRESS

Daniel M. Goodman, Massapequa Park, N.Y., and Robert Brakeman, Jr., Darien, and Daniel B. Ventre, Stamford, Conn., assignors to Positioning Devices, Inc., New York, N.Y., a corporation of New York

Filed Nov. 16, 1965, Ser. No. 508,053
23 Claims. (Cl. 83—62)



1. An attachment for converting a die press with a hand shiftable hollow die to a die press with an automatically shifting hollow die, which die press includes a stationary portion constituting a cutting block and a movable portion constituting a vertically shiftable horizontal platen and which die press further includes a single cycle control that when actuated will drive the platen down toward the cutting block and will then raise the platen back to an uppermost position of rest, said attachment comprising a hollow frame, means to mount said frame on the stationary portion of the die press with the hollow frame above and circumscribing a cutting area of the cutting block, a die locating carriage arranged to have a hollow die secured to its undersurface, means mounting the carriage for movement in a horizontal transverse direction relative to the frame, power means for shifting the carriage in said horizontal transverse direction, means mounting the carriage for vertical movement, means biasing the carriage vertically upwardly toward the platen, settable indexing means for deactivating the power means after the carriage has shifted a preselected increment, means operable after deactivation of the power means to actuate the single cycle control for the platen, and means operable after completion of the single cycle of the platen to reactivate the power means, said power means and said single cycle control for the platen being operable alternately to step the die transversely across the frame with the platen being actuated when the carriage is stationary and with the carriage being actuated when the platen is in its uppermost position of rest.

11. An attachment as set forth in claim 1 which further includes means to deactivate the power means when the platen is not restored to its uppermost at rest position within a predetermined period of time.

3,357,289
ROUND CORNER CUTTING MACHINE FOR RECORD CARDS

Walter G. Thomson, Endwell, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

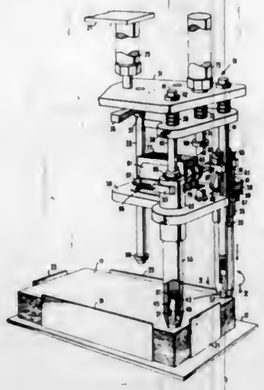
Filed Dec. 27, 1965, Ser. No. 516,498
3 Claims. (Cl. 83—389)

1. A round corner cutting device for a stack of record cards wherein the record cards are supported superimposed upon one another with their edges in alignment, said round corner cutting device comprising

a mounting plate assembly having a plurality of pressure rods depending therefrom which terminate in yieldable retractable feet,

means for moving said retractable feet into engagement with the corners of the stack of cards with a predetermined amount of force,

an arcuate knife for each of said pressure rods having a radius equal to that of the round corners to be cut,



means for mounting each said arcuate knife for oscillation about its respective pressure rod while sliding along the rod to project therefrom, and

power means for oscillating said knives and for simultaneously moving said knives in unison along the pressure rods to advance through the stack of cards cutting round corners.

3,357,290
ATTACHING OF CUTTING TIPS TO SHANKS OR BODIES OF CUTTING BLADES AND LOOPERS FOR CARPET MAKING

Richard Bernard Neale, Langstone, near Newport, Wales, assignor to Dock Grinding and Engineering Company Limited, Newport, Wales, as tenants in common

Filed Jan. 29, 1965, Ser. No. 429,071
Claims priority, application Great Britain, Feb. 11, 1964, 5,580/64
5 Claims. (Cl. 83—651)



1. A cutting tool for use in the manufacture of carpets and the like, said tool comprising a cutting tip made of a metal having superior edge holding properties, a thin flat shank less than 1/10 of an inch thick and made of a metal which holds an edge less well than that of said tip, each of said shank and tip having a pair of surfaces making an obtuse angle with respect to each other while the surfaces on said shank mate with those on said tip, and a metal shim interposed between and soldered to said mating surfaces.

3,357,291
HI FI AMPLIFICATION OF A SELF-CONTAINED AMPLIFIER FOR GUITAR

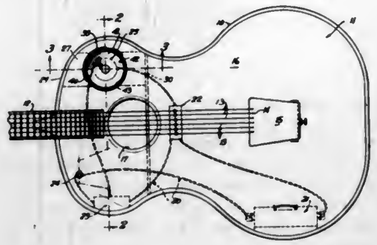
Edward W. Carmichael, Belmont, Calif. (926 Leighton Way, Sunnyvale, Calif. 94087)

Filed May 25, 1966, Ser. No. 552,937
8 Claims. (Cl. 84—267)

1. The combination with a loud-speaker of an amplifier system built into the sound box of a conventional guitar having a top and a bottom panel spaced by an outer wall, a speaker mount comprising;

an aperture formed in such top panel in a zone thereof remote from the strings of the guitar and having a marginal edge slightly larger than the inner diameter of the outer rim of such speaker at the perimeter of the flexure cone of the speaker,

a platform conforming to the contour of the inner surface of such bottom panel and secured thereto opposite the aperture formed in such top panel,



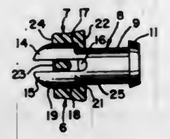
a cylinder having one end mounted on said platform and its opposite end secured to the back of the speaker for supporting the speaker concentric to and in spaced relation but close proximity to the aperture formed in such top panel, and

a sound ring secured to the outer rim of such speaker and in spaced concentric relation to the marginal edge of the aperture in such top panel.

3,357,292
TWO-PART THREADLESS FASTENER

Douglass R. Falkenberg, 20997 Westlake Road, Rocky River, Ohio 44116

Filed Feb. 23, 1965, Ser. No. 434,181
7 Claims. (Cl. 85—8.8)



1. A fastener comprising a threadless nut and bolt, said nut including:

(a) an axial passageway;

(b) an abutment forming a restricted opening into the passageway;

(c) a wedge traversing the passageway in axial spaced relation from the abutment;

and the bolt including:

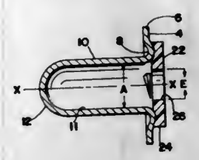
(d) a pair of spaced resilient fingers defining a slot for receiving the wedge, said fingers being insertable through the opening into the passageway a predetermined distance for interlocking engagement with the nut, said fingers being compressed towards each other as they by-pass the abutment to engage and by-pass the wedge; and

(e) a stop carried by at least one of the fingers for interlocking engagement with the abutment when the fingers are inserted said predetermined distance into the passageway.

3,357,293
SEALED SELF-THREADING CAP NUT

Robert J. Holton, Rocky River, Ohio, assignor to Tinnerman Products, Inc., Cleveland, Ohio, a corporation of Ohio

Filed Sept. 15, 1965, Ser. No. 487,426
5 Claims. (Cl. 85—35)



1. A metal fastening device for rotative application with a threadless stud or the like comprising, a base having a central opening extending therethrough, a tubular shank integrally connected to said base and extending downwardly therefrom, said shank having an endless side wall defining an axial passageway disposed concentric relative to the opening in said base and adapted to receive a stud when inserted through the opening in said base, said shank being entirely closed at the end remote from said base for completely encompassing a stud when disposed in said passageway, a plurality of angularly disposed thread-cutting projections sheared from the material of said side wall and extending interiorly from said side wall into said passageway, said projections being disposed adjacent said base for self-threadcutting engagement with a stud when inserted through the opening in said base, a deformable flexible, substantially flat sealing member attached to the upper surface of said base, an endless raised embossed portion formed from the material of and projecting upwardly from said base, said embossed portion being spaced radially outwardly relative to the opening in said base and adapted to provide a support for said sealing member, said sealing member having a generally circular opening disposed in concentric relation relative to said embossed portion, and the opening in said sealing member having a substantially smaller diameter than the maximum transverse dimension of said stud for tight sealing engagement therewith when inserted for self-threading engagement through the passageway in said shank, and whereby in the installed position of the device with an apertured support member, said sealing member provides the sole surface engagement between said base and the confronting surface of said support member when held together by said stud.

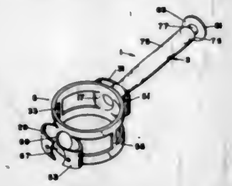
3,357,294
FASTENING DEVICES

Steadmon O. Taylor, Fort Lauderdale, Fla., assignor to Inventions and Invention Consultants, Inc., Chicago, Ill., a corporation of Illinois

Filed Dec. 8, 1965, Ser. No. 512,370
12 Claims. (Cl. 85—36)

1. A fastening device comprising a lock-ring having a tubular body which is cut away in the formation of first and second opposed tabs and third and fourth opposed tabs, the first and second tabs having closely spaced ends provided with opposed arcuate cut-outs which define a first split aperture, the third and fourth tabs having closely spaced ends provided with opposed arcuate cut-outs which define a second split aperture; and a pin having a shank greater in transverse width than the first split aperture, the pin having a head and a diametrally reduced portion immediately inwardly from the head at its one end and an end portion at its opposite end, which end portion inwardly terminates at a shoul-

der; the first and second tabs being adapted to ride over the shank when the pin is inserted through the first split aperture and to spring into the diametrally reduced portion so as to prevent unauthorized removal of the pin, the third and fourth tabs being adapted to spring



inwardly beyond the shoulder so that the arcuate margins thereof engage the shank immediately inwardly from the shoulder when the pin is fully inserted, whereby to further prevent unauthorized removal of the pin from the lock-ring.

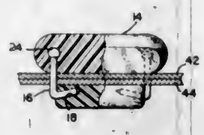
3,357,295
SELF-TAPPING SCREWS
Ronald Smith, Dudley, England, assignor to G.K.N. Screws & Fasteners Limited, Birmingham, England, a company of Great Britain
Filed June 2, 1965, Ser. No. 460,759
Claims priority, application Great Britain, Apr. 24, 1965, 17,389/65
1 Claim. (Cl. 85—41)



A self-tapping screw comprising a head, a cylindrical shank having an axis, a two-start thread extending over said cylindrical shank, a metal piercing point of four-sided pyramidal form having a base, said point also having a quadrilateral cross-section taken in any plane at right angles to the axis of said shank, said cross-section having one diagonal longer than the other and said diagonals intersecting at 90° whereby the angle included at the point in the plane of the longer diagonal is approximately 5° greater than that in the plane of the shorter diagonal, the thread on said shank having a core diameter larger than the longer diagonal dimension of the pyramidal point base, and a pilot portion joining said point to said shank, said pilot portion tapering in cross-section from a maximum where it joins the cylindrical shank to a minimum where it joins the point, the threads on the shank being continued on said pilot portion and being of a radial depth which decreases gradually from the joinder between the shank and the pilot portion down to the joinder between the pilot portion and the point, the two starts of the thread being coincident with the opposite corners of the base of the point at the ends of is longer diagonal dimension.

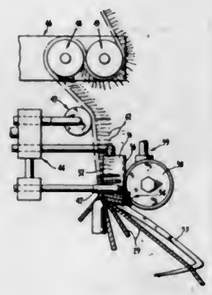
3,357,296
STAPLE FASTENER
Kenneth W. Lefever, 5914 Anniston Road, Bethesda, Md. 20034
Filed May 14, 1965, Ser. No. 455,755
7 Claims. (Cl. 85—49)

1. A fastener for connecting sheet articles comprising a staple element and an elongated receiving element, said staple element including a cross member, independent legs detachably mounted in said cross member proximate each end thereof and depending therefrom in parallel coplanar relation to one another, said receiving element having a pair of holes adjacent the ends thereof with at least a portion of said holes being in opposed relationship, said holes being configured to receive the legs of said staple element after said legs are bent inwardly during the



driving operation whereby disposition of said staple element and receiving element in alignment on opposite sides of the articles to be connected followed by displacement of said staple element toward said receiving element to pierce said article with said legs and to insert said legs into the holes of said receiving element connects said articles and encases the free ends of said legs in said holes, and means to retain said legs in said holes.

3,357,297
APPARATUS FOR FORMING PILE BRAID
Carl J. Greenspan, 6212 Murietta Ave., Van Nuys, Calif. 91401
Filed June 1, 1965, Ser. No. 460,074
4 Claims. (Cl. 87—34)



1. Pile braid forming apparatus comprising a table having a double figure eight guide way in the upper surface thereof, a plurality of carriers mounted upon said table in upright position for movement in said guide way, means for synchronously moving said carriers through said guide way, strand dispensing means carried by said carriers for dispensing strands from the upper ends thereof, said dispensing means of adjacent carriers being alternately relatively long and short, pulling means disposed above said table for pulling said strands dispensed from the upper ends of said dispensing means along an upwardly extending path during movement of said carriers through said guide way, a mandrel mounted upon said table in an elevated position overlying a central portion of the central loop of said double figure eight guide way, said mandrel disposed parallel to said upwardly extending path closely adjacent same at a position between the path and one arcuate side of said central loop, said mandrel disposed with its lower end at a level where the strands from said long dispensing means pass over and the strands from said short dispensing means pass under said mandrel, and cutter means engaging the opposite side of said mandrel from said upwardly extending path at a position intermediate the ends of said mandrel.

3,357,298
STAR TRACKER INCLUDING ANGULARLY DISPOSED PHOTOELECTRIC STRIP SURFACES
Horace A. Beall, Jr., Los Alamitos, Calif., assignor to North American Aviation, Inc.
Filed June 19, 1963, Ser. No. 289,122
2 Claims. (Cl. 88—1)



1. In a telescope tracking system wherein an image of an object to be tracked is directed onto the focal plane of the telescope, and wherein said telescope is adapted to reciprocate to sweep the image along a predetermined straight line trajectory across said focal plane, means for determining the distance and direction of said image from the center of said focal plane comprising:

a photodetector located at said focal plane for detecting said image, said photodetector comprising,

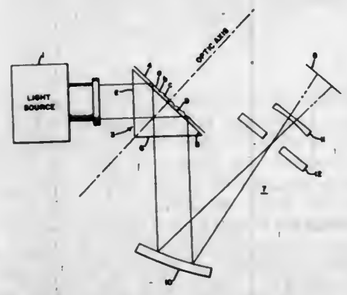
a pair of elongated substantially rectangular photoelectric strip surfaces for providing output signals in response to illumination, said surfaces being arranged so as to converge whereby dithering of said telescope about a single axis which intersects both of said surfaces permits centering of said image along said single axis and along another axis which is perpendicular to said single axis;

means for dithering said telescope to cause said image to sweep consecutively across said photoelectric surfaces;

means for differentially combining the output signals from said pair of photoelectric surfaces; and

means operatively coupled to said combining means for sensing the times of occurrence of said output signals and for determining the position of said image based upon said time.

3,357,299
TOTAL INTERNAL REFLECTION PROJECTION SYSTEM
Milton L. Noble, Liverpool, N.Y., assignor to General Electric Company, a corporation of New York
Filed Sept. 21, 1962, Ser. No. 222,844
11 Claims. (Cl. 88—24)



1. A light projection system comprising:

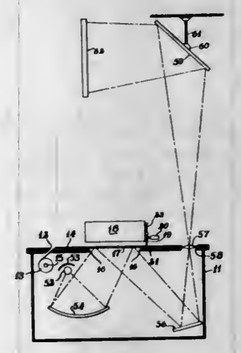
(a) a light permeable solid prism means having an entrance surface, an exit surface and a further surface integrally disposed with respect to said entrance and exit surfaces,

(b) a light modulating control medium overlaying said further surface and forming a boundary with a second medium, said prism means and said control medium having approximately equal indexes of refraction, said second medium having a relatively low index of refraction, said boundary being normally oriented with respect to the critical angle for total internal reflection so as to effect total internal reflection for light rays incident thereon from the entrance surface,

(c) means for directing light through the entrance surface of said prism at said boundary, the light reflected at said boundary being modulated in accordance with the modulation characteristics of said control medium, the internally reflected light exiting from said exit surface, and

(d) means for projecting the internally reflected light received from said exit surface upon a display area.

3,357,300
PRINTABLE MATERIAL AND PROJECTION SYSTEM
William D. Cornell, Grand Haven, Mich., assignor to Brunswick Corporation, a corporation of Delaware
Filed Mar. 11, 1964, Ser. No. 350,955
20 Claims. (Cl. 88—24)



1. A projection system comprising a supply of light-transmitting flexible solid web having an internal reflective permanently deformable surface, an image pick-up station, a light source, optical means for directing said light source to said image pick-up station, means mounting said supply web for feeding to said image pick-up station for reflecting from said internally reflective surface light directed to said station, printing means for mechanically deforming the internally reflective surface of said web at said station in a configuration to be projected and optical means for directing light reflected from the permanently deformed internally reflective surface at said station as a constant image to a viewing screen.

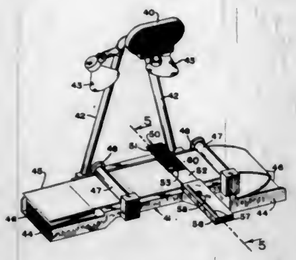
3,357,301
INDEX LOCATION SYSTEM FOR MICROFILM
Sam C. Pandolfo III, Denver, Colo., assignor to General Publishing Corporation, Denver, Colo., a corporation of Colorado
Filed Nov. 23, 1964, Ser. No. 413,092
4 Claims. (Cl. 88—24)

1. Apparatus adapted to photograph data compiled on paper sheets in an alphabetical order onto a film for microfilm viewing, including in combination therewith:

(a) a camera having means to photograph a pair of frames simultaneously;

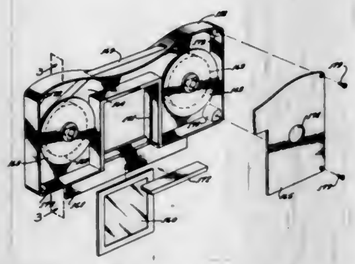
(b) a base having means to encompass a two-frame view of the camera and to hold a sheet of compiled

data at a first frame portion on the base and having a transversely disposed alphabetical index indicator associated with the second frame portion; and,



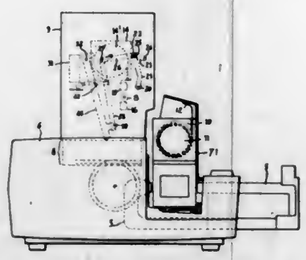
(c) a transversely disposed gage strip extending across the base having means to cover the said second frame portion thereof, said pad having a dark area at one side and a light area at the other side, and a longitudinally disposed dividing edge between the areas, and having means shiftable transversely across the base, whereby to position the dividing edge at a selected transverse position according to said alphabetical arrangement to correlate the dividing edge with said arrangement and with the proper index of a data sheet placed on the other frame portion.

3,357,302
AUTOMATIC SOUND AND SLIDE PROJECTOR CONTROL MECHANISM
Martin E. Gerry, 13452 Winthrope St., Santa Ana, Calif. 92705
Filed Dec. 22, 1965, Ser. No. 515,790
5 Claims. (Cl. 88—26)



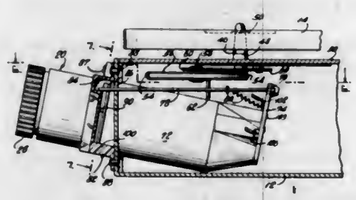
1. In an apparatus for optically projecting visual information and recording and reproducing sound,
- a cartridge containing the combination of a sound track means and a slide, comprising
- a cartridge case which retains a pair of spools whose flanges are coplanar with each other and which retain the said sound track means,
- recesses in said cartridge case which retain axial extensions of said pair of spools,
- a cover for said cartridge case with two apertures at the same axes as the axes of the said spools,
- keyways at the axis of rotation of each of the said pair of spools for insertion of keyed drive shafts,
- a holding means in each of the said pair of spools for retaining and holding securely each end of the said sound track means, and
- a window located in a plane parallel to the plane of the said flanges of said pair of spools for retaining therein a visual information slide.

3,357,303
COMBINED APPARATUS FOR PROJECTING SLIDES AND RECORDING AND PLAYING SOUND TAPES
Marcel Jules Hélène Staar, Rhode-Saint-Genese, Belgium, assignor to Usines Gustave Staar S.A., Brussels, Belgium
Filed May 10, 1965, Ser. No. 454,277
Claims priority, application Belgium, May 11, 1964, 647,746
10 Claims. (Cl. 88—28)



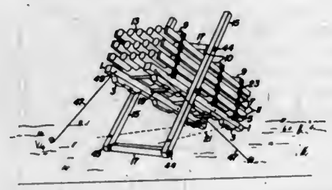
1. Apparatus comprising a slide projector including a projector casing having a channel for receiving a slide magazine in which a plurality of slide frames can be stored, a slide carrier which is reciprocally movable for moving slides from said slide tray to an operative projecting position in the projector and then returning such slides to the slide tray; each slide frame comprising a portion with a recess for storing a sound tape, means detachably mounted on said projector casing as a separable unit for recording and playback of sound tape, and means whereby when the slide frame is in said operative position, a tape in the recess of said slide frame is in an operative position relative to the means for recording and playback of such tape.

3,357,304
PHONOGRAPH-SLIDE PROJECTOR COMBINATION
Robert A. Wolfe, 455 Elizabeth Ave., Newark, N.J. 07112
Filed July 9, 1965, Ser. No. 470,865
12 Claims. (Cl. 88—28)



1. Apparatus for providing correlated visual and aural information, comprising, projector means for projecting images from a series of slides, record player means including a turntable for playing a series of recordings, automatically one after the other, which respectively correspond to the series of slides, and advancing means drivingly connected to said record player means and coacting with said projector means for advancing one slide out of a projecting position and the next slide of the series into said projecting position when one of said series of recordings corresponding to one slide terminates and the next recording corresponding to the next slide is about to commence said advancing means including a rod pivotally supported in said apparatus and pivotable from a rest position in which one of the slides is in a projecting position to a slide advancing position, and rotatable means drivingly connected to said turntable and movable along a path during a part of which said rotatable means displaces said rod from said rest position to said advancing position.

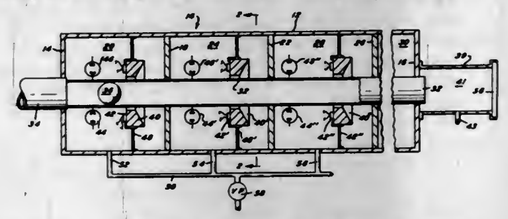
3,357,305
EXPENDABLE DUAL-PURPOSE ROCKET LAUNCHER SHIPPING CONTAINER
Garland W. Clutz, Baltimore, and Louis E. Garono, Aberdeen, Md., assignors to the United States of America as represented by the Secretary of the Army
Filed Dec. 15, 1965, Ser. No. 514,438
6 Claims. (Cl. 89—1.815)



1. An expendable shipping container rocket launcher comprising in combination:
- (a) an open expendable wooden rectangular shipping container having equally spaced top, bottom and interior saddles, skids and adjustable front elevation supports,
- (b) said saddles being horizontally perpendicular to the long dimsensional side members of said shipping container and means to retain said saddles in position,
- (c) said top and bottom saddles having similar, concave, successive, grooves along their interior surface and extending from end to end,
- (d) said inner saddles having similar, concave, successive, grooves directly opposite each other on both top and bottom surfaces and extending from end to end,
- (e) layers of parallel rocket packaging tubes communicating with said concave grooves of said saddles,
- (f) said packaging tubes containing said individual rockets,
- (g) said packaging tubes performing as individual launching tubes,
- (h) means for attaching said adjustable parallel front elevation supports to the skids of said shipping container,
- (i) said front elevation supports being interconnected at their terrestrial-engaging ends and in between the section of said supports directly on top of the launcher by transversely extending cross members,
- (j) means of securing said cross members to said supports,
- (k) means for shackling each of said front elevation supports to the rear portion of each skid during the launching of said rockets,
- (l) means for obliquely mooring said front elevation supports.

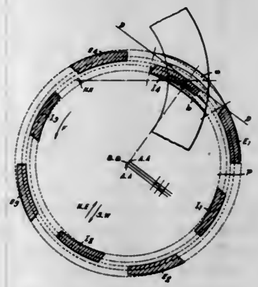
3,357,306
ACCELERATING PARTICLES TO HIGH VELOCITIES
Charles A. Boyd and Philip G. Luckhardt, West Chester, Pa., assignors to Aeroprojects Incorporated, West Chester, Pa., a corporation of Pennsylvania
Filed June 29, 1965, Ser. No. 468,006
5 Claims. (Cl. 89—8)

1. Apparatus for accelerating projectiles to high velocities comprising a housing, means for evacuating said housing, a plurality of aligned annular explosive charges in said housing, said housing having an inlet and an outlet aligned with said charges, sensing means for sequentially firing each charge whereby each charge will accelerate



the speed of a projectile passing through said housing and partitions dividing said housing into separate chambers, means for supporting the charges in said chambers, and each charge having its own sensing means coupled thereto.

3,357,307
PROCESS AND MACHINES FOR MANUFACTURING BEVEL OR HYPERBOLOID GEARS
José Picanol, Calle Latorre 124, Sabadell, Barcelona, Spain
Filed Oct. 15, 1965, Ser. No. 496,620
Claims priority, application Belgium, July 23, 1965, 667,283
3 Claims. (Cl. 90—5)



1. A process for cutting bevel and hyperboloid gears, characterized by the fact that it consists in imparting to the axis of the cutter, whilst the latter is cutting, a slight additional translatory motion in a direction which is practically at right angles to the general direction of the teeth, the change of sense of this additional motion taking place near the middle of the tooth width, and also characterized in that the translatory motion of the cutter axis which gives rise to the additional displacements of the latter in a direction which is practically at right angles to the general direction of the teeth, is an alternating circular motion.

3,357,308
APPARATUS FOR PRODUCING 3-DIMENSIONAL FORM
John K. Karfo, 939 Madison Ave., New York, N.Y. 10021
Filed Oct. 22, 1965, Ser. No. 502,202
5 Claims. (Cl. 90—13)

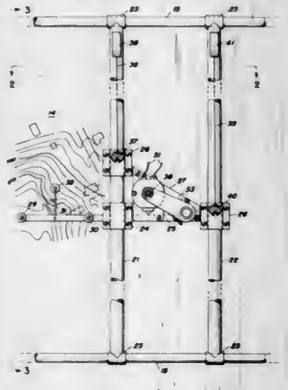
1. Apparatus for producing three-dimensional forms to represent elevational data delineated by the respective curvilinear contour lines shown on a two-dimensional topographical map, comprising:
- a reverse print of said map positioned in a vertical plane substantially coincident with a vertical plane of a first vertical wall;
- means mounted on said first wall and simultaneously movable in horizontal and vertical directions to con-

stitute effectively curvilinear directions apart from said last-mentioned horizontal and vertical directions over said print in a vertical plane spaced from and parallel with said print vertical plane for tracing said respective curvilinear contour lines on said print;

a second vertical wall spaced from and opposing said first wall, and adapted to receive a block of cutting material positioned in a vertical plane substantially coincident with a vertical plane of said second vertical wall;

elongated cutting tool means mounted normally on said movable means in a direction toward said block and variable in length in such direction for routing said last-mentioned block;

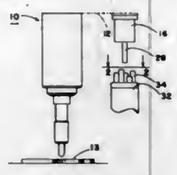
drive means mounted on said movable means in spaced relation with respect to said cutting tool means and having a rotor disposed normally to said movable means in parallel relation with said cutting tool means in a direction toward said block; and



an elongated rod assembly mounted on said drive means rotor in coaxial relation therewith in a direction toward said block in parallel relation with said cutting tool means for rotatably supporting said cutting tool means and adjustable in length for varying the length of said cutting tool means, said rod assembly comprising an elongated hollow member fixed in position for rotatably supporting said cutting tool means and an elongated rod rotatable preset in predetermined numbers of revolutions in said hollow member for adjusting the combined length of said hollow member and rod in predetermined amounts to represent elevational data delineated by said respective contour lines on said map and to vary the length of said cutting tool means in corresponding amounts, said cutting tool means actuated in the varied lengths thereof to route said block in depths and curvilinear directions representing the elevational data and curvilinear directions, respectively, of said respective curvilinear contour lines on said print as said movable means is moved over said print to trace said last-mentioned lines thereon.

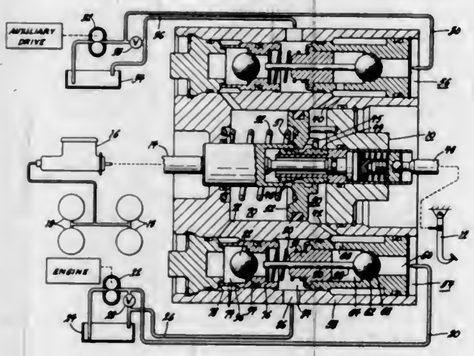
3,357,309
PROTECTIVE DEVICE FOR TRACER MECHANISM
Roy Rosebrook, Sr., Downey, Calif., assignor to Rosebrook, Inc., Downey, Calif., a corporation of California
Filed Nov. 22, 1965, Ser. No. 509,023
9 Claims. (Cl. 90—62)

1. In a pattern tracing mechanism of the type having a stylus with a longitudinal axis, which stylus is mounted for universal movement within a housing and having control devices operable in response to movement of said stylus for operation of a power drive carriage supporting said tracing mechanism, the provision of:



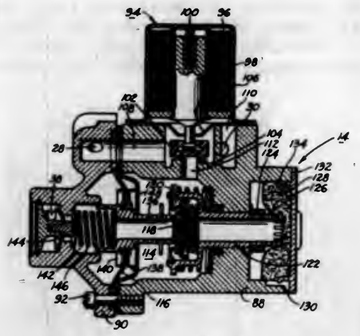
means mounting said stylus for tracing, and reverse control means operable in response to a selected degree of force upon said stylus for causing said power-driven carriage to withdraw said tracer and stylus, whereby excessive end pressure on said tracing mechanism is prevented.

3,357,310
TRANSFER VALVE FOR UTILIZING PLURAL PRESSURE SOURCES
Robert P. Rohde, Saginaw, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Mar. 23, 1965, Ser. No. 442,139
11 Claims. (Cl. 91—6)



1. In combination, a transfer valve and a vehicle braking system having a primary pressure system and an auxiliary pressure system, said transfer valve comprising: a valve body; a first inlet in said valve body from a pressure source; first means for selectively closing said inlet in said valve body; a first outlet in fluid communication with said inlet to the vehicle braking system, said braking system also being in communication with said auxiliary pressure system; a second inlet in said valve body from the vehicle braking system; a second outlet to the pressure source; and second means including a pressure responsive sliding piston and a relatively fixed ball for selectively isolating said second inlet from said second outlet in response to a loss of pressure from the pressure source, said ball being held stationary against said piston by a differential pressure produced by said auxiliary pressure system to prevent further fluid communication from the pressure source to said first outlet thereby effectively isolating the primary braking system from the auxiliary braking system, said piston normally held stationary by shifting of said first means, while said piston moves relative to said ball to allow fluid communication thereby under normal operating conditions.

3,357,311
SERVOMOTOR SYSTEM
Maxwell L. Cripe, South Bend, Ind., assignor to The Bendix Corporation, a corporation of Delaware
Filed Oct. 11, 1965, Ser. No. 494,581
13 Claims. (Cl. 91—32)



1. In a fluid pressure servomotor having a first control chamber and a second control chamber, a means to communicate said control chambers comprising:

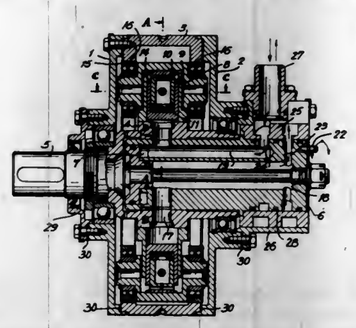
a valve means including a housing having a first pressure supply port, a second pressure supply port, an adjustable pressure responsive valve means operatively arranged to control communication between one or the other of said first and second ports and a control port, a first pressure communication port, a second pressure communication port, a remotely controllable valve poppet operatively arranged to communicate either said first and second pressure communication ports with each other or said control port with said second pressure communication port;

means communicating said first control chamber to said first pressure communicating port; and

means communicating said second control chamber to said second pressure communicating port.

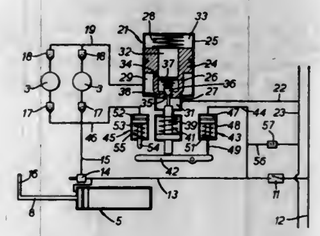
3,357,312
RADIAL-PISTON HYDRAULIC MOTOR
Anatoly Jakovlevich Rogov, Moscow Region, Ljubertsy, Jury Ivanovich Lovtsov, Moscow, and Vasily Kuzjmich Kuteinikov, Moscow Region, Ljubertsy, U.S.S.R., assignors to Institute Gornogo Dela imeni A.A. Skochinskogo
Filed Aug. 13, 1964, Ser. No. 389,401
5 Claims. (Cl. 91—176)

1. A high-torque multiple-action radial-piston hydraulic motor comprising: a rotor having radial bores and a centrally located axial through hole; radial passages being provided in said rotor which are coaxial with said bores and connect said bores with the centrally located axial hole in the rotor; an output shaft rigidly connected to said rotor; a stator including a front end part provided with a hole to accommodate said output shaft and a rear end part provided with a hole coaxial with said hole in the front end part of the stator and accommodating said rotor, and a center part having an inside surface with identical projections and identical depressions the number of which corresponds to that of the hydraulic motor strokes; said inside surface of the stator so shaped as to provide a maximum variation control angle and a minimum velocity of the power fluid in the rotor passages during torque and speed variation; pistons adapted for axial deformation to compensate for impact loading during torque and speed variation and accommodated in said radial bores in the rotor so that they can move axially inside the bores; means for transmitting force from said pistons to the stator; a ported power fluid distributor rotatably mounted in said centrally located rotor hole and having radial and axial passages for power fluid to pass to and from said radial passages in the rotor different angular positions of the rotor; means for rotating said power fluid distributor around its axis in order to vary power



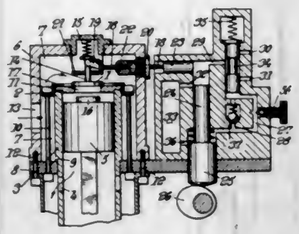
fluid delivery per revolution; a main collector provided in order to allow power fluid to pass to and from said power fluid distributor; an auxiliary collector located in said distributor opposite said main collector and providing communication between the axial passages of the distributor; and means for delivering power fluid to said main collector and returning it therefrom.

3,357,313
ROOF SUPPORT ASSEMBLIES SUITABLE FOR USE IN MINES
Frank Pawling, Cheltenham, England, assignor to Dowty Mining Equipment Limited
Filed Feb. 8, 1965, Ser. No. 430,920
Claims priority, application Great Britain, Feb. 11, 1964, 5,687/64
3 Claims. (Cl. 91—189)



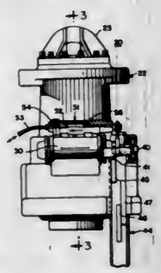
1. In a mine roof support having a fluid-pressure-operated prop means, a pair of members operable to engage the floor and the roof of the mine, respectively, when the pressure in the prop means is elevated to a given value, and a fluid-pressure-operated jack to advance the support in relation to an anchorage, the improvement comprising first valve means operable to relieve the pressure in the prop means at a relatively slow rate of relief, in response to actuation of the jack in a support advancing manner, and second valve means operable responsively to relieve the pressure in the prop means at a relatively high rate of relief, when the first valve means is in operation and the pressure in the prop means exceeds the value below the given value, at which the support was disengaged from the roof.

3,357,314
STEAM ENGINES
Jacques Duveau, 23 Ave. Granger, 91, Draveil, France
Filed Dec. 13, 1965, Ser. No. 513,365
Claims priority, application France, Dec. 18, 1964, 999,196
5 Claims. (Cl. 91—263)

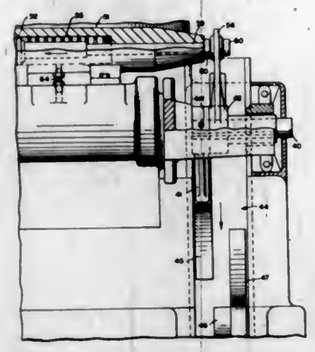


1. A steam engine which comprises, in combination,
a cylinder including a cylinder head rigid therewith, said cylinder being provided with an exhaust port, said cylinder head being provided with an inlet port,
a piston reciprocable in said cylinder,
a steam feed jacket distinct from both said cylinder and said cylinder head surrounding said cylinder head and the portion of said cylinder adjoining said cylinder head so as to form a steam chamber opening into said cylinder through said inlet port, the base of said steam jacket being located at a level between that of said cylinder head and that of said exhaust port, at a short distance above said exhaust port,
an annular plate rigid with the base of said steam jacket and extending between it and the external wall of said cylinder to close said steam jacket and
means for rigidly securing said annular plate to said cylinder, said rigid means forming the only mechanical connection between said steam jacket on the one hand and the whole of the cylinder head on the other hand.

3,357,315
POWER HAMMER
Campbell V. Adams, Chicago, Ill., and Henry G. Warrington, Palm Beach, Fla., assignors to Vulcan Iron Works Inc., Chattanooga, Tenn., a corporation of Illinois
Filed June 8, 1966, Ser. No. 556,119
11 Claims. (Cl. 91—277)

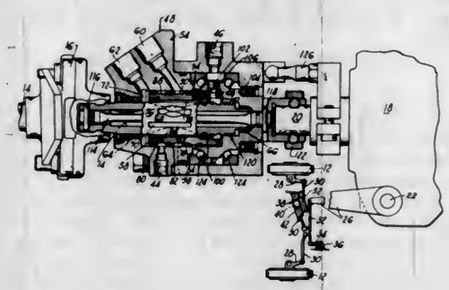


1. The combination in a pile driving hammer of:
a cylinder,
a piston selectively operable in said cylinder through a normal and a short upstroke, and adapted to drive a ram,
valve means including a valve chamber and a multiposition valve element movable in said chamber,
passageway means connecting said valve chamber with said cylinder below said piston,
exhaust passage means connecting said valve chamber to ambient,
supply means adapted for connecting said valve chamber to a source of pressurized fluid,
said valve element being movable between a first position connecting said passageway means with said supply means to lift said piston and a second position connecting said passageway means with said exhaust passage means to release said piston,



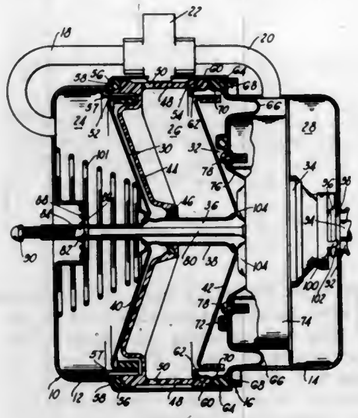
cam means for moving said valve element to its first position when said piston is near the bottom of its stroke to supply pressurized fluid to said cylinder to raise said piston, and
cam means remotely selectable to respond to said piston approaching the top of its normal stroke and the top of its short stroke for moving said valve element to its second position to exhaust said cylinder thereby remotely and selectively providing for movement of said piston through a normal or short stroke.

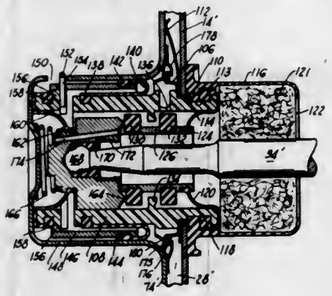
3,357,316
POWER STEERING MECHANISM
Arthur K. Brown, Jr., South Bend, Ind., assignor to The Bendix Corporation, a corporation of Delaware
Filed Oct. 21, 1965, Ser. No. 500,021
7 Claims. (Cl. 91—375)



1. In a power steering mechanism for a vehicle the combination of a steering shaft, a steering gear having an input member and an output member, a valve unit coaxially aligned with and located between said steering shaft and said input member, and means for supporting said valve unit solely on said input member, said valve unit having a housing and a pair of relatively rotatable telescoped tubular elements through which fluid flow to and from said motor is controlled, one of which is connected to and rotatable with said steering shaft and the other of which is connected to said input member through said supporting means.

3,357,317
SERVOMOTOR WITH LIMITED VALVE TRAVEL
Robert R. Hager, South Bend, Ind., assignor to The Bendix Corporation, a corporation of Delaware
Filed Oct. 21, 1965, Ser. No. 499,209
9 Claims. (Cl. 91—391)

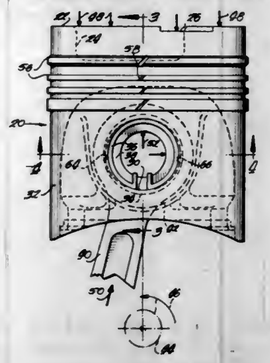




1. A servomotor comprising:
a housing having a chamber therein;
a movable wall means operably arranged in said housing;
a valve means including a casing operably connected to a portion of said movable wall means and a valve poppet connected to said housing;
a spring connection affixed to said housing and operably connected to said casing; and
means to operate said valve means which in absence of sufficient pressure differential across said portion of said movable wall means mechanically releases said connection to manually move said wall means in said housing while leaving said valve poppet affixed to said housing behind.

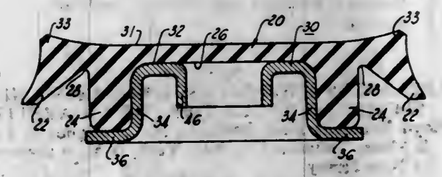
3,357,318
PISTON
Norman M. Packard, Des Plaines, Ill., and Howard R. Cook, Cape Coral, Fla., assignors to International Harvester Company, a corporation of Delaware
Filed Sept. 13, 1965, Ser. No. 490,154
6 Claims. (Cl. 92—187)

1. In a piston,
a head having a gas-loaded face;
a skirt;
spaced-apart bored pin bosses joined between the head and skirt; and
a connection between a hollow wrist pin and the bored pin bosses providing clearance in the bore,



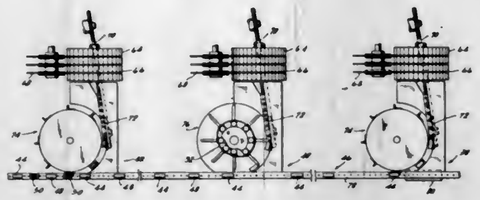
the coextensive surface of each boss with the pin having no more than running clearance space for relative oscillatory motion, except for wedge-like spaces of relative relief in the surface which are segments of a circle and are confined to both skirt sides of the pin, each wedge-like space being thick at the inner edge of the boss and generally decreasing in thickness outwardly therefrom, whereby gas loads on said face which flatten the wrist pin and decrease the thickness of each wedge-like space, will cause a side thrust to be transmitted between the unrelieved surface of each boss and the wrist pin on a skirt side of the pin, and impose a head load transmitted between the surface of each boss and the wrist pin on the side of the pin adjacent the head, in a manner to increase the area of contact between each boss and the wrist pin on said head side.

3,357,319
CUP SEAL CONSTRUCTION
Sidney E. Hagerty, Union, Mich., assignor to The Bendix Corporation, a corporation of Delaware
Filed Oct. 22, 1965, Ser. No. 501,664
3 Claims. (Cl. 92—245)



1. A resilient cup seal for a fluid motor comprising: a front face of a given diameter, said front face being generally flat in a central portion thereof within the confines of an annular abutment means projecting rearwardly from a rear face of said seal a predetermined distance and having a peripheral ring curved forward, a rearwardly extending annular peripheral lip, the rear portion of said peripheral lip projecting rearwardly a distance less than the predetermined distance of the projection of said annular abutment means and the front portion of said lip conforming to the contour of the peripheral ring curving forward from the generally flat central portion which rear portion and front portion are integral with said peripheral ring.

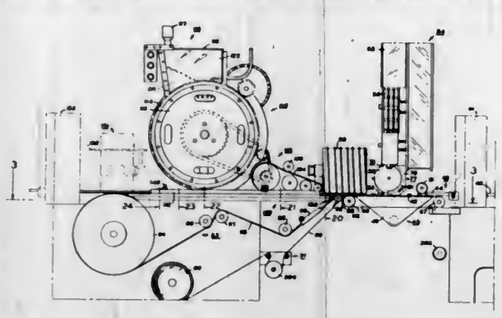
3,357,320
MULTIPLE FILTER ASSEMBLY APPARATUS
John H. Sexstone and Michael B. Hagan, Louisville, Ky., assignors to Brown & Williamson Tobacco Corporation, Louisville, Ky., a corporation of Delaware
Filed Feb. 5, 1965, Ser. No. 430,645
16 Claims. (Cl. 93—1)



1. A method of making composite cigaretter mouthpiece rods each of which comprises components of at least three different characters and each of which is divisible into mouthpieces having at least three filter sections, said method comprising the steps of:
feeding first components of one character to a first conveying station;
conveying the first components endwise and in spaced relation in line to a wrapping station;
feeding second components of a second character to a conveying station;
alternating the second components with the first components in an endwise relation and in the same line for conveyance to the wrapping station;
feeding third components of a third character to a third conveying station;
alternating the third components with the first and second components in endwise relation and in the same line for conveyance to the wrapping station, conveying the components to the wrapping station at a predetermined speed, feeding the first and second components to their respective conveying stations at one-half said predetermined speed, and feeding the third components to the third conveying station at said predetermined speed;
placing the first, second and third components being conveyed in abutting relationship end-to-end;
enclosing the abutted components in a continuous wrapper to form a continuous composite rod; and
sub-dividing said continuous rod by cutting it at predetermined intervals and through predetermined components.

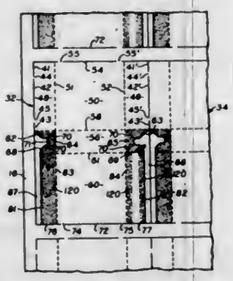
3,357,321
APPARATUS AND PROCESS FOR MAKING MULTI-SECTIONAL FILTER TIPS FOR CIGARETTES
Floyd Vanmeda Hall, Durham, N.C., assignor to Liggett & Myers Tobacco Co., New York, N.Y., a corporation of New Jersey
Filed July 8, 1965, Ser. No. 470,386
25 Claims. (Cl. 93—1)

1. Apparatus for the production of cigarette filter tips having multi-sectional internal construction, said apparatus comprising means for feeding a plurality of filter elements of disparate lengths into an alternating series; means for receiving and conveying the alternating series of filter elements thereon; means located in said receiving and conveying means for longitudinally aligning the filter elements of the alternating series of filter elements; means for spacing each filter element of the alternating series of filter elements an equal distance from the preceding and succeeding filter element in the alternating series; means for delivering a continuously generated strip of mouthpiece paper under said spacing means for receiving the equally spaced filter elements of the alternating series of filter elements thereon; means located in axial alignment with said spacing means for conveying the strip of mouthpiece paper with the alternating series of equally spaced filter elements thereon away from said spacing means; means positioned over said conveying means in alignment with the strip of mouthpiece paper for injecting a predetermined charge of granular adsorptive-type filter material into each determinate space between successive filter



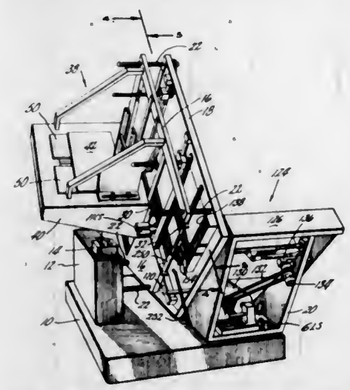
elements of the alternating series of filter elements; means for forming the strip of mouthpiece paper into an overlapped tube fully enclosing the alternate filter elements and injected granular material; means for sealing the overlapped strip of mouthpiece paper for forming a rod-shaped assembly of alternating sections of filter elements and granular materials; and means for cutting the rod-shaped assembly into successive filter tip assemblies of determinate length.

3,357,322
COATED BOX AND METHOD OF MAKING
Lester D. Gill, 302 North Road, Smoke Rise, Butler, N.J. 07405
Filed Jan. 12, 1965, Ser. No. 424,946
10 Claims. (Cl. 93—36)



1. The method of making a box which comprises,
(a) cutting and scoring a web to form a box blank having front, back and side panels, and also bottom panels, that meet along fold lines,
(b) orienting the box blank in the web with the fold lines along which side panels meet extending generally parallel to the side edges of the web, the web being cut out and waste material being stripped from the web along the full length of the edge of at least one side panel and also along the full length of an edge of a bottom panel,
(c) leaving uncut portions of the blank integral with the web to retain the blank in position in the web,
(d) covering at least one side of the blank with plastic material while in position in the web and extending the plastic material across the cut-outs in the web, beyond those edges of the side panel and bottom panel, from which waste material has been stripped,
(e) applying an adhesive coating to the other side of the blank over at least the areas of the blank adjacent to the edges from which material was stripped;
(f) subsequently severing the uncut portions of the blank and removing the plastic covered blank from the web; and
(g) folding the blank into a box with the panels having adhesive thereon confronting other panels to form the seams of the box, the panels having the subsequently cut portions being on the outside of the seam.

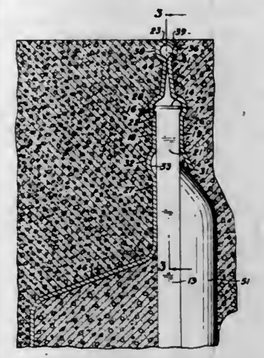
3,357,323
MACHINE FOR ASSEMBLING CASE PARTITIONING MEMBERS
Ignace C. Waclawski, Wethersfield, and Robert Spurr, West Hartford, Conn., assignors to Emhart Corporation, Bloomfield, Conn., a corporation of Connecticut
Filed July 19, 1965, Ser. No. 473,130
14 Claims. (Cl. 93—37)



1. A machine for assembling case partitioning members in two parallel sets which cross each other and which are joined by engaging regularly spaced notches along their mating edges, comprising guide means for accommodating longitudinal movement of the members of one set while they are disposed in spaced generally parallel relationship with their mating edges facing the same side of the guide means, a first magazine for the members of one set adjacent one end of the guide means having associated means for feeding and positioning the members of the said one set in said one end of the guide means, a second magazine adjacent the other end of the guide means for the members of the other set and having a feeder for advancing the members thereof one at a time and mating edge first toward and transversely of said guide means, and means for advancing said one set along said guide means in steps and in timed relationship with the operation of the second magazine feeder so that the notches in the members of the one set are positioned sequentially for engagement with the notches in the sequentially fed members of said other set.

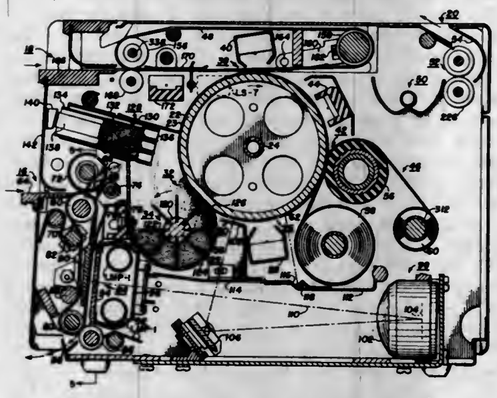
3,357,324
SCREED AND DIVIDER STRIP FOR CONCRETE SLABS
Richard N. Tone, 1803 Mezes Ave., Belmont, Calif. 94002, and Warren D. Wilbur, 13379 Pastel Lane, Mountain View, Calif. 94040
Filed July 20, 1965, Ser. No. 473,352
7 Claims. (Cl. 94—17)

1. In combination, a plurality of aligned metal stakes with peened over upper stake ends set at a predetermined grade level; an elongated sheet metal screed and divider strip having a longitudinally extending side portion folded into spaced opposed relation to the main body of said strip to provide an inverted channel having resiliently displaceable side walls for slipping over said stake ends, said channel presenting an entry slot somewhat narrower than the width of said stake ends so as to effect a resilient separation of said side walls upon effecting entry of said



stakes into said channel, said channel being formed with a relatively enlarged socket extending longitudinally over the length of said strip for snap acting receipt and retention of said stake ends, and said strip being mounted on said stakes with said stake ends registering with said socket, said socket being positioned to locate the top edge of said divider strip at finish elevation for screening of concrete poured adjacent to said divider strip.

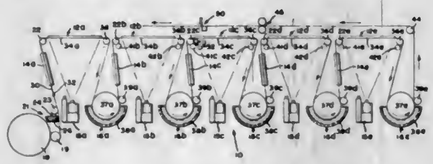
3,357,325
XEROGRAPHIC TRANSFER APPARATUS
Roger H. Elchorn, Webster, and Norbett H. Kaupp, Newark, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Oct. 22, 1965, Ser. No. 500,945
4 Claims. (Cl. 95—1.7)



1. A xerographic transfer apparatus for use in an automatic zerographic machine having a rotating xerographic drum including
a dielectric belt mounted in a continuous loop for movement through a path wherein the bottom of the belt contacts the surface of the xerographic drum,
a first electrostatic charging device positioned to place an electrostatic charge on a sheet of paper placed in contact with the belt prior to the belt's contacting the drum surface thereby electrostatically tacking the sheet of paper onto the belt for movement therewith,

a second electrostatic charging device positioned to place an electrostatic charge on the back of the dielectric belt at the point where the belt contacts the drum surface to effect transfer of the powder image on the drum surface to the sheet of material on the belt.

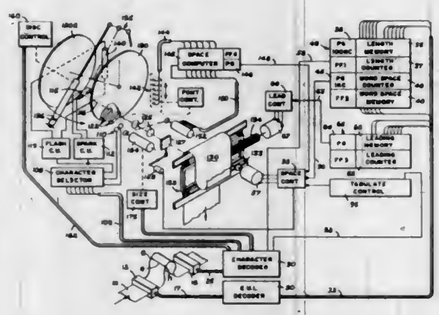
3,357,326
ELECTROPHOTOGRAPHIC APPARATUS
Francis Hunstiger, Parma Heights, Ohio, assignor to Harris-Intertype Corporation, Cleveland, Ohio, a corporation of Delaware
Original application June 4, 1964, Ser. No. 372,498, now Patent No. 3,307,457, dated Mar. 7, 1967. Divided and this application May 4, 1966, Ser. No. 547,502
10 Claims. (Cl. 95—1.7)



1. In an electrophotographic printing machine for producing a plurality of successive images on a moving web wherein (a) the number of images per unit length of web may be varied from one series to another, (b) the space between trailing and leading edges of successive images may be varied from one series to another, and (c) wherein both the number of images per unit length and the spacing between trailing and leading edges of successive images in a series may be varied from one series to another, the combination comprising means for applying an electrostatic charge to a surface of the moving web, means positioned with respect to the moving web for exposing said charged surface to light to form an electrostatic latent image thereon, said exposing means including a high-intensity, short-duration flashing lamp, means to operate said lamp intermittently whereby an electrostatic latent image is produced on the web for each flash thereof, means for developing the web with said latent images thereon with toner material, means for driving the web at a given speed under tension through said machine, means responsive to the passage of a first predetermined length of web for controlling said flashing lamp operating means in a first relation with respect to said first length of web to produce successive latent images each of a length corresponding to a first series, means for varying said responsive means with respect to a second predetermined length of web different from said first to alter the relationship of said flashing operating means with respect to said second length of web to produce successive latent images each of a length corresponding to a second series different from said first, web-severing means for cutting the developed web into sheets of a length corresponding to a given image length, and means for operating said web-severing means in synchronized relationship with the flashing lamp operating means whereby said web-severing means is operated once for each flash exposure irrespective of whether exposure is timed to occur for said first series of images or said second series.

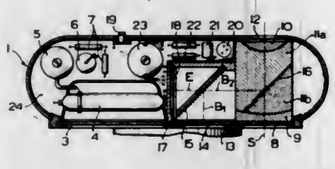
3,357,327
TABULATION AND LEADER INSERTION FOR PHOTOTYPESETTING SYSTEM
Ralph A. Proud, Jr., Somerset, N.J., assignor to Harris-Intertype Corporation, Cleveland, Ohio, a corporation of Delaware
Filed May 12, 1965, Ser. No. 455,120
5 Claims. (Cl. 95—4.5)

1. In a phototypesetting machine, a tabulating device including means for generating a code directing a tabulating function and a plurality of further codes each directing a spacing operation of predetermined amount the total number of which additional codes corresponds to the space required for the tabulating operation, means defining an optical path along which character images are projected in predetermined order, means for supporting photosensitive material to receive the projected images, means for selecting the order of characters to be projected and for selecting other functions of the machine including a tabulating function to produce lines of composition, spacer means connected to produce relative spacing movement between said supporting means and the optical path according to the widths of the projected images, selectively



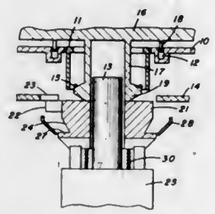
operable character spacing pulse generating means connected to supply pulses corresponding to desired spacing movements to said spacer means, separate generating means normally inoperative and adapted when operative to supply pulses to said spacer means, a tabulating circuit responsive to a code directing a tabulating function and connected to actuate said separate generating means to operative condition, and additional circuit means responsive to each of said additional codes to cause said separate pulse generating means to supply a predetermined number of pulses to said spacer means in response to each of said additional codes to complete the directed spacing operation for a tabulating function.

3,357,328
CAMERA VIEWFINDER WITH FRAME-LIMIT INDICATION
Gotthard Kinder and Werner Schacht, Braunschweig, Germany, assignors to Voigtlander A.G., Braunschweig, Germany, a corporation of Germany
Filed Mar. 30, 1965, Ser. No. 443,928
Claims priority, application Germany, Apr. 8, 1964, V 25,755
8 Claims. (Cl. 95—11)



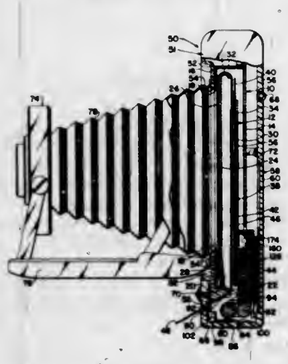
1. In a camera, support means, viewfinder means for viewing the object which is to be photographed, indicating means cooperating with said viewfinder means for indicating the framing limits of the object to be photographed, electroluminescent plate means coacting with said indicating means for illuminating the indication of the framing limits by said indicating means when said electroluminescent plate means is energized, a source of potential, and means for optionally connecting said source of potential to said plate means for energizing the latter at the option of the operator, said viewfinder means, indicating means, plate means, source of potential, and means for optionally connecting the latter to said plate means all being carried by said support means.

3,357,329
FLASH EJECTOR
Hubert Nerwin, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed July 14, 1965, Ser. No. 471,820
3 Claims. (Cl. 95—11)



1. In a flash device having a connecting socket to attach a photoflash package containing a plurality of photoflash lamps, and drive means to rotate the attached package through a revolution cycle to sequentially place the lamps in a photoflash circuit for flashing with sequential operations of a camera, the improvement comprising ejector means responsive to attachment of a package to rotate with the attached package, means urging the ejector means toward an ejecting position, retainer means overcoming the urging means to hold the ejector means during rotation of the attached package through the revolution cycle, and means upon completion of the revolution cycle to release the retainer means and eject the attached package by movement of the ejector means toward its ejecting position.

3,357,330
PHOTOGRAPHIC APPARATUS
John B. Murphy, West Roxbury, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed Apr. 21, 1965, Ser. No. 449,798
7 Claims. (Cl. 95—13)

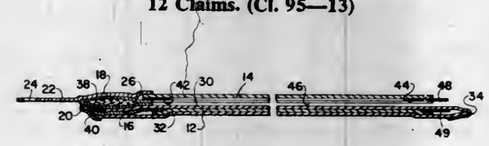


1. In photographic processing apparatus including a pair of juxtaposed pressure-applying members having adjacent linear portions defining a gap lying substantially in a plane through which a pair of photographic sheets are advanced in superposition in said plane for distributing a processing liquid between said sheets, in combination, means for engaging said sheets to releasably restrain them against movement in said plane toward said members and for preventing escape of said liquid from between said sheets at the lateral edges thereof during movement of said sheets in said plane between said members, said means comprising:

a support member located adjacent said pressure-applying members to one side of said plane and having surfaces and a transverse edge extending at least to the edges of said sheets for supporting at least the lateral marginal portions of said sheets substantially in said plane; and

a pair of resilient members located between said support means and said pressure-applying members closely adjacent said transverse edge of said support member and including edge portions inclined with respect to said plane and extending from said one side of said plane outside said lateral edges of said sheets toward one another through said plane to the opposite side thereof intermediate said lateral edges of said sheets for compressively engaging said marginal portions of said sheets between said edge portions and said surfaces of said support means, said edge portions of said resilient member intersecting the plane of the surfaces at points spaced from one another by a distance substantially less than the width of said sheets.

3,357,331
PHOTOGRAPHIC FILM ASSEMBLY
Herman E. Erikson, Winchester, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed July 12, 1965, Ser. No. 471,364
12 Claims. (Cl. 95—13)



1. A photographic film assembly comprising, in combination:

(a) a first liquid-confining layer having a photosensitive portion on one surface thereof;

(b) a second liquid-confining layer positionable in superposed relation to said first layer and facing said one surface thereof;

(c) hinge means connecting said first and second layers together at one end thereof for movement into and away from said superposed relation;

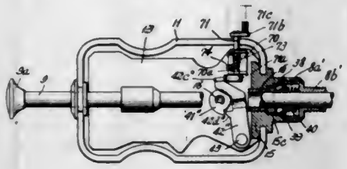
(d) a rupturable container holding a liquid processing composition and positioned between said layers adjacent said hinge means for discharge of its liquid contents for distribution between said sheets;

(e) an envelope enclosing at least a portion of said first layer, said envelope being closed on three sides and open along the side thereof parallel to said hinge means; and

(f) cover means including a pair of wall members at least as long as said open side of said envelope and extending from an anchored position substantially at said hinge means to enclose the entire open side of said envelope between said wall members;

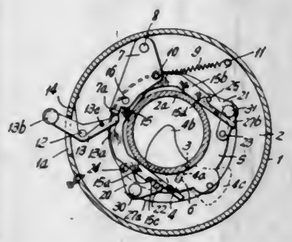
(g) said envelope and said cover means being opaque to visible and near-visible light, whereby said photosensitive portion is protected from such light by the cooperative arrangement of said envelope and said cover means.

3,357,332
PHOTOGRAPHIC CAMERA RELEASE AND TIME EXPOSURE DEVICE
Karl Helber, Calmbach, Black Forest, and Rolf Reinhold Bott, Hofen (Enz), Germany, assignors to Prontor-Werk Alfred Gauthier G.m.b.H., Calmbach (Enz), Germany, a corporation of Germany
Filed May 28, 1965, Ser. No. 459,805
Claims priority, application Germany, May 30, 1964, G 40,726
4 Claims. (Cl. 95—53)



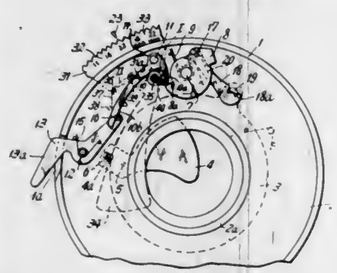
1. A device for actuating a shutter of a photographic camera, said device comprising: a push-rod connected to said shutter; a lock engageable with said push-rod to hold the latter in a release position; an actuating device connected to said push-rod to be actuated thereby when said push-rod is moved to its release position, said actuating device comprising a driving spring, a driven member, and a setting control, said driven member being engageable with said lock to release the same and thereby permit said push-rod to return to an extended position; and a fixing device comprising means engageable with said driven member to prevent said driven member from releasing said lock when said fixing device is set for ultra-long exposures.

3,357,333
PHOTOGRAPHIC SHUTTER WITH SWING-THROUGH SHUTTER BLADES
Franz W. R. Starp, Calmbach, Germany, assignor to Prontor-Werk Alfred Gauthier G.m.b.H., Calmbach (Enz), Germany, a corporation of Germany
Filed May 12, 1965, Ser. No. 455,126
Claims priority, application Germany, May 15, 1964, G 40,610
7 Claims. (Cl. 95—61)



1. A photographic shutter comprising: swinging-through shutter blades; a driving lever; a rotatably mounted shutter blade operating ring; pivotal means connecting said shutter blades to said ring whereby said blades swing through from a first closed position to an open position to an alternate closed position as said ring rotates in one direction and from said alternate closed position to said open position to said first closed position as said ring rotates in the opposite direction; a stirrup connected to said driving lever to be actuated thereby and guided to move with respect to said ring and comprising first and second legs; first and second control pawls pivotally connected to said ring to engage, respectively and alternately, said first and second legs, whereby successive running down of said driving lever from the cocked position moves said stirrup in one direction causing said first leg to move said first pawl and thereby rotate said ring in one direction and then said second leg to move said second pawl and thereby rotate said ring in the opposite direction.

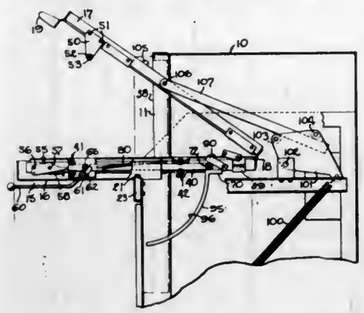
3,357,334
PHOTOGRAPHIC CAMERA WITH HIGH SPEED SHUTTER OPERABLE AT SMALL DIAPHRAGM APERTURE SETTINGS
Waldemar T. Rentschler, Gauthier Strasse 41, Calmbach, Black Forest, Germany
Filed July 14, 1965, Ser. No. 471,846
Claims priority, application Germany, July 25, 1964, G 41,190
3 Claims. (Cl. 95—63)



1. A shutter mechanism comprising at least one main shutter blade; operating means connected thereto to move said blade from a closed position to an open position and back to a closed position; an adjustable diaphragm; a scale associated with the diaphragm-adjusting means to adjust said diaphragm in a range of diaphragm values; an additional shutter blade; an exposure time scale; control means connected to said shutter operating mechanism to control the operation thereof; said scale comprising an additional exposure value range following the smallest of the normal aperture values and including an extremely short exposure time value not contained in the exposure time scale and diaphragm values corresponding to some of the smallest aperture values; means connected to said diaphragm adjusting mechanism to control the aperture thereof, said last-named means being connected to said additional blade to move said additional blade into position to connect with said operating means only when one of the additional exposure values is set, whereby said additional blade may close the aperture corresponding to a value of the additional exposure value range in accordance with said extremely short exposure time value, said last-named means, when the shutter is set to the additional exposure value range, yielding in a first position a larger aperture and a second position the smallest aperture.

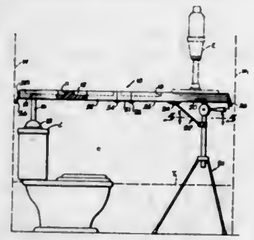
3,357,335
CLAMPING AND SEQUENCING ARRANGEMENT FOR VACUUM PRINTING FRAME
Delbert T. Blatherwick, Woodstock, Ill., assignor to American Photocopy Equipment Company, Evanston, Ill., a corporation of Illinois
Filed Feb. 23, 1965, Ser. No. 434,455
13 Claims. (Cl. 95—76)

1. In a vacuum printing frame apparatus the combination comprising a pair of spaced supports, a printing frame having a base portion and having a glass cover hinged at the rear edge thereof, means for centrally supporting the base portion on the supports for tilting between a horizontal loading position and a vertical exposing position, stops on the supporting structure for defining said positions, clamps at the forward edge of the base portion for clamping the glass cover into a seated vacuum-retaining position, clamping bars mounted for endwise shifting movement along respective sides of the base portion for operating the clamps, a manual operator accessible at the front edge of the base portion for simultaneous shifting of the bars, means for latching the



bars in clamping position and for maintaining them in clamping position as the frame is tilted toward its vertical exposing position, and means responsive to restoration of the frame to horizontal position for releasing the latching means.

3,357,336
PHOTOGRAPHIC WORK TABLE AND PRINT WASHER FOR BATHROOMS
Herbert W. Vendig, 3329 Chamblee Tucker Road, Chamblee, Ga. 30005
Filed May 3, 1965, Ser. No. 452,660
8 Claims. (Cl. 95—89)



1. A photographic work table comprising, in combination, an elongated table top member, suction cup means for supporting one end of said table top member in spaced relation above a horizontal surface, means for supporting the other end of said table top member at a position level with respect to said one end of said table top member, said table top member being formed with an interior chamber, a plurality of rectangular recesses in the top of said table top member for receiving seated therein a like plurality of photographic developing trays, said recesses constituting table top wall openings communicating with said chamber, and means for circulating tap water through said chamber and in heat transfer relation with trays seated in said recesses.

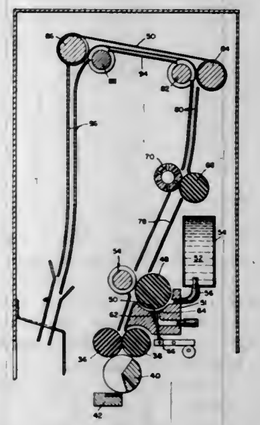
3,357,337
PHOTOGRAPHIC PROCESS AND APPARATUS FOR PRODUCING PHOTOGRAPHIC IMAGES
Edwin H. Land, Cambridge, and Richard J. Chen, Brockton, Mass., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed May 17, 1965, Ser. No. 456,422
15 Claims. (Cl. 95—94)

10. Photographic apparatus for applying a free-flowing processing liquid to one side only of a photographic sheet to impregnate said sheet with a uniformly distributed, predetermined quantity of said liquid within a predetermined time interval, said apparatus comprising, in combination:

cavity means for holding a body of said liquid;

an applicator roll having a smoooth, liquid impervious peripheral surface mounted for rotation with a portion of its periphery located within said cavity means so as to be immersed in said body of liquid;

means for moving said photographic sheet relative to and past said roll with said side of said sheet in contract with said surface to transfer said liquid from said roll to said sheet, the last-mentioned means comprising rotatable means including means providing for minimum contact with said sheet and said applicator roll for supporting said sheet and moving said sheet relative to said applicator roll;



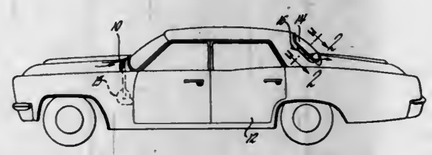
means for rotating said applicator roll and rotatable means at predetermined constant speeds to apply a layer of liquid to said surface of said applicator roll and transfer said liquid to said sheet;

a pair of juxtaposed wringer rolls mounted a predetermined distance from said applicator roll and rotatable means and biased toward one another for applying compressive pressure to said sheet to remove excess liquid from said sheets during movement thereof between said wringer rolls;

means for guiding said sheet from between said applicator roll and rotatable means into the bite of said wringer rolls; and

means for so rotating said wringer rolls as to advance said sheet therebetween at substantially the same rate as said sheet is advanced by said rotatable means.

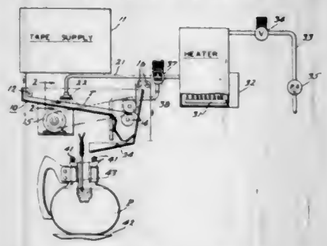
3,357,338
CLOSED CAR VENTILATION
Samuel C. Pollock, Rochester, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 27, 1965, Ser. No. 516,623
4 Claims. (Cl. 98—2)



1. A ventilation system in a closed car having a passenger compartment, an air inlet and an air outlet serving said compartment, an engine ignition switch, a source of

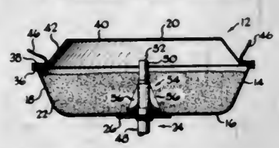
power, a blower, a motor connected through one pole of said ignition switch to said power source and arranged to drive said blower to force air from said inlet to said outlet while said car is not being operated, and a thermostatic switch connected between said ignition switch and said motor and subject to the temperature of said compartment to control said motor.

3,357,339
AUTOMATIC COFFEE MAKER
Michael J. Schaab, Mentor, Ohio, assignor to American Gas Association, Inc., New York, N.Y., a corporation of New York
Filed June 30, 1966, Ser. No. 561,954
10 Claims. (Cl. 99—283)



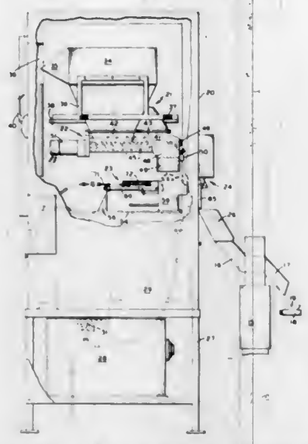
1. Apparatus for brewing coffee from ground coffee disposed in a continuous uniform layer of predeterminant width within an absorbent porous carrier of indeterminant length, comprising a brewing chamber having a moistening station, an extracting station, and a discharge spout, feed means to advance said carrier continuously through said stations in the chamber, spray means at said moistening station to continuously direct hot water into contact with the coffee layer in said carrier across its full width as it is advanced therethrough, at least a portion of said water being absorbed by said coffee-laden carrier and retained in brewing contact with said ground coffee to make liquid coffee during its travel from said moistening station to said extracting station, said extracting station being operable to extract the liquid coffee from said carrier and direct the coffee into the discharge spout.

3,357,340
COFFEE BREWING APPARATUS
William Berns, 4800 Chicago Beach Drive, Chicago, Ill. 60615, and Harvey Ross, 8534 Belmar, Northridge, Calif. 91324
Filed Dec. 8, 1964, Ser. No. 416,869
6 Claims. (Cl. 99—295)



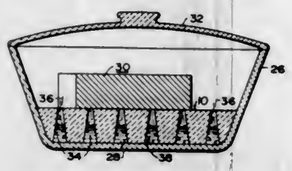
1. For use with the vessel of a percolator-type coffeemaker providing a heating means, a coffee-containing basket having a lower wall of readily deformable material, a stem comprising a hollow elongated tube having a first end adapted to be inserted into said basket and having a second end adapted to be placed adjacent said heating means, means facilitating the penetration of said tube through the lower wall of said basket, a support means associated with said tube intermediate its ends for engaging the undersurface of said basket, and projections extending outwardly from the wall of said tube between said support means and said first end for detachably securing same to said basket after said projections have been passed through the lower wall of said basket.

3,357,341
FRYER SCALE
Maximiliaan Albert Kocken, Stamford, and Harry Stammer, West Haven, Conn., assignors to American Machine & Foundry Company, a corporation of New Jersey
Filed Oct. 20, 1965, Ser. No. 498,557
11 Claims. (Cl. 99—334)



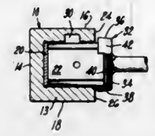
7. A machine for cooking and dispensing portions of a food component such as french fried potatoes comprising:
a source of supply of a food component;
a measuring station for measuring portions of said food supply having substantially the same weights;
means to convey said food portions from said source of supply to said measuring station;
means to measure said portions at said measuring station;
a cooking station;
means to convey said portions from said measuring station to said cooking station;
means to cook said portions at said cooking station;
means to convey said cooked portions away from said cooking station; and
mechanism for timing and coordinating the operation of said conveying means and said measuring means and said cooking means.

3,357,342
FROZEN FOOD COOKER
Jean-Paul L. Dreyfus, Rego Park, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Jan. 18, 1965, Ser. No. 426,219
3 Claims. (Cl. 99—418)



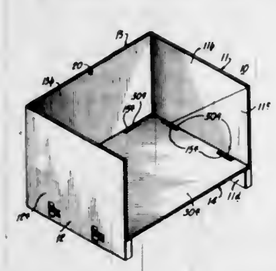
1. An improved cooking utensil comprising a removable plate-like body perforated with tapered holes, said body having substantially parallel top and bottom surfaces and adapted to fit within a saucepan in substantially continuous contact with the inside bottom surface thereof, said holes extending between said top and bottom surfaces.

3,357,343
APPARATUS AND METHOD FOR LOADING SEALS
Franz A. Kneidl, Milford, and Roger D. Park, Sr., West Hartford, Conn., assignors to The Stanley Works, New Britain, Conn., a corporation of Connecticut
Filed Aug. 5, 1965, Ser. No. 477,426
6 Claims. (Cl. 100—2)



3. A method of loading a strapping tool with a stack of nested seals and of retaining the stack of seals at a magazine station on the strapping tool for successively feeding the seals for sealing comprising the steps of forming a clip of nested seals to provide a stack of seals for the strapping tool, magnetically retaining the seals in a stack and while so magnetically retained transferring the stack to the magazine station of the strapping tool, magnetically holding the seals at the magazine station in a stack for successive feeding of the seals for sealing, and terminating the magnetic retention of the seal stack after the stack of seals is magnetically held at the magazine station.

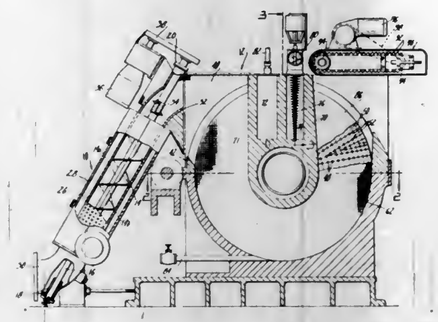
3,357,344
STACKING AND BUNDLING DEVICE
Sherman E. Pate, 7901 N. Kildare Ave., Skokie, Ill. 60075
Filed June 15, 1965, Ser. No. 464,090
1 Claim. (Cl. 100—34)



A stacking device for newspapers and magazines and the like comprising a corrugated box form including a wall section of generally trapezoidal developed form folded to provide double corrugated spaced side walls and interconnecting back wall, said wall section additionally having upwardly extending support flanges along its bottom edges overlying the inner lower wall surfaces thereof to define downwardly opening channels, a bottom section resting on said support flanges and having downwardly extending flanges extending into said channels, said back wall having a cord opening near its top, and cord cutting means extending into said opening.

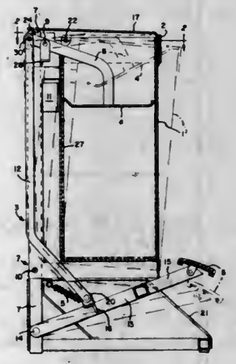
3,357,345
APPARATUS FOR LIQUID REMOVAL
Alan R. Hamilton, Paxton, Mass., assignor to Rice Barton Corporation, Worcester, Mass., a corporation of Massachusetts
Filed Feb. 2, 1965, Ser. No. 429,755
11 Claims. (Cl. 100—158)

1. Liquid removing apparatus comprising
a screw filter with an output zone,
a disc press having
an input zone,
horizontal axes of rotation, and
an output zone above said axes,
a pressure sensor in said input zone operative to vary the rate of rotation of the discs of the disc press to tend to keep constant the pressure in said input zone, and



a shredder above the press output zone, said shredder comprising a multiplicity of teeth rapidly and successively engaging the output of said press output zone.

3,357,346
DEVICE FOR COMPRESSION OF THE CONTENTS OF A CONTAINER
Carl-Gustaf Bjorn Crafoord, Tyreso, Sweden, assignor to AB Bonnierforetagen, Stockholm, Sweden
Filed Oct. 25, 1966, Ser. No. 589,311
Claims priority, application Sweden, Oct. 7, 1964, 12,028/64
6 Claims. (Cl. 100—226)

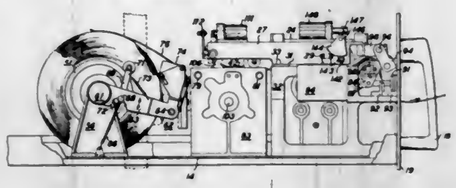


1. A collecting container for used paper towels and like articles comprising a frame, a container pivotally mounted on said frame, an exchangeable inner bag for said container, a pressure plate pivotally mounted on said frame, means for moving said plate to a position above said container and to a position in said container for compression of the container contents, said means including spring means for moving said plate inwardly in said container to bring about the compression of the container contents and means actuated against the action of said spring means to move said plate out of said container.

3,357,347
PAPER FEEDING AND BRAKING MEANS FOR ELECTROGRAPHIC DEVICE

Daniel J. Nesin, Arcadia, Calif., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York

Filed Mar. 17, 1966, Ser. No. 535,076
6 Claims. (Cl. 101—45)



1. An electrographic printer comprising means to form a latent electrostatic image on a recording web material; means to advance said recording web material intermittently after all of the desired electrostatic images have been formed on one position of said recording web material; and means to feed said recording web material from a roll of said recording web material on a reel comprising:

(a) a pair of upright standards,

(b) a shaft having a flange thereon, said flanged shaft journaled for rotation in each of said standards to rotatably support said reel,

(c) a tensioning arm pivotally mounted on at least one of said support standards coaxially with said flanged shaft, said tensioning arm having a first spring normally biasing said arm towards said support standard and into a loop of recording web material between said roll of recording web material and said means to form an image, and

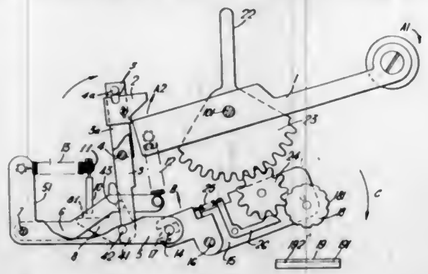
(d) braking means attached to said tensioning arm comprising a two-ended lever braking arm pivotally mounted on said tensioning arm between the outer periphery of said flange and the pivotal mounting of said tensioning arm on said standard, said two-ended braking arm having a braking end and an end opposite from said braking end, said braking end adapted to press against said flange when rotation of said tensioning arm causes said opposite end of said braking arm to engage said standard whereby said braking means prevents the free turning of said flanged shaft and said reel when said tensioning arm is in its normally biased position.

3,357,348
IMPACT ACTUATOR FOR ROCKABLE PRINT WHEELS

Herbert G. Harrison, Enfield, England, assignor to English Numbering Machines Limited, Enfield, England, a British company

Filed May 21, 1965, Ser. No. 457,680
Claims priority, application Great Britain, May 25, 1964, 21,463/64
7 Claims. (Cl. 101—94)

1. In a printing device of the kind comprising a printing wheel, a plurality of printing faces on said printing wheel, and means for setting said printing wheel to obtain a print from a selected one of said printing faces, the improvement comprising: an operating lever, a first lever element, a second lever element, means operatively connecting said printing wheel to said first lever element to effect a print on rotation of said first lever element, first spring means arranged for acting on said second lever element, and for being tensioned by said operating lever, first means for releasably locking said first lever element in position, second means for releasably locking said first lever element to said second lever element, second spring means weaker than said first spring means and arranged for acting on said first lever element in a sense opposed to the action of said first spring means, said second spring means being tensionable by said first lever element when moving under the action of said first spring means, first means for releasing said first locking means

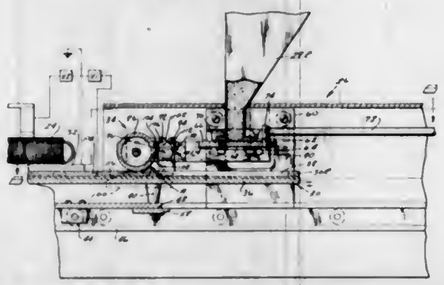


for permitting rotation of said first and second lever elements during a first phase of operation, said first releasing means being operable by said operating lever after it has tensioned said first spring means, and second means for releasing said second locking means for permitting independent movement of said first and second lever elements during a second phase of operation, said second spring means during a third phase of operation returning said first lever element.

3,357,349
RECIPROCATING POWER BED WITH PLURAL REPLENISHING MEANS FOR ELECTROSTATIC PRINTER

Alfred S. Decker, Toledo, George R. Obenshain, Sylvania, and Luther H. Wideman, Toledo, Ohio, assignors to Owens-Illinois, Inc., a corporation of Ohio

Filed Feb. 10, 1967, Ser. No. 615,206
7 Claims. (Cl. 101—114)

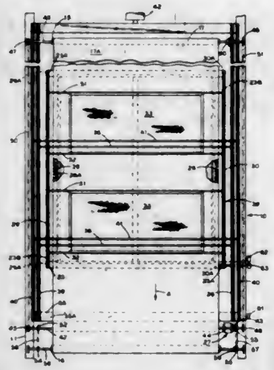


1. In an electrostatic printing apparatus, an elongate powder supply tray adapted to contain a supply of electrostatic printing powder and mounted for longitudinal movement back-and-forth along a path between opposite end limits spaced from each other by a distance less than twice the length of said tray, a pair of powder supply hoppers mounted above said tray at locations symmetrically spaced on opposite sides of the mid point of said path at which both of said hoppers overlie said tray throughout its full range of movement, dispensing means on said hoppers actuable to dispense powder from the hopper on to said tray, a stencil screen mounted above said tray at a location between said hoppers, means for advancing substrate surfaces to be printed in succession into vertical registry with said stencil screen, means operable to electrically impel powder particles from said tray through said screen to a substrate surface in registry therewith, reversible drive means for moving said tray along said path, first means responsive to the arrival of said tray at either end limit of movement for actuating the dispensing means on the hopper adjacent that end limit to dispense a charge of powder from the hopper, second means operable upon the arrival of said tray at either end limit of movement for reversing said drive means to drive said tray toward the opposite end limit of movement, and doctor means located between each hopper and said stencil screen for doctoring the surface of powder in said tray during movement of the tray in a direction from the doctor means toward the stencil screen.

3,357,350
METHOD AND APPARATUS FOR SCREEN PRINTING WHILE WORK IS INDEXED

Matthew L. Jaffa, 92 Clark Court, Rutherford, N.J. 07070, and David Jaffa, 38—26 Allwood Place, Fair Lawn, N.J. 07410

Filed May 28, 1965, Ser. No. 459,799
13 Claims. (Cl. 101—123)



1. A method of screen printing successive designs on a continuous strip of material comprising the steps of:

positioning a screen having a stenciled portion with a leading and trailing well portion on opposite sides thereof and an associated movable squeegee onto the material to be printed whereby said squeegee is adapted to be disposed in the leading well portion of the screen, and

printing and indexing said material simultaneously by moving both the screen and the material to be printed in the same direction and at the same speed at predetermined amounts relative to said associated squeegee acting on said screen, and

moving said squeegee during said printing and indexing step in the same direction as the travel of said moving screen and material whereby said moving squeegee forces the color in the leading well of the moving screen through the stenciled portion thereof and onto the material moving with said screen and squeegee, and

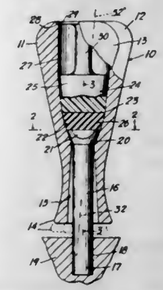
including the step of moving the screen and material at a rate of speed which is greater than the speed of the squeegee moving in the same direction during the indexing and printing step.

3,357,351
HANDGRIPS FOR RUBBER STAMPS

Whitney K. Munson, 192 Comanche Drive, Oceanport, N.J. 07757

Filed Mar. 14, 1966, Ser. No. 534,193
5 Claims. (Cl. 101—406)

1. A handgrip for rubber stamps, said handgrip comprising an elongated tubular body portion having a bore in the upper end thereof, means mounted in said bore forming a socket in the lower end of the bore, a support and coupling rod including a head arranged and operating in said socket, the rod having a protruding coupling end, resilient means in said socket above said head for normal support of the head in seated position in the socket, said first named means comprising a part forming a check



engaging said resilient means in limiting movement thereof in one direction, and the body portion having, at the lower end thereof, a large diameter bore encircling said rod to facilitate circumferential angular positions of the handgrip with respect to the longitudinal axis of said rod.

3,357,352
PAPER BASE PLANOGRAPHIC PRINTING PLATES

Henry P. Williams, Jr., Combined Locks, and Donald A. Rosenbohm and William H. Page, Appleton, Wis., assignors to Appleton Coated Paper Company, Appleton, Wis., a corporation of Wisconsin

No Drawing. Filed Aug. 12, 1965, Ser. No. 479,343
13 Claims. (Cl. 101—462)

1. A planographic printing plate comprising a paper base having applied directly onto at least one surface a dried and insolubilized coating layer thereon derived from a single coating application and providing a planographic printing surface, said coating being formed from an aqueous dispersion of from about 5 to 10 parts by weight of a protective colloid selected from the group consisting of polyvinyl alcohol and hydroxyethylated starch; from about 0.3 to 10 parts by weight of a mixture containing from about 55 to 85 parts by weight ethyl acrylate, from about 45 to 20 parts by weight acrylonitrile and from about 0.5 to 4 parts by weight of methacrylic acid; from about 18 to 60 parts by weight of inert mineral pigment; from about 0.2 to 5 parts by weight of a resin material selected from the group comprising melamine formaldehyde resin alone and melamine resin plus melamine formaldehyde resin; and from about 1.5 to 30 parts by weight of a mixture containing from about 1 to 4 parts of zinc acetate and a salt selected from the group consisting of 1 part of aluminum chloride, about 1.2 part of ferric chloride and about 1.2 part of chromium chloride.

3,357,353
VAPOR THERMOGRAPHY RECORDING PROCESS AND RECORDING MEMBER USED THEREIN

Leon A. Teuscher, Webster, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York

Filed Jan. 3, 1966, Ser. No. 518,091
12 Claims. (Cl. 101—469)

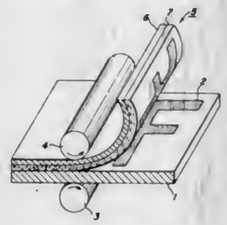
8. A vapor thermography recording process comprising:

(a) applying visible intelligence to an original sheet with colored material containing a transferable heat volatilizable color reactive reagent;

(b) positioning said original sheet in contact with a master member;

(c) transferring at least a portion of said volatilizable color reactive reagent to the surface of said master member in contact with said original sheet;
(d) separating said original from said master sheet; vapor thermography recording member in contact with said surface of said master sheet, said thermography recording member comprising a substrate treated with a color reaction partner for said volatilizable color reactive reagent and overcoated with said thermosealing barrier layer, said layer being permeable by vapors of said reagent at the volatilization temperature thereof; and
(f) applying heat energy to said master sheet and said thermosealing barrier layer to evaporate and transfer at least a portion of said transferable heat volatilizable color reactive reagent from said surface of said master through said thermosealing barrier layer to said color reaction partner on said substrate thereby forming an intensely colored reaction product and rendering said thermosealing barrier layer impermeable to vapors of said volatilizable reagent.

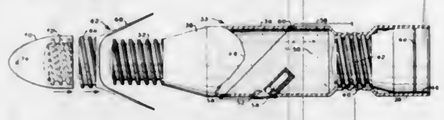
3,357,354
REPRODUCTION METHOD
Carl Brynko, West Webster, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Sept. 3, 1965, Ser. No. 484,806
6 Claims. (101—472)



1. An imaging process comprising the steps of:
(1) providing a receiving sheet having fixed on the surface thereof a substantially uniform layer of capsules containing a solvent;
(2) bringing said receiving sheet into contact with an original sheet having an image thereon, said image comprising a material at least partially soluble in said solvent;
(3) pressing said capsule bearing face of said receiving sheet against said image so as to rupture said capsules, releasing said solvent which at least partially dissolves said image material whereby a portion of said image material is transferred to said receiving sheet; and,
(4) stripping said receiving sheet from said original sheet.

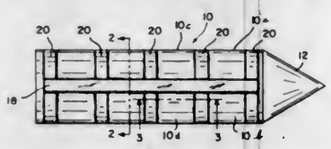
3,357,355
BLASTING AGENT PRIMER AND TUBULAR EXPLOSION TRAIN
Gale S. Roush, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed June 13, 1966, Ser. No. 556,964
10 Claims. (Cl. 102—24)

1. A primer cartridge comprising in combination:
(a) an elongated tubular body closed at one end by a male threaded section of reduced diameter;
(b) a male threaded tubular closure similar to that of (a) threaded axially and inwardly into a female threaded section in the other end of said body, the external threads of said tubular closure forming internal female threads adapted to receive a threaded male section conforming to that of (a);
(c) a recess in the midsection of the side of said body of (a) for a detonating cap, said recess extending obliquely toward the female threaded end of said tubular body and including a thimble therein sealed to said body, and



(d) a pair of holes in opposite walls of said body of (a) for passing lead wires thru said body and connecting same with a cap in said recess of (c), one of said holes being on the same side of said body as said recess and intermediate said recess and the threaded section of (a).

3,357,356
EXPLODING MISSILE CASE
Elton L. Bischoff, Wayne, Pa., assignor to the United States of America as represented by the Secretary of the Air Force
Filed July 19, 1961, Ser. No. 126,486
1 Claim. (Cl. 102—49.5)

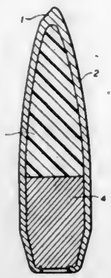


An exploding missile case structure for housing a propulsion system propelling a pay load into flight after which the case structure is explosively divided into segments of substantially the same radar reflective characteristics as the pay load, said case structure comprising: a hollow cylindrical case detachably joinable at one end to a pay load and having a plurality of longitudinal cavities formed by inwardly dimpled longitudinal troughs in said case and sealed with closure strips continuous welded across the opening of said longitudinal troughs, a plurality of circumferential cavities formed by inwardly dimpled circumferential troughs in said case joining said longitudinal troughs and sealed with closure strips continuous welded across the opening of said circumferential troughs, said longitudinal and said circumferential cavities being hermetically sealed from within and without said case and outlining said case into a plurality of arcuate segments at least a portion of which have substantially the same radar reflective characteristics when divided as that of the pay load, and explosive in said cavities for dividing said case into the outlined arcuate segments at a predetermined time after the pay load has separated from said case in flight.

3,357,357
RIFLE BULLET
Günther Voss, Madrid, Spain, assignor to Instituto Nacional de Industria-Centro de Estudios Tecnicos de Materiales Especiales "Ini-Cetme," Madrid, Spain, a corporation of Spain
Filed Aug. 3, 1965, Ser. No. 476,924
Claims priority, application Germany, Aug. 4, 1964, J 26,334
6 Claims. (Cl. 102—92.3)

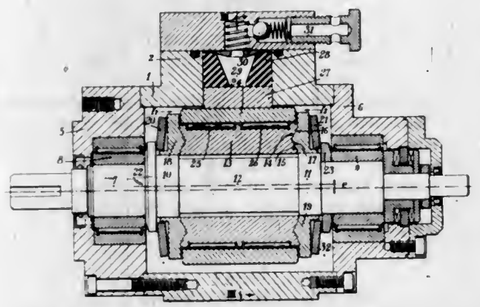
1. A substantially smooth-shaped rifle bullet stabilized by rotation, comprising
a jacket extending at least over the rear part of the bullet,

a core surrounded at least at its rear part by said jacket, and



a tip of asymmetric shape disposed in front of said bullet.

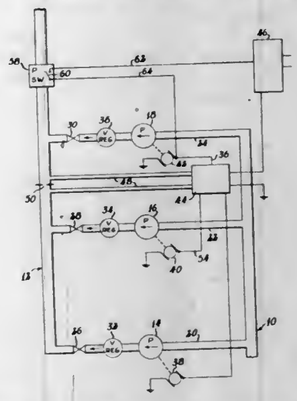
3,357,358
HYDRAULIC PISTON PUMPS
Alexis Rateau, 10 Ave. Elisee Reclus, Paris, France
Filed Oct. 22, 1965, Ser. No. 501,575
Claims priority, application France, Jan. 18, 1965, 2,321, Patent 1,431,741
4 Claims. (Cl. 103—5)



1. A hydraulic piston pump comprising a rotary shaft having an eccentric portion, a plurality of radial cylinders disposed at spaced angular intervals about said eccentric portion of said rotary shaft, an intermediate ring member surrounding with a certain clearance said eccentric portion and controlling the reciprocating movements of the pistons slidably mounted in said radial cylinders, said ring member having formed on each one of its two end faces frustoconical cam surfaces adapted to co-act with frustoconical cam surfaces of opposite inclination formed respectively on the registering inner faces of two annular members surrounding said eccentric and concentric thereto, said annular members being disposed on either side of said ring member, and resilient means constantly urging said annular members towards each other to return said ring member to its maximum eccentric position, said ring member being adapted, by pushing said annular members outwards through the medium of the pressure exerted on the co-acting inclined cam surfaces, to resume more or less reduced eccentric positions, down to zero throw.

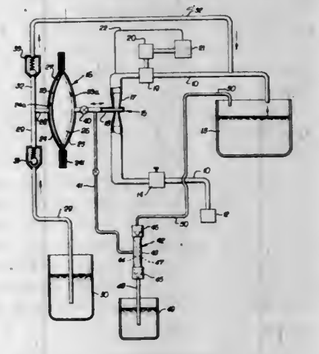
3,357,359
COMBINATION FIRE AND DOMESTIC WATER SYSTEM
Robert F. Schaub, La Grange, Ill., assignor to Syncroflo, Inc., Downers Grove, Ill., a corporation of Illinois
Filed July 19, 1965, Ser. No. 473,036
7 Claims. (Cl. 103—11)

1. A tankless pumping system for supplying water under both normal and emergency conditions, said system comprising a water inlet conduit, a water supply conduit, first pump means and second pump means connected in parallel between said water inlet conduit and said water supply conduit, said first pump means providing pressurized water to said water supply conduit under normal conditions while said second pump means provides water to said water supply conduit only under emergency conditions, a flow indicator including an orifice in said water supply line and being positioned intermediate the connections of said first and second pump means to said



water supply conduit, means responsive to said flow indicator when said indicator determines the existence of emergency flow conditions so as to operate said second pump means and provide sufficient fluid to said water supply conduit, means for sensing the existence of emergency pressure conditions in said fluid supply line, and means responsive to said sensing means for operating said second pump means when said sensing means indicates the existence of emergency pressure conditions in said water supply conduit.

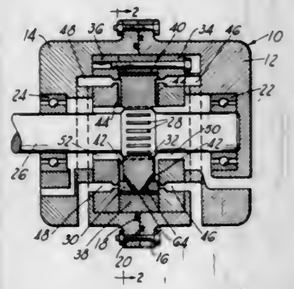
3,357,360
HYDRAULIC PUMPING SYSTEM
George L. Borell, Anaheim, Calif., assignor to Purex Corporation, Ltd., Lakewood, Calif., a corporation of California
Filed Nov. 22, 1965, Ser. No. 509,089
9 Claims. (Cl. 103—44)



1. A fluid pumping system comprising a pump having a chamber and a fluid impermeable reciprocally displaceable pumping element having a freely floating portion extending within said chamber to form fluid tightly separated zones therein, conduit means connected to the chamber zone at a first side of said element for conducting fluid to and from the chamber, means forming a fluid passage containing a restricted eductor connected to the chamber zone at a second side of said element to cause displacement

thereof in one direction in response to reduced pressure communicated by virtue of fluid flow through the eductor, and means for intermittently closing said fluid passage at the discharge side of the eductor to the extent of causing transmission intermittently of positive pressure from the eductor to said chamber and resultant pumping displacement of said element in an opposite direction.

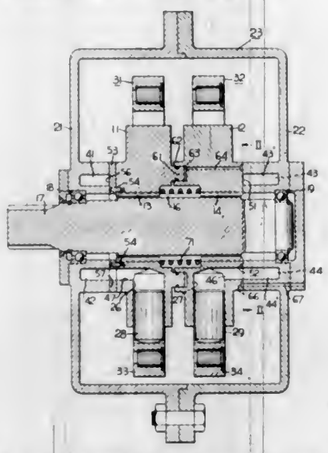
3,357,361
HIGH VELOCITY PUMP
Robert W. Scott, South Bend, Ind., assignor to The Bendix Corporation, a corporation of Delaware
Filed Oct. 21, 1965, Ser. No. 500,415
4 Claims. (Cl. 103—84)



1. A high velocity pump comprising:
a housing having a chamber therein with inlet and outlet ports leading from said chamber to the exterior of said pump;
a shaft rotatably supported by said housing;
a port plate means operatively connected to said housing in said chamber, said port plate means comprised of two axially spaced stators each having a central annular passage connected to said inlet port and another annular passage radially spaced from said central annular passage which another annular passage is connected to said discharge port whereby fluid flow is directed from the center of said chamber to the radial extremities thereof thereby transferring heat of operation to the outer extremities of the housing where it may be more readily dissipated; and
a pump means operatively connected to said shaft between said stators, said pump means having a plurality of radial passages overlying said central annular passage of each of said spaced stators and another plurality of passages overlying each of said another annular passages on both sides of said rotor which passages are connected by a surface of decreasing depth from said plurality of radial passages overlying said central annular passage to said plurality of passages overlying said another annular passage to draw fluid from said central annular passage of each of said stators as said pump means is being rotated by said shaft and compress the fluid while directing it radially outwardly to deliver the compressed fluid to the another annular passage which is the outermost passage of said stators.

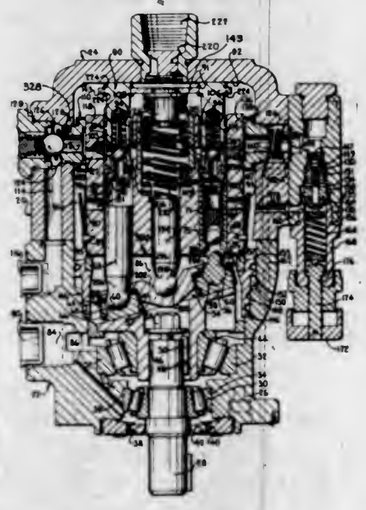
3,357,362
HYDROSTATIC POWER UNIT
Bobby J. Orr, Springfield, Ill., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed June 17, 1966, Ser. No. 558,377
2 Claims. (Cl. 103—161)

1. In a hydrostatic power unit of the type having a housing, a pair of radial piston blocks within the housing, a shaft extending through the blocks and secured thereto for rotation therewith and for axial shifting movement relative thereto and to each other, high and low pressure passages for conveying fluid to and from each of the blocks and cooperating axial contact annular sealing surfaces on the housing and axially remote sides of the blocks, the improvement comprising:



means for urging said blocks in axially opposite directions to insure sealing engagement of said sealing surfaces including
a hydraulic actuator mechanism axially interposed between said blocks and operative when supplied with pressure fluid to urge said blocks in axially opposite directions
passage means placing said actuator in fluid communication with one of said high pressure passages.

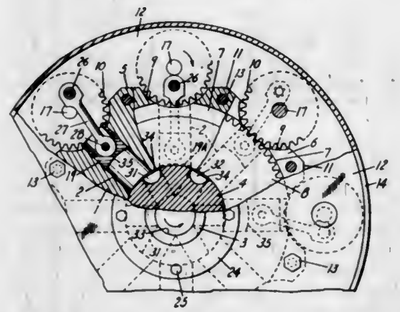
3,357,363
HYDRAULIC MACHINE
Robert E. Raymond, Zanesville, Ohio, assignor to International Basic Economy Corporation, New York, N.Y., a corporation of New York
Filed Nov. 15, 1966, Ser. No. 594,350
23 Claims. (Cl. 103—173)



1. A hydraulic machine comprising, in combination, housing means; cam means rotatably mounted in said housing means; cylinder barrel means axially shiftably

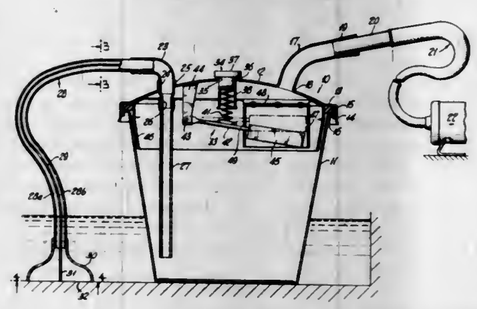
mounted in said housing means and including cylinder means; piston means mounted for reciprocation in said cylinder means and including a piston foot; piston shoe means mounted on a ball shaped portion of said piston foot and including a lower bearing portion for engagement with said cam means, an upper multiple segment ring bearing means overlying the upper portion of said piston foot and retaining means mounted in force transmitting relationship over said multiple segment ring bearing; shoe casing means surrounding said piston shoe means; sealing means separating the interior of said housing means into a cooling chamber and an intake chamber; and pressure relief valve means on said cylinder barrel means for releasing pressurized fluid from said cooling chamber to said intake chamber responsive to shifting of said cylinder barrel means.

3,357,364
FLUID DISPLACEMENT DEVICES HAVING RADIALLY ARRANGED CYLINDERS
Robert L. Ellis, Constantine, Mich., assignor to Ward Aero, Inc., Three Rivers, Mich.
Filed Sept. 30, 1965, Ser. No. 491,705
18 Claims. (Cl. 103—174)



1. In a fluid displacement device having a plurality of circular cylinders with their axes arranged radially around a shaft at equi-angularly spaced points,
a body in which said cylinders are formed and having a central shaft and valve opening formed therethrough and intersecting the inner ends of said cylinders throughout the circumference of the cylinders,
a cylindrical valve body relatively rotatably mounted in sealing fit within said opening at the inner ends of said cylinders and directly connected to said shaft for rotation with the shaft,
a pair of sun gears located one on each side of said first body and connected to said valve body for rotation therewith,
a pair of end members positioned on the axially outer sides of said sun gears from said first body and projecting radially therebeyond,
a plurality of bolts extending through radially outer portions of said first body, in the segmental portions of the body between said cylinders and securing said end members to the ends of said first body,
the end faces of said first body having central circular recesses formed therein receiving said sun gears, and arcuate recesses formed in their periphery between said segmental portions,
stud shafts carried by said end members in opposed pairs located radially outwardly of each of said cylinders,
pinions rotatably mounted on said stud shafts and meshing with said sun gears,
crank pins carried by the pairs of pinions at the end of each cylinder and extending transversely thereacross, connecting rods pivoted on said crank pins and extending into said cylinders,
pistons reciprocably positioned in said cylinders and angularly tiltably connected to said connecting rods to extend to closely adjacent the surface of said valve body in the radially inwardly rotated positions of said crank pins on said pinions,
and means within said shaft and said valve body forming fluid inlet and outlet passages extending axially of the shaft with branch passages from each opening alternately to the surface of said valve body at equi-angularly spaced positions around the valve body, there being at least three inlet branch passages and an equal number of outlet branch passages in said valve body.

3,357,365
PNEUMATIC WATER PUMP
Marcel J. E. Golay, 116 Ridge Road, Rumson, N.J. 07760
Filed Sept. 20, 1965, Ser. No. 488,404
1 Claim. (Cl. 103—236)

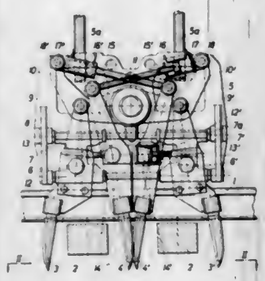


A vacuum operated liquid pump comprising a cover adapted to be removably carried by a container for receiving and holding the liquid being pumped, tubular means carried on the upper side of said cover and communicating with the underside thereof, said tubular means adapted to receive a vacuum conduit for evacuating said container, a water inlet conduit on said cover, an air inlet valve mounted on said cover, a float carried by and movable relative to said cover, and mechanical means directly coupling said float to said valve, said float and mechanical means storing energy as water is drawn into said container and rises to a level engaging said float, the weight of said float when the water level in the container is below said float holding said valve in the closed position, said vacuum being the sole sealing force for said cover and said vacuum sealing said cover to said container and drawing water into said container through said water inlet conduit, and said water level upon reaching the level of the float reacting therewith to effect the storage of energy until the force exerted exceeds the force of said vacuum holding the valve in the closed position whereupon said valve will be forced open rapidly dissipating the stored energy and thereby terminating the pumping operation and enabling removal of said cover for disposal of the pumped water.

3,357,366
TRACK TAMPING MACHINE
Franz Plasser and Josef Theurer, both of Johannesgasse 3, Vienna, Austria
Filed Feb. 17, 1966, Ser. No. 528,277
Claims priority, application Austria, Mar. 9, 1965, A 2,113/65; June 24, 1965, A 5,759/65
28 Claims. (Cl. 104—12)

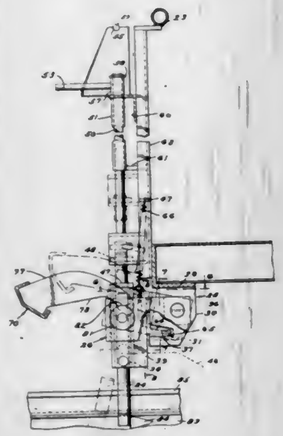
1. A machine for tamping ballast underneath a track including rails supported on a plurality of spaced ties resting on the ballast, said machine comprising

(1) a carriage frame; and
(2) a track tamping assembly mounted on said frame, the assembly including
(a) two pairs of opposed tamping tools, said pairs of tools being spaced from each other in the direction of elongation of the track, the spacing between said pairs of tools being such that the tools of each pair, which are adjacent to each other, are at a smaller distance from each other than the distance between adjacent ones of said



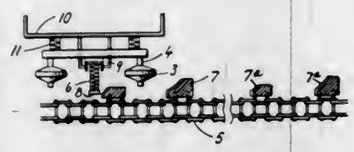
ties whereby said adjacent tools may be immersed in the ballast between said adjacent ties, the opposing tools of each pair being arranged for immersion in the ballast adjacent one of said ties, with the one tie positioned between the opposing tools, and for reciprocation in the direction of elongation of the track, and
(b) a common drive for said pairs of tamping tools.

3,357,367
DRIVE PIN POSITION CONTROL MECHANISM FOR FLOOR TRUCK TOW LINE SYSTEMS
Walter C. Etheridge, Birmingham, and Clarence A. Dehne, Garden City, Mich., assignors to Jervis B. Webb Company, Detroit, Mich., a corporation of Michigan
Filed Nov. 28, 1962, Ser. No. 240,665
19 Claims. (Cl. 104—172)



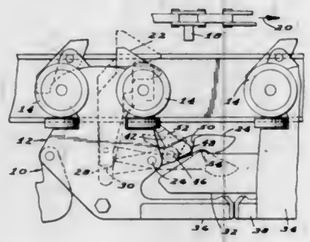
1. Mechanism for controlling the relative position between the drive pin of a floor truck and the drive member of a tow line comprising drive pin supporting means carried by the floor truck for mounting the drive pin for movement between a lower driving position in which the drive pin is engageable by a drive member and a higher driving position in which the drive pin is ordinarily not engageable by a drive member, means urging the drive pin to said higher position, a bumper, means mounting the bumper on the front of the truck for movement between an extended position and a retracted position, and drive pin positioning means operable by movement of the bumper for holding the drive pin in the lower normal driving position thereof when the bumper is in its extended position and for permitting normally urged movement of the drive pin to the higher position thereof when the bumper is moved to its retracted position.

3,357,368
ARRANGEMENT IN TRANSPORT SYSTEMS FOR CONNECTING TRUCKS OR THE LIKE
Per Borje Fonden, Linkoping, Sweden, assignor to Borgs Fabriks, AB, Norrkoping, Sweden
Filed Sept. 27, 1965, Ser. No. 490,459
Claims priority, application Sweden, Sept. 29, 1964, 11,673/64
6 Claims. (Cl. 104—172)



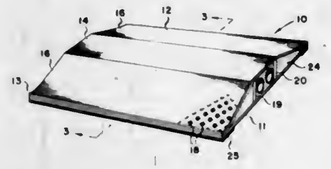
1. An arrangement in transport systems for connecting trucks that are guided along tracks, to a driving device, said device including a chain arranged along the track, the truck being provided with a driver that consists of a coil spring movable in a number of directions, said driver being so arranged that upon encountering a resistance it will spring away from its engagement with the chain and thus release the truck from its drive connection to the chain, and a projection on the chain normally engaged by the driver until the driver encounters said obstruction.

3,357,369
ANTI-BACKUP DEVICE FOR RELEASING DOG TROLLEY
Clarence A. Dehne, Orchard Lake, Mich., assignor to Jervis B. Webb Company, a corporation of Michigan
Filed Oct. 21, 1965, Ser. No. 499,601
8 Claims. (Cl. 104—172)



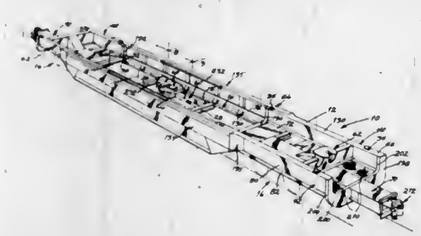
1. A conveyor carrier of the type which is movable along a supporting track by engagement of a pusher of a propelling member with a driving dog on the carrier and which is provided with means for moving the driving dog between driving and non-driving positions including a forwardly projecting dog releasing member mounted for movement from normal to a released position in response to engagement with an object in the path of carrier movement, characterized by anti-backup means mounted on the dog releasing member and engageable with the carrier supporting track when the dog releasing member is in its said released position.

3,357,370
PLASTIC SAFETY RAMP
George J. Walkey, Burbank, Calif., assignor to Lockheed Aircraft Corporation, Burbank, Calif.
Filed July 1, 1966, Ser. No. 562,196
6 Claims. (Cl. 104—275)



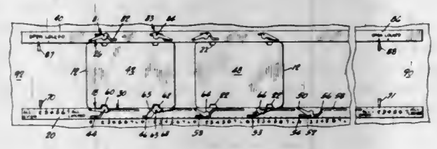
1. A ramp comprising:
a base;
a top cover means connected to said base and enclosing an area therebetween, said top cover means having at least one inclined surface diverging from said base;
support means disposed between said base and said top cover means for supporting loads on said top cover means;
conduit means disposed between said base and said top cover means for receiving elements therethrough; and
filler means disposed throughout the area enclosed between said base and said top cover means, and wherein said filler means is a non-flammable, high resistance, high strength-to-weight material.

3,357,371
CONTAINER WELL CAR
Jack E. Gutridge, Dyer, Ind., assignor to Pullman Incorporated, Chicago, Ill., a corporation of Delaware
Filed Apr. 12, 1965, Ser. No. 447,340
13 Claims. (Cl. 105—366)



1. A railroad car for handling freight containers comprising:
a car frame riding on spaced railroad car trucks,
said frame being formed to define a depressed freight container support well intermediate said trucks,
said well having an open top and an unobstructed container receiving space between the trucks, said space being proportioned the width of the car to support one or more containers lying in end to end relation in said well at a level disposing the bottom portion of the container adjacent the axle level of said trucks,
said frame over each truck including container load support means for supporting an end located container thereon astride the respective trucks and above the well,
a pair of continuous structural support members positioned on either side of said well and extending longitudinally of the car,
said structural support members forming part of said frame,
coupler force transmitting means for making like ends of said structural support members fast to each other and for transmitting forces acting longitudinally of the car to said structural support members,
whereby said structural support members serve as columns acting in tension and compression to transmit said forces longitudinally of the car on either side of said well,
said coupler force transmitting means including a pair of longitudinally spaced end located stub center sill structures above the well bottom, each center sill structure being on each respective end of the well and extending over a respective car truck,
said structural support members having their upper surfaces at a level below the upper portion of the container and above the lower portion of the container when stored in the well to enable removal of the container by lifting the container by crane means or the like, and the said structural support members of the frame defining wall structures extending substantially the entire length of the car,
support means in the well extending between the wall members,
said wall structures being spaced apart from one another at greater distances in the area of the well than in the area of the trucks allowing containers of the same width to be disposed between the wall structures on said support means in the area of the well or atop the wall structures in the area of the trucks.

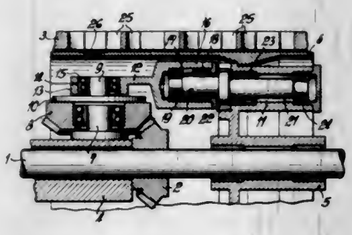
3,357,372
CARGO HANDLING SYSTEM
Howard E. Bader, Long Beach, Calif., assignor, by mesne assignments, to McDonnell Douglas Corporation, Santa Monica, Calif., a corporation of Maryland
Filed July 2, 1963, Ser. No. 292,416
2 Claims. (Cl. 105—369)



1. In combination with a cargo handling system wherein a plurality of load supporting pallets are to be employed, said pallets are to be placed in an in-line arrangement and are to be held against movement, a latching assembly to effect the non-movement of the pallets comprising:
a series of first latches and a series of second latches which are capable of cooperating to hold said pallets against movement, each of said pallets cooperating with one of said first latches and one of said second latches;
a cam being movable to at least a first and a second position, said cam having means to sequentially op-

erate said first and second latches, with said cam in said first position one of said first latches is capable of being engaged with a pallet while said second latches and the remaining first latches maintain a non-engageable position with said pallets, with said cam in said second position one of said first latches and one of said second latches cooperate to engage a pallet and another first latch is positioned to be engageable with another pallet.

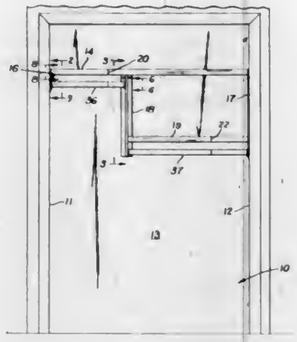
3,357,373
KNEADING MACHINE FOR KNEADING PLASTIC MATERIAL
Klaus Fischer, Stuttgart, Germany, assignor to Werner & Pfleiderer, Stuttgart-Feuerbach, Germany, a company of Germany
Filed Aug. 11, 1965, Ser. No. 478,916
Claims priority, application Germany, Sept. 26, 1964, W 37,616
6 Claims. (Cl. 107—9)



1. A driving device for driving the kneading drum of a kneading machine having a rotary apertured outer drum and an inner kneading drum disposed within the outer drum coaxially therewith, said device comprising a drive shaft, a kneading drum, a first mounting means supporting the kneading drum rotatably and axially displaceably on said shaft, a second mounting means supported by the shaft freely rotatably about the same, a support member supported by the second mounting means rotatable about an axis normal to said shaft, a transmission means transmitting a rotation of said shaft to said support member, a pivot pin supported on the support member eccentric of and parallel to the rotational axis thereof, said first mounting means including a bearing means eccentric of said shaft, a connecting rod pivotally connected at one end to said eccentric pin and having at its other end a bearing means, and a crankshaft having one crank arm journaled in the bearing means of the first mounting means and a second crank arm journaled in the bearing means of the connecting rod, whereby a rotation of said shaft imparts a combined axial and rotational reciprocating motion to the kneading drum.

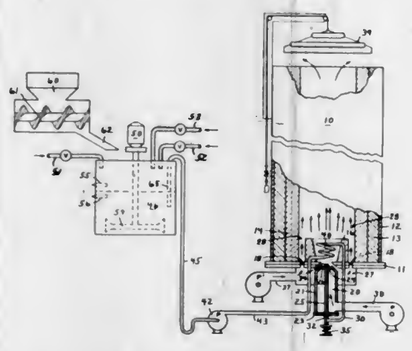
3,357,374
WARDROBE SHELF AND HANGER POLE ASSEMBLY
Lester L. Smith, Peoria, Ill. (P. O. Box 68, Princeville, Ill. 61559), and Frank E. Randall, Peoria, Ill.; said Randall assignor to said Smith
Filed Feb. 28, 1966, Ser. No. 530,583
8 Claims. (Cl. 108—29)

1. A wardrobe shelf and hanger pole assembly for mounting on the walls of closets and the like and comprising, in combination, a pair of wall plates of different vertical dimensions adapted to be secured to opposed walls, an intermediate wall bracket of substantially the same vertical dimension as the larger wall plate and mountable on another wall to project between said wall plates in substantially parallel relationship thereto, first shelf means mounted at the upper regions of said wall plates and bracket and supported thereby, a hanger pole extending between and supported by the smaller wall plate and said wall bracket in spaced and substantially parallel relationship to said first shelf means, a second shelf means extending between and supported by said



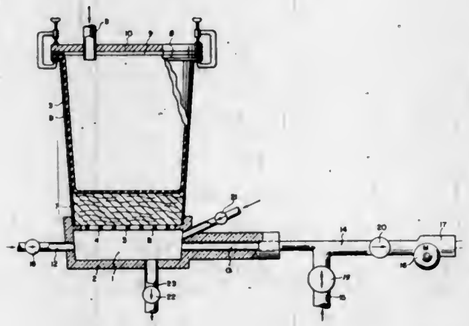
wall bracket and the larger wall plate in spaced and substantially parallel relationship to said first shelf means, and a hanger pole extending between and supported by the wall bracket and the larger wall plate in spaced and substantially parallel relationship with said second shelf.

3,357,375
INCINERATION OF INDUSTRIAL WASTE, AND APPARATUS
John Warren Brophy, Royal Oak, Mich., assignor to Prenco Manufacturing Company, Royal Oak, Mich., a corporation of Michigan
Filed Aug. 17, 1965, Ser. No. 480,428
12 Claims. (Cl. 110—7)



1. The process of pyro-decomposing a fluid waste material to convert the same into a gaseous fully decomposed reaction product, which comprises completely dispersing with primary air, into the base of a vertical cylindrical elongated space defined in part by refractory walls, the axial length of which space has a 5-to-1 ratio to its diameter, a fluid waste material including a combustible component; initiating the combustion of the combustibles of the air-borne dispersed fluid waste material upon its entry into said space, thereby forming a burning aeroform stream; controlling the combustion to maintain a maximum temperature within the range 2800–3000° F.; maintaining the aeroform contents of the elongated space at a superatmospheric pressure consistent with a desired retention time for the burning stream; surrounding the burning stream with a mantle of secondary air moving in an axial direction only and in the same direction as that of and coextensively with said stream thereby protecting said refractory walls from waste material impingement; and completing the pyro-decomposition by mixing the secondary air of said mantle, in the uppermost zone of said space, with said burning stream whereby to decompose said waste material and to convert the same into a gaseous reaction product free from smoke, odor and visible ash.

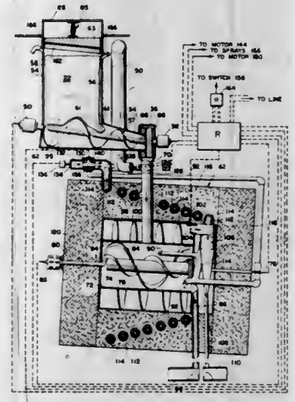
3,357,376
WASTE INCINERATOR
Bernard Miller, Glenshaw, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Feb. 27, 1964, Ser. No. 347,886
4 Claims. (Cl. 110—8)



1. In apparatus for reducing ordinary combustible waste to a smokeless and odorless gas and ash with no combustibles remaining, and including a combustion chamber: a waste material storage bin having an outlet opening directly into said combustion chamber, said bin having an inlet for accepting loose waste material while its outlet remains open directly to said combustion chamber, means in said bin for compacting said loose waste material into an imporous mass and for advancing said mass to said combustion chamber for burning, the last-mentioned means comprising an inflatable member, and means for introducing compressed fluid for inflating said member.

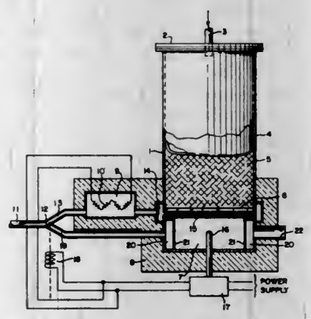
3,357,377
COMBUSTION OF ORGANIC WASTE MATERIAL
Charles F. B. Stevens, Pierrefonds, Quebec, Canada, assignor to Pulp & Paper Research Institute of Canada, a corporation of Canada
Filed Sept. 3, 1965, Ser. No. 484,861
18 Claims. (Cl. 110—8)

1. Apparatus for burning to a very high degree of completeness material such as garbage which normally has a low average oxygen demand but at times has inclusions with a very high oxygen demand and which during heating evolves gas-phase substances while leaving solid-phase substances which on combustion evolve further gas-phase substances, comprising means for comminuting any solid components of said material, means for thereafter feeding said material blobwise at a substantially constant overall rate into a first chamber, means for preheating air, means for introducing preheated air turbulently into contact with said material within said chamber at a constant rate sufficient to give partial pressure of oxygen in predetermined excess over the maximum stoichiometric oxygen demand of any inclusion, said feeding means including means for conducting each successive blob of said material into contact with a preheated surface within said first chamber, means for scraping said surface bare at frequent intervals, means for heating said surface to preheat it and to transfer heat to said material at a rate sufficient, in view of the rate of feed and also in view of the heat transferred to said material by all other sources, to evolve gas-phase substances from and thus reduce cohesiveness of said blobs so rapidly that the action of said scraping means and the turbulence of said current of incoming air is effective to disperse said material in



particulate form in said air without accumulation of non-dispersed material within said chamber, a second chamber means for transferring said gas-phase substances and said air as a combined stream from said first chamber to said second chamber, said second chamber including means for retaining this combined stream in turbulent heated condition to complete the combustion thereof to said high degree in said second chamber, and means for retaining said particulate material in turbulent contact with air in the heated first chamber until the solid-phase substances thereof also are burned to said high degree of completeness.

3,357,378
DOMESTIC INCINERATOR
Franklin S. Malick, Monroeville, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 22, 1965, Ser. No. 501,362
3 Claims. (Cl. 110—8)



1. In an incinerator device having a combustion chamber (7) surmounted by a trash bin (1), and means (4, 6) in the trash bin for compacting trash (5) therein into an imporous plug of oxidizable material with its bottom

face constituting an upper wall of the combustion chamber:

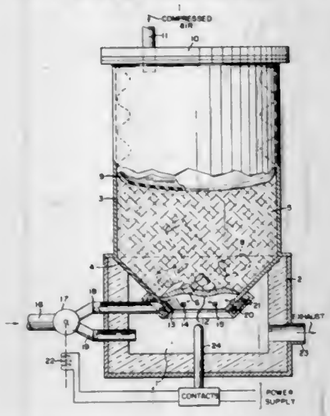
(a) an air supply pipe (11),

(b) first air conveying means (13, 9, 14, 15) for delivering air into the top of the combustion chamber (7) onto the bottom face of the plug of trash (5) to increase rate of burning thereof,

(c) second air conveying means (19, 20, 21) for delivering air into the bottom of the combustion chamber (7) to decrease rate of burning of the bottom of the plug of trash (5), and

(d) air switching means (12, 18, 17, 16) including a selector valve (12) and temperature-responsive actuator means (16, 17, 18) therefor operative to open one or the other of the first and second air conveying means to the air supply pipe (11) according to temperature changes in the combustion chamber (7).

3,357,379
DOMESTIC INCINERATOR APPLIANCE
Sumner K. Wiley, Jr., Hampton, N.H., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 22, 1965, Ser. No. 501,546
6 Claims. (Cl. 110—8)



1. An improvement in an incinerator device for reducing oxidizable waste material to a clear odorless gas with a minimum of large solid remains which includes:

means (2) defining a combustion chamber (1);

waste compacting means (3, 4, 9, 10, 11) to compact trash which includes tin cans (7, 8) into a plug (5) and to introduce such plug to said combustion chamber (1) for burning; and

air supply means (16) for said combustion chamber;

wherein the improvement comprises temperature regulating means (24, 22, 17, 18, 19, 20, 13) including a temperature sensor (24) for maintaining temperature in said combustion chamber (1) during burning of the plug (5) above the allotropic transformation temperature of the material of said tin cans, whereby oxidation and brittleness of such cans is enhanced to facilitate crumbling.

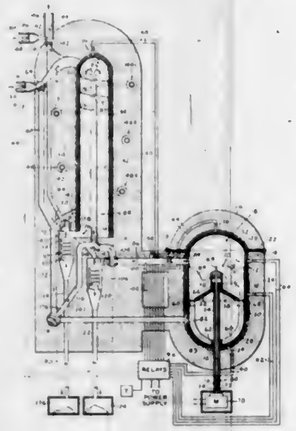
3,357,380
GARBAGE DISPOSAL SYSTEM
Gianni Siracusa, 100 Mary Way, Los Gatos, Calif. 95030
Filed Dec. 22, 1965, Ser. No. 515,567
4 Claims. (Cl. 110—8)

1. In apparatus for disposing of refuse such as garbage and the like, the combination comprising means separating at least some of the noncombustible objects including glass and metallic objects from the refuse, means shredding the combustible parts of the refuse and reducing it to pieces of small size to facilitate burning thereof, an elongated incinerator having an inlet and an outlet, said incinerator having burner means with the flames thereof heating a burning zone, means blowing air into the inlet of said incinerator providing an air flow through said incinerator and propelling said small pieces of refuse mixed with air into the burning zone of said incinerator, said last mentioned means supplying air to the burning zone of said incinerator to promote complete combustion of the



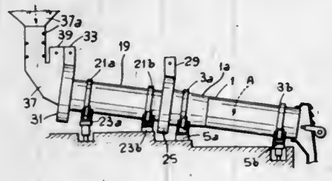
small pieces of refuse while it is floating through said burning zone, wall structure forming a washing chamber having a plurality of nozzles for producing a water spray therein, means connecting the outlet end of said incinerator to said washing chamber so that the effluent gases and fine ash from said incinerator pass through the water spray therein, said wall structure including baffles arranged so that said gases are directed in a serpentine path through said chamber, and means connected to said washing chamber in which the water from said spray carrying the fine ash and soluble gases washed out of said effluent is collected.

3,357,381
TOILET WASTE COMBUSTOR
Charles F. B. Stevens, Pierrefonds, Quebec, Canada, assignor to Pulp and Paper Research Institute of Canada, a corporation of Canada
Filed May 18, 1966, Ser. No. 551,154
9 Claims. (Cl. 110—9)



1. Apparatus for burning in a cycle which consists of drying, pyrolyzing and burning to a very high degree of completeness a batch of waste material, such as toilet waste. which consists of vaporizable, combustible and usually also ash-producing substances which during heating evolve (a) gas-phase material including combustibles and (b) solid material which on combustion evolves (i) further gas-phase material including combustibles and usually (ii) ash, comprising a first chamber for receiving a batch of said waste material, means for heating and supplying air to the waste material in said first chamber causing said material to evolve said gas-phase material by the successsive reactions of drying, pyrolyzing and burning, said first chamber having an exit conduit through which at least the gas-phase products of said reactions leave said first chamber, temperature sensitive means associated with said first chamber for sensing the temperature of the products exiting from said first chamber, means responsive to said temperature sensing means for reducing the amounts of heat and air added to said materials in response to the detection by said temperature-sensitive means of a temperature above a predetermined level and for increasing said amounts in response to detection by said temperature-sensitive means of a temperature below said predetermined level thus to define a maximum rate of oxygen demand of the combustible gas-phase products thus evolved from said batch of waste material, and a second chamber connected through said exit conduit with said first chamber, said second chamber being so constructed and arranged as to burn to said desired high degree of completeness the materials thus evolved.

3,357,382
SOLID TRASH DRYING AND INCINERATING FURNACE
Silvano Matteini, Via Bellosguardo 2, Florence, Italy
Filed Feb. 14, 1966, Ser. No. 527,250
Claims priority, application Italy, Feb. 17, 1965, 3,734/65; May 5, 1965, 10,343/65
19 Claims. (Cl. 110—14)



1. In a trash incinerator,

rotary cylindrical casing means defining a combustion zone, said casing means being arranged to rotate about the longitudinal axis thereof,

further rotary cylindrical casing means defining a drying zone, means for delivering trash into the drying zone at the upstream end thereof, said further casing means being arranged to rotate about the longitudinal axis thereof, and lying upstream of said combustion zone,

means defining a first passage for exhaust gases from the combustion zone through the drying zone,

means defining a second passage for exhaust gases from the combustion zone surrounding said further casing means,

means defining a third passage for exhaust gases from the combustion zone communicating directly with said combustion zone, and

valve means capable of varying selectively the flow through each said passage.

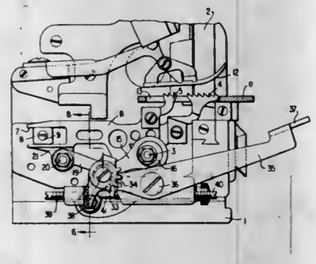
3,357,383
HORIZONTAL CYLINDRICAL FURNACE WITH REMOVAL OF LIQUID SLAG
Nikolai Vasilievich Golovanov, Glinskaya, ulitsa, 1, kv. 39, and Viktor Vladimirovich Pomerantsev, Politekhnicheskaya ulitsa, 29, kv. 3, both of Leningrad, U.S.S.R.
Filed Aug. 5, 1965, Ser. No. 477,494
4 Claims. (Cl. 110—28)

1. A furnace with liquid slag removal adapted for burning low reaction pulverized fuel, said furnace comprising a hollow body having internal walls defining a cylindrical combustion chamber, means defining a gas-exit port opening into the combustion chamber and extending longitudinally in relation to the cylindrical combustion chamber, and means disposed adjacent to said port for supplying fuel and air into the chamber tangentially along the internal wall thereof, the latter means comprising a first channel for the discharge of fuel and air and a second channel for the discharge of secondary air, the channels being parallel to one another and immediately adjacent said exit port and disposed relative to



the chamber such that the secondary air is discharged tangentially against the walls of the chamber and forms an outer layer for the fuel and air discharged from the first channel, said second channel constituting the sole source of secondary air for the furnace, the internal surface of the said body in the region of the exit port at the side thereof receiving the flow of exit gases having a smaller radius of curvature as compared with the remaining internal surface of the chamber and forming a protuberance for deflecting the gases and preventing tangential discharge thereof through the exit port.

3,357,384
FEEDING MECHANISM FOR SEWING MACHINE
John M. Washburn, West Hartford, Conn., assignor to The Merrow Machine Company, Hartford, Conn., a corporation of Connecticut
Filed Dec. 10, 1965, Ser. No. 512,840
7 Claims. (Cl. 112—209)



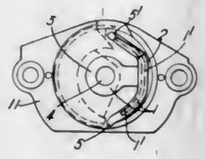
1. In a sewing machine feeding mechanism having a machine base, a drive shaft rotatably mounted on said base, a feed dog, a feed carrier supporting said dog for oscillatory movement in a vertical and horizontal direction to engage and feed work material through the machine, first eccentric means on said shaft for imparting oscillatory movement to said carrier in a vertical direction, second eccentric means on said shaft, and linkage means connecting said second eccentric to said feed carrier to impart oscillatory movement thereto in a horizontal direction, the improvement wherein said linkage means comprises, a connecting rod, crank means mounted on said base about a first horizontal axis and supporting said connecting rod for pivotal movement thereon about a sec-

ond horizontal axis spaced from said first horizontal axis, first and second pitmans each having one end rotatably connected to said connecting rod for pivotal movement thereon about an axis parallel to and spaced from said second horizontal axis, said first pitman having its other end rotatably connected to said feed carrier, said second pitman having its other end rotatably mounted on said second eccentric for oscillatory movement thereon upon rotation of said shaft to impart oscillatory pivotal movement to said connecting rod about said second horizontal axis to guide said one end of said first and second pitmans along an arcuate path about said second horizontal axis, and means for rotating said crank about said first horizontal axis between a maximum feed position and a minimum feed position to shift said second horizontal axis and said arcuate path to vary the amplitude of horizontal oscillatory movement imparted to said feed carrier and the feed dog carried thereby.

3,357,385
SHUTTLE DRIVER

Giuliano Gustin, Milan, Italy, assignor to Soc. per Azioni Fratelli Borletti, Milan, Italy, an Italian company

Filed June 7, 1965, Ser. No. 462,012
Claims priority, application Italy, June 10, 1964, 12,701/64
5 Claims. (Cl. 112—232)

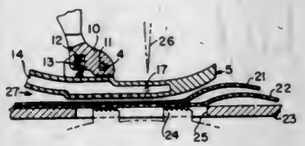


1. In a sewing machine having an angularly oscillatory shuttle, a shuttle driver of the type having two ends adapted to come alternately into contact with the shuttle to impart oscillations to it, said shuttle driver comprising a metallic core and a generally radial extension by which the driver may be fixed on an oscillatory control shaft, said metallic core having arms that extend in opposite directions from said radial extension, each said arm terminating in one of said ends, and on at least one of said ends a covering of plastic material molded directly onto the core.

3,357,386
METHOD AND APPARATUS FOR SEWING WITH A PRESSER FOOT

Leo Kalman, 2731 Taylor St., Dallas, Tex. 75226

Filed June 14, 1965, Ser. No. 463,562
9 Claims. (Cl. 112—235)

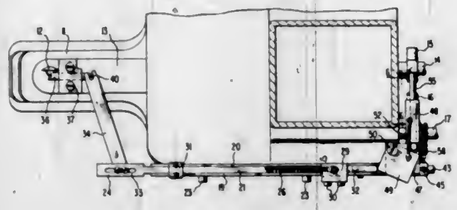


1. A method for sewing material, comprising in combination the steps of: directing pressurized air through perforations in the bottom of a sewing machine presser foot and against the material in such a manner as to hold the material in place, advancing the material through a sewing machine, and simultaneously directing a coolant air in a high velocity flow against the sewing machine needle.

3,357,387
AUTOMATIC THREAD CUTTING MECHANISM FOR BUTTON SEWING MACHINES

Horace E. Owens, Owings, S.C., assignor to Her Majesty Underwear Company, Mauldin, S.C., a corporation of South Carolina

Filed Dec. 22, 1965, Ser. No. 515,612
9 Claims. (Cl. 112—252)

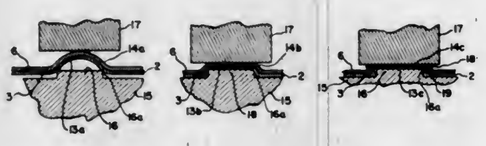


1. A thread cutting mechanism for a button sewing machine of the class having a rotating stop dog and a coacting cushioning part movable cyclically into the path of travel of the stop dog and clear of such path of travel, said mechanism comprising a supporting body portion attachable to the body of the sewing machine, a thread cutter device movably engaging said body portion and shiftable thereon toward and away from thread cutting positions, and an actuator means for the thread cutter device movably mounted upon the supporting body portion and being engaged with and supported by said cushioning part and shiftable with such part cyclically into the path of travel of the stop dog so that the stop dog may directly engage said actuator means and operate said cutter device to cut the button sewing thread.

3,357,388
COMPOSITE ARTICLE AND METHOD

Lloyd G. Dunn, Richmond, Ind., assignor to Aluminum Company of America, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Nov. 25, 1964, Ser. No. 413,875
6 Claims. (Cl. 113—121)



6. A method of securing an aluminum sheet metal container opening tab to an aluminum sheet metal container member having a removable portion including,

forming in a single draw operation a generally dome-shaped boss in the container member and in the opening tab, said bosses having substantially similar dimensions,

scoring the container member to define a removable portion container the boss formed therein,

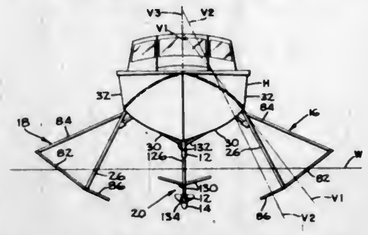
positioning the tab over the container member with the boss of the container member extending into the boss of the tab, and

supporting the interior of said bosses against lateral inward collapse by providing an anvil within the boss of the container member while pressing said bosses together to reduce axially the said bosses and induce outward flow of the metal of both thereby reversely folding the metal of both bosses into interlocking peripheral beads forming a double hollow headed rivet which joins said tab to said container member.

3,357,389
HYDROFOIL SYSTEM AND METHOD OF FORMING LIFT FOILS FOR USE THEREIN

David Wray, Jr., Los Gatos, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware

Filed June 28, 1965, Ser. No. 467,218
16 Claims. (Cl. 114—66.5)

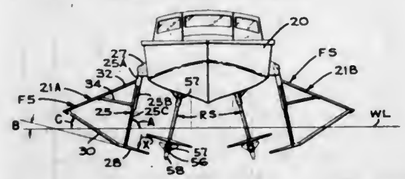


1. A hydrofoil craft comprising a hull including upright side walls, a pivotable hydrofoil unit at each side of the hull, means connected to said hull and defining a pivot axis for each hydrofoil unit inwardly of said upright side wall, and means for swinging said hydrofoil unit about said axis between an outer position in which said unit has portions projecting outwardly beyond the plan profile of said hull, and an inner position in which said unit lies totally within said plan profile beneath said hull and inward of said side.

3,357,390
HYDROFOIL CRAFT

David Wray, Jr., Los Gatos, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware

Filed Aug. 30, 1965, Ser. No. 483,621
7 Claims. (Cl. 114—66.5)



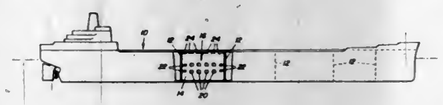
1. A hydrofoil craft comprising a hull, and a forward and an aft foil system depending from said hull; said forward foil system comprising a foil unit on each side of said hull, each forward foil unit including a plurality of ogival lifting foils each having a flat undersurface and one ventilating brace; said aft foil system comprising a plurality of struts, a ladder foil extending between each strut and the hull, and a main foil secured to the lower end of each strut, all of said aft foils being ogival foils each having a flat undersurface.

3,357,391
PASSIVE STABILIZERS FOR TANKERS AND THE LIKE

Sheldon B. Field, Floral Park, and Thomas F. Bridges, Port Washington, N.Y., assignors to John J. McMullen Associates, Inc., New York, N.Y., a corporation of New York

Continuation of application Ser. No. 445,514, Apr. 5, 1965. This application May 12, 1967, Ser. No. 638,159
6 Claims. (Cl. 114—125)

1. In a tanker-like vessel, a stabilization system comprising first and second oil-tight transverse bulkheads extending across the hull of the vessel and extending vertically throughout the height of the hull, said transverse bulkheads defining with said vessel an elongated, enclosed container arranged across said vessel, at least one longitudinal bulkhead extending through said container and extending vertically throughout the height of the hull, a plurality of stiffening members secured along the longitudinal bulkhead within the container and arranged horizontally at vertically spaced positions so as to increase suitably the bending modulus of the bulkhead suitably to withstand predetermined loads, the portion of the bulkhead within the container defining large openings therein; and a body of liquid partially filling said container and

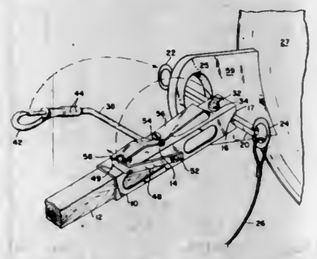


having a liquid level above the lowest limit of said openings, whereby a portion of the liquid transfers through the openings in response to the roll of the vessel, said longitudinal bulkhead defining additional openings near the top thereof to enable an unimpeded passage of air therethrough, said large openings being generally square with rounded edges and being vertically and horizontally aligned in zones along the longitudinal bulkhead, the vertical dimension of each large opening being greater than the vertical spacing between said horizontal stiffening members at generally the same vertical location on said longitudinal bulkhead, and some of said stiffening members running along the solid parts of the bulkhead above, and below the vertically spaced large openings.

3,357,392
REEVING DEVICE

Clark W. Straus, Tonawanda, N.Y., assignor to the United States of America as represented by the Commandant of the United States Coast Guard

Filed Nov. 25, 1966, Ser. No. 597,139
7 Claims. (Cl. 114—230)



1. A device for passing an object around a normally inaccessible mooring point comprising:

threading means attached to said object for making initial contact with said mooring point;

said threading means having first and second engageable portions;

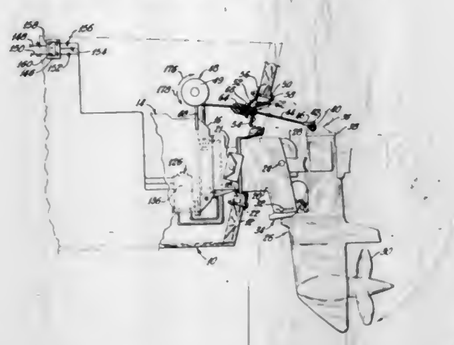
first engaging means for releasably engaging said threading means at said first engageable portion;

second engaging means operatively connected to said first engaging means for engaging said threading means at said second engageable portion;

releasing means for releasing said threading means from said first engaging means;

and means for preventing release of said threading means from said first engaging means until said second engaging means has engaged said threading means at said second engageable portion.

3,357,393
MARINE DRIVE LIFT MECHANISM
Joseph E. Urbassik, Saginaw, Mich., assignor to Eaton Yale & Towne Inc., a corporation of Ohio
Filed June 23, 1965, Ser. No. 466,223
13 Claims. (Cl. 115—41)



1. In a lift mechanism for the power leg of a marine drive, wherein the drive is powered by an inboard engine and the power leg is located outboard of the transom and is mounted for pivotal movement about a horizontal axis, the power leg being disposed substantially vertically with respect to the transom and is adapated to tilt-up about said horizontal axis upon striking an obstruction while maintaining a continuous drive relation with the inboard engine

a support mounted in space in operable relation to said power leg,

a rotatable shaft carried by said support,

means for rotating said shaft,

a tensile element,

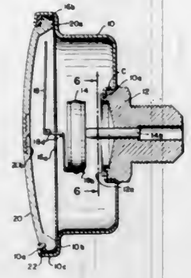
means connecting one end of said tensile element to said rotatable shaft,

and means connecting the other end of said tensile element to said power leg,

whereby rotation of said shaft in one direction is effective to shorten said tensile element and tilt said power leg toward a horizontal position; and rotation of said shaft in the opposite direction is effective to lengthen said tensile element and lower said power leg by gravity toward a vertical position, and means in driving relation with said rotatable shaft responsive to the output of the lower leg to control rotation of said shaft.

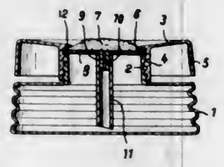
3,357,394
GAUGE CONSTRUCTION
Robert Joseph Ingham, Fairfield, and Robert Donald Bissell, Orange, Conn., assignors to Dresser Industries, Inc., Stratford, Conn., a corporation of Delaware
Filed June 21, 1965, Ser. No. 465,361
7 Claims. (Cl. 116—129)

1. In gauge apparatus for indicating changes in a condition and including; a spiral condition responsive element adapted for winding and unwinding movements in response to changes in a sensed variable condition; wherein the improvement comprises a dial plate having a central opening mounted adjacent said spiral condition responsive element substantially perpendicular and generally coaxial with the center axis thereof; support means attached to one end of said spiral condition responsive element and supporting said element free of said dial and a pointer element removably attached to the other end of said spiral condition responsive element displaced from said center axis and including a first portion substantially parallel to said dial plate and projecting between said dial plate and said spiral condition responsive element toward the center axis thereof, a second portion projecting from a connection with said first portion in a direction away from said spiral condition responsive element and through an opening in said dial plate substantially



in the vicinity of said center axis, and a third portion substantially parallel to said dial plate and projecting from a connection with said second portion away from the center axis of said spiral condition responsive element.

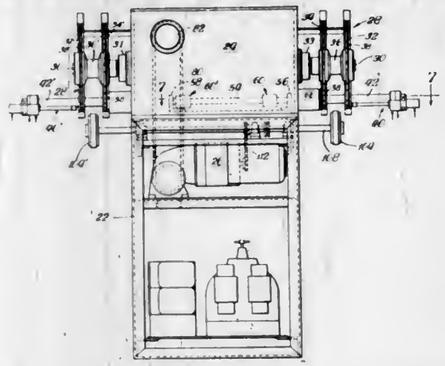
3,357,395
MOISTENING PADS
Kurt Lorber, Aichelberg, Kreis Esslingen, Germany
Filed Sept. 30, 1965, Ser. No. 491,662
Claims priority, application Germany, Oct. 2, 1964, L 48,930
3 Claims. (Cl. 118—266)



1. A pad for wetting gummed surfaces such as stamps or for wetting a finger for turning over sheets, characterized by a water container of resiliently flexible materials, said container having a bellows-like wall, said container having a neck with an external screw thread therein, a cover having a central aperture, a lip surrounding said aperture at the inside of said cover and an internal screw thread surrounding said aperture and threadedly receiving said neck, a disc-shaped piece of sponge the periphery of which rests against said lip of said aperture at the inside of said cover, a disc resting against said sponge inwardly thereof, the sponge and the disc being clamped together between the lip of said aperture and the end of said neck, said disc having a hole therethrough, and a riser tube dipping into the water container and carried by said disc in communication with said hole therethrough.

3,357,396
TURRET TYPE INDEXING MACHINE
Julius J. Melind, Park Ridge, Ill., assignor to H. L. Fisher Mfg. Co., Inc., Chicago, Ill., a corporation of Illinois
Filed Feb. 12, 1965, Ser. No. 432,296
3 Claims. (Cl. 118—313)

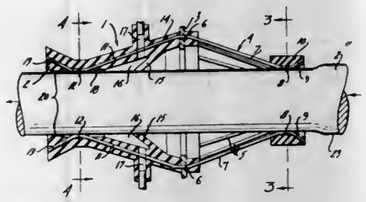
1. In apparatus for indexing a plurality of workpieces or the like to be operated on and for performing operations simultaneously on a plurality of workpieces, the improvement comprising, in combination, a pair of turret members interconnected for conjoint rotation about a common axis, each of said turret members having a plurality of seats formed around the periphery thereof for holding workpieces to be operated on, indexing means for intermittently rotating said turret members to dispose at least two of the workpieces in each of said turret members in position to be operated on, a first pair of operating means associated with a first one of said turret members for reciprocating movement first toward a pair of workpieces carried by said first turret member and then away therefrom during which movement an operation is performed on such workpieces, a second pair of operating means associated with a second one of said turret members for reciprocating movement first toward a pair of workpieces carried by said second turret member and then away therefrom during which movement an operation is performed on such workpieces, actuating means mounted on a rotatable shaft for simultaneously reciprocating said first and second pairs of operating means first toward the corresponding workpieces and then away therefrom



to operate upon at least four workpieces simultaneously, said actuating means comprising a first cam having two separate cam tracks therein, one cam track controlling the reciprocating movement of said first pair of operating means and the other cam track controlling the reciprocating movement of said second pair of operating means, a main drive shaft having a second cam fixedly carried thereon for driving said indexing means to rotate said first and second turret members one predetermined increment of rotation during each revolution of said main drive shaft, and a first gear fixedly carried on said rotatable shaft and a second gear fixedly carried on said main drive shaft, said gears having a one-to-one drive ratio and being in continuous engagement with one another whereby said main drive shaft will drive said rotatable shaft and said actuating means through one revolution for each revolution of said main drive shaft thereby driving said indexing means and said actuating means in synchronism so as to reciprocate said two pairs of operating means while said turret members are temporarily stationary.

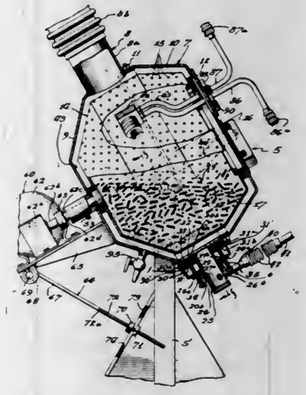
3,357,397
APPARATUS FOR COATING ARTICLES
Robert M. Jackman, Little Rock, Ark., assignor, by mesne assignments, to A. O. Smith Corporation, Milwaukee, Wis., a corporation of New York
Filed Sept. 7, 1965, Ser. No. 485,459
8 Claims. (Cl. 118—405)

1. An applicator for applying a coating to the surface of an object, comprising expansible guide means capable of expanding and contracting in a radial direction, said guide means including a series of circumferentially spaced contact portions adapted to ride against the surface of the object to be coated, resilient means for urging said contact portions against the object, a body of elastomeric material secured to said guide means and enclosing the spaces between said contact portions and characterized by the ability to expand and contract in accordance with expansion and contraction of said guide means, said body defining a liquid chamber, and an annular doctoring member secured to said body and characterized by the ability to expand and contract in accordance with the expansion and contraction of said guide



means, said doctoring member located adjacent said contact portions and inscribing an area different than the area inscribed by the contact portions whereby the doctoring surface is spaced out of contact with the object when said contact portions are in engagement with said object to thereby enable said doctoring member to spread a uniform coating of a material onto the surface of the object.

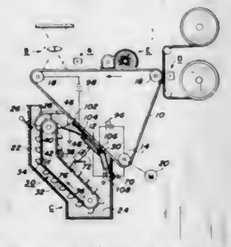
3,357,398
METHOD AND APPARATUS FOR COATING TABLETS
Herbert M. Gross, Waukegan, Ill., assignor to Abbott Laboratories, North Chicago, Ill., a corporation of Illinois
Filed Sept. 28, 1962, Ser. No. 226,879
6 Claims. (Cl. 118—418)



1. In a tablet coating apparatus: a closed housing, a coating drum defining a multiplicity of perforations about substantially the entire periphery thereof, means mounting said drum for rotation within said housing, said coating drum being adapted to contain a bed of tablets, said coating drum being disposed radially inward of said housing, the space between said housing and said coating drum defining a manifold, a pair of spaced means non-fixedly separating said housing and drum and dividing said manifold into an inlet manifold and an outlet manifold, inlet means connected to said housing and providing communication with said inlet manifold, said inlet means leading to a source of drying medium under pressure, outlet means mounted in opposition to said

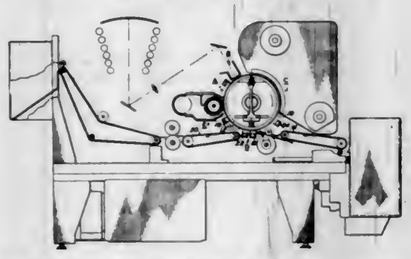
inlet means and connected to said housing for providing communication with said outlet manifold, and means for dispensing a coating medium onto the half of said drum proximate said inlet means whereby said drying medium traverses a closed path from through said inlet means into said inlet manifold, through one end of said coating drum, out the opposing end of said drum to said outlet manifold and through said outlet means.

3,357,399
COMBINED FLUIDIZED BED AND INVERTED CASCADE DEVELOPMENT APPARATUS
Donald J. Fisher, Rochester, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed July 21, 1966, Ser. No. 566,841
10 Claims. (Cl. 118—637)



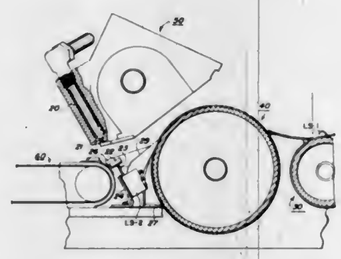
1. Xerographic development apparatus for developing electrostatic images on image bearing members with a two-component developer material comprising carrier particles and an electrostatically attractable powder including,
- a conductive plate member positioned beneath a portion of an electrostatic image bearing member sufficiently close thereto to affect the field of electrostatic image thereon.
- guide means positioned adjacent the conductive plate and adapted to introduce a flow of two-component developer across the conductive plate member,
- and means to rapidly vibrate the conductive member to effect a fluidization of two-component developer material brought above the plate by the guide means whereby the fluidized two-component developer material will be impelled into repeated contact with the image bearing member for development thereof.

3,357,400
ELECTROSTATIC APPARATUS FOR PAPER DETACKING
Arjan T. Manghirmalani, Pittsford, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Oct. 11, 1966, Ser. No. 585,826
5 Claims. (Cl. 118—637)



1. In apparatus for producing xerographic copy which includes means for charging a photoconductive surface with an electrostatic charge, means to expose the charged surface to dissipate the charge in a patterned configuration of image and non-image areas corresponding to the object to be reproduced, means to develop the exposed photoconductive surface with charged toner particles, means to electrostatically transfer the toner particles to an insulating backing sheet and means to strip the toner-bearing backing sheet from the photoconductive surface, the improvement comprising
- means to reduce the charge differential between the exposed and unexposed portions of the photoconductive surface prior to the electrostatic transfer and
- means to decrease the electrostatic bond between the backing sheet and photoconductive surface created by the electrostatic transfer to thereby facilitate the stripping of the toner-bearing backing sheet from the photoconductive surface.

3,357,401
XEROGRAPHIC FUSER MONITORING APPARATUS
Larry M. Wood, Rochester, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Oct. 11, 1966, Ser. No. 585,972
3 Claims. (Cl. 118—637)

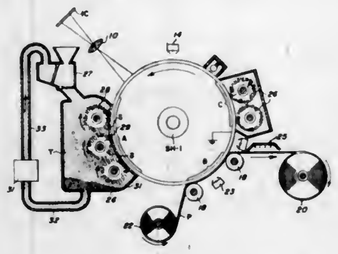


1. A monitoring apparatus for sensing the presence of support material in a xerographic fixing apparatus including
- means for transporting a sheet of support material in a path of movement through a xerographic fixing apparatus,
- switch means positioned in said path of movement at the entrance of said xerographic fixing apparatus adapted to be actuated by a sheet of support material,
- a source of aeriform fluid positioned adjacent said path of movement at the egress of said xerographic fixing apparatus to direct said aeriform fluid through said path of movement,
- switch means positioned at the egress of said xerographic fixing apparatus adjacent said path of movement in cooperative relation with said source of aeriform fluid to be actuated by said aeroform fluid passing through said path of movement, and
- means operatively connecting said switching means in an electrical circuit including means to control the operation of said xerographic fixing apparatus upon the operative coincidence of said switching means.

3,357,402
ROTARY BRUSH DEVELOPMENT
Gopal C. Bhagat, Rochester, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Dec. 27, 1966, Ser. No. 605,059
5 Claims. (Cl. 118—637)

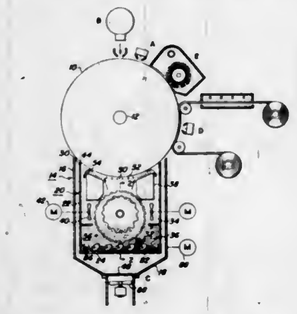
1. In an electrostatic image reproduction apparatus including a movable photoconductive surface for carrying an electrostatic latent image through a development

apparatus containing electrostatically attractable toner particles to effect development of the latent image including:
- a housing for containing the toner particles,
- a plurality of cylindrical brushes having bristles attractable triboelectrically to the toner particles radially extending therefrom, said brushes being arranged in said housing and along the photoconductive surface such that the tips of the bristles of each brush touch the surface during rotation thereof,



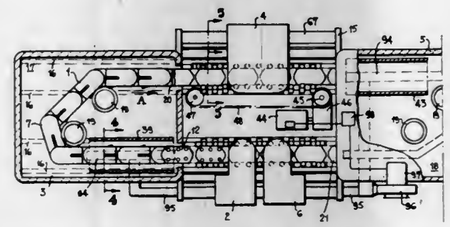
- support means for rotatably holding said brushes adjacent to the surface and adjacent to each other so that the bristle tips of one brush lightly touch the tips of an adjacent brush,
- means for loading each of the brushes with toner particles,
- and means for rotatably driving each of said brushes to effect a turbulence of air and toner particles between the brushes and also between the brushes and the surface.

3,357,403
POWDER CLOUD DEVELOPMENT APPARATUS
Daniel J. Donalies, Rochester, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Jan. 3, 1967, Ser. No. 606,675
10 Claims. (Cl. 118—637)



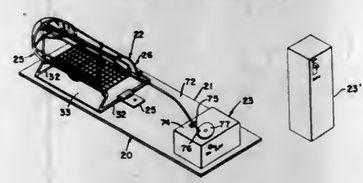
1. In a xerographic development system of the type wherein a powder cloud of charged toner particles is used to develop latent electrostatic images, apparatus to remove from the powder cloud those toner particles of an undesired polarity, including,
- means to create an electric field adapted to attract and retain toner particles of a like polarity from a powder cloud, the field creating means including a first conductive electrode member and a second conductive electrode member located remote from the field of the latent electrostatic images to be developed,
- means to hold the first and second conductive electrode members spaced and electrically insulated from each other and
- impelling means operatively positioned to move a cloud of charged toner particles from a toner supply to a xerographic development zone through the field creating means to thereby effect the removal of toner particles of the undesired polarity from the cloud.

3,357,404
INSTALLATION FOR COATING THE INSIDE OF METAL TUBES
Hans Zollinger, Lausanne, Vaud, Switzerland, assignor to Autocalora S.A., Vevey, Switzerland, a corporation of Switzerland
Filed Nov. 27, 1963, Ser. No. 326,500
Claims priority, application Switzerland, Dec. 21, 1962, 15,041/62; Aug. 31, 1963, 10,740/63
11 Claims. (Cl. 118—642)



1. Installation for coating the inside of tubular articles with a polymerized glaze comprising an endless-chain conveyor consisting of carriages; roller members disposed on the base of said carriages; articulation means connecting said carriages, supports on said carriages for supporting tubes disposed consecutively along the path of said conveyor at the upper parts thereof so as to support tubes standing vertically above said conveyor; lateral guide rails for said carriages; a track for said conveyor along part of its path formed by a running surface for said roller members and over another part by rotatable support members on either side of the path engageable by the carriage lateral guide rails; at least one device for glazing the interior of the tubes; a glaze polymerization oven; an annealing oven, and a device for loading and unloading the tubes; driving means providing a continuous advance of said conveyor; said glazing device being adapted to move between two positions spaced out along the path of said conveyor; coupling means periodically connecting said glazing device to said conveyor for movement thereby between said two positions; and return means to return said glazing device to the upstream position upon release of said coupling means.

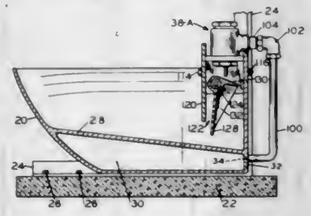
3,357,405
PHEASANT RELEASE DEVICE
Lester T. Stormon, 1708 Magnolia Ave., Manhattan Beach, Calif. 90266, and Robert D. Stormon, Devils Lake, N. Dak. 58301
Filed Mar. 14, 1966, Ser. No. 533,907
5 Claims. (Cl. 119—15.6)



4. An air wave animal release device comprising a support said support having a cage, an air wave receiver, and an electrically actuated latch means mounted on said support, said cage comprising a pair of half shell means

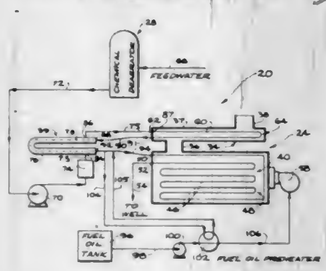
contoured to surround and receive an animal therein, and latched together by said electrically activated latch means and spring biased to open, said cage being detachable from said support and said receiver, an air wave transmitter remote from said support and adapted to transmit a signal via the air waves to said air wave receiver, said receiver being adapted to respond to said signal to electrically actuate said latch means to unlatch said shell means to allow them to spring open and release the animal.

3,357,406
LIVESTOCK WATERING DEVICE
John C. Robinson, Radnor, Ohio
Filed Mar. 29, 1966, Ser. No. 543,475
5 Claims. (Cl. 119—73)



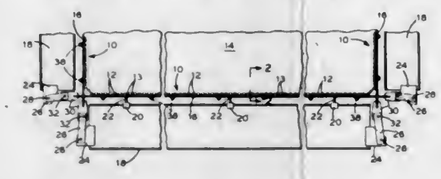
1. A livestock watering device comprising, in combination, a watering trough including structure providing an integrally formed heating cavity adapted to receive a heating element, said cavity disposed directly below and in heat transmitting relationship with the bottom surface of said trough and including a water inlet and a water outlet; valve means mounted on said trough including a movable valve element comprising a vertically disposed valve stem, a valve head, means for biasing said valve head toward a valve seat and a valve inlet passage and a valve outlet passage communicating with said valve inlet passage and said trough; valve actuating means mounted within said trough for controlling said valve element; and conduit means connecting said heating cavity outlet with said valve inlet.

3,357,407
THERMAL RECOVERY APPARATUS AND METHOD
John P. Fanaritis, Warren, Pa., assignor, by mesne assignments, to Struthers Thermo-Flood Corporation, Tulsa, Okla., a corporation of Delaware
Filed Jan. 14, 1965, Ser. No. 425,432
1 Claim. (Cl. 122—1)



A water heater adapted for use in the thermal recovery of oil from wells, said heater comprising:
(a) a chamber;
(b) means for conducting hot gases from said chamber;
(c) means for producing radiant heat within said chamber and for the conversion into steam of water in passage through said chamber;
(d) means for the conduction of product steam from said chamber;
(e) means for conducting water in a single pass through said chamber including an economizer for exchanging heat between said hot gases and feed water to be directed into said chamber;
(f) a heat exchanger, directly connected to said single pass water conducting means (e), located externally of said chamber for exchanging heat between feed water to be directed into said economizer and feed water leaving said economizer, and thereby preheating said feed water to be directed into said economizer; and
(g) means directly supplying hot feed water from said economizer (e) to said external heat exchanger (f).

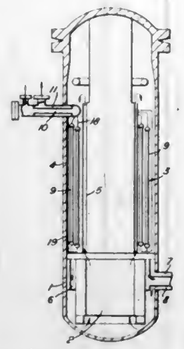
3,357,408
VAPOR GENERATING APPARATUS
Gordon A. Patterson, North Canton, Ohio, assignor to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey
Filed Aug. 19, 1965, Ser. No. 480,906
9 Claims. (Cl. 122—6)



1. In a vapor generator, the combination of:
(a) a furnace including a row of upright tubes joined together to define a wall,
(b) buckstay structure including a horizontally elongated tie bar for reinforcing said wall,
(c) horizontal series of upper and lower lugs each having a bight portion, said lugs being joined to said wall in vertically spaced pairs adapted to receive said tie bar therebetween for contact with said wall,
(d) and elongated locking means adapted for snug reception in upright position between the bight portions of each pair of lugs and said tie bar whereby said buckstay structure is assembleable with said wall by first positioning said tie bar horizontally between the upper and lower lugs of said series and next inserting said locking means in said lugs to thereby hold said tie bar against lateral movement without restraining said wall from expansive movement across its width and height relative to said tie bar.

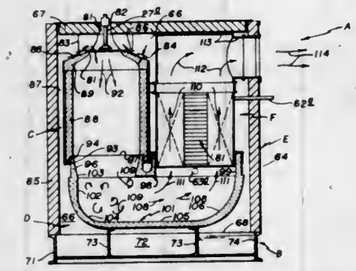
3,357,409
VERTICAL TUBE MODULE ONCE-THROUGH STEAM GENERATOR
Malcolm Richard Williamson, Oldham, and Michael Joseph Chamberlain, Hadlow, near Tonbridge, England, assignors to United Kingdom Atomic Energy Authority, London, England
Filed Sept. 30, 1965, Ser. No. 491,732
Claims priority, application Great Britain, Oct. 7, 1964, 40,941/64
6 Claims. (Cl. 122—32)

1. A steam generator comprising a cluster of once-through tubes the external surfaces of which are exposed to a heating fluid and including an upper header and a lower header, said lower header including a first chamber and a second chamber, means including at least one of said tubes for feeding water to the said first chamber, at least some of said tubes of said cluster being evaporator tubes extending from said first chamber to said upper header wherein water evaporates as it passes upwardly through said evaporator tubes from said first chamber to said upper header, and at least some of said tubes of said cluster being superheater tubes extending from said upper header to said second chamber wherein the water evaporated in the said evaporating tubes is superheated



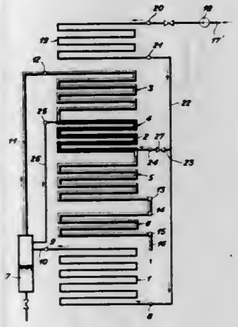
as it passes downwardly through said superheater tubes from said upper header to said second chamber, and an outlet for superheated steam connected to said second chamber.

3,357,410
WATER TUBE HEATER
John L. Boyen, Orinda, Calif., assignor to C-C Industries, a corporation of California
Filed Sept. 13, 1965, Ser. No. 486,627
3 Claims. (Cl. 122—238)



1. In a compact heater suitable for generating a hot working fluid by the burning of a low-grade fuel, the combination comprising: a U-shaped airtight enclosure defined by first and second hollow upright members and a transverse curved delivery conduit extending in fluid communication between the lower ends of said first and second upright members, means for maintaining said transverse member and first upright member at high temperature; heat exchange means disposed only within said second upright member and spaced above the lower end thereof; means for transferring working fluid through said heat exchange means; means mounted at the upper end of said first upright member for introducing fuel into said enclosure; means disposed within said first upright member for initiating the burning of said fuel; and means for providing air to the upper end of said first upright member under sufficient pressure to produce a hot turbulent mixture of air and burning fuel in said first upright member which is subjected to further turbulence upon passage from said first upright member through said transverse delivery conduit, thereby causing extended burning of said fuel to minimize the low-heat conductive non-burned portion of said fuel that remains when said hot mixture contacts said heat exchange means in said second upright member to inhibit the deposit of the non-burned fuel portion on said heat exchange means.

3,357,411
FORCED-FLOW ONCE-THROUGH VAPOR GENERATOR
Helmut Kamm, Neuss (Rhine), Germany, assignor to Sulzer Brothers, Limited, Winterthur, Switzerland, a corporation of Switzerland
Filed Sept. 28, 1965, Ser. No. 490,919
Claims priority, application Germany, Sept. 28, 1964, M 62,589
3 Claims. (Cl. 122—406)

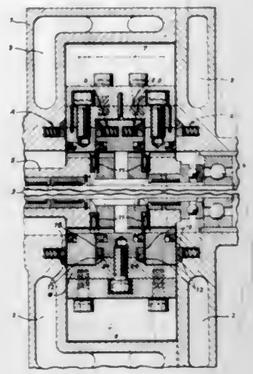


1. A fume-gas heated forced-flow once-through vapor generator for full load and part load operation comprising
a working medium feed means,
an economiser connected to said feed means for receiving working medium directly therefrom,
a first evaporator means connected to said economiser for receiving a first portion of the working medium directly therefrom for part load operation,
a separator means connected to said first evaporator for receiving said first portion of the working medium therefrom,
a plurality of superheater means for receiving a working medium from said separator means,
a second evaporator means positioned within one of said superheater means forming a heat exchanger therewith,
valve means interposed between said economiser and said second evaporator for directing a second portion of the working medium into said second evaporator, and
means connecting said second evaporator means to said separator means whereby said second portion of the working medium is passed through said second evaporator means and direct to said separator.

3,357,412
SEALING ARRANGEMENT
Huschang Sabet, Eduard-Pfeiffer-Strasse 67, Stuttgart-Nord, Germany
Filed May 20, 1966, Ser. No. 551,590
Claims priority, application Germany, May 26, 1965, S 97,300
11 Claims. (Cl. 123—8)

1. In combination with a piston engine having a first engine part provided with a groove, and a second engine part disposed with one surface adjacent said groove and arranged to rotate with respect to said first engine part, sealing means comprising:
(a) a split sealing ring disposed in said groove and having a substantially trapezoidal cross section defined by a wide base facing said one surface of said second part, a narrow base facing the bottom of said groove, and a sloping, radially inwardly facing flank; and

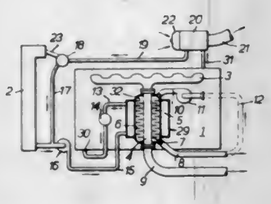
(b) a pressure ring disposed in said groove radially inwardly of said sealing ring and having a sloping, radially outwardly facing flank which extends substantially parallel to, and presses against, said inwardly facing flank of said sealing ring.



3,357,413
ENGINE COOLANT TEMPERATURE STABILIZING DEVICE

Reginald Douglas Quinton, Lakeside Road, P.O. Box 489, Knowlton, Quebec, Canada

Filed June 22, 1965, Ser. No. 465,903
Claims priority, application Great Britain, June 29, 1964, 26,871/64
13 Claims. (Cl. 123—41.05)



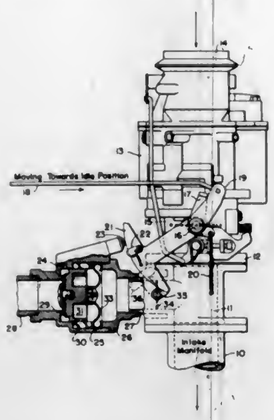
1. An internal combustion engine comprising an engine block having an inlet and an outlet for a coolant flow through a cooling jacket in the block, means for recirculating coolant from the outlet to the inlet, a heat exchanger having a first path for receiving coolant, a second path for receiving engine exhaust gas and a third path for an intermediate heat transfer fluid, the coolant path being upstream of the jacket inlet, and temperature responsive means to control operation of the heat exchanger whereby the heating of the coolant will be controlled in accordance with engine temperature.

3,357,414
VACUUM BREAKER FOR INTERNAL COMBUSTION ENGINES

Forrest Clayton Meserve, 19 Peters St., North Andover, Mass. 01845

Filed Feb. 15, 1965, Ser. No. 432,538
3 Claims. (Cl. 123—119)

1. A vacuum breaker comprising a single tubular casing having an air passage leading to the carburetor and the intake manifold of an internal combustion engine, concentrically arranged and longitudinally spaced valve seats associated with said passage, a valve body having concentric shoulders fitting the respective valve seats in said tubular casing, toggle springs holding the valve closed upon one of said valve seats, a normally closed air passage in said casing leading to the other of said valve seats,

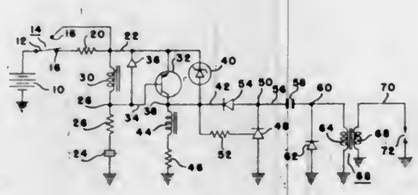


an air valve for admitting atmospheric pressure to the second of said valve seats, for unseating the valve body in opposition to said toggle spring, and said vacuum breaker being characterized in that the air valve is opened by a rocking cam having a lost motion connection with the carburetor valve of the engine.

3,357,415
CAPACITOR DISCHARGE IGNITION SYSTEM

Gerald O. Huntzinger, Anderson, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Oct. 7, 1965, Ser. No. 493,723
5 Claims. (Cl. 123—148)

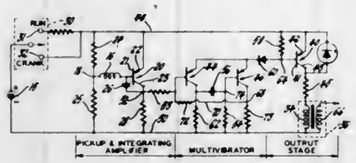


1. An ignition system for an internal combustion engine comprising, an ignition coil having a primary winding and a secondary winding, said secondary winding being adapted to be connected with a spark plug of said internal combustion engine, a source of direct current, an inductor, a first switching means operative to periodically connect and disconnect said source of direct current and said inductor, a capacitor, a charging circuit connecting said capacitor and said inductor, the energy developed in said inductor when said switching means is opened being transferred to said capacitor through said charging circuit, a second switching device having current carrying terminals and a control terminal, the current carrying terminals of said second switching device being connected in series with said capacitor and with the primary winding of said ignition coil whereby said capacitor discharges through said second switching device and through the primary winding of said ignition coil when said second switching device is biased to a conductive condition, and a control circuit coupling said charging circuit with said control terminal of said second switching device, said control circuit responsive to the direction of current flow in said charging circuit and operative to supply a turn on current to said second switching device at the instant that said capacitor is completely charged by said inductor.

3,357,416
TRANSISTORIZED IGNITION SYSTEM HAVING AN INTEGRATING CIRCUIT

Gerald O. Huntzinger, Anderson, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Oct. 11, 1965, Ser. No. 494,744
5 Claims. (Cl. 123—148)

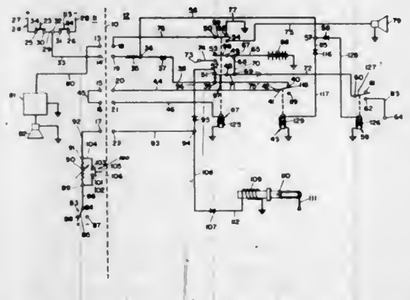


1. In an ignition system for an internal combustion engine of the type wherein the current supplied by a direct current potential source flowing through the primary winding of an ignition coil and the emitter-collector electrodes of a normally conducting transistor switching device in series is periodically interrupted in timed relationship with said engine by triggering said transistor switching device to nonconduction in timed relationship with said engine, the combination with said direct current potential source, ignition coil and transistor switching device of a magnetic pulse generator means for producing ignition synchronizing potential pulses in timed relationship with said engine, means for integrating said ignition synchronizing potential pulses and means responsive to said integrated ignition synchronizing potential pulses for triggering said transistor switching device to nonconduction in timed relationship with said engine.

3,357,417
REMOTE CONTROL MEANS FOR INTERNAL COMBUSTION ENGINES

Robert J. Baumann, 3241 N. Monticello Ave., Chicago, Ill. 60618

Filed Apr. 20, 1965, Ser. No. 449,584
7 Claims. (Cl. 123—179)

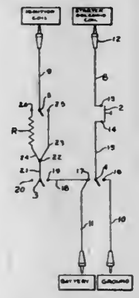


1. In apparatus for remotely controlling the starting of an internal combustion engine and having a battery, electrically operable engine starting means including a starter solenoid and an ignition coil remotely manually controlled circuit means for simultaneously connecting a voltage source to said starter solenoid and said ignition coil to said battery and for maintaining said battery and said ignition coil in coupled condition to start and thereafter continue to run said engine after starting, and a carburetor for supply of fuel to said engine, the improvement comprising adjustable means for controlling current flow from a voltage source for regulating fuel flow from said carburetor to said engine and accordingly the speed of said engine once started.

3,357,418
AUXILIARY STARTER AND IGNITION CIRCUIT ARRANGEMENT WITH VOLTAGE AND POLARITY SELECTION

Virgil C. Goodman, Greenville, Mo., assignor of one-third to Lacy K. Ragan, Greenville, Mo., and one-third to Oliver A. Morris, Fredericktown, Mo.

Filed Aug. 29, 1966, Ser. No. 575,615
6 Claims. (Cl. 123—179)



1. For use with an internal combustion engine of a vehicle having a battery, an ignition coil and a starter solenoid, an auxiliary starter comprising means defining a housing, a starter switch mounted on said housing, a two-position starter selector switch mounted on said housing, a two-position ignition switch mounted on said housing, a voltage selector switch mounted on said housing, a first lead for connecting said starter switch to the starter solenoid, a first conductor connecting said starter switch and said starter selector switch, a second conductor connecting said starter selector switch and said ignition switch, leads connecting said ignition switch to opposite sides of said voltage selector switch, and means for connecting said voltage selector switch to the ignition coil of the vehicle.

3,357,419
ACOUSTIC AIR CONDUCTING DOOR INSTALLATION FOR CABINET TYPE FURNACE

Bernard L. Duchinsky, Belleville, Ill., assignor to International Oil Burner Company, St. Louis, Mo., a corporation of Missouri.

Filed Oct. 31, 1966, Ser. No. 590,622
5 Claims. (Cl. 126—114)

1. An acoustic air conducting door installation for a cabinet type forced air circulation furnace, comprising

a vertically elongated rectangular door frame having a top and bottom and including side angular frame elements having outer flanges presenting forwardly and having rear flanges projecting toward each other in a plane,

together with a vertically elongated door structure therein including

left and right post-like vertical structural members,

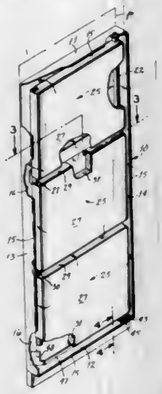
a plurality of vertically arranged, spaced-apart acoustic structural panels secured to the left and right post-like structural members,

whereby to constitute with the post-like members a door having structural rigidity in the manner of a Vierendeel girder,

bridging strips characterized by a height greater than the spacing between said panels and secured to the aft side of said door structure, the greater part of the width of said bridging strips being spacedly offset rearward of said panels,

whereby the spaces between the adjacent acoustic structural panels and the bridging strips provides for the inflow of air through the door structure,

the width of said acoustic panels being less than the spacing between the outer forwardly presented flanges of the rectangular door frame, and

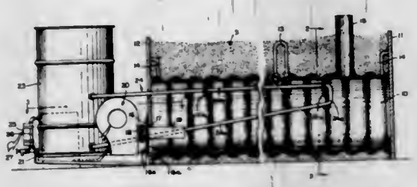


means to hinge the upper and lower ends of one of said post-like members between the top and bottom of the door frame spacedly between said side angular frame elements,

whereby to position the door structure with the rear surfaces of the acoustic panels spacedly forward of the plane of the rear flanges of said door frame side elements.

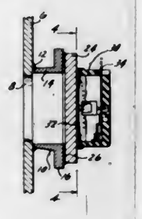
thereby to provide for inflow of air between the edges of said acoustic panels and the said side frame elements.

3,357,420
COMBINED SAND AND WATER HEATER
Howard B. Fleming, South Portland, Maine, assignor to Fleming Devices, Inc., South Portland, Maine, a corporation of Maine
Filed Sept. 8, 1965, Ser. No. 485,801
3 Claims. (Cl. 126—350)



1. A combined sand and water heater comprising a horizontal, tubular chamber to be covered with the sand to be heated and kept warm, a wall closing each end of said chamber, at least one wall extending above and laterally of the chamber to constitute a sand retaining wall, an exhaust stack in communication with the interior of said chamber remote from said one wall, a water tank having a loop conduit extending through said wall a substantial distance lengthwise of the upper part of the interior of said chamber, and an oil burner of the gun type with its barrel extending into said chamber through said one wall and having a control circuit provided with a thermostat, said thermostat being connected to said water tank to be responsive to the temperature of the water therein whereby the rate of sand heating is determined by the rate at which the water cools.

3,357,421
THERMOSTATIC CONTROL FOR HOT WATER TANKS AND THE LIKE
Kenneth G. Hatch, Milwaukee, Wis., assignor to Hatco Corporation, Milwaukee, Wis., a corporation of Wisconsin
Filed Oct. 12, 1965, Ser. No. 495,087
5 Claims. (Cl. 126—374)



1. The combination with a sensing device for a tank having a wall, of a mounting for the sensing device comprising a plate which is highly thermally conductive and has a surface to which the sensing device is directly attached, a fitting having a hole through it and having an end applicable about an aperture in a tank wall, said fitting having a free outer end with anchorage means to which said plate is applied and said plate constituting a closure spaced from the tank across the hole of said fitting and being thereby exposed to the contents of the tank.

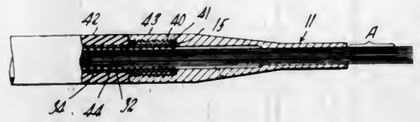
3,357,422
SURGICAL INSTRUMENT FOR CONIZATION OF UTERINE CERVIX
Raymond C. Creelman, 532 5th St., Bremerton, Wash. 98310
Filed Jan. 6, 1967, Ser. No. 613,984
18 Claims. (Cl. 128—2)



1. A surgical instrument for conization of the uterine cervix comprising an elongated obturator insertable lengthwise into the endocervical canal, stop means physically connected with the obturator in such relative position as to engage the endocervix and thereby limit penetration of the obturator, an elongated support having a handle end and a distal opposite end, which opposite end carries the obturator to effect such insertion thereof, an elongated cutting blade having a point adapted to pierce the cervix, and means including a blade carrier mounted on said support and guiding the blade to move generally lengthwise of

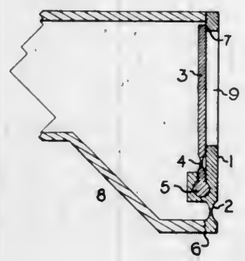
itself and relative to the obturator between an extended position pressed inwardly and throuh the cervix tissue substantially to the cervical canal and a retracted position substantially withdrawn from the cervix.

3,357,423
SURGICAL LIGHT PIPE AND THE LIKE
Robert D. Winchester, Lynn, and Earl S. Carpenter, Lynnfield, Mass., assignors to Iota-Cam Corporation, Wakefield, Mass., a corporation of Massachusetts
Filed Mar. 26, 1965, Ser. No. 443,058
8 Claims. (Cl. 128—23)



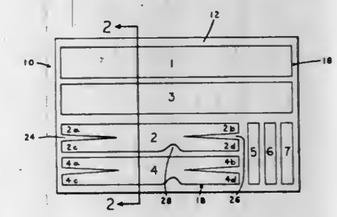
1. A light pipe comprising, in combination, a bundle of flexible, transparent, light-conducting fibers, three heat-resistant protective tubular layers surrounding the length of said light pipe, said protective layers comprising a first pressure resistant, impermeable tube having annular conformations whereby said tube is flexible and crush-resistant, said first tube lying immediately adjacent said bundle of fibers, said first tube having an internal cross-sectional area substantially larger than said bundle, a second braided metal protective tube having a predetermined maximum length, said second tube surrounding said pressure resistant impremeable tube, and a third smooth outer-surface flexible tube surrounding said braided tube and providing a smooth surface to said light pipe, at each end of the light pipe a rigid cap secured thereto and sealed to said tubes, the ends of fibers of said fiber bundle bonded with bonding material, and each end of said fiber bundle bonded to the inside of the respective rigid cap, said light pipe being substantially leak-proof under steam pressure on the order of 25 p.s.i., preventing entry of steam to said fibers, said three tubes together constructed and arranged, relative to said fiber bundle, to limit bending thereof within the predetermined bend limit of said bundle.

3,357,424
RESPIRATORY DEVICE FOR EMPHYSEMA PATIENTS
Gus Schreiber, 3993 NW. Highway, Dallas, Tex. 75220
Filed Dec. 3, 1964, Ser. No. 415,641
2 Claims. (Cl. 128—136)



1. A valve structure for the control of expiration in emphysema patients comprising: a mouthpiece, a valve housing having one end attached to said mouthpiece, said valve housing having a fluid passageway therethrough communicating with said mouthpiece, a valve leaf pivotally mounted in said passageway, said passageway being partially obstructed on expiration by said pivotally mounted valve leaf constituting an inlet check valve over a portion of the fluid passageway, whereby free flow is obtained through said passageway upon inhalation and said smaller aperture on expiration restricting flow upon exhalation; means provided for the lateral movement of the valve leaflet permitting thereby regulation of the cross-sectional area of the expiratory passageway.

3,357,425
STRAPPING KIT
Burton D. Morgan, Hudson, Ohio, assignor to Morgan Adhesives Company, Stow, Ohio, a corporation of Ohio
Filed Oct. 22, 1965, Ser. No. 501,076
3 Claims. (Cl. 128—156)



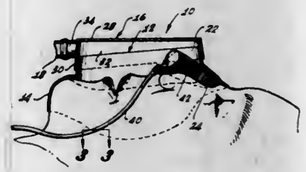
1. In a strapping kit the combination of

a large sheet of cloth precut to form a series of separate and distinct shapes which can be sequentially applied to effect a supporting wrap on a portion of a person's anatomy, each of the precut shapes of cloth is marked to indicate the sequence in which it is to be used,

pressure sensitive adhesive means covering one complete side of the cloth, and

a release paper covering the adhesive means until it is used, said release paper holding the shapes in relative position in thir precut relationship.

3,357,426
ADHERENT FACE MASK HAVING A QUICK DISCONNECT FITTING AND DISPOSABLE COMPONENTS
David D. Cohen, Northridge, Calif., assignor to The Regents of the University of California
Filed Jan. 14, 1965, Ser. No. 425,527
8 Claims. (Cl. 128—205)



1. A face mask, comprising:

a shallow ring-like coupling arranged to be positioned on the frontal portion of the face, said coupling, when so positioned, presenting an enlarged front opening encompassing the nose and mouth for affording convenient access thereto, the width of said opening in the region of said nose and mouth being substantially greater than the maximum height of said coupling;

means on said coupling and adapted for continuous engagement with the face outwardly of the coupling for retaining said coupling so positioned and for establishing and maintaining a sealing relationship between said coupling and the face;

a quick disconnect fitting receivable by said coupling for closing said front opening and cooperating with said coupling to provide a shallow breathing chamber in the interior of said mask;

and means for establishing an inlet-outlet passage from said chamber.

3,357,427
AEROSOL INTRODUCER DEVICE FOR DISPENSING A MEASURED CHARGE OF THERAPEUTIC COMPOSITION INTO BODY CAVITIES

John M. Wittke, 10 Breezeknoll Drive, Westfield, N.J. 07090, and Richard M. Monahon, Child's Roads, Basking Ridge, N.J. 07920

Filed Apr. 21, 1965, Ser. No. 449,747
10 Claims. (Cl. 128—235)



1. An introducer device for use with an elongated pressure-dispensing valved container containing a fluidized composition and having an axially shiftable valve actuator provided with a dispensing bore therethrough, comprising:

an elongated metering and transfer tube for receiving said container and actuator in telescoping relation thereto, said tube having a restricted dispensing orifice at one end and having its other end open to receive said container,

said transfer tube adapted to have a snug sliding peripheral fit with said actuator member thereby to define a piston-like surface at the end of said actuator,

manual shiftable detent means carried by said tube adjacent said tube other end adapted for releasably retaining said actuator against axial movement in either direction thereby to permit actuation of said valve by movement of said container relative to said actuator for ejecting a charge of said fluidized composition from said container into said tube between said dispensing orifice and said actuator.

8. An assembly for dispensing measured quantities of foam-like composition comprising in combination:

an elongated pressure-dispensing container containing a foam-like composition and having a valve controlling flow therefrom,

a shiftable actuator for said valve element,

said actuator having a dispensing bore providing communication with the container when said valve is opened,

an elongated transfer tube receiving said container and actuator in telescoping relation therewithin,

said tube having a dispensing orifice at one end and its other end open to receive said container and actuator, said actuator snugly and slidably engaging the bore of said tube to define a plunger portion thereof at its forward end,

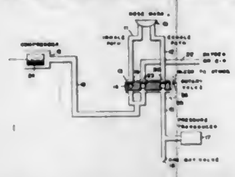
manual shiftable detent means for releasably holding said actuator in a first predetermined position to permit motion relative thereto of said container to actuate said valve and eject a charge of composition into said tube,

and means for preventing relative movement between said actuator and said container to further actuate said valve as said actuator and container are telescoped as a unit to a second predetermined position within said tube.

3,357,428
RESPIRATORY AUGMENTOR WITH ELECTRONIC MONITOR AND CONTROL

David L. Carlson, Ames, Iowa, assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Department of Health, Education, and Welfare

Filed Dec. 23, 1963, Ser. No. 332,369
14 Claims. (Cl. 128—145.8)

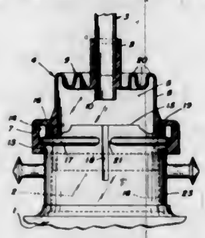


1. A respiratory augmentor, comprising a pair of conduits providing paths for inhalation and exhalation of air and terminating at one end in a face mask, valve means in said conduits, means for providing a predetermined volume of air to said inhalator conduit, and subatmospheric pressure-sensing means operably associated with said exhalation conduit, said pressure-sensing means being coupled to said valve means for interconnecting said air providing means with said face mask upon initiation of inhalation, said valve means including a spool-equipped casing and means for rotating said spool between alternative positions coupling said face mask with said pressure-sensing means and said means for providing gas under pressure, said exhalation conduit terminating in check valve means, and means operably associated with said exhalation conduit tor communicating the portion thereof between said valve means and said check valve means with the atmosphere when said spool is in the position coupling said face mask with said means for providing gas under pressure.

3,357,429
COLLECTION SYSTEM FOR BODY FLUIDS

Bern D. Folkman, Van Nuys, and Stephen D. Thornton, Jr., North Hollywood, Calif., assignors to Pharmaseal Laboratories, Glendale, Calif., a corporation of California

Filed Nov. 30, 1964, Ser. No. 414,723
10 Claims. (Cl. 128—275)



1. A collection system for body fluids comprising:

(a) a container having a port;

(b) a tubular neck surrounding the port and connecting with the container, said tubular neck extending outwardly to a lip and having a passage therethrough communicating with an interior of the container, said neck including a side groove extending to the lip of the neck, and including an end groove across its lip spaced from said side groove;

(c) a transverse snap ring on and encircling the tubular neck, said snap ring being discontinuous over a portion of the tubular neck containing said side groove;

(d) conduit means;

(e) an adapter flexibly connecting the conduit means to the tubular neck, said adapter including

(1) a drip chamber surrounded by an upstanding wall,

(2) retaining means associated with the upstanding wall attaching the adapter to the tubular neck, said retaining means engaging the transverse snap ring and including an undercut recess connecting said side and end grooves to provide a tortuous fluid path between the tubular neck and adapter,

(3) conduit receiving means connected to said conduit means adjacent an end of the conduit means, and

(4) a flexible end wall connecting the conduit receiving means with the upstanding wall, said flexible end wall having at least one convolution concentric with the conduit receiving means.

2. A fluid collection system comprising:

(a) a container having a port;

(b) a tubular neck surrounding the port and connecting with the container, said tubular neck extending outwardly to a lip and having a passage therethrough communicating with an interior of the container, said neck including an external side groove therein;

(c) a transverse snap ring on and encircling the tubular neck, said snap ring being discontinuous over a portion of the tubular neck containing said side groove;

(d) a flexible, kinkable conduit means; and

(e) an adapter flexible connecting the conduit means to the tubular neck, said adapter including

(1) a drip chamber surrounded by an upstanding wall,

(2) retaining means associated with the upstanding wall attaching the adapter to the transverse snap ring,

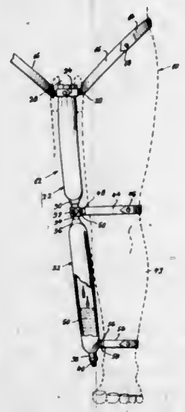
(3) said system including passage means between the adapter and tubular neck connecting the side groove to an interior of the container, and

(4) conduit receiving means connected to said conduit means adjacent an end of the conduit means.

3,357,430
INDIVIDUAL URINARY APPLIANCE

Abraham Rosenberg, 300 Robin Road, Englewood, N.J. 07631

Filed May 16, 1966, Ser. No. 550,436
8 Claims. (Cl. 128—295)

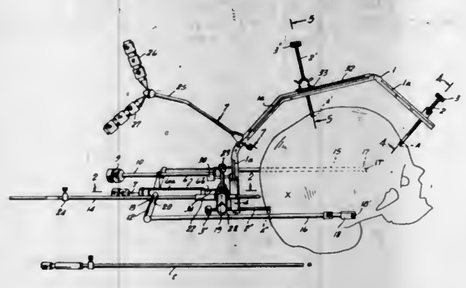


1. A urinary appliance of the kind described including an elongated reservoir for holding urine, said reservoir having a cylindrical hollow body open at both ends thereof, means for operatively connecting the open end of the body to the penis of the wearer, the other open end of the reservoir serving as a discharge opening, a removable cap for closing said discharge opening, and means for attaching and supporting the reservoir on a portion of the body of the wearer of the appliance wherein the operative means of connection between the reservoir and penis of the wearer includes an elongated tubular member open at both ends thereof, a tube connecting the adjacent open ends of the tubular member and body of the reservoir, the other end of the tubular member adapted to receive the penis of the wearer, a strap around the other end of the tubular member for fastening the tubular member to the penis, opposed snap fastener elements on the outer surface of the strap, and other strap sections encircling the hip and upper portion of the legs of the wearer at the crotch of the wearer, said other strap sections carrying complementary snap fastener elements coacting with the snap fastener elements on the strap.

3,357,431
NEUROSURGICAL APPARATUS

George Nodder Newell, Edinburgh, Scotland, assignor to Allen & Hanburys Limited, London, England, a British company

Filed Mar. 3, 1965, Ser. No. 436,734
11 Claims. (Cl. 128—303)



1. A surgical stereotactic instrument which comprises:

(a) a crest frame adapted to be fitted to the cranium of a patient to be treated along the mid-sagittal plane;

(b) a carriage movably attached to the crest frame;

(c) a cylinder attached transversely to said carriage;

(d) a column mounted on the cylinder and extending vertically upward therefrom;

(e) a cross-arm having a slot therethrough attached substantially perpendicularly to said column and when fitted to a patient's head extending across the patient's cranium transverse to the mid-sagittal plane thereof;

(f) two sight arms, one attached near each end of the cross-arm, both arms extending vertically in the same plane as the column;

(g) two sights, each of which are attached to the distal ends of the sight arms;

(h) a guide tube slidably attached to the cylinder; and

(i) treatment means passing through the slot in the cross-arm and guided by the guide tube to contact the point to be treated.

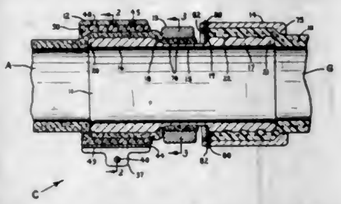
3,357,432
ANASTOMOTIC COUPLING

Charles H. Sparks, Portland, Oreg., assignor to Edwards Laboratories, Inc., Santa Ana, Calif., a corporation of California

Filed Feb. 9, 1965, Ser. No. 431,342
12 Claims. (Cl. 128—334)

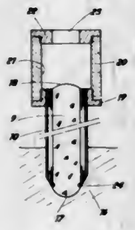
1. An anastomotic coupling comprising a sleeve adapted to be inserted in the end of a natural tubular vessel in

the body, a ring clamp adapted to clamp the vessel on said sleeve member, and a porous, compressible pad lining said clamp, said clamp having openings overlying said



pad for the passage of body fluids to and through said pad to the vessel to promote the ingrowth of tissue in said pad for nourishment of the vessel.

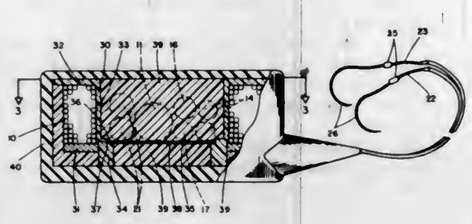
3,357,433
ENDOSCOPE FOR ILLUMINATION AND OBSERVATION OF CONTACTING DISTAL REGIONS
Max Fourestier, Vanves, Gérard François Guiot and Jacques François Rougerie, Paris, and Huguette Nelly Vulmiere, born Grangaud, and Jacques Claude Vulmiere, Pre-Saint-Gervais, France, assignors to Etablissement Public Centre National de la Recherche Scientifique, Paris, France, a corporation of France
Filed Dec. 3, 1963, Ser. No. 327,623
Claims priority, application France, Dec. 4, 1962, 917,519
6 Claims. (Cl. 128—397)



1. A contact endoscope for illuminating and observing structure at the distal end thereof by means of light incident to the proximal end thereof, comprising a metallic sheath, a rod coaxial and substantially co-extensive with said sheath and having a proximal end face and a distal end face at opposite ends of said sheath, means for interlocking said sheath and said rod, said rod being of optical-quality transparent material and having polished generating lines and providing a total reflection of the incident light between said proximal and distal faces, said proximal end face being convex and disposed outside said sheath, means including a cylindrical sleeve secured to and extending beyond the proximal end of said rod in coaxial relation thereto, said sleeve comprising a transparent body having on its inner side inclined surfaces for directing to said proximal end face light emanating from outside said body, mounting means at one end of the sleeve mounting the sleeve on the sheath adjacent the proximal end of the rod, and cap means at the other end of said sleeve, said cap means including a sighting aperture directed through said sleeve for viewing said proximal end face in a direction coaxial with said rod.

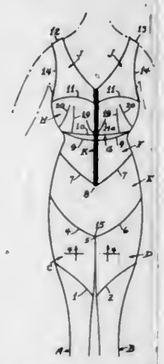
3,357,434
INDUCTIVELY LINKED RECEIVER
Gurdon R. Abell, West Woodstock, Conn., assignor to Avco Corporation, Cincinnati, Ohio, a corporation of Delaware
Filed Apr. 6, 1964, Ser. No. 357,396
11 Claims. (Cl. 128—419)

1. In an inductively-linked device for receiving electrical energy within a living body and producing a flow of electrical current through a load, the combination comprising:
(a) an annular pickup coil having a generally flat end portion and an open center portion;
(b) a substantially-flat ferromagnetic member having an outer periphery substantially the same as that of said coil, said member being in substantially abutting relationship with said flat end portion of said coil and having a thickness dimension that is small compared to that of said coil;



(c) a capacitor disposed in the center of and connected across said coil to form a resonant circuit;
(d) first means disposed in the open center portion of said coil for coupling electrical energy out of said resonant circuit;
(e) second means for coupling the output of said first means to a load and
(f) electrically-nonconductive, impermeable material nonirritating to live body tissue encasing said resonant circuit, ferromagnetic member, first means, and a portion of said second means.

3,357,435
THREE-IN-ONE MATERNITY GARMENT
Stephanie F. Enrico, 175 Melrose Ave., San Francisco, Calif. 94112
Filed Oct. 15, 1965, Ser. No. 496,331
4 Claims. (Cl. 128—431)



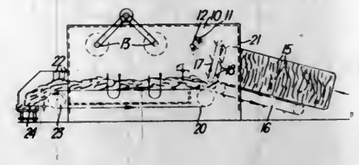
1. A three-in-one single piece garment comprising:
(a) two leg and foot portions of a light mesh stretch weave;
(b) thigh portions integral with said legs and foot portions and being of a tighter and slightly heavier stretch weave than said leg and foot portions, said thigh portions extending upwardly on a curve from the front of the garment then around the sides of the garment, and to the rear of the garment, where they meet to provide a central rear seam;
(c) a girdle portion disposed above said thigh portions and being integral therewith, said girdle portion having a stretch weave slightly tighter and heavier than the thigh material and extending upwardly on an incline from the front to the rear seam of the garment so as to exert an upward and rearward yielding pull on the abdomen of the wearer;
(d) a midriff portion disposed above said girdle portion and being integral therewith and having a stretch weave similar thereto, said midriff portion extending upwardly on an incline from the front to the rear seam of the garment so as to exert an upward and rearward yielding pull on the front of the wearer's body;
(e) a band integral with the top of said midriff portion and extending across the front of the garment and from side to side thereof; said band having a stretch weave similar to said midriff and girdle portions;
(f) a lower brassiere portion integral with and extending above said band portion and having a stretch weave similar thereto; said brassiere portion having two cup-shaped areas, each having central and side tucks;
(g) a shoulder portion extending above and being integral with said lower brassiere portion and having shoulder straps extending down at the back of the garment to the rear part of the midriff portion, said shoulder portion having a stretch weave similar to said leg and foot portions; and
(h) a zipper extending along the front of the garment from the center of the shoulder portion down to said midriff portion.

3,357,436
APPARATUS FOR DRYING TOBACCO
Alexander Herbert Wright, London, Middlesex, England, assignor to Brown & Williamson Tobacco Corporation, Louisville, Ky., a corporation of Delaware
Filed Aug. 26, 1964, Ser. No. 393,481
18 Claims. (Cl. 131—135)

1. Apparatus for humidifying air and drying tobacco comprising means for circulating the said air in a substantially closed system, means for heating the air in the system, means for introducing tobacco at one end of the system and in the path of the heated air, means in advance of said tobacco introduction station for moisturizing the air so that the air initially contacting the tobacco contains a predetermined amount of moisture, chamber means in the system at a point beyond the tobacco introduction station and in which the tobacco is conveyed upwardly by the hot moisturized air, the air flow in the chamber means being insufficient to overcome the force of gravity on denser portions of the tobacco so that such denser portions will lose their initial upward velocity before reaching the top of the chamber and will sink back in the outer part of the chamber and execute a circulatory motion in the chamber until the density of such portions has decreased to the desired degree, means for separating the tobacco from the conveying air, means for discharging an amount of moisture-ladened air from the system, means for introducing the equivalent amount of fresh air at a lower moisture content into the system, and temperature-sensing means for sensing the temperature of the air following the discharge of the tobacco; said sensing means regulating the proportion of moisturized air that is heated prior to its contact with the tobacco at the tobacco introduction station.

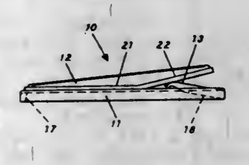
3,357,437
TREATMENT OF TOBACCO
Donald Maguire, Lodge View 29, The Lawns, Rolleston-on-Dove, England
Filed Feb. 21, 1966, Ser. No. 528,987
9 Claims. (Cl. 131—136)

1. Apparatus for treating packages of tobacco in the nature of hogsheads having the tobacco leaf packed in flat laminations, comprising means for supporting the package including means for advancing the package into the apparatus so that the leading surface of the advancing package is parallel with the laminations, means for subjecting the said surface to the pressure action of moist



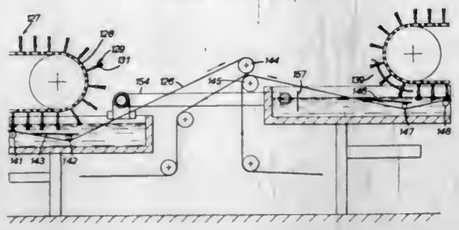
fluid, said moist fluid constituting means acting not only to restore moisture content to the said surface layer of the package but also to remove leaf from that surface layer, so that the leaf in the entire package is progressively moistened and unpacked in a single continuous process.

3,357,438
UNITIZED HAIRCLIP
Eugene G. Castagna, Clark, N.J., assignor to Chevron Research Company, a corporation of Delaware
Filed Dec. 24, 1964, Ser. No. 421,012
4 Claims. (Cl. 132—46)



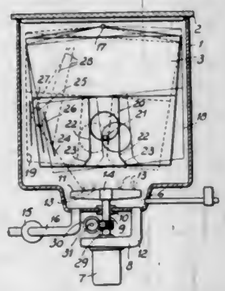
1. A one-piece clip including first and second superposed elongated lever members forming clamping portions at one end of their ends and handle portions at the other of their ends, and a resilient restoring means struck from the material of both of said level members adapted to interconnect said lever members and to urge them toward a closed position, said resilient restoring means extending between said handle portions of said first and second lever members in a direction toward their clamping portions, said restoring means including oppositely curved first and second folds consecutively located therealong in a direction toward clamping portions of said lever members, said first fold including a permanently formed, fulcrum-forming camming surface adapted to engage a surface of said handle portion to said second member so as to allow said lever members to be pivoted relative to one another, said second fold being located adjacent to said handle portion of said second lever member and adapted to place said restoring means in a stressed condition so that to urge said second lever member in a first direction toward a closed position with respect to said first lever member, said first lever member including an aperture longitudinally extending over a major portion thereof, said second lever member including cantilevered clamping means attached to said handle portion at a location adjacent to said restoring means, said cantilevered clamping means having an end portion being urged by said restoring means into contact with a broad surface of said clamping portion of said first level member at said aperture, said second lever member including at least said clamping means being adapted to pass through the plane of said aperture of said first level member in a second direction opposite to said urging direction of said second lever member so as to form said second fold of said restoring means and thereby place said restoring means in a stressed condition.

3,357,439
CONVEYORS FOR STRIP MATERIAL
Joseph Clegg, Dagenham Dock, Essex, England, assignor to Porous Plastics Limited, Essex, England, a company of Great Britain
Filed June 10, 1965, Ser. No. 462,891
Claims priority, application Great Britain, June 12, 1964, 24,575/64
14 Claims. (Cl. 134—60)



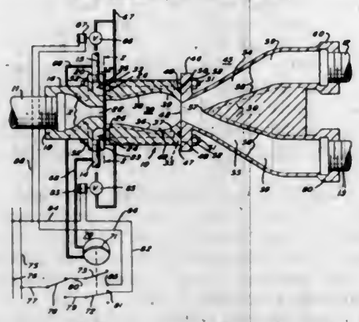
5. Conveying apparatus for conveying a fragile strip material through a liquid, including a bath for the liquid, a companion conveyor comprising an endless band of sheet material passing through the bath, an endless band of brushes having soft bristles opposed to the band conveyor to hold the strip material in contact with the endless band conveyor, and means for driving the two conveyors at the same linear speed.

3,357,440
DISHWASHING MACHINE WITH DOUBLE RELATIVE MOTION BETWEEN CLEANSING SPOUTS AND DISHES
Eugenio Bianchi, Viale Vittorio Emanuele 39, Bergamo, Italy
Filed Aug. 2, 1965, Ser. No. 476,300
Claims priority, application Italy, Dec. 19, 1964, 27,115/64
5 Claims. (Cl. 134—140)



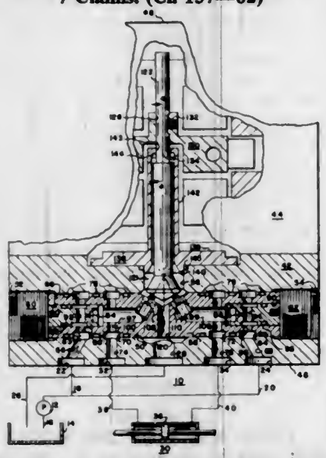
1. A dishwashing machine comprising at least one basket adapted to support dishes in spaced relationship, means mounting the basket for oscillatory swinging movement, jet means for applying cleaning fluid to dishes in the basket, means mounting the jet means for cyclic movement in a closed path, said jet means comprising a group of nozzles, a rotating member by which said nozzles are carried, a washing tank encompassing said basket, a motor disposed outside said washing tank for rotating said nozzles, a pump driven by said motor for supplying cleaning liquid to said nozzles, said basket-mounting means comprising means mounting said basket for vertical swinging movement about a horizontal axis disposed near the top of the basket, and means for oscillating the basket and for moving the jet means about said closed path with a frequency of oscillation of said basket which is distinctively different from the frequency of cyclic movement of said jet means so that the cleaning fluid from the jet means impinges on the dishes at continuously different impact angles, said means for oscillating the basket comprising a rotatable eccentric and two parallel guides secured to the basket and between which said eccentric is rotatably disposed.

3,357,441
FLUID CONTROL APPARATUS
Robert B. Adams, Bethayres, Pa., assignor to Moore Products Co., Spring House, Pa., a corporation of Pennsylvania
Filed Oct. 5, 1964, Ser. No. 401,523
9 Claims. (Cl. 137—81.5)



1. Fluid flow control apparatus comprising a source of fluid to be controlled, a nozzle connected to said source for delivery of a fluid stream, a fluid interaction chamber to which said nozzle is connected and from which the fluid is delivered, fluid control passageways on opposite sides of said nozzle for controlling the position of said fluid stream in said chamber, a source of control fluid connected to said control passageways, valve members in each of said control passageways, means for opening said valve members, and means responsive to the differential pressure between said control passageways for selectively deactivating said opening means.

3,357,442
FLAPPER-NOZZLE RELAY
Logan H. Mathis, Southfield, and Julian R. Romans, Dearborn, Mich., assignors to Sperry Rand Corporation, Troy, Mich., a corporation of Delaware
Filed June 28, 1965, Ser. No. 467,413
7 Claims. (Cl. 137—82)



1. In a transducer for converting an input movement into an inverse variation between two output pressures, the combination of:

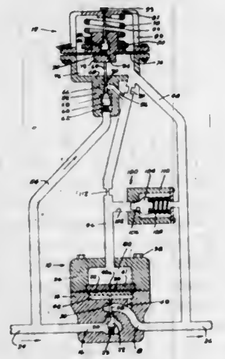
means forming a pair of nozzles having discharge axes which, projected, converge at an acute angle;

means for supplying a controlled flow of fluid to each of said nozzles;

a flapper member having a pair of control surfaces, each surface being spaced from but proximate to one of said nozzles and lying on a plane disposed substantially perpendicular to the axis of the nozzle to which it is proximate, thus forming a pair of control orifices;

and means for supporting said flapper member for movement to inversely affect the spacing between said control surfaces and said nozzles and thus vary the flow restrictive effect of said control orifices.

3,357,443
FLUID PRESSURE REGULATOR
Richard S. Brumm, El Cerrito, Calif., assignor to Grove Valve and Regulator Company, Oakland, Calif., a corporation of California
Filed Mar. 15, 1965, Ser. No. 439,624
11 Claims. (Cl. 137—116.5)



1. In combination with a fluid pressure regulator including a valve member and a main pressure-responsive member operating said valve member,

a compensator device for operating said main pressure-responsive member comprising:

a compensator valve,

a compensator pressure-responsive member for operating said compensator valve,

means connecting said compensator pressure-responsive member to the downstream side of the fluid pressure regulator,

duct means connecting the opposite sides of said main pressure-responsive member,

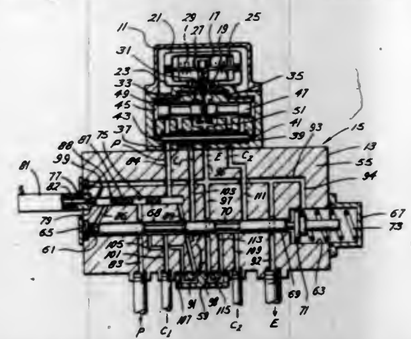
an orifice in said duct means,

a load conduit connecting the discharge of said compensator valve to one side of said main pressure-responsive member, and

a normally closed loaded relief valve connecting the opposite sides of said main pressure-repsonsive member and constructed and arranged to limit the amount by which the pressure on said one side of said main pressure-responsive member exceeds the pressure on the other side.

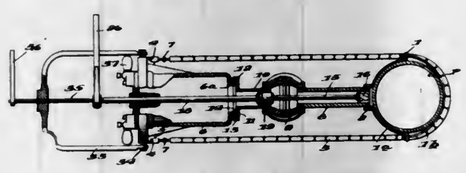
3,357,444
FLUID FLOW CONTROL
Kenneth W. Zeuner, Levittown, Pa., assignor to Weston Instruments, Inc., Newark, N.J., a corporation of Delaware
Filed Jan. 21, 1965, Ser. No. 427,046
10 Claims. (Cl. 137—270)

1. In a manifold apparatus for automatically controlling the flow of fluid between a regulating valve and a fluid driven device in response to the occurrence of an event, fluid supply means for directing fluid under pressure to the regulating valve, means forming passages for directing fluid from the regulating valve to the fluid driven device, normally closed means forming diverting channels for directing fluid from said fluid supply means to said



fluid driven device, selectively operable means for closing said passage means and for opening said diverting channel means, and means responsive to the occurrence of said event for operating said closing and opening means.

3,357,445
PIPE TAPPING MACHINES
Frank J. Daugherty, 8005 S. Burchfield Drive, Oak Ridge, Tenn. 37830
Filed Mar. 25, 1964, Ser. No. 354,518
1 Claim. (Cl. 137—318)

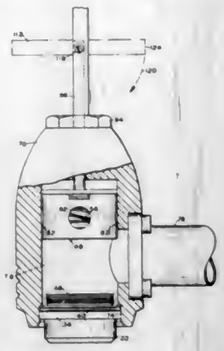


In a pipe tapping machine, the combination with an elongated tapping body having one end thereof substantially open, and means for closing the opposite end of a pipe clamp with a saddle and clamp arranged to encircle a pipe to be tapped, said saddle having a threaded opening in a side thereof, a valve intermediate the pipe clamp and the tapping body, a nipple connected with one side of the valve and with the threaded opening, a fitting connected with the opposite side of the valve and with the open end of the tapping body, and a chain pivotally connected at opposite ends with the tapping body in position to extend in embracing relation around the pipe to hold the parts in aligned relation securely on the pipe during tapping, said fitting and tapping body being held in aligned relation by the clamping relation of the chain, and a drill having an operative driving connection with the tapping body for movement therethrough into tapping engagement with a side of the pipe.

3,357,446
METHOD AND APPARATUS FOR EVACUATING SEALED CHAMBERS
Ira W. Simons, Columbus, Ohio, assignor to Cryo-Vac, Inc., Columbus, Ohio, a corporation of Ohio
Filed Dec. 29, 1966, Ser. No. 605,904
11 Claims. (Cl. 137—322)

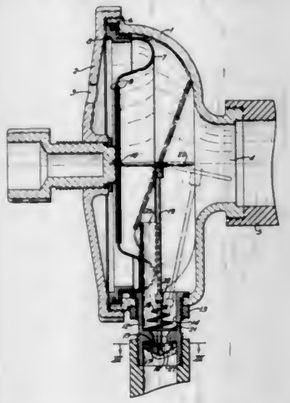
1. A mechanism for use in evacuating sealed chambers comprising, in combination, a housing portion attached to a wall of said sealed chamber to be evacuated and including a passage communicating with the interior of said

sealed chamber; valve means for said passage and removably mounted on said housing portion; a cover portion for said valve means and removably mounted to said housing portion; and valve means lift apparatus removably at-



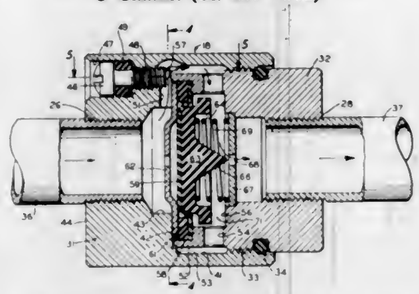
tachable to said housing portion and including interengaging means for connection with said valve means, said portion having sealing means for engagement with said cover and apparatus.

3,357,447
BREATHING APPARATUS DEMAND VALVE
Nicholas Zarichansky, East McKeesport, Pa., assignor to Mine Safety Appliances Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Apr. 9, 1965, Ser. No. 446,877
2 Claims. (Cl. 137—494)



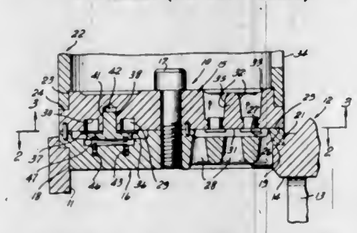
1. A breathing apparatus demand valve comprising a housing having a back wall provided with a central outlet port, a flexible diaphragm in the housing, means sealing the edge of the diaphragm to the housing near its front to form a chamber between the diaphragm and the back wall of the housing communicating with said port, the diaphragm being responsive to variations in pressure in said chamber and having a stiff central portion movable toward the outlet port during inhalation at said outlet port, the side of the housing in said chamber being provided with an inlet passage encircled at its outer end by a valve seat, a tiltable valve head for said seat, a spring normally holding said head on the seat, a stem fastened to the center of the valve head and extending through the inlet passage to a point adjacent said stiff central portion of the diaphragm, a head on the inner end of the stem for engagement by the rearwardly moving diaphragm to tilt the stem and valve head, and a stop rigidly mounted between the stem and diaphragm in the path of the part of said stiff portion between said inlet passage and the portion of the diaphragm engaging said stem head, whereby when the diaphragm is drawn backward in the housing during inhalation said stiff portion of the diaphragm will engage said stop and will tilt on it back into engagement with the back wall of the housing at the side of said outlet port opposite to said inlet passage.

3,357,448
CONSTANT FLOW VALVE
Thomas B. Martin, % Micro-Pump Corp., P.O. Box 392, Danville, Calif. 94526
Filed June 14, 1965, Ser. No. 463,556
5 Claims. (Cl. 137—501)



2. A valve comprising a first and a second hollow casing part, said first part formed with an internal shoulder, said second part formed with an inner end dimensioned to fit inside said first part and to extend in close proximity to said internal shoulder, means for holding said parts together in assembled position, an inlet port in said first part, an outlet port in said second part, said ports axially aligned transverse to the plane of said shoulder, an inlet chamber in said first part inside said inlet port and on the side of said shoulder toward said inlet port, an outlet chamber in said second part spaced inside said outlet port, means forming an orifice between said outlet chamber and said inlet port, a diaphragm in proximity to said shoulder separating said inlet and outlet chambers, mounting means for said diaphragm compressed between the inner end of said second part and said shoulder when said parts are in assembled position, orifice blocking means mounted for movement with said diaphragm toward and away from said orifice to vary the effective area of said orifice, a spring biasing said blocking means away from said orifice, said casing parts formed with a restricted flow bypass from said inlet chamber around said diaphragm and into said outlet chamber upstream of said orifice.

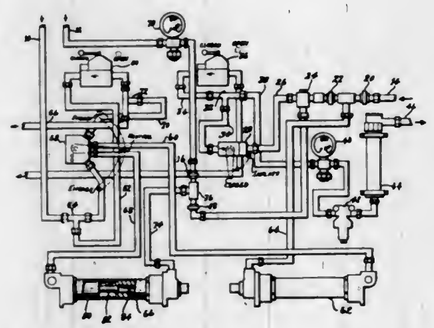
3,357,449
VALVE UNIT FOR NON-LUBE AIR COMPRESSORS
Smith F. King, Franklin, Pa., assignor to Chicago Pneumatic Tool Company, New York, N.Y., a corporation of New Jersey
Filed June 24, 1965, Ser. No. 466,532
7 Claims. (Cl. 137—512.1)



1. In a valve unit for a piston type air compressor, comprising a valve seat member having an inner level face and a pair of concentric air intake channels recessed in

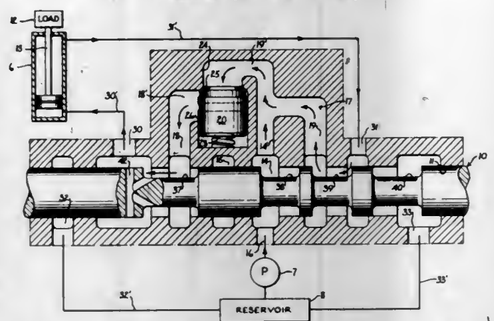
said face, a keeper member complementing the seat member having an inner level face and having an annular channel recessed therein in opposed parallel relation to the intake channels, and a pair of concentrically arranged ring plate valves axially movable in the annular channel to open and closed condition over the intake channels, the improvement comprising: a plurality of wells spaced circumferentially equally apart at the bottom of the annular channel of the keeper member and each centered relative to the intake channels, a separate guide bore coaxial with each well formed in the seat member between the intake channels, a valve guide associated with each well having an annular base portion abutting undersurface portions of both valves, a guide stem portion extending axially from the base portion having slidable movement in the guide bore and extending between the valves and in close relation thereto, a spring seated in each well pressing upwardly against the underside of the base portion of the related guide member so as to yieldably hold the valves by means of the base portion seated over the intake channels, the base portion of each guide member being forcefully movable into its corresponding well upon opening of the valves, each well having a flat level bottom surface, and the base portion of each guide member having a complementary flat undersurface impactable against the bottom surface of its well upon opening of the valves.

3,357,450
POSITIVE CONTROL TIRE INFLATION SYSTEM
Gerald F. Spillman, Denver, Colo. (14418 Avis, Lawndale, Calif. 90260)
Filed Feb. 16, 1965, Ser. No. 433,236
2 Claims. (Cl. 137—567)



1. An apparatus for safely inflating and deflating a high pressure device comprising;
a first working air pressure system having an input for supplying low pressure air to the device, first valve means having a closed position causing the device to become isolated from the system input and an open position connecting the device to the system input, second valve means for selectively venting the system and device to atmospheric pressure,
a boost system having a plurality of differential area piston and cylinder means each of which has a larger area portion connected to a pressure input and a smaller area portion connected to the first system, third valve means comprising a manually operated valve having a neutral position and a position to connect said last mentioned input to the larger area portion of each of the plurality of cylinder means whereby the pressure in the first system is increased one predetermined increment of pressure each time the third valve means is opened to one of the actuating positions.

3,357,451
SPEED AND DIRECTIONAL CONTROL VALVE FOR DOUBLE-ACTING LIFT CYLINDER
Francis H. Tennis, Hartland, Wis., assignor to Hydraulic Unit Specialties Company, Pewaukee, Wis., a corporation of Wisconsin
Filed May 24, 1965, Ser. No. 458,123
3 Claims. (Cl. 137—596)

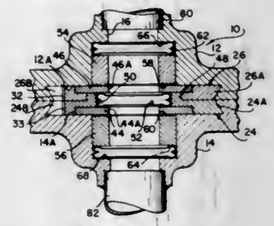


1. A hydraulic control valve for governing flow of pressure fluid to and from the head and rod ends of a double-acting lift cylinder, which valve is of the type characterized by a body having an inlet passage to receive pressure fluid from a source thereof, supply passage means connecting with the inlet passage, return fluid passage means, and a pair of service passages respectively adapted for connection with the head and rod ends of the cylinder, said valve being further characterized by:
(A) a valve element in the body movable to a plurality of operating positions to selectively control communication between the service passages and said supply and return passage means, one of said operating positions comprising a high speed lift position of the valve element at which both of said service passages are closed off from the return passage means;
(B) said supply passage means comprising
(1) a first branch passage unrestrictedly connected with the inlet passage and adapted to have unrestricted communication with the rod-connected service passage in said high speed lift position of the valve element,
(2) a second branch passage adapted to be communicated with the head-connected service passage in the high speed lift position of the valve element,
(3) and passage defining means connecting said second branch passage with the inlet passage and with the first branch passage so that the service passages will be communicated with one another and with the inlet passage in said high speed lift position of the valve element and source fluid together with fluid returning to the rod connected service passage will then flow to the head connected service passage;
(C) and a load holding check valve located in the supply passage means between said branches thereof so as to be in the path of all pressure fluid flowing to the head connected service passage either from the inlet passage or from said first branch passage.

3,357,452
QUICK-DISCONNECT COUPLING
Artemas M. Larkin, Glendale, and Ralph E. Middleton, North Hollywood, Calif., assignors to Lockheed Aircraft Corporation, Burbank, Calif.
Filed Oct. 1, 1965, Ser. No. 492,143
5 Claims. (Cl. 137—614.01)

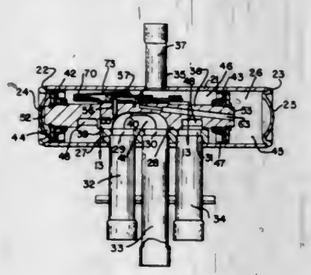
1. A hydraulic disconnect coupling comprising:
a pair of separable mating hollow housings in abutting

relation and having at least one port extending through the housings and the housings being held together by a fastening means;
a pair of plates mating and abutting each other and being mounted between the pair of mating housings with one plate being retained and slidable relative to each housing the plates being disposed entirely within the housings;
an insert extending within each of the plates, each insert and each plate having ports therethrough which match the ports through the housings;
the inserts defining an annular groove between both the inserts and the plate ports;



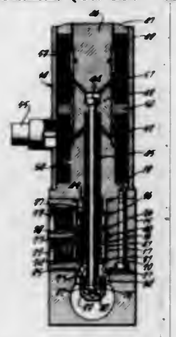
means for sliding the plates relative to the housings so as to move the plate ports between an open position wherein the plate ports match the housing ports and a closed portion wherein the plates close off the housing ports;
a metallic seal being disposed in the annular groove and sealing the joint between the abutting plates;
a pair of sealing rings being slidably disposed within the housing with one sealing ring on opposite sides of the plates and each having a reduced rim portion abutting the respective plate insert; and
a plurality of second metallic seals being disposed one each within the housing ports and abutting the sealing rings and the housing.

3,357,453
VALVE CONSTRUCTION AND PARTS THEREFOR OR THE LIKE
Frank V. Mingrone, Mildord, New Haven, and David L. Morgan, Shelton, Fairfield, Conn., assignors to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware
Filed May 26, 1965, Ser. No. 459,025
19 Claims. (Cl. 137—625.63)



1. In combination, a housing having a cavity therein and being interrupted by port means, a main valve member disposed in said cavity and being axially movable to interconnect various of said port means together, the ends of said main valve member cooperating with said housing to define a pair of opposed chambers and an intermediate chamber in said housing, and a pilot valve member pivotally carried by said main valve member and being adapted to selectively interconnect said intermediate chamber to one of said opposed chambers while interconnecting the other opposed chamber to one of said port means.

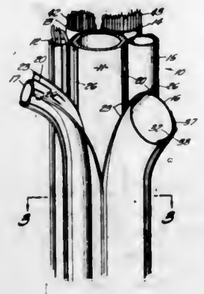
3,357,454
BALANCED MULTI-WAY VALVE
Rodrick J. Koutnik, Vista, Calif., assignor, by mesne assignments, to Snap-Tite, Inc., Union City, Pa., a corporation of Pennsylvania
Filed Jan. 20, 1964, Ser. No. 338,813
3 Claims. (Cl. 137—627.5)



1. In a three-way valve,
a body having an axial opening and inlet, service and exhaust passages spaced along said axial opening and communicating with said opening,
said service passage being intermediate said inlet and exhaust passages, a first port means in said opening forming a first port between said inlet and service passages,
a second port means in said opening forming a second port between said service and exhaust passages, said second port being of at least substantially the same diameter as the diameter of said first port,
a first valve member in said opening on one side of said inlet passage and engageable with said first port means to close said first port, a sliding seal on said first member slideable in said opening on the opposite side of said inlet passage, said sliding seal being of at least substantially the same diameter as the diameter of said first port,
a second valve member in said opening on one side of said exhaust passage and slideably connected to said first valve member and engageable with said second port means to close said second port, a second sliding seal on said second member slideable in said opening on the opposite side of said exhaust passage, said second sliding seal being of at least substantially the same diameter as the diameter of said first port,
spring means extending between said valve members whereby to normally maintain said valve members in engagement with said respective port means,
and means for selectively moving said first valve member in one direction to open said first port and for moving said second valve member in an opposite direction to open said second port.

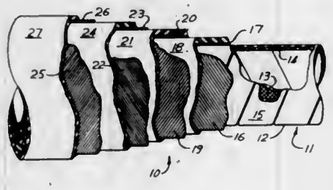
3,357,455
MULTIPLE CHANNEL JACKETING WITH ATTACHED MOUNTING STRIP
Walter A. Plummer, 3546 Crownridge Drive, Sherman Oaks, Calif. 91403
Filed June 13, 1966, Ser. No. 557,254
6 Claims. (Cl. 138—106)

1. In a jacket assembly for use to enclose conductors, cabling and the like, said jacket assembly comprising a continuous tubular main body of thin flexible sheet plastic material; that improvement which comprises a connector and mounting strip for said jacket assembly, said strip extending lengthwise from end to end of the jacket body with the midportion thereof bonded to the midportion of said jacket body, the opposite lateral edges of said mounting strip being provided respectively with first and second complementally shaped portions of an interlocking separable seam of the type mateable by relative lateral movement whereby the first portion of one strip



is adapted to be interlocked with the second portion of the mounting strip of a second similarly constructed jacket assembly upon relative lateral mating movement and whereby the second portion of said one strip is adapted to be interlocked with the first portion of the mounting strip of a third jacket assembly upon relative lateral mating movement to hold a plurality of said jacket assemblies flexibly interlocked in side-by-side relation to one another.

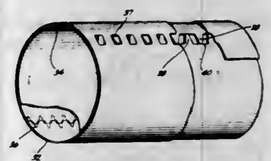
3,357,456
HOSE AND METHOD OF MANUFACTURE
Charles E. Grawey, Peoria, and Robert W. Untz, Hanna City, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Aug. 30, 1966, Ser. No. 576,035
10 Claims. (Cl. 138—127)



1. A method of making flexible wire-reinforced rubber hose on a mandrel wherein the mandrel is removed when the hose is completed comprising:
(a) forming a laminated tape, said tape having two thin layers of uncured elastomers with an open mesh fabric sandwiched therebetween;
(b) wrapping said laminated tape in overlapping relationship on a mandrel to form a core;
(c) winding a plurality of resilient wires on said core in parallel side-by-side helical convolutions to form a cylindrical wire ply having a wall thickness equivalent to the diameter of said wires;
(d) covering said cylindrical wire ply with a skin of uncured elastomer;
(e) winding a plurality of resilient wires on said skin in parallel side-by-side helical convolutions to form a second cylindrical wire ply having a wall thickness equal to the diameter of said wires, said helical convolutions of said second ply being wound at an angle opposite to the winding angle of said first ply so said wires in said second cylindrical wire ply cross those of said first wire ply; and
(f) subsequently vulcanizing the built-up hose by heating it.

8. A flexible wire-reinforced rubber hose comprising a tubular core formed by wrapping in overlapping relationship a laminated tape composed of two layers of elastomer with an open mesh fabric sandwiched therebetween and at least two mutually concentric wire plies separated by a skin of elastomer, each consisting of a multiplicity of individual resilient flexible helical shaped wires wound in parallel, side-by-side convolutions, said first concentric wire ply being wound on said core with an angle within ½° of 54° 44′ with reference to the hose axis and said next adjacent concentric ply being wound with an opposite angle of equal magnitude to cross said first ply.

3,357,457
COLLAPSIBLE TUBULAR STRUCTURE
Jon H. Myer, Newport Beach, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed Apr. 30, 1964, Ser. No. 363,969
1 Claim. (Cl. 138—166)

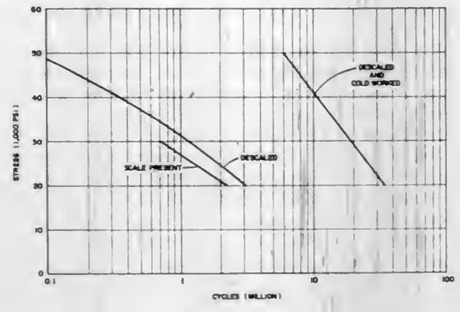


A collapsible tubular structure comprising:
a first elongated member having a preformed circular cross section and a ratio of width to thickness of a value falling within a specific range of values enabling the member to be rolled into a compact form and then unrolled into a tubular structure having a cross section substantially similar to the preformed cross section;
a second elongated member having a preformed circular cross section of a diameter slightly less than that of the first elongated member and a ratio of width to thickness of a value falling within a specific range of values enabling the member to be rolled into a compact form and simultaneously with said first member unrolled into a tubular structure circumscribed by said first member; and
means cooperating with said first and second elongated members to provide torsional rigidity to said tubular structure, said means including a plurality of serrations along the longitudinal edges of said first member defining a plurality of tabs and a plurality of perforations spaced longitudinally along the periphery of said second member whereby the unrolling of said members causes said serrations to automatically interdigitate and said tabs to be retained by said perforations.

3,357,458
PROCESS AND PRODUCT FOR IMPROVED RESISTANCE TO STRESS CORROSION
Frederick J. Radd and Louis H. Wolfe, Ponca City, Okla., assignors to Continental Oil Company, Ponca City, Okla, a corporation of Delaware
Filed Aug. 3, 1964, Ser. No. 386,884
6 Claims. (Cl. 138—177)

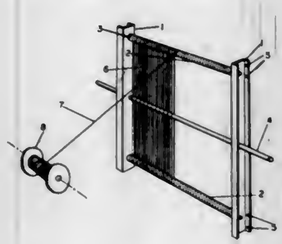
1. A process for the treatment of a steel sucker rod for use in corrosive environments containing hydrogen

sulfide which comprises skinning-off by mechanical treatment substantially all oxide-defective and decarburized



surface layers and thereafter inducing compressive stresses in the surface of said sucker rod by surface cold-working.

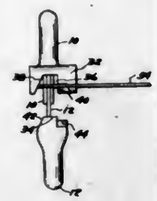
3,357,459
METHOD OF MAKING A FLAT WIRE GRID
Roger Raymond Cahen and Jean Pierre Driffort, Levallois, Hauts-de-Seine, France, assignors to CFT—Compagnie Francaise de Television, a corporation of France
Filed June 18, 1965, Ser. No. 464,971
Claims priority, application France, June 25, 1964, 979,564
3 Claims. (Cl. 140—71.5)



1. A method of making a wire grid for a cathode ray tube which comprises:
(a) winding a continuous wire about two first spaced, grooved rods to form two sheets of wires;
(b) bringing the two sheets to rest on two second spaced grooved rods;
(c) tensioning the wires of said sheets to form between said second rods a single sheet of wires extending in a common plane;
(d) exerting forces on two opposite sides of a resilient frame to move said sides toward each other into a position remote from the relative position of said sides in the relaxed condition of said frame;
(e) sealing the wires of said single sheet to said opposite sides while maintaining said wires in said common plane and while maintaining said sides in said remote position thereof; and
(f) thereafter relaxing said forces.

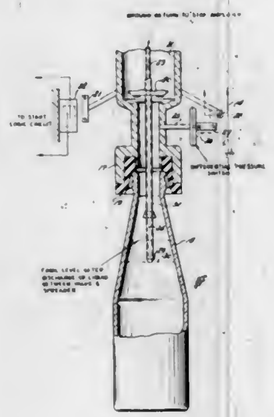
3,357,460
WIRE FORMING IMPLEMENT
Eugene Gawura, 6927 Coleman, Dearborn, Mich. 48126
Filed Oct. 12, 1965, Ser. No. 495,282
2 Claims. (Cl. 140—106)

1. A wire forming implement comprising two pivoted jaw members having an open and a closed position, means for manipulating the jaw members, a die on one of the jaw members having therein a cavity one side wall of which is outwardly disposed, a transverse slot in the die for receiving and positioning an end section of wire across the cavity, and a die on the other jaw member shaped to fit into the cavity of the first mentioned die when the



jaw members are moved to a closed position, such second mentioned die member forcing the end of the wire to slide along the outwardly disposed side wall to the bottom of the cavity thereby forming a terminal offset in the wire.

3,357,461
AUTOMATIC CONTAINER FILLING CONTROL METHOD AND APPARATUS
Kenneth F. Friendship, Akron, Ohio, assignor to Geo. J. Meyer Manufacturing Co., Cudahy, Wis., a corporation of Wisconsin
Filed Sept. 30, 1965, Ser. No. 491,691
9 Claims. (Cl. 141—6)



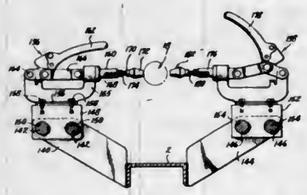
1. A method of filling containers with a beverage supplied continuously under pressure when the containers have a counter pressure set up within them when they are engaged for filling action, comprising the steps of
changing an electrical condition in a control circuit which can only operate when said electrical condition is changed when a container is engaged for filling action,
closing a part of said control circuit by said counter pressure to render it conductive,
actuating beverage flow control means by said control circuit to release beverage for flow to an engaged container,
providing an electrical impulse when a container is filled with a beverage, and
transmitting said impulse to said control container to render it non-conductive and terminate flow of beverage to said container.

3,357,462
CUTTING BLADE
Wilbur J. Craven, Glastonbury, Conn., assignor to The Capewell Manufacturing Company, Hartford, Conn., a corporation of Connecticut
Filed Apr. 6, 1964, Ser. No. 358,152
8 Claims. (Cl. 143—133)



1. A cutting blade comprising a shank portion having means for attaching the blade to a reciprocating machine, a cutting portion disposed at an acute angle to said shank portion and having a cutting edge and a back edge spaced from said cutting edge, and a work-hardened compressively deformed portion disposed substantially between said shank and cutting portions and extending from a point intermediate said cutting edge and said back edge outwardly toward one of said edges.

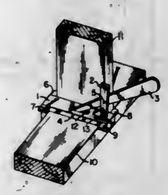
3,357,463
METHOD FOR REPAIRING A CRACKED BASEBALL BAT
Gene F. Franscioni, 520 E. 11th St., Davis, Calif. 95616
Filed Feb. 2, 1966, Ser. No. 524,608
7 Claims. (Cl. 144—310)



1. The method for repairing a cracked baseball bat, the crack beginning in a hairline base region within the baseball bat and terminating at its outer end on the periphery of the bat, comprising: making a hole in said baseball bat into the base region of the crack; injecting an adhesive through said hole into the base region of the crack; applying force thereto to bend the baseball bat to separate the confronting crack surfaces at the outer end of the crack; applying adhesive to the separated confronting surfaces of the crack; terminating said bending force; and wrapping the baseball bat with a tensioned resilient element, to clamp the crack in closed relationship while said adhesive cures.

3,357,464
CARPENTER'S ALIGNING TOOL
Walter J. Vroman, 2630 SW. 13th St., Fort Lauderdale, Fla. 33312
Filed Sept. 7, 1965, Ser. No. 485,422
1 Claim. (Cl. 145—1)

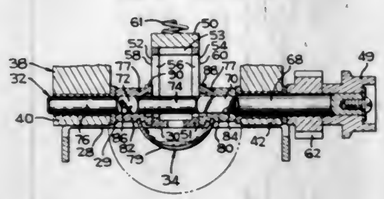
A carpenter's assist tool for positioning two framing members perpendicular to each other, said tool comprising a U shaped base member defined by an elongated portion and a pair of depending arms at opposite ends thereof, said elongated portion having a through slot adjacent one of said arms, a wedge having a serrated surface received by said slot and operative upon movement therein to grip one of said frame members between said serrated surface and a surface of the other of said arms, a lever pivotally connected to said elongated portion and said wedge to slide said wedge in said slot, said elongated member having parallel side surfaces for aligning and positioning against either side surface thereof the other of said frame members with a predetermined line on said one of said frame members, and each of said side surfaces having at opposite ends thereof a pair of oppositely extending wing members for engagement with both edges of said other of said frame members to prevent lateral movement thereof.



3,357,465
NUT SHELLER
George E. Thurman, Rte. 3, Box 9, Marble Falls, Tex. 78654
Filed Mar. 30, 1965, Ser. No. 443,872
8 Claims. (Cl. 146—10)

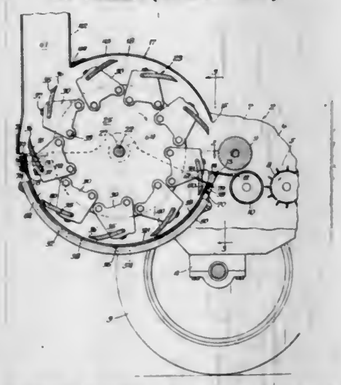
1. A nut sheller comprising a support, a nut holding assembly mounted on the support, said holding assembly comprising opposed rotary shafts having facing ends, nut holding means on said ends for engaging opposite sides of the shell of a nut, one of said shafts being adjustable toward and away from the other shaft, a rotary cutter assembly mounted on the support and parallely spaced with respect to said rotary shafts, said cutter assembly being p.voted on said support to be swung from a retracted inoperative position at one side of said rotary shafts to an overbalanced operative position relative to the rotary shafts, said cutter assembly having rotary cutter mean thereon which is adapted to engage a nut held between the facing ends of said rotary shafts, first means for rotating the cutter means, and second means for rotating the nut holding shafts, said holding means comprising parallel spaced fixed shafts mounted on the support, opposed and connected pairs of sleeves sliding on said fixed shafts, one of said rotary shafts being journaled on one pair of sleeves, and the other rotary shaft being journalled on the other pair of seeves.

3,357,466
PITTING APPARATUS
Robert C. Luhdorff, Campbell, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed July 29, 1965, Ser. No. 475,776
3 Claims. (Cl. 146—28)



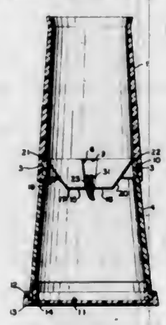
1. In a fruit half pitter head of the type wherein the head has apertured fruit support block with a support surface arranged to engage the pit side of an unpitted fruit half, a knife carrier on said head, a knife support shaft rotatable in said carrier and disposed substantially parallel to said fruit support surface, said knife shaft extending through the aperture in said fruit support block, and a U-shaped pitting knife having hub portions slidably mounted on said shaft with leg portions connected to said hub portions for straddling said fruit support, said pitting knife also having a central bight portion connecting said leg portions having a cutting edge, said bight portion sweeping over said support surface upon rotation of said knife support shaft; the improvement wherein each of said knife hub portions projects axially outwardly from its leg portion and has a non-circular aperture, said knife support shaft having a corresponding cross-sectional configuration for keying the pitting knife hub portions to the shaft, and wherein radial flanges are formed on the axially inner end of each hub portion, said flanges being in sliding contact with the adjacent surfaces of said fruit support block to maintain the knife legs in spaced apart relation and thus resist radial elongation of the central bight portion of said knife.

3,357,467
DAMAGE PROTECTED MATERIAL CHOPPING DEVICE
James Morkoski, Clarendon Hills, Ill., assignor to International Harvester Company, a corporation of Delaware
Filed Oct. 15, 1964, Ser. No. 404,020
16 Claims. (Cl. 146—117)



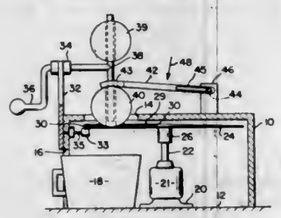
1. In a chopper having a generally cylindrical housing including a pair of opposed side walls and means providing arcuate wall sections between said side walls and defining circumferentially spaced inlet and outlet openings, a shear bar mounted on one of the sections for movement therewith and normally disposed along one edge of said inlet opening, a rotary cutter head journalled between said side walls and having knife means in shearing coaction with the shear bar pursuant to rotation of the rotor, and a break-away connection securing said one section to the housing and accommodating separation of said one section from the housing attendant to introduction of an unshearable object between the shear bar and the rotor knife means as said knife means tends to shear such object against the shear bar.

3,357,468
DOMESTIC CHOPPING APPARATUS
Peter Brinch-Moller, Bagsvaerd, Denmark, assignor to AKTS. EVA Husholdningsmaskiner, Skive, Denmark
Filed Feb. 18, 1965, Ser. No. 433,702
Claims priority, application Denmark, Feb. 19, 1964, 806/64
5 Claims. (Cl. 146—123)



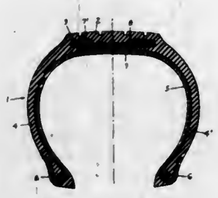
1. Domestic chopping apparatus comprising
a base portion;
a knife axle rotatably mounted in said base portion, said knife axle having an axis;
a plurality of knives mounted on said knife axle for rotation therewith and extending radially therefrom;
a grate positioned over said knife axle, and being in direct contact with said knife axle, said grate having edges supported by said base portion, and a plurality of slits formed therethrough and extending transverse to said axis in a manner whereby said knives cooperate with said grate when said knife axle is rotated; and
a funnel portion mounted on said base portion over said grate.

3,357,469
CORED APPLE SLICING MACHINE
Warren S. Pease, Honeoye Falls, and Lawrence H. Page, Rochester, N.Y., assignors to F. B. Pease Company, Rochester, N.Y., a corporation of New York
Filed Sept. 11, 1964, Ser. No. 395,730
2 Claims. (Cl. 146—125)



1. Apparatus for slicing cored fruit or the like into rings comprising:
(a) means comprising a pin receiving cored fruit for orienting said fruit along the core axis thereof;
(b) means for slicing fruit transversely of its core axis; and
(c) means for feeding said fruit axially of said pin into said slicing means, said feeding means being mounted to radially retract from said pin and mounted independently of movement of said pin.

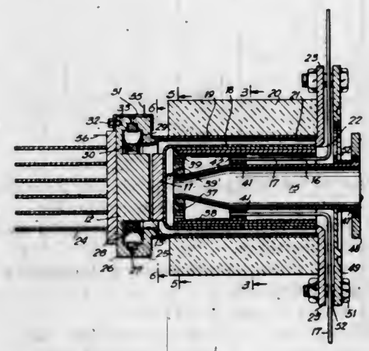
3,357,470
PNEUMATIC TIRES
Jean-Marie Massoubre, Clermont-Ferrand, France, assignor to Compagnie Generale des Etablissements Michelin, raison sociale Michelin & Cie, Clermont-Ferrand, France
Filed Dec. 15, 1965, Ser. No. 514,004
Claims priority, application France, Dec. 18, 1964, 1,814
11 Claims. (Cl. 152—361)



1. A tire having a tread, sides and beads and a crown reinforcement substantially co-extensive with said tread, said crown reinforcement comprising a plurality of superimposed plies of cables, the cables of at least two adjacent plies being inclined in opposite directions and at angles a and b relative to one of the two main directions of the tire, the values of said angles a and b corresponding to the equation

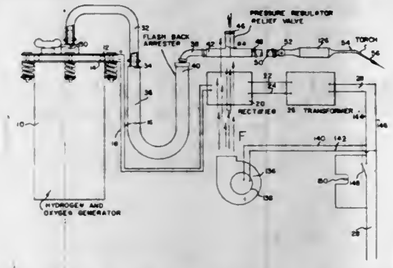
tangent $(a+b)-2$ tangent $b=0$ approximately.

3,357,471
HIGH TEMPERATURE GENERATING HIGH INTENSITY BURNERS
Felix J. Lyczko, Boxford, Mass., assignor to Thermo Electron Engineering Corporation, Waltham, Mass., a corporation of Delaware
Filed Mar. 29, 1965, Ser. No. 446,472
4 Claims. (Cl. 158—7.5)



1. A burner comprising in combination a longitudinally elongated combustion chamber having a fuel inlet end and an oppositely disposed heat transfer surface, said heat transfer surface comprising a material of good heat conductivity; an orifice member having a multiplicity of closely spaced orifice openings positioned close to said heat transfer surface with each of said orifice openings disposed to provide a jet of combustion products passing from said combustion chamber through said orifice openings onto said heat transfer surface; means for supplying said combustion chamber with fuel and with an oxygen containing gas to support combustion of said fuel at the end thereof remote from said heat transfer surface; means for passing said combustion products after the jetting thereof onto said heat transfer surface in indirect heat exchange relation with oxygen containing gas employed to support combustion of said fuel; and insulation surrounding the combustion chamber and means for passing combustion products to minimize loss of heat therefrom and from said combustion products flowing in indirect heat exchange relation with said oxygen-containing gas.

3,357,472
MEANS AND METHOD FOR THE ELECTROLYTIC PRODUCTION OF HYDROGEN AND OXYGEN FOR THE SAFE CONSUMPTION THEREOF
William A. Rhodes and Raymond A. Henes, Phoenix, Ariz., assignors to Henes Manufacturing Co., Phoenix, Ariz., a corporation of Arizona
Original application Mar. 23, 1962, Ser. No. 182,726, now Patent No. 3,262,872, dated July 26, 1966. Divided and this application Oct. 18, 1965, Ser. No. 510,119
7 Claims. (Cl. 158—27.4)



1. In a means of the class described, the combination of: an electrolytic oxygen and hydrogen generator having a common outlet conductor for oxygen and hydrogen, said conductor having a restriction therein; a flash-back arrestor communicating with said conductor; a tubular member of said flash-back arrestor disposed vertically; non-inflammable liquid in said tubular member; the lower end of said tubular member communicating with said conduit; an outlet at the upper end of said tubular member; a bleed-off pressure regulator communicating with said last mentioned outlet; said bleed-off pressure regulator having a vent therein, means disposed to close said vent and release gas therethrough at a predetermined pressure; a delivery outlet for said bleed-off pressure regulator to deliver hydrogen and oxygen therefrom; a torch communicating with said outlet of said bleed-off pressure regulator.

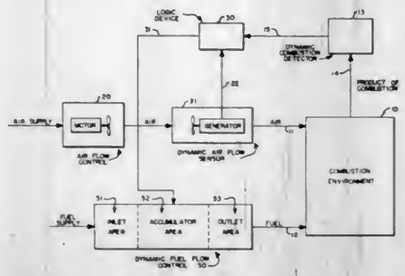
3,357,473
CONTROL SYSTEM
James C. Blackett, Rosemount, William B. Hamelink, Richfield, and Loren L. Krueger, Minnetonka, Minn., and William L. Livingston, Sharon, Mass., assignors to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Sept. 6, 1966, Ser. No. 577,416
6 Claims. (Cl. 158—28)

1. A control system for use in controlling the flow of a first reactant into a reaction chamber where the first reactant combines with a second reactant to sustain an existing reaction, comprising:
means to supply said second reactant to said reaction chamber, a surplus of which may be safely tolerated,
first dynamic means cooperating with said means to

supply said second reactant and providing a dynamic output so long as said second reactant continues to flow to said reaction chamber,

second dynamic means to supply said first reactant to said reaction chamber,

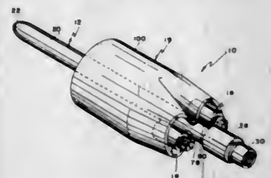
dynamic reaction detecting means cooperating with said reaction chamber and providing a dynamic output



so long as said existing reaction continuously exists at said reaction chamber,

and means controlled by said first dynamic means and by said detecting means to provide dynamic control of said second dynamic means and thereby continue said existing reaction only when a dynamic output is provided by both said first dynamic means and said detecting means.

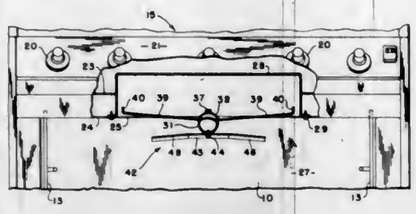
3,357,474
COMBINED FUEL VAPORIZER AND TORCH
Ralph C. Pivonka, % Flame Engineering Co., La Crosse, Kans. 67548
Filed Aug. 24, 1965, Ser. No. 482,082
2 Claims. (Cl. 158—53)



1. A burner for vaporizable fuel comprising a straight tubular member having front and rear ends, a pair of nozzles secured to the tubular member in diametrically opposed positions on the outside of the latter, a generally cylindrical sleeve coaxially disposed about the tubular member in radially spaced relation to the latter and the nozzles, said sleeve including an integral rear end section having radially inwardly inclined portions that are diametrically opposed and secured to the tubular member at positions circumferentially intermediate the nozzles, a tube concentrically disposed in spaced relation within the tubular member to define an annular space therebetween, said tubular member being closed at its front end and sealingly secured adjacent its rear end to the tube, said nozzles being arranged to discharge vaporized fuel toward the front end of the tubular member, and passageway means for fluid communication between the annular space and the nozzles.

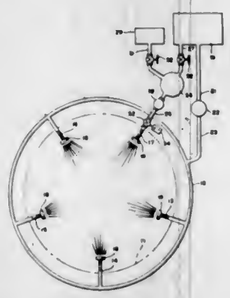
3,357,475
GAS BURNER ASSEMBLY
Ronald D. Schweitzer, Mansfield, Ohio, assignor to The Tappan Company, Mansfield, Ohio, a corporation of Ohio
Filed June 27, 1966, Ser. No. 560,431
4 Claims. (Cl. 158—113)

1. A gas burner assembly for broiling in the upper portion of a cooking oven, comprising an elongated burner body adapted to be mounted horizontally within the oven adjacent the top wall thereof, said body having rows of ports at the sides for discharge and burning of a combustible gaseous mixture supplied to the interior of the body, upper baffle means having lower surfaces which project outwardly from the body sides closely above the rows of ports fully over the lengths of the same, and lower baffle means having upper surfaces projecting outwardly from the sides of the body closely below the



rows of ports and being longitudinally inclined, whereby the vertical separation of said upper surfaces and the lower surfaces of the upper baffle means varies along the length of the burner body, said lower and upper baffle means surfaces being related to define a space for the burner flame at each side which is of outwardly increasing cross-sectional area, with the lateral projection of said lower surfaces being appreciably greater than that of said upper surfaces.

3,357,476
PROCESS AND APPARATUS FOR SPRAY DRYING MULTI-COLORED DETERGENT PARTICLES
Roderick Henry Tofflemire, Mexico City, Mexico, assignor to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware
Filed Aug. 6, 1965, Ser. No. 477,820
12 Claims. (Cl. 159—4)



1. A process for continuously producing a multicolored particulate detergent product which comprises:

(1) forming a first stream of an uncolored liquid detergent composition;

(2) forming a second stream of an uncolored liquid detergent composition;

(3) forming a stream of colorant;

(4) admixing said colorant stream with one of said detergent streams to form a colored detergent composition stream;

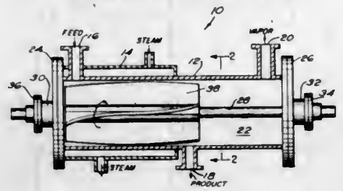
(5) subsequently spraying said uncolored liquid detergent composition into a stream of drying gas in the form of a plurality of liquid droplets;

(6) separately but simultaneously spraying said colored liquid detergent into said stream of drying gas in the form of a plurality of colored liquid droplets;

(7) whereby said colored and uncolored liquid droplets are dried; and

(8) removing a dry particulate detergent product containing a mixture of colored and uncolored particles from said drying air stream.

3,357,477
THIN FILM PROCESSING APPARATUS
Leo J. Monty, Reading, Mass., assignor to Artisan Industries, Inc., Waltham, Mass., a corporation of Massachusetts
Filed Dec. 23, 1966, Ser. No. 604,447
10 Claims. (Cl. 159—6)



1. An improved fluid processing apparatus of a thin film type which comprises in combination:

(a) a closed chamber characterized by an interior wall defining a surface of revolution;

(b) a rotor shaft within the chamber;

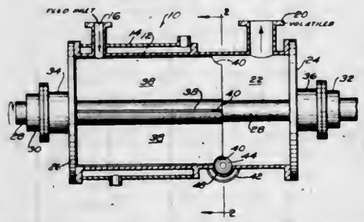
(c) means to rotate the rotor shaft;

(d) an inlet for the introduction of feed material;

(e) an outlet axially spaced apart from the inlet for the removal of product material;

(f) rotor blades secured to the rotor shaft for rotation therewith, the blades having a one end and other end and radially and coaxially arranged from the rotor shaft and extending into a close thin-film forming relationship with the interior wall, said blades having a helical twist therein at either one or the other end thereof, the remaining portion of the blades being coplanar with the rotor shaft axis.

3,357,478
THIN FILM PROCESSING APPARATUS
James Donovan, Cambridge, and Max Mendelsohn, Mattapan, Mass., assignors to Artisan Industries, Inc., Waltham, Mass., a corporation of Massachusetts
Filed Dec. 5, 1966, Ser. No. 599,308
6 Claims. (Cl. 159—6)



1. An improved fluid processing apparatus of a rotary, thin film type which apparatus comprises in combination:

(a) a closed chamber characterized by an interior wall which is a surface of revolution whose elements are straight lines;

(b) a rotor within the chamber;

(c) means to rotate the rotor;

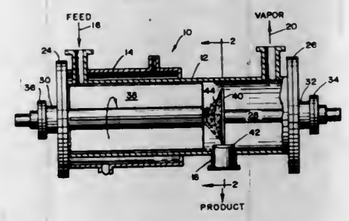
(d) rotor blades secured to the rotor for rotation therewith, the blades generally radially and axially arranged from the rotor and extending into a close relationship with the interior wall of the chamber to form a small space between the outer edges of the blades and the interior wall, each said blade further characterized by having a predetermined shaped cut-out area lying in the longitudinal peripheral edge of the blade in a given transverse plane of the rotor axis;

(e) an inlet at one end of the chamber for the introduction of feed material to be processed;

(f) an outlet in the chamber spaced axially downstream from the inlet for the removal of processed material from the chamber; and

(g) extruding means which means comprise an elongated worm for conveying viscous or other material from the chamber, said axis of the worm being placed at substantially a skew right angle to the rotor axis and pentrating said wall substantially tangentially to intercept the swept out annular region of the cutout areas of the rotor blades, and into a material receiving relationship with the cut-out areas, means for discharging the viscous or other material from said worm, and driving means to drive said worm whereby the material is transferred from the the cut-out edges of the cut-out areas of the blades during rotation of same to the worm and by the worm from the closed chamber.

3,357,479
WIPED FILM PROCESSING APPARATUS FOR EVAPORATING AND CONCENTRATING VISCOUS MATERIALS
James L. Baird, Winchester, and John E. Davis, North Reading, Mass., assignors to Artisan Industries, Inc., Waltham, Mass., a corporation of Massachusetts
Filed Jan. 13, 1967, Ser. No. 609,199
9 Claims. (Cl. 159—6)



1. An improved fluid processing apparatus of a rotary, thin-film type which comprises in combination:

(a) a closed chamber characterized by an interior wall having a surface or revolution;

(b) a rotor shaft within the chamber;

(c) means to rotate the rotor shaft;

(d) rotor blades secured to the rotor shaft for rotation therewith, the blades generally radially and axially arranged from the rotor shaft and extending into close relationship with the interior wall;

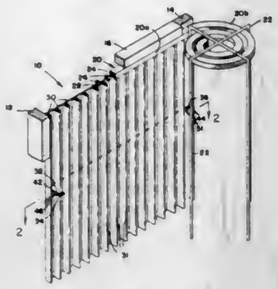
(e) an inlet in the chamber for the introduction of feed material to be processed;

(f) an outlet in the chamber axially spaced apart from the inlet for removal of processed material from the chamber;

(g) process material retaining means extending circumferentially about the rotor shaft and spaced downstream from one end of the rotor blades and having a peripheral edge generally extending outwardly from the axis of the rotor shaft, said retaining means adapted to prevent material clinging to the rotor from moving further down the rotor during rotation of the rotor shaft; and

(h) a conveying means including a leading edge which is in a material transfer relationship with the retaining means, and adapted to direct material from the retaining means to the outlet, whereby in operation viscous material which tends to cling to the rotor shaft and accumulates on the upstream face of the retaining means is continuously removed and directed to the outlet.

3,357,480
SLIDING DOOR STRUCTURE
Tom T. Matsumoto, 826 S. Mary Ave., Sunnyvale, Calif. 94087
Filed Sept. 27, 1965, Ser. No. 490,494
8 Claims. (Cl. 160—133)



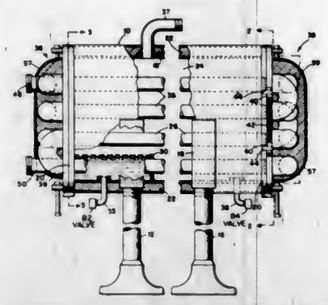
1. A sliding door structure which comprises
a track extending along a substantially horizontal path extending rectilinearly above the door opening and curvilinearly adjacent one side of the opening,
a plurality of slats movably suspended in substantially vertical and adjacent positions from said track, and
means interconnecting said slats and means for tensioning said interconnecting means for releasably holding said slats against displacement from horizontal rectilinear alignment.

3,357,481
METHOD OF INHIBITING EROSION ON MOLD SURFACES
William T. Snyder, Flossmoor, Ill., assignor to Nalco Chemical Company, Chicago, Ill., a corporation of Delaware
No Drawing. Filed Aug. 27, 1965, Ser. No. 483,301
8 Claims. (Cl. 164—72)

1. A method of inhibiting erosion of the surface of the base member of a metal mold used to cast ingots, which erosion normally occurs during contact of said surface with flowing molten metal, while subsequently preventing adherence of said ingots to said base member upon ingot formation; which comprises the steps of applying to said surface a slurry comprising a refractory suspended in a binder, said slurry being applied in an amount sufficient to form a coating of sufficient thickness to inhibit said erosion and prevent said adherence and allowing said slurry to dry whereby a protective solid coating is formed upon said base member, said slurry comprising at least one refractory selected from the group consisting of vitreous silica, crystalline silica, aluminum silicate, alumina, graphite, zirconium silicate, magnesium silicate and clay suspended in a binder comprising a colloidal silica sol and a silicic acid sol, with said binder being present in an amount sufficient to bind the refractory particles together to thereby form a tightly adherent coating which is bonded to said surface.

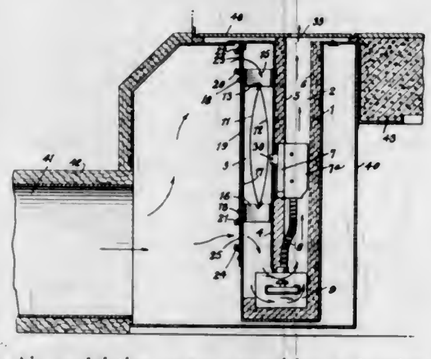
3,357,482
METHOD AND APPARATUS FOR HEAT EXCHANGING
Gus M. Irving, Jr., Lima, and Carl P. Vogel, Rochester, N.Y., assignors to Ritter Pfaudler Corporation, a corporation of New York
Continuation of application Ser. No. 81,335, Jan. 9, 1961. This application Sept. 7, 1965, Ser. No. 485,305
10 Claims. (Cl. 165—1)

9. A method for transferring heat between a heat transfer liquid in a single shell and a fluid being conducted through at least one tube extending through two or more separated volumetric heat transfer areas within the single shell chamber comprising the following steps: introducing a selected quantity of said liquid into only one of said volumetric areas and confining said liquid to said one



compartment, conducting said fluid through said conduit, adding said liquid to the other of said volumetric areas to vary the heat transfer capacity of said shell chamber.

3,357,483
AIR MODULATING MEANS FOR AIR CONDITIONING APPARATUS
Thomas L. Day, Brookfield, Conn., assignor to Connor Engineering Corporation, Danbury, Conn., a corporation of New York
Filed Apr. 27, 1965, Ser. No. 451,252
4 Claims. (Cl. 165—39)

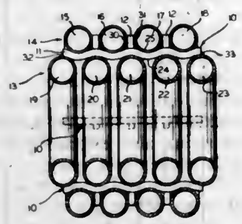


1. Air modulating means comprising, a housing into which an air flow is directed, a casing located within the housing, the casing being divided into two passages, the first passage having spaced inlet openings which directly and independently establishes communication between it and the interior of the housing, a valve in said passage between said openings, said valve consisting of distensible plates operative by spreading apart to control air flow in the passage between the inlet openings or to completely close said passage between said openings while blocking the inflow from only one of the inlet openings, adjustable dampers for regulating the effective size of the inlet openings, the second passage being in communication at one end with the first passage, and the second passage being provided at its opposite end with an air outlet.

3,357,484
TUBE SEPARATOR ASSEMBLY FOR ANNULAR FLUIDTUBE COILS
Frank A. Maher, Mount Prospect, Ill., assignor to Vapor Corporation, Chicago, Ill., a corporation of Delaware
Filed Nov. 15, 1966, Ser. No. 594,578
7 Claims. (Cl. 165—76)

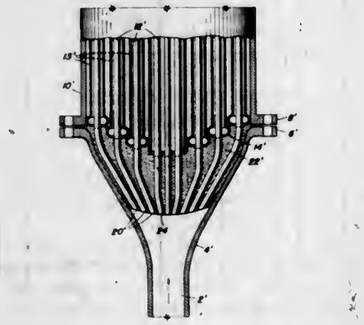
1. An annularly shaped bank of fluidtube coils for a fluid heating apparatus comprising, a tube of uniform

cross-section throughout wound to form a plurality of tubes in substantially radially extending rows and concentrically arranged layers, the tubes in each layer being aligned and in each row being staggered, a plurality of separator means for spacing tubes from each other in



each row and layers from each other, each of said separator means including a sinuous spacer portion arranged between each layer and block spacer portions secured to and extending from said sinuous spacer portion and arranged between adjacent tubes in a row.

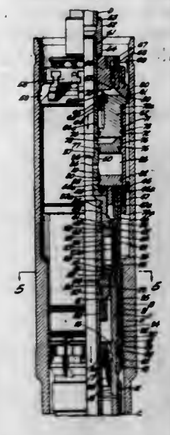
3,357,485
COOLER INLET DEVICE
Thomas F. O'Sullivan, Wilton, Conn., Jan Kramer, Voorschoten, Netherlands, and Karl Buschmann, Neustadt an der Weinstrasse, and Herman Meyer and Armin Schweitzer, Ludwigshafen (Rhine), Germany, assignors to The Lummus Company, New York, N.Y., a corporation of Delaware
Filed Apr. 21, 1965, Ser. No. 449,849
7 Claims. (Cl. 165—174)



1. A connector duct for the tube side of a heat exchanger that comprises:
a generally conical conduit connectable at its larger end to said heat exchanger around the periphery thereof;
a generally conical diverter axially located within said conduit and having its larger end connectable to said heat exchanger; and
a plurality of passages within said diverter coaxially connectable to the individual tubes of said exchanger covered by the larger end of said diverter so as to be in fluid communication therewith, said passages terminating at their opposite ends at the surface of said diverter.

3,357,486
WELL CASING HANGER
Cicero C. Brown, Houston, Tex., assignor to Atlantic Richfield Company, a corporation of Pennsylvania
Filed June 22, 1965, Ser. No. 465,945
11 Claims. (Cl. 166—.6)

1. In an underwater casing hanger assembly for hanging a casing string in a tubular member having a shoulder therein and affixed to a formation underlying a body of water and wherein a casing hanger mandrel connectible to the upper end of said casing string is adapted to land on said shoulder and is of such a configuration that an annular path is defined between said mandrel and said tubular member, and wherein annular sealing means are provided between said mandrel and said member which are of a configuration that permits fluids to pass said seal before said seal is extruded in said annulus, the improvement comprising:



a setting tool having means thereon for extruding said sealing means in said annulus, and
said setting tool having means for anchoring said setting tool relative to said tubular member for applying a force on said seal to extrude said seal between said mandrel and said tubular member.

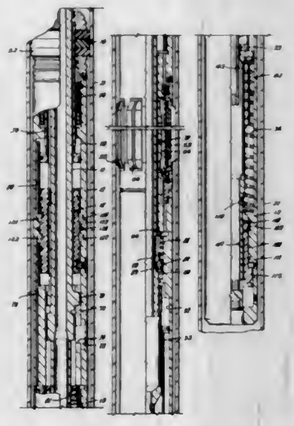
3,357,487
METHOD OF OIL RECOVERY WITH A HOT DRIVING FLUID
Ralph E. Gilchrist, Emery M. Craighead, and Donald O. Hitzman, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed Aug. 26, 1965, Ser. No. 482,939
13 Claims. (Cl. 166—11)

6. A process for producing oil from an oil-bearing stratum penetrated by a well which comprises the steps of:
(1) injecting thru said well into the surrounding stratum a slug of a surfactant stable at temperatures up to at least 650° F. dissolved in an oil solvent, the concentration of said surfactant being in the range of 0.01 to 5 weight percent and said slug being in the range of 0.1 to 10 percent of the oil pore volume;
(2) injecting into said stratum thru said well hot aqueous driving fluid substantially free of surfactant so as to move said slug a substantial distance into said stratum from said well;
(3) thereafter moving said slug thru said stratum toward a production well so as to displace oil thereinto; and
(4) recovering the produced oil.

3,357,488
WELL TOOL CONTROL APPARATUS
Howard L. McGill, Houston, Tex., assignor, by mesne assignments, to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas
Filed Dec. 10, 1965, Ser. No. 512,857
10 Claims. (Cl. 166—120)

1. A well tool sized and adapted for reception in a well bore comprising: a tubular housing; a mandrel movably disposed within said housing; means coupling said

mandrel to said housing for securing said mandrel against substantial longitudinal shifting in one angular position of said mandrel relative to said housing and for freeing said mandrel for longitudinal shifting between spaced positions in other angular positions of said mandrel relative to said housing; pressure-responsive means movably mounted on said housing and movable relative thereto in response to a hydraulic pressure; pressure-developing means including piston means fluidly sealed within said housing and slidable in response to shifting of said mandrel toward one of said spaced positions for developing an increased hydraulic pressure; control means including first, second and third passage means interconnecting said pressure-developing means and pressure-responsive means, first valve means in said first passage means



adapted to admit hydraulic pressure into said pressure-responsive means but prevent release of hydraulic pressure therefrom, second valve means in said second passage means for selectively limiting hydraulic pressure in said pressure-responsive means to a predetermined maximum differential above the pressure in said pressure-developing means, and third valve means in said third passage means for selectively opening and closing said third passage means; and actuating means between said mandrel and third valve means for opening said third valve means in response to movement of said mandrel toward said one angular position and for closing said third valve means in response to movement of said mandrel toward said other angular positions.

3,357,489

MULTIPLE WELL PRODUCTION PACKER APPARATUS AND METHODS OF POSITIONING THE SAME

Cicero C. Brown, 8490 Katy Road, Houston, Tex. 77024

Filed Feb. 19, 1965, Ser. No. 433,940
9 Claims. (Cl. 166—48)

1. A multiple production well packer apparatus for a well bore which traverses at least two well producing zones and including,

a lower well packer in said well bore positioned between the lowermost producing zone and the zone thereabove and sealing with the well bore,

an upper well packer in the well bore positioned above the said upper zone and sealing with the well bore,

a first tubing string extending downwardly through the upper well packer and into the lower packer and having sealing engagement with both packers whereby production from the lowermost zone is conducted to the surface from the lower zone through said first string,

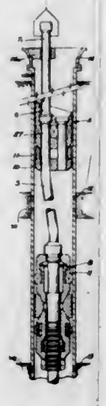
means mounting the upper packer in a predetermined position on said first tubing string,

means connecting the lower packer to the first tubing string whereby an upward tension on the first string will move the upper packer upwardly relative to the lower packer to place that portion of said first tubing string between the packers under a predetermined tension to prevent pressure and temperature from affecting said portion,

means for thereafter setting said upper packer without relieving the tension in that portion of the first string which extends between the packers, and

a second tubing string also extending downwardly to the upper well packer and having communication with the area between said packers whereby production from the zone below the upper packer is conducted to the surface from said zone through said second string.

7. The method of positioning a lower well packer, and an upper well packer and two production tubing strings



within a well bore which traverses at least two producing zones, said method including

lowering the upper and lower well packers into the well bore on the first tubing string to position the lower packer between a lower zone and an upper zone and position the upper packer above the upper zone,

manipulating said first tubing string to set the lower packer and anchor it against movement in both directions, said first string remaining connected to said lower packer after the latter is in anchored position,

pulling an upward strain on said first tubing string to raise the upper packer relative to the lower packer to place that portion of the string between the packers under tension,

thereafter lowering a second tubing string within the well bore and into engagement with the upper packer, and

setting the upper well packer by manipulating the second tubing string.

3,357,490

APPARATUS FOR AUTOMATICALLY INTRODUCING COOLANT INTO AND SHUTTING DOWN WELLS

Billy G. Holmes, Lancaster, Tex., assignor to Mobil Oil Corporation, a corporation of New York

Filed Sept. 30, 1965, Ser. No. 491,541
5 Claims. (Cl. 166—53)

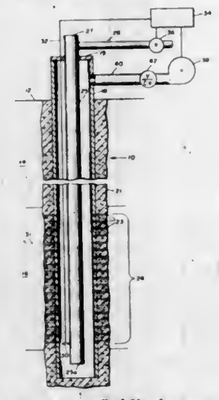
1. In a well having an open production interval in a carbonaceous stratum and adapted for recovery from said

stratum of products of a thermal recovery procedure, the system comprising:

means forming in said well a first passage having an inlet within said well for the withdrawal of said products therefrom,

means forming in said well a second passage for the flow of coolant within said well,

temperature sensing means in said well in the vicinity of said stratum for producing a first condition in response to said means sensing a specified temperature and for producing a second condition in response to said means sensing a temperature less than said specified temperature,



first flow control means fluidly interconnected with said second passage for introducing a coolant into said second passage in response to said first condition and for restricting the introduction of said coolant into said second passage in response to said second condition, and

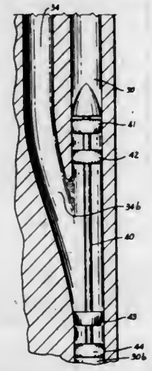
second flow control means fluidly interconnected with said first passage for preventing withdrawal of said products therefrom in response to said second condition failing to occur within a specified time period after the occurrence of said first condition.

3,357,491

CHRISTMAS TREE FOR WELLS

Marvin R. Jones, Leonard E. Williams, Jr., and David L. Gruller, Houston, Tex., assignors to Cameron Iron Works, Inc., Houston, Tex.

Continuation of application Ser. No. 417,172, Dec. 9, 1964. This application May 11, 1967, Ser. No. 641,418
10 Claims. (Cl. 166—75)



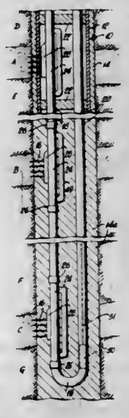
1. A wellhead member adapted to control the path of tools pumped from a well, comprising first passage means providing a production bore having an upwardly extending substantially straight portion and a continuing outwardly curved portion for connection to a flow line for conveying fluid from the well and also for conveying said tools therefrom, and second passage means providing an auxiliary bore branching upwardly and outwardly from a point intermediate said straight portion of the production bore and continuing upwardly, said second passage means, during normal well production, being free from a retrievable deflector means, whereby access to the well may be had through the second passage means but tools pumped from the well will follow said first passage means.

3,357,492

WELL COMPLETION APPARATUS

Laurence M. Hubby, Bellaire, Tex., assignor to Texaco Inc., New York, N.Y., a corporation of Delaware

Filed Dec. 21, 1965, Ser. No. 515,393
3 Claims. (Cl. 166—106)



1. Well completion apparatus for use in multiple zone completion using a pair of tubing strings in a wellbore penetrating a plurality of vertically spaced, hydrocarbon-bearing productive formations separated by relatively impermeable, non-productive formations comprising,

a first means for isolating said formations from each other,

a second means for providing sequential communication between each of the hydrocarbon-bearing productive formations with each other, said second means supporting said first means,

a third means for controlling the individual flow of production fluids into said tubing string from each hydrocarbon-bearing productive formation and supported by said second means, and

a fourth means for lifting production fluids to the surface above said formations,

said first means comprising sealing means between said pair of tubing strings and said wellbore,

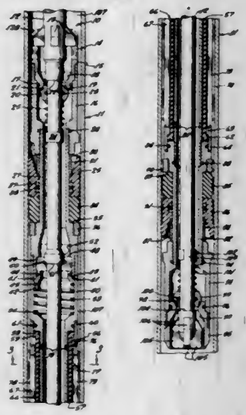
said second means comprising a divided chamber-like structure interconnected into one of said pair of tubing strings with one chamber therein having open communication with a hydrocarbon-bearing productive formation separated by non-productive formations and a second chamber therein for bypassing production fluid in said one of said pair of tubing strings around said third means,

said third means comprising an adjustable choke having inlet communication with the isolated hydrocarbon-bearing productive formation, and a flowmeter having spaced means thereon positioned in said tubing string to provide inlet communication with respect to said choke and outlet communication with respect to

said one of said tubing strings and to prevent inlet flow of hydrocarbons therein into and through said flowmeter,

said fourth means comprising means for lifting production fluids to the surface via the second of said pair of tubing strings.

3,357,493
RETRIEVABLE BRIDGE PLUG
Martin B. Conrad, 9326 Rives Ave., Downey, Calif. 90240
Filed Aug. 3, 1965, Ser. No. 476,828
20 Claims. (Cl. 166—122)



16. A packer for use in a well bore containing fluid comprising a body member having a passage therethrough, spaced packing means on said body member for preventing fluid flow between the exterior of said body member and the wall of a well bore, port means between said passage and the exterior of said body member, drag and anchor means on said body member disposed intermediate of said packing means for frictionally engaging the wall of a well bore and responsive to fluid pressure for anchoringly engaging said packer with respect to the wall of a well bore, and selectively operable valve means for admitting fluid pressure in the well bore to said drag and anchor means, said valve means being movable between one position for admitting hydrostatic pressure through said passage and through said port means and being movable to another position where said port means is closed and said pressure is admitted to said drag and anchor means, said valve means including a pressure area responsive to fluid pressure in said passage for holding said valve means in said position where said port means is closed.

3,357,494
SCRATCHER ATTACHMENT FOR OIL WELL CASING
Benson H. Bolding, Sr., Box 3205, Amarillo, Tex. 79106
Filed Dec. 7, 1964, Ser. No. 416,211
6 Claims. (Cl. 166—173)

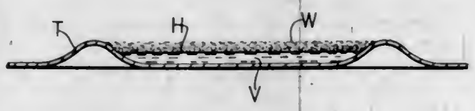
1. An oil well casing centralizer and scratcher comprising

at least one strip having a longitudinally outwardly directed semi-circular central portion, said strip retained longitudinally along the exterior surface of said oil well casing and encircling said casing helically for not more than one revolution, said strip having pairs of openings spaced periodically longitudinally along said strip, each pair comprising a first opening on one side of said central portion and a second opening on the other side of said central portion, said openings positioned below the top of said central portion adjacent the junction of said central portion and said strip, and



a continuous length of wire cable threaded through said first opening to said second opening under said central portion thence outwardly to form a large loop across said central portion and threaded similarly through the next adjacent pair of openings continuously the length of said strip.

3,357,495
METHOD OF EXTINGUISHING BURNING VOLATILE MATERIAL
Will B. Jamison, Wyckoff, N.J., assignor to Specialties Development Corporation, Belleville, N.J., a corporation of New Jersey
Filed Aug. 10, 1965, Ser. No. 478,659
1 Claim. (Cl. 169—15)

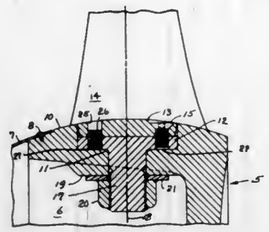


The method of extinguishing burning volatile liquid confined in a dike, pit, trench or open tank exposed to wind, which method comprises applying to the surface of the burning volatile liquid a layer of high expansion foam having an expansion ratio from about 100 to 1 to about 2000 to 1 and having a thickness sufficient to control the fire, and thereafter directly superimposing on the layer of foam sufficient water fog formed by sending one high-pressure stream of water against another in the tip of a nozzle so that the combined weight of the foam and the water fog creates a heavy layer of foam on top of light foam which shields the light foam and overcomes the vapor pressure of the volatile liquid and the foam is unaffected by wind and convection currents to thereby effect extinguishment of the fire.

3,357,496
ADJUSTABLE PITCH AXIAL FLOW FAN BLADES
Arne G. Petersen, Norfolk, Mass., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 28, 1966, Ser. No. 568,504
10 Claims. (Cl. 170—160.6)

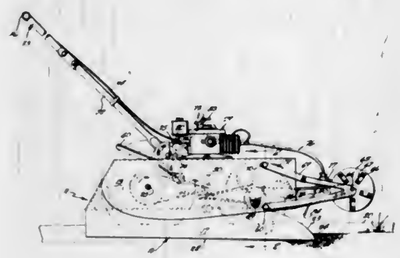
1. An axial flow blower comprising an impeller blade having a root through which extends radially the longitudinal axis of said blade, a hub, an insert within an

opening within said hub, means fixedly attaching said root to said insert, means including a surface of said hub forming a pair of surfaces in frictional contact around a radial line extending through said axis for attaching said insert



to said hub, and means for decreasing the friction between said surfaces for permitting adjustment of the pitch of said blade, and for increasing the friction between said surfaces for holding said blade in a selected pitch position.

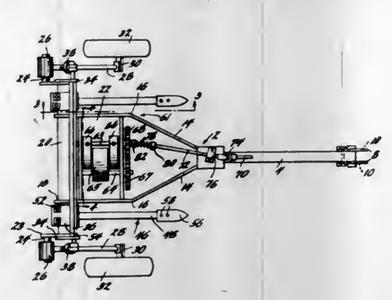
3,357,497
SIDEWALK EDGER
Joseph J. Simolka, 1611 River Drive, Watertown, Wis. 53094
Filed May 4, 1965, Ser. No. 453,091
10 Claims. (Cl. 172—16)



1. A lawn edging machine comprising a wheeled main frame adapted to be moved along the edge of a sidewalk adjacent to a lawn, a drive motor on the frame, a depending generally V-shaped longitudinally extending furrowing member secured to said frame and being engageable in the soil adjacent the sidewalk to cut a furrow therein parallel to said edge as the machine moves therealong, transverse shaft means journaled in the frame and extending through the outer wall of the furrowing member, a cutter wheel secured on said shaft means in the furrowing member adjacent said outer wall, means drivingly coupling said shaft means to said drive motor, said main frame including a forwardly-extending auxiliary portion, an auxiliary cutter wheel journaled on said auxiliary frame portion, and means drivingly-coupling said auxiliary cutter wheel to said drive motor.

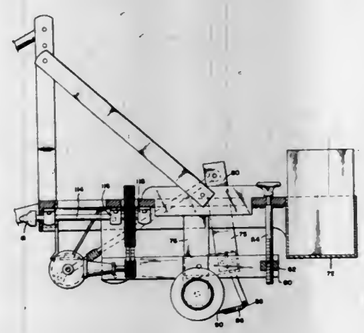
3,357,498
SOIL RIPPER
Rolland C. Higley, 610 Southlawn Ave., Artesia, N. Mex. 88210
Filed May 11, 1964, Ser. No. 366,321
15 Claims. (Cl. 172—40)

1. In an earth-working machine for movement across the earth to be worked and having ground cleaving tools, a vibrating mechanism in association with said tools comprising a pair of shafts arranged with their axes along the line of movement of the machine and in a plane generally



parallel to the earth when in operation, said shafts carrying rotary, eccentric weights, and means to rotate said weights in opposite directions.

3,357,499
TURF CUTTER
Dudley W. Finneyfrock, Box 35, Olney, Md. 20832
Filed Sept. 25, 1964, Ser. No. 399,189
2 Claims. (Cl. 172—19)



1. In a turf cutting device of the type including a frame having a rear end weight-supporting component, turf engaging means rotatably suspended beneath said frame, and a transverse cutter blade connected to said power take-off the combination of:

(A) a ground engaging cutter roller rotatably pivoted beneath said frame and

(i) being revolvably mounted in a cutter roller yoke pivoted at its forward end to said frame and having at its rear free end a vertical adjusting piece engaging said frame;

and including means adjusting the angle of pivotability of said cutter roller with respect to said frame; and

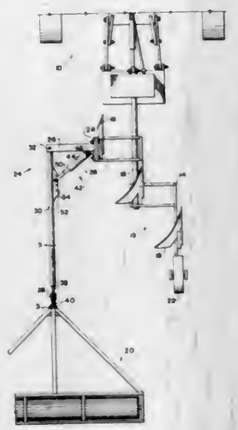
(ii) a pair of parallel blades aligned so as to define therebetween a cutting path in said turf and said transverse cutter blade extending between said parallel blades;

(B) a pivoted transverse cutter blade connected to said power take-off and pivoted in said frame in rear juxtaposition with said cutter roller so as to pivot into and out of the path of longitudinal cut made by said roller; and

(C) a power take-off shaft supported in said frame extending to an external source of power at one end and at its other end engaging a sprocket rotatably

supported in said frame; a differential supported in said frame and powering eccentric shafts at either side, said differential being connected to said sprocket by chain means and a differential shaft.

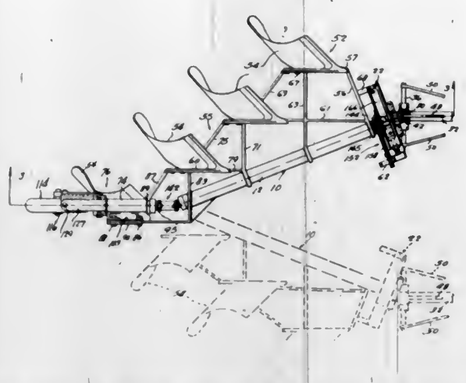
3,357,500
HARROW HITCH
Harold David Harris, 701 N. Avenue N, Lubbock, Tex. 79403
Filed May 7, 1965, Ser. No. 453,984
5 Claims. (Cl. 172—161)



1. An improved hitch for use in combination with
(a) a plow having
(b) two sets of bottoms
(c) mounted on a frame,
(d) said frame mounted for rotation about
(e) a horizontal axis aligned with the direction of draft, and
(f) an auxiliary implement to drag behind the plow; said improved hitch in combination with the above comprising:
(g) a rigid elongated tension element pivoted
(h) about a vertical axis when it is in the plowing position at
(j) one side of the frame,
(k) an extension means between the frame and tension element for limiting the movement of the tension element each way about its pivot, and
(m) a telescoped, rotatable tension rod in
(n) the end of the tension element
(p) attached to the auxiliary equipment.

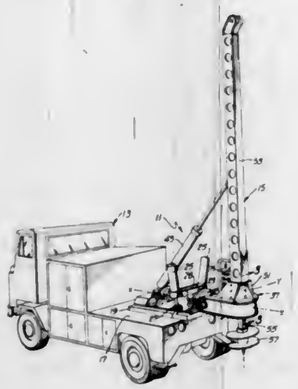
3,357,501
TWO-WAY REVERSIBLE GANG PLOW
Glen A. Watts, Caldwell, Idaho, assignor to Deere & Company, Moline, Ill., a corporation of Delaware
Continuation of application Ser. No. 153,036, Nov. 17, 1961. This application May 24, 1965, Ser. No. 463,452
9 Claims. (Cl. 172—227)

1. In combination, a tractor having a stationary drawbar and a vertically-movable drawbar, a plow assembly comprising a horizontal frame connected at its forward end to said movable drawbar, a vertically-adjustable furrow wheel assembly rotatably connected to the rear end of the frame, means extending from the furrow wheel assembly to the movable drawbar of the tractor for elevating and depressing the furrow wheel assembly relative to the ground for elevating and depressing the frame, a carrier tube journalled on the frame, diametrically-opposed plow gangs fixed to the tube, and means for rotating the tube in opposite directions with the frame in an elevated position for reversing the relationships of the plow gangs relative to the ground and for positioning both plow gangs in horizontal positions out of contact with the ground, said reversing means comprising a transverse support fixed on the frame, a longitudinal shaft journalled on the support, a sprocket wheel fixed on the shaft behind



the support, a toothed annulus fixed on and surrounding the carrier tube, a sprocket chain trained around said annulus and the sprocket wheel, a radial arm on said shaft, a two-way hydraulic cylinder pivoted at one on said support and having a piston rod pivoted to said radial arm, and two-way hydraulic operating means connected to the cylinder.

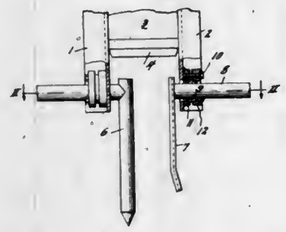
3,357,502
UNIVERSAL BORING MACHINE MOUNTING
Darius W. Elliott, Anaheim, Calif., assignor to Calavar Corporation, Santa Fe Springs, Calif., a corporation of California
Filed Oct. 20, 1965, Ser. No. 498,212
8 Claims. (Cl. 173—43)



1. In a mounting assembly, the combination of:
a supporting structure;
a support member mounted on said supporting structure for pivotal movement relative thereto;
positioning means for pivoting said support member relative to said supporting structure about first and second axes, said first axis being angularly positioned relative to said second axis;
motor means mounted on said support member;

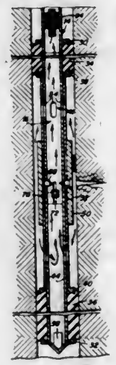
an earth-boring tool mounted on said support member for rotation relative thereto; and
means on said support member for drivingly interconnecting said motor means and said boring tool.

3,357,503
RAM GUIDING DEVICE
Manfred Burk, Bad Driburg, and Achim Kehrberger, Nellingen, Germany, assignors to Firma Delmag-Maschinenfabrik Reinhold Dornfeld, Esslingen (Neckar), Germany
Filed Oct. 22, 1965, Ser. No. 501,837
Claims priority, application Germany, Nov. 5, 1964, D 45,785
6 Claims. (Cl. 173—130)



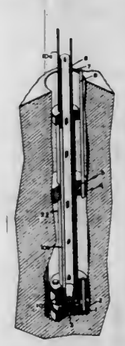
1. A ram guiding device comprising at least two parallel guide rails spaced from each other for guiding a rammer, and universally adjustable means for clamping said guide rails to an element to be rammed by said rammer, said means comprising a pair of pivot bearings secured to the lower end of each guide rail, a plurality of holding members each having a rod-shaped part inserted into one of said bearings and slidable in its axial direction therein and adapted to be turned about its axis and to be pivoted in different directions relative to the plane of said guide rails, and locking means for locking said pivot bearings and said holding members thereon in any adjusted position so as to clamp the element to be rammed between them.

3,357,504
STRADDLE PACKER WIRE LINE TESTER
Gerald G. Calhoun, 4309 Bedford, Midland, Tex. 79701
Filed June 7, 1965, Ser. No. 461,655
9 Claims. (Cl. 175—4.52)



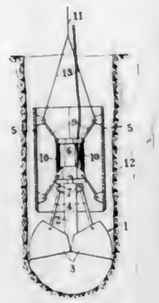
9. In combination a well tool provided with means adapted to be suspended in a well bore by a wire line and controllable from the well head to test a formation for productivity and the like comprising a housing, a pair of spaced bore hole packers slidable on said housing, a pair of abutments secured to said housing outwardly of each of said packers, packer setting means operatively associated with said housing and positioned between said packers to compress said packers against said fixed abutments to effect radial expansion of said packers into gripping, sealing engagement with the wall of the bore to isolate the region between said set packers, fluid recovery means adapted to recover fluid from the region isolated, said fluid recovery means including a first fluid entry means provided in said housing intermediate of said spaced packers, a second fluid entry means provided in said packer setting means, said second fluid entry means adapted to be out of registry with said first fluid entry means when said packers are in their unset position, said second fluid entry means adapted to move into registry with said first fluid entry means to admit fluid to said housing when said packer setting means is actuated to set said packers, sensing means mounted within said housing to obtain and transmit data to the well head pertaining to conditions within said region isolated, said packer setting means including opposed annular packer expanding pistons slidably carried by said mandrel and having their opposed axial surfaces maintained in spaced apart relation, annular cylinder means positioned in overlying sealing relationship to the opposed ends of said slidable pistons to define an annular axially expansible chamber means between said mandrel, said cylinder means and the opposed ends of said slidable pistons, and means mounted within the tool and actuatable from the well head to pressurize said expansible chamber means to drive said slidable pistons outwardly to expand said packers.

3,357,505
HIGH TEMPERATURE ROCK DRILL
Dale E. Armstrong, Santa Fe, and James S. Coleman, Berthus B. McInteer, Robert M. Potter, and Eugene S. Robinson, Los Alamos, N. Mex., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed June 30, 1965, Ser. No. 468,654
1 Claim. (Cl. 175—16)



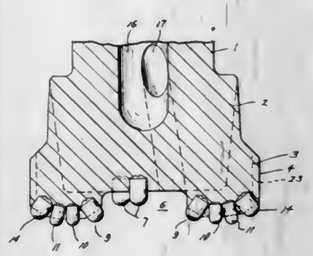
A high temperature rock drill comprising a tubular housing, a drill face consisting of a tungsten disc closing one end of said housing and having a central orifice therein, a flat coiled tungsten heater placed adjacent said disc, said heater being imbedded in a thin layer of boron nitride, power supply means electrically connected to said heater, a guide tube of smaller diameter in said housing and concentric therewith and centrally positioned within said housing, said guide tube being connected to said orifice, and pneumatic means for removing through said guide tube material melted by contact with said drill face.

3,357,506
DRILLING BUCKETS
Pierre de Bosredon, 14 Rue Durou, Bergerac, Dordogne, France
Filed June 29, 1965, Ser. No. 467,963
Claims priority, application France, July 28, 1964, 983,301, Patent 1,410,326
4 Claims. (Cl. 175—99)



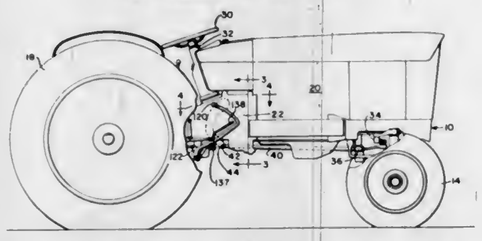
1. A drilling apparatus comprising a bucket consisting of a hydraulic-operated cylinder having a bearing element and a working element movable in relation to said bearing element, shells pivoted on said bearing element, links pivoted on said shells and said working element of said cylinder, a fastening system supporting said bearing element of the bucket cylinder, means for suspending said fastening system, said fastening system comprising a hydraulic control cylinder having a lower end connected to the bearing element of the bucket hydraulic cylinder and an upper end, surface guide members corresponding in shape to sectors of the wall of the shaft being drilled, links having outer ends pivotally connected to said surface guide members and inner ends pivotally connected to the lower and upper ends, respectively, of said hydraulic control cylinder, the operation of said control cylinder in the direction to reduce its length freeing said guide members from the shaft being drilled, the operation of said control cylinder in the direction to increase its length causing said guide members to be locked together with the complete fastening system on said sectors of the shaft wall.

3,357,507
PERCUSSION BIT
Vernon G. Stewart, Houston, Tex., assignor to Mission Manufacturing Company, Houston, Tex., a corporation of Texas
Filed Oct. 24, 1965, Ser. No. 504,608
5 Claims. (Cl. 175—410)



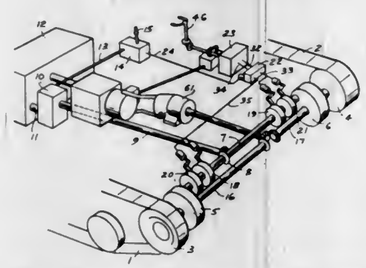
1. A percussion bit comprising a body having a transverse bottom surface and a side surface, first cutting inserts protruding from said bottom surface and spaced inwardly from said side surface, and second cutting inserts projecting from said body in the general area of intersection of said bottom and side surfaces, the extremities of said second inserts extending radially beyond said side surface for maintaining the gauge of the hole being drilled and being spaced substantially upwardly and outwardly from the cutting extremities of said first inserts, there being a substantial annular space between said first and second inserts free of cutting elements for leaving a shoulder-like intrusion of material at the periphery of the hole bottom to facilitate chipping of said periphery by said inserts.

3,357,508
TRACTOR CONSTRUCTION
John Daniel Gleeson, Jr., and Merle Leroy Miller, Waterloo, Iowa, assignors to Deere & Company, Moline, Ill., a corporation of Delaware
Filed Jan. 10, 1966, Ser. No. 519,491
10 Claims. (Cl. 180—6.2)



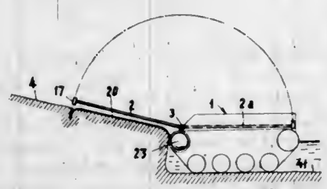
1. A tractor having a fore-and-aft extending body including a power plant clutch, a housing enclosing the clutch and including opposite side walls, clutch operating means carried by the body and including a fore-and-aft movable member spaced laterally outwardly of and movable alongside one of the side walls, and steering mechanism carried by the body and including a fore-and-aft movable steering arm external to the housing and disposed generally alongside said member and intermediate said member and said one wall and a cross shaft connected to said arm and extending into the housing, the improvement comprising further wall means rigid with the housing and including a generally upright fore-and-aft portion laterally intervening between the member and the arm and protectively separating the two from each other.

3,357,509
STEERING DEVICE FOR A TRACK LAYING VEHICLE
Per Olle Lennart Gustafsson and Erik Arne Bergling, Karlskoga, Sweden, assignors to Aktiebolaget Bofors, Bofors, Sweden, a corporation of Sweden
Filed Oct. 18, 1965, Ser. No. 497,232
Claims priority, application Sweden, Dec. 3, 1964, 14,600/64
3 Claims. (Cl. 180—6.44)



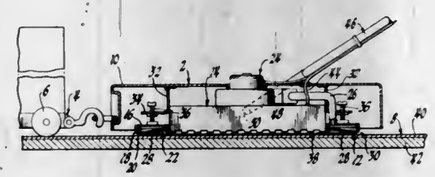
1. A steering device for a track laying vehicles having two tracks, said device comprising:
a main drive means drivingly coupled with both tracks of said vehicle for driving both said tracks with a uniform main driving force;
a main control means for each of said tracks, each of the main control means including a clutch means interposed between the respective track and said main drive means and a brake means interposed between the respective clutch means and said main drive means to effect turning of the vehicle into a desired direction by controlling said clutch means and said brake means;
auxiliary drive means coacting with said main drive means for superimposing to said main driving force an additive auxiliary driving force at one track and a subtractive auxiliary driving force at the other track to effect turning of the vehicle into the desired direction;
auxiliary control means coacting with said auxiliary drive means for controlling the same, said auxiliary control means comprising a control valve including a movable valve member, the position of said valve member controlling the superimposition of said auxiliary driving force upon the main driving force;
directional shift means operable for shifting the driving direction of the tracks from forward to reverse and vice versa; and
transmission means coupled to said control valve for controlling the position of the valve member thereof and also coupled to said directional shift means for controlling the transmission means by the setting of said shift means, said transmission means including a reversal linkage means for reversing the direction of the transmitted auxiliary driving force when said shift means is shifted from forward drive to reverse drive, said linkage means including a rotatable control shaft, the angular position of said shaft controlling the position of said movable valve member so that said auxiliary control means reverses its control functions upon turning of said shaft from one predetermined angular position into another predetermined angular position; a control member fixedly secured to said control shaft for turning in unison with the same, and coupling means coupling said shift means with said control member for turning the latter and with it the control shaft through said one predetermined angle upon setting the shift means for forward drive and through said other predetermined angle upon setting the shift means for drive in reverse.

3,357,510
SYSTEM FOR ENABLING MOTOR VEHICLES TO CLIMB OBSTACLES
Daniel Jourdan, 63 Rue Victor Hugo, Puteaux, France
Filed Mar. 2, 1965, Ser. No. 436,622
Claims priority, application France, Mar. 5, 1964, 966,227
10 Claims. (Cl. 180—7)



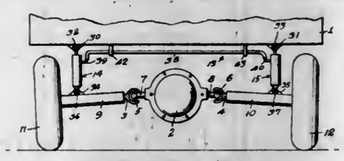
1. A system for enabling a motor vehicle having a motor to climb obstacles, said system comprising, in combination, at least one arm articulated on the vehicle, means to bring the extremity of the arm to a point situated ahead of the vehicle, at least one winch mounted on the vehicle, at least one cable wound on the winch and the free extremity of which is carried by the forementioned arm, means for anchoring said cable extremity to the point in the ground over which the extremity of said arm has been brought, a controllable drive connection between said motor and said winch for operating the winch to pull on the cable after anchoring of said extremity thereof and to exert traction at a point on the lower fore part of the vehicle in such a manner as to bring the vehicle to the desired position for the vehicle to climb over the obstacle by being drawn by the cable onto said obstacle.

3,357,511
AIR CUSHION SUPPORTED, OMNIDIRECTIONALLY STEERABLE, TRAVELING MAGNETIC FIELD PROPULSION DEVICE
Harry A. Mackie, Birmingham, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 11, 1965, Ser. No. 494,755
10 Claims. (Cl. 180—7)



1. A tractionless friction free propulsion arrangement comprising in combination, a floor structure formed of an uninterrupted non-ferrous upper layer and an uninterrupted ferrous lower layer, a hull structure overlying said floor, omnidirectionally free bearing means supporting said hull in substantially frictionless relation with said floor, a linearly translating field producing means supported on said hull in gapped relation to the upper surface of said upper layer, and steering means on said hull for controlling horizontal angular orientation of said field producing means, whereby the direction of thrust acting on said hull is infinitely omnidirectionally variable thereby enabling optimum maneuverability of said hull within the confines of the entire area of said floor structure.

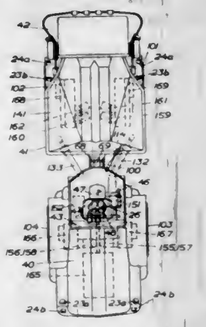
3,357,512
VEHICLE STABILIZER
Curtis L. Wilson, P.O. Box 1094, Sierra Vista, Ariz. 85635
Filed Sept. 15, 1965, Ser. No. 487,639
3 Claims. (Cl. 180—73)



1. In combination with a vehicle having a body, a differential, a pair of stub axles extending from said differential and driven thereby, a pair of axles, a universal joint connecting each of last named axles with said stub axles, and a wheel carried by each said axle connected to said stub axle; stabilizing means for said vehicle and including a pair of spaced hydraulic units pivotally connected to said body and said axles connected to said stub

axles, a conduit connecting said hydraulic units; each said hydraulic unit comprising a cylinder, a piston slidable therein, a shock absorber means in the bottom of each said cylinder and below said piston, a shaft connected to said vehicle body and said piston, and a nipple connected to the upper end of said cylinder for connection to said conduit.

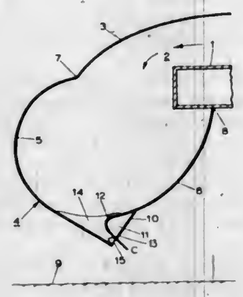
3,357,513
CONTROL MEANS FOR VEHICLES
Nils Olof Sundberg, Orebro, Sweden, assignor to Atlas Copco Aktiebolag, Nacka, Sweden, a corporation of Sweden
Filed Sept. 23, 1965, Ser. No. 489,701
Claims priority, application Sweden, Sept. 28, 1964, 11,650/64
5 Claims. (Cl. 180—77)



1. Control means for vehicles having a driver's compartment provided with a seat mounted to enable it to be swung from a first forwardly facing position to a second rearwardly facing position, a steering control member and a power control member operable in the same way in relation to a driver on the seat in both positions of the seat for the operation of the vehicle, said power control member being reversible for controlling forward or rearward movement of the vehicle, means by which said control members become automatically changed from forward control position to rearward control position by movements of the seat from the forwardly facing position to the rearwardly facing position and vice versa, the steering control member being rotatable on a steering post and being coupled to a control valve means, a cylinder means into which fluid pressure is directed by the control valve, means for the expansion of the cylinder means upon the turning of the steering control in one first direction and for the contraction of the cylinder means in a second direction, a change-over valve provided between the control valve means and the cylinder means and which valve is controlled by movements of the seat and which automatically shifts the direction of fluid flow to and from said cylinder means upon turning of the seat from said first position to said second position.

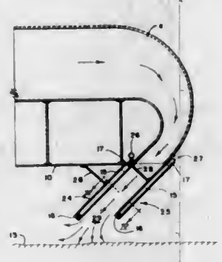
3,357,514
FLEXIBLE UNDERSTRUCTURES FOR GROUND EFFECT MACHINES
Richard Stanton Jones, Isle of Wight, England, assignor to Westland Aircraft Limited
Filed July 2, 1964, Ser. No. 379,847
Claims priority, application Great Britain, July 20, 1963, 28,806/63
10 Claims. (Cl. 180—128)

1. A peripheral jet type ground effect machine provided with an inflatable flexible skirting assembly freely suspended to encompass at least part of, and to retard the escape of air or gas from, the gaseous ground effect cushion, the flexible skirting assembly comprising an outer flexible portion which, when the flexible skirting assembly is inflated, extends from its uppermost point of attachment to the ground effect machine outwardly from the gaseous cushion space, then downwardly and inwardly to include the outermost portion of a discharge nozzle arrangement which includes at least one gaseous fluid discharge orifice, and an inner flexible skirt portion which, when the flexible skirting assembly is inflated, extends from its uppermost point of attachment to the ground effect machine downwardly and outwardly from



the cushion space to include the innermost portion of said nozzle arrangement, said flexible skirting assembly having sufficient rigidity, when inflated, to assume, and when deflected, to return to, a downwardly extended position, and tension members maintaining the innermost and outermost portions of the discharge nozzle arrangement in the desired position relative to each other, the inner wall of said gaseous fluid discharge orifice or orifices being connected by tension members to the flexible inner skirt portion.

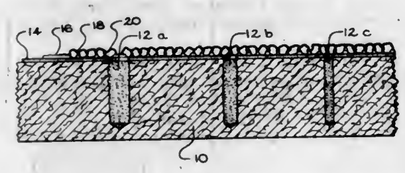
3,357,515
FLEXIBLE UNDERPORTIONS FOR GROUND EFFECT VEHICLES
David William Thomas Richards, Yeovil, England, assignor to Westland Aircraft Limited, Yeovil, England
Filed Aug. 1, 1963, Ser. No. 299,298
4 Claims. (Cl. 180—128)



3. A ground effect machine comprising a platform-like base structure, means forming an elongated duct opening downwardly from said base structure, means forming flexible barriers depending downwardly from the opposite sides of said elongated duct to retard the escape of air from the underside of the base structure, said means comprising at least in part a plurality of individually separable juxtaposed inflated flexible tubes connected to said base structure substantially along the edges of said elongated duct to form a downwardly extending flexible continuation of said duct, said tubes being closed at their lower ends, means for inflating the individual tubes, and means for passing pressurized air to said elongated duct and

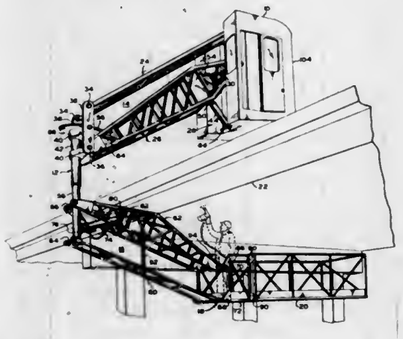
down through the continuation defined by said flexible tubes to issue from the elongated opening defined by the lower ends of said flexible tubes, said pressurized air issuing in the form of a fluid curtain to assist in creating and maintaining a pressurized fluid supporting cushion under said base structure.

3,357,516
ACOUSTICAL PANELS
John E. Cadotte and Paul J. McGervey, St. Paul, Minn., assignors to Wood Conversion Company, St. Paul, Minn., a corporation of Delaware
Filed Apr. 20, 1964, Ser. No. 361,097
4 Claims. (Cl. 181—33)



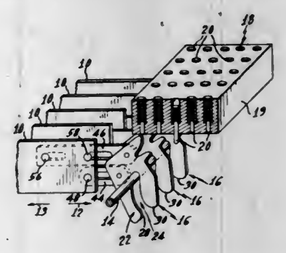
1. An acoustical panel comprising a rigid fibrous body having a multiplicity of inter-fiber voids for the absorption of sound, openings formed in one face of said body and extending thereinto to communicate with said inter-fiber voids, said openings terminating short of the opposite face of said body, a layer of granular material substantially covering said one face of said panel, a paint-like coating on said panel serving to adhere said granular material to said one face, said granular material being of such a size and so arranged with respect to said openings as to hide substantially all of said openings when the panel is viewed obliquely without seriously obstructing the access of sound to said openings.

3,357,517
MOBILE SCAFFOLD
Elmer A. Wagner, Rte. 1, Box 120, Cornelius, Oreg. 97113
Filed Dec. 27, 1965, Ser. No. 516,535
10 Claims. (Cl. 182—2)



1. A scaffold device comprising:
a base member,
an intermediate support means,
a first boom means extending from said base member to said intermediate support means wherein said first boom means comprises a pair of parallel arm means of substantially equal length pivoted upon said base member on spaced parallel horizontal axes and also pivoted to said intermediate support means on spaced parallel horizontal axes to provide for raising and lowering said first boom means and for movably mounting said intermediate support means in a substantially constant parallel attitude with respect to said base member,
said intermediate support means projecting in a vertical direction from said first boom means,
second boom means pivotally extending from said intermediate support means entirely on the same side of both the spaced horizontal axes on said intermediate support means to which said arm means of said first boom means are pivoted, wherein said second boom means has one end supported by said intermediate support means for rotary movement about a vertical axis with respect to said first boom means and for pivotal movement about a horizontal axis with respect to said intermediate support means to provide for swinging said second boom means about said vertical axis and for raising and lowering said second boom means,
means for raising and lowering said first boom means relative to said base member,
means for raising and lowering said second boom means relative to said intermediate support means,
and means for swinging said second boom means relative to said first boom means.

3,357,518
DECELERATION DEVICE
William J. Hildebrandt, Weatogue, and Alfred F. Le Febvre, Bloomfield, Conn., assignors to Westbury Electronic Corporation, Westbury, N.Y., a corporation of New York
Filed May 26, 1965, Ser. No. 458,885
16 Claims. (Cl. 188—1)

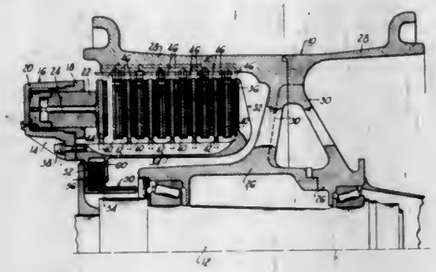


1. A deceleration device for a load member movable in a predetermined path, said device comprising
a moving means for moving said load member,
and a deceleration member connected with said load member and movable therewith,
said deceleration member including means operable to engage said moving means to move said load member and said deceleration member with said moving means and operable to release its engagement with said moving means to stop the movement of said load member and said deceleration member at a preselected point in the path of travel of said load member and said moving means and to permit the continued movement of said moving means in its path of travel.

3,357,519
AIRCRAFT BRAKE DAMPER MECHANISM
Bruce W. Anderson and Raymond J. Black, South Bend, Ind., assignors to The Bendix Corporation, a corporation of Delaware
Filed Mar. 21, 1966, Ser. No. 536,024
9 Claims. (Cl. 188—18)

1. In an aircraft wheel and brake assembly having fixed mounting means, rotatable brake means, and non-rotatable brake means operatively connected to said fixed

mounting means and frictionally engaging said rotatable brake means, said non-rotatable brake means having torsional vibrations induced therein upon frictional engagement with said rotatable brake means, damping means located between and operatively connected to said fixed mounting means and said non-rotatable brake means for providing an elastic torque path therebetween which will substantially eliminate said torsional vibrations, said



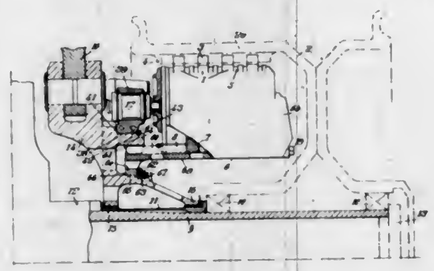
damping means including housing means having first and second parts, one part of which is fixedly connected to said fixed mounting means and the other part of which is fixedly connected to said non-rotatable brake means, and an elastomeric damping material located between and attached to said first and second parts of said housing means for being stressed in shear upon relative movement between said first and second parts.

3,357,520
STRAND BRAKE FOR LOAD LOWERING ASSEMBLY
Ronald S. Foote, 2672 Hubbard St., Brooklyn, N.Y. 11235
Filed Mar. 10, 1966, Ser. No. 533,374
11 Claims. (Cl. 188—65.3)



1. For use in a load-lowering assembly, friction slider means for frictionally engaging and sliding down a rope and for carrying a load which urges said slider means downwardly along the rope, and manually operable brake means operatively connected to said slider means for automatically assuming a braking position braking movement of said slider means and a load carried thereby downwardly along the rope, said brake means being manually displaceable with respect to said slider means from said braking position to a release position releasing said slider means for movement downwardly along the rope, said slider means and brake means respectively including a pair of elongated bodies both of which are formed with openings through which the rope passes for frictionally engaging said bodies, said slider means having an upper end and said brake means being pivotally connected to said slider means below the upper end of said slider means, and said brake means when in said release position thereof extending downwardly from the pivotal connection of said slider means and brake means to each other, said brake means when released by the operator coacting with the rope for responding automatically to tension in the rope to be pulled upwardly by the tension in the rope to said braking position, said brake means when in said braking position thereof extending upwardly from said pivotal connection and being situated alongside of said friction slider means.

3,357,521
DISC BRAKE ASSEMBLY
Pierre Joseph Martin Lallemant, Port-Marly, France, assignor to Societe Hispano-Suiza-Lallemant, Bois-Colombes, France
Filed Mar. 2, 1966, Ser. No. 531,271
Claims priority, application France, Mar. 11, 1965, 8,895; Apr. 21, 1965, 14,040
3 Claims. (Cl. 188—72)



1. For use in a vehicle including a frame and a wheel journalled in said frame, a braking device for said wheel which comprises, in combination,

a stub axle rigid with said frame,

an annular fixed support secured to said stub axle coaxially thereto, said fixed support being provided, on the side thereof turned toward the outer end of said stub axle, with an annular bearing surface,

an annular holder coaxial with said annular support and including a cylindrical portion and a coaxial annular flange rigid with said cylindrical portion at the end thereof farther from said annular support,

fixation means for detachably securing said holder to said fixed support coaxially thereto,

a first plurality of discs angularly fixed to said holder cylindrical portion coaxially thereto, said discs being slidable axially in said holder,

a second plurality of discs angularly fixed to said wheel coaxially thereto, said last mentioned discs being slidable axially in said holder,

all of said discs being juxtaposed, with every disc of one of said pluralities interposed between two discs of the other of said pluralities, with the exception of the end discs of the juxtaposition,

a removable annular support fitting on said annular bearing surface,

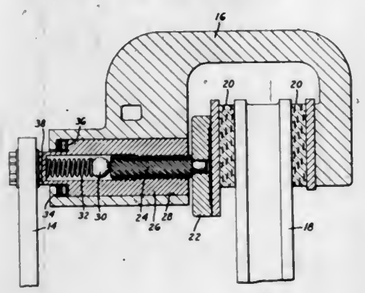
means for detachably securing said removable annular support to said fixed support coaxially thereto, and

a plurality of cylinder-and-piston units, distributed about said stub axle, carried by said removable annular support, each of said cylinder-and-piston units being interposed between said removable annular support and the juxtaposition of said discs,

said fixed support being provided with a shoulder turned toward the outer end of said stub axle, said annular support bearing against said shoulder, said

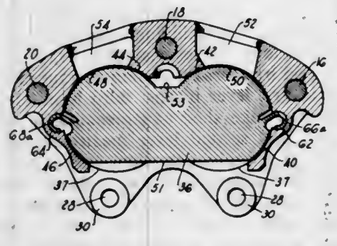
means for detachably securing said removable annular support to said fixed support comprising a ring applied against said annular support, said annular bearing surface being provided with a circular groove adapted to accommodate said ring.

3,357,522
PARKING BRAKE MECHANISM FOR DISK BRAKES
Arthur W. Bradley and Lowell F. Smith, Saginaw, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 1, 1965, Ser. No. 491,933
4 Claims. (Cl. 188—73)



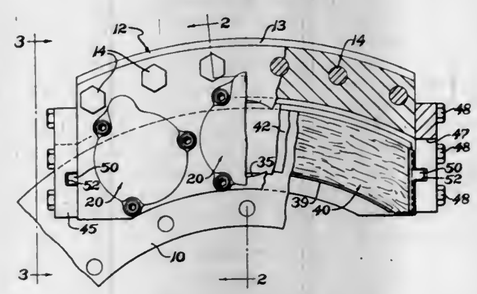
1. Hand brake actuating mechanism for disk brakes, said actuating mechanism comprising: a housing formed as a portion of a caliper type disc brake, a disc situated in juxtaposition to said housing; sleeve means rotatable in said housing; threaded drive means threadingly engaging said sleeve means and axially movable in said sleeve means, said drive means including an element engaging a friction pad; biasing means carried within said sleeve means urging said drive means toward an extreme of axial movement in said sleeve means; and lever means carried for rotation with said sleeve means for driving said sleeve means rotationally in opposition to the threads of said drive means to cause axial movement thereof toward the disk.

3,357,523
RESTRAINT SYSTEM FOR DISC BRAKE NOISE REDUCTION
George C. Reed, Fern Creek, Ky., and William H. Du Bois, South Bend, Ind., assignors to The Bendix Corporation, a corporation of Delaware
Filed Jan. 24, 1966, Ser. No. 522,457
1 Claim. (Cl. 188—73)



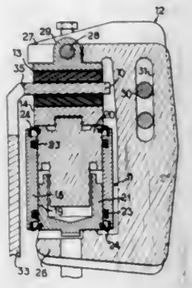
A disc brake comprising a rotatable disc having friction surface means thereon, a member extending opposite said friction surface means, said member having first arcuate anchoring surface means formed thereon, a friction element slidably carried by said member and located opposite said disc for frictional engagement with said friction surface means, said friction element having second arcuate anchoring surface means coacting with said first arcuate anchoring surface means, said first anchoring surface means comprising a first pair of circumferentially-spaced anchoring surfaces, and said second anchoring surface means comprising a second pair of circumferentially-spaced anchoring surfaces adjacent said first pair of anchoring surfaces for respective engagement therewith, piston means slidably carried by said member and located adjacent said friction element for causing engagement of said friction element with said disc, said friction element being movable relative to said piston means in the plane of said disc, and resilient means operatively connected to said first and second anchoring surface means of said member and friction element, respectively, for restraining and limiting vibrational freedom of said friction element in the plane of said disc, said resilient means including first spring means operatively connected to one set of coacting surfaces of said first and second anchoring surface means and second spring means operatively connected to the other set of coacting surfaces of said second anchoring surface means, said member including a first cavity for containing a portion of said first spring means and a second cavity for containing a portion of said second spring means, said first and second spring means being an integral part of said friction element and extending into said first and second cavities, respectively.

3,357,524
FRICTION PAD SUPPORT MEANS FOR CALIPER-TYPE DISC BRAKES
Philip A. Smith, Troy, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York
Filed Aug. 16, 1965, Ser. No. 479,873
1 Claim. (Cl. 188—73)



A brake assembly comprising a rotatable disc; a rigid non-rotatable housing having a body portion embracing one peripheral edge of the disc and integral side pieces flanking the opposite faces of the rotatable disc; a pair of opposing friction members, each between one of said side pieces and the adjoining face of the disc; means in the housing for pressing the friction members laterally against opposing sides of the disc to retard its rotation; end plates releasably fastened to the opposing ends of the housing so that each bridges between the end edges of said side pieces of the housing and through which said disc projects, said end plates having mutually parallel inside faces conforming to and adapted to abuttingly engage the adjoining end edges of said friction members to resist displacement of said friction members in the rotational plane of the disc when the brake is engaged, and means interlocking a portion of said end edges of said friction members with said inside faces of said end plates to suspend said friction members between said end plates for slidable movement transverse to the rotational plane, said interlocking means comprising an interfitting lug and slot connection providing the sole support for said friction members in said housing.

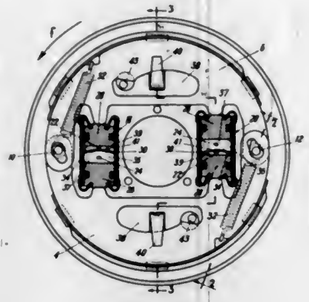
3,357,525
DISC-DRUM BRAKES
Jean Georges François, Blanc-Mesnil, France, assignor to Societe Anonyme Francaise du Ferodo, Paris, France, a corporation of France
Filed May 2, 1966, Ser. No. 546,946
Claims priority, application France, May 6, 1965, 16,009; Nov. 12, 1965, 38,098
15 Claims. (Cl. 188—76)



1. A disc-drum brake comprising a drum, two brake shoes disposed one on either side of the drum, a control cylinder disposed within the drum, a first piston slidably mounted in the cylinder for urging one of said shoes against the drum, a C-shaped stirrup member floatingly mounted with respect to said drum, a second piston slidably mounted in the cylinder to urge the C-shaped member in the opposite direction to the first piston, said cylinder and said brake shoes being disposed within the C-shaped member along the axis along which the gripping action of the shoes takes place, said second piston acting on one end of said stirrup member, the latter transmitting the action of the second piston to the other of said brake shoes, characterized by a fixed support in the form of an H having for its plane of symmetry the radial plane containing said gripping axis, said cylinder being formed in said support, said support having two lower arms for fixing the support, said arms having, at right angles to the axis of the disc-drum, a common medial plane containing said gripping axis, the central bar of said H-shaped support being formed by said cylinder, the two upper arms of said H-shaped support being disposed one to either side of the C-shaped member and the brake shoes.

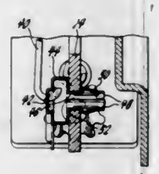
3,357,526
DRUM BRAKE
René Thirion, Paris, France, assignor to Societe Anonyme D.B.A., Paris, France, a company of France
Filed Apr. 19, 1965, Ser. No. 449,229
Claims priority, application France, Apr. 20, 1964, 971,604; Mar. 26, 1965, 10,964
9 Claims. (Cl. 188—78)

1. A brake including a rotatable drum, a fixed support, a pair of anchor pins carried on opposite sides of the fixed support; a pair of brake shoes each having adjacent the ends thereof of a pair of elongated slots having a width substantially greater than the width of said pins, said slots being arranged to register with said anchor pins so that the anchor pins may extend therethrough; a pair of fluid pressure cylinders each operatively connected to each of the brake shoes adjacent the ends thereof; a ramp provided on each of said slots which is inclined with respect to a plane passing through said pair of anchor pins; spring means operatively connecting with the outlet end of each brake shoe, which outlet end is the end opposite the first shoe end located in the direction of drum rotation, whereby upon pressurization of said cylinders, as the drum is rotating, the outlet end of said shoe is carried by the drum into abutment with the respective anchor pin through the intermediary of said ramp, while the entry end of said shoe, which is the opposite shoe end with respect to said outlet end, is abutting the other anchor pin so as to be pivotable and capable of lateral movement thereabout, said brake shoes being mounted to said support so as to inverse their position with respect to said anchor pins when the drum is



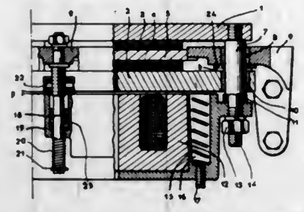
rotating in an opposite direction than aforementioned, and said brake shoes are also arranged on said support so as to shift the abutment of the outlet end of the brake shoes on said ramp transversely to the respective anchor pin.

3,357,527
AUTOMATIC BRAKE DRUM AND LINING CLEARANCE ADJUSTER
Robert H. Bauman, Thomas A. Bratten, and Richard D. Meixell, Dayton, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Aug. 26, 1965, Ser. No. 482,797
4 Claims. (Cl. 188—79.5)



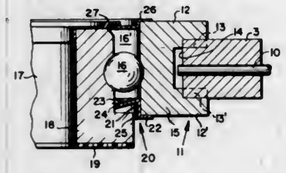
1. Brake adjusting mechanism for brake shoes frictionally engageable with a drum, said mechanism comprising: first lever means pivotally carried by a fixed portion of a vehicle and including a portion biased to a brake shoe; second lever means including adjusting means pivotally carried by a brake shoe and arranged to pivot relative to said first lever means; third lever means biasedly engaging the brake shoe and pivotable in response to a pivoting of said second lever means as the brake shoe moves during a brake actuation; and expandable means held in biased engagement with opposed ends of brake shoes and arranged to expand in response to rotational movement induced by said third lever means as brake shoe wear occurs necessitating further travel of the brake shoes during successive brake actuations, said adjusting means of said second lever means is an arm pivotally supported by the brake shoe and including a plurality of apertures disposed at different distances from the pivotal mounting adapted for engagement by said first and second lever means, said arm including means for allowing deflection of said arm during a condition of complete brake adjustment.

3,357,528
ELECTROMAGNETIC DISC BRAKE FOR ELECTRIC MOTOR
Auguste Verlinde, Loos-lez-Lille, France, assignor to Verlinde, S.A., a company of France
Filed May 23, 1966, Ser. No. 552,140
Claims priority, application France, May 21, 1965, 18,038
2 Claims. (Cl. 188—171)



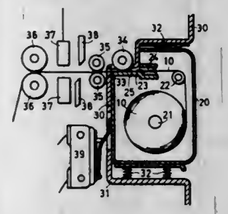
1. An electromagnetic disc brake for an electromagnetic motor having a disc rigid with the motor shaft, comprising:
(A) a support secured to said motor;
(B) a housing having therein an electromagnet adapted to be energised when said motor is fed with current, said magnet having a yoke provided with springs and an air gap of a given dimension;
(C) a pair of self-lubricating rings carried by the support;
(D) a pair of jaws each carrying a brake lining adapted to contact said disc and brake the same; the first of said jaws being secured at one end of a rod and to a guide slidingly mounted in said rings; the second of said jaw being also secured to said guide and normally spaced apart from said yoke by said springs, said second jaw being attracted by said electromagnet when the same is energised whereby to grip said disc together with said first jaw;
(E) a plurality of wear washers mounted on said rod and separating said guide from said yoke;
(F) a pair of bars passing the said housing, each having springs urging said housing and said yoke toward said support, said bars having stops thereon for limiting said air gaps as a function of the wear of said brake linings; and,
(G) means for adjusting the tension of said springs urging said second jaw away from said yoke and thereby adjusting the dimension of said air gap.

3,357,529
CLUTCH RELEASE BEARING ASSEMBLY
Richard Binder and Werner Herold, Schweinfurt (Main), Germany, assignors to Fichtel & Sachs A.G., Schweinfurt (Main), Germany
Filed Jan. 17, 1967, Ser. No. 609,832
Claims priority, application Germany, Nov. 24, 1962, F 38.385
9 Claims. (Cl. 192—98)



1. A clutch release bearing assembly comprising, in combination:
(a) an inner bearing ring having an axis;
(b) an outer bearing ring coaxially surrounding said inner ring, respective portions of said rings being axially coextensive and defining an annular bearing space therebetween;
(c) a plurality of bearing balls in said space, each bearing ball engaging respective radial recesses of said rings for securing the rings against relative axial displacement,
(1) an integral portion of said inner bearing ring projecting axially beyond said outer bearing ring and having an annular end face transverse of said axis;
(d) a flat annular disc of thermoplastic synthetic resin composition secured to said end face in face-to-face thermal contact, the axial thickness of said disc being but a small fraction of the radial width thereof;
(e) two pin members fastened to respective diametrically opposite portions of said outer bearing ring and projecting therefrom in a radially outward direction; and
(f) clutch release fork means including two arms respectively engaging said pin members for axially moving said outer bearing ring.

3,357,530
CODED TAPE CONTROLLED VENDING MACHINE
Mititaka Yamamoto and Hiroo Akamatsu, Kyoto-fu, Japan, assignors to Tateisi Electronics Co., Kyoto-shi, Japan, a corporation of Japan
Filed July 19, 1966, Ser. No. 566,295
Claims priority, application Japan, July 29, 1965, 40/45,983
5 Claims. (Cl. 194—4)

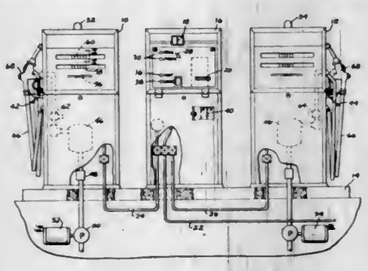


1. A vending machine for selling the performance of functions at a plurality of selling prices, said machine comprising in combination, a tape case enclosing a tape having specified value marks thereon, a receiving cavity portion adapted for receiving the tape case, said receiving cavity portion being formed on a housing of the machine, a plurality of selecting switches corresponding to the selling prices of the desired functions, a tape drawing means to draw out the tape from the tape case responsive to operation of one of the selecting switches, sensing means to sense and count the value marks on the tape being drawn out, a terminating means to terminate the operation of the tape drawing means, said terminating means conditioned by the operation of a selected switch and actuated by the sensing means, whereby operation of the tape drawing means is terminated when value marks corresponding to the selling price of the desired function are sensed and counted by the checking means, a cutting means to cut the tape drawn out and function releasing means to release the desired function, said last two means controlled by the operation of the terminating means.

3,357,531
CURRENCY CONTROLLED ACCUMULATOR FOR FLUID DISPENSERS
Albert F. Romanowski, Greeneville, Tenn., assignor to Bowser, Inc., Greeneville, Tenn., a corporation of Indiana
Filed May 6, 1966, Ser. No. 548,269
17 Claims. (Cl. 194—5)

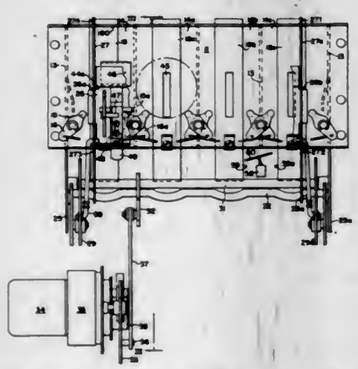
1. A system for storing values corresponding to units of currency and for cancelling out the stored money

values, comprising: bistable relay means having first and second operative conditions and being sensitive to pulses supplied thereto to change from one operative condition to the other; first means for supplying input pulses corresponding to units of currency to said relay means to be stored therein by change of condition of said relay means; second means operable by said relay means in response to the storage of a predetermined number of input pulses in said relay means to prevent the supply of any further input pulses by said first means; third means for supplying countdown pulses corresponding to units of currency to said relay means to countdown the input pulses stored therein; and fourth means operable by said relay means in response to the complete countdown of all said input pulses stored therein to prevent the supply of any further



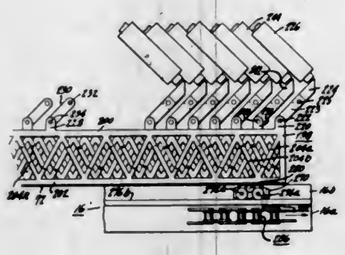
countdown pulses by said third means; said bistable relay means being in groups of serially arranged relays, each group of relays having a said first means individual to the group for supplying input pulses thereto and each group of relays having said second means individual to the group for controlling the respective first means, said third means being common to said groups, said fourth means comprising means pertaining to each group, said means pertaining to each group except the last group being operable upon the pertaining group being counted down to connect said third means with the next following group, said means pertaining to said last group being operable upon the last group being counted down to prevent the supply of any further countdown pulses by said third means.

3,357,532
ELECTRICAL CONTROL CIRCUIT FOR VENDING MACHINE
James E. Howard, Jr., Feeding Hills, Mass., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 15, 1966, Ser. No. 594,488
5 Claims. (Cl. 194—10)



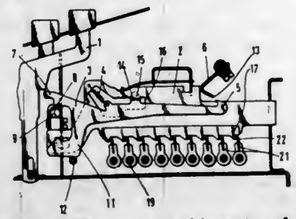
1. A vending machine comprising a plurality of article dispensing mechanisms, a common operating mechanism for releasing said dispensing mechanisms, electric motor means adapted to be energized to be operated for operating said common operating mechanism during each vend cycle, a credit relay, a vend relay, a respective connecting solenoid for each dispensing mechanism adapted to be energized to connect a respective dispensing mechanism to said common operating mechanism during a particular vend cycle to thereby selectively dispense an article, a respective selection switch for each of said solenoids, means responsive to the deposit of requisite coinage to energize both said credit and vend relays, a holding circuit for said vend relay, means responsive to the energization of said credit relay to prepare a holding circuit for said solenoids, means responsive to the energization of said vend relay to prepare an operating circuit for said selection switches, means responsive to the operation of a selected one of said selection switches to extend the previously prepared operating circuit to energize a selected one of said solenoids, means responsive to the energization of a selected one of said solenoids to maintain said solenoid energized through the previously prepared holding circuit and to interrupt the holding circuit for said vend relay and deenergize said vend relay, means responsive to the deenergization of said vend relay while said credit relay is still energized to energize said electric motor means, cycle switch means adapted to be operated in response to the operation of said motor means to maintain the energization of said motor means for the duration of a vend cycle, and means responsive to the operation of said cycle switch during a vend cycle to interrupt the holding circuit for said credit relay and deenergize said credit relay and thereby interrupt the respective holding circuit to deenergize the respective selection solenoid.

3,357,533
PRINTER HAVING PRINT BARS WITH ZIGZAG STRUTS OUT OF PHASE
Maurice Artzt, Princeton, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Aug. 6, 1965, Ser. No. 477,875
7 Claims. (Cl. 197—1)



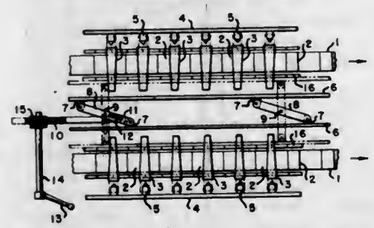
1. In a printer, the combination comprising:
a plurality of printer bar structures disposed in side-by-side relationship;
each printer bar structure including first and second elongated members held in fixed spatial relation by a plurality of interposed supporting struts arranged in a zigzag pattern along the lengths of the first and second members;
the zigzag patterns of struts of adjacent printer bar structures being out of phase with one another with the individual struts of each printer bar structure being transverse to the adjacent struts of next adjacent printer bar structures; and
means for supporting said printer bar structures for individual movement toward and away from a document to be printed.

3,357,534
KEYBOARD CAPABLE OF PRODUCING EITHER OF TWO DIFFERENT CODES
Bruno Nitschke and Alfred Rückerl, Munich, Germany, assignors to Siemens & Halske Aktiengesellschaft, Berlin and Munich, Germany, a corporation of Germany
Filed Oct. 23, 1965, Ser. No. 505,226
Claims priority, application Germany, Apr. 30, 1965, S 96,885
1 Claim. (Cl. 197—98)



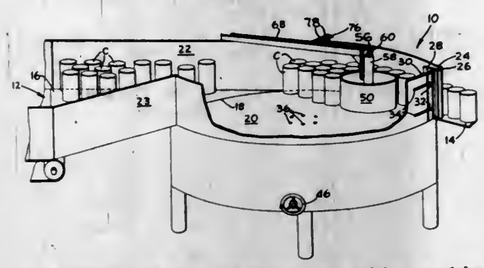
A keyboard for Teletype machines for the generation of character steps, comprising a plurality of selector slides each having a row of projections thereon and which are controllable by keys with multiple character occupation, a plurality of selector rocker members, mounted for pivotal movement, each slide having a projection for each selector rocker member, each selector member means interconnecting a respective key and a respective one of said selector slides for displacing said selector slides and said projections longitudinally through a predetermined range, each selector rocker member having at least two axial operative positions with respect to said selector slides, having a plurality of teeth separated by gaps, shift key means for axially shifting the selector rocker members thereby shifting a different tooth or gap into the range of a respective slide member projection allocated to such selector rocker member, whereby a corresponding projection engages one of said teeth for pivoting the respective selector rocker member or passes through one of the gaps without pivoting the respective selector rocker member, the number of said teeth corresponding to the number of steps to be selectively generated through such displacements thereof.

3,357,535
APPARATUS FOR SIMULTANEOUSLY DONNING A PLURALITY OF EMPTY BOBBINS
Koichi Shoji and Makoto Kotuji, Yatukagun, Japan, assignors to Deering Milliken Research Corporation, Spartanburg, S.C., a corporation of Delaware
Filed July 11, 1966, Ser. No. 564,143
4 Claims. (Cl. 198—24)



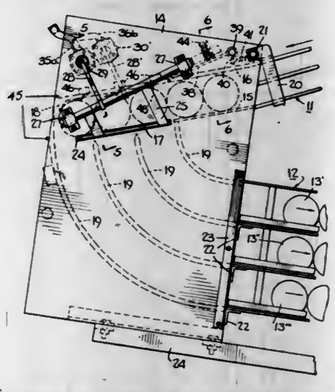
1. An apparatus for donning empty bobbins comprising: a bobbin conveyor, a plurality of cleats on said conveyor spaced from one another to form pockets between adjacent cleats, plate means mounted adjacent one lateral edge of said conveyor, pegs mounted on said plate means and extending toward said conveyor, pusher plate means mounted adjacent the other lateral edge of said conveyor, bobbins in said pockets, bobbin guide means, having notches thereon to receive and center the bobbins in substantial alignment with the pegs, straddling said conveyor and mounted for vertical movement between said pegs and said conveyor to guide said bobbins from said conveyor to said pegs, and means operably associated with said pusher plates to push said plate means against said bobbins to seat said bobbins on said pegs.

3,357,536
CONTAINER FEEDING MECHANISM
Walter W. Kelly, Portland, Oreg., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Aug. 8, 1966, Ser. No. 570,847
10 Claims. (Cl. 198—30)



1. Container feeding apparatus comprising a driven conveyor having a conveying surface arranged to convey upright containers along a predetermined path, an elongate swing arm mounted for swinging movement in a horizontal plane over said conveying surface, and a container deflecting drum carried by said swing arm and supported by said conveying surface, said drum being rotatable about an axis inclined from the vertical so that the drum is in point contact engagement with said conveying surface, said contact point being laterally displaced from a vertical plane including said swing arm such that the drum tends to move across said conveying surface.

3,357,537
AUTOMATIC CONTAINER SEPARATOR AND METHOD OF SEPARATING CONTAINERS
Marion F. Ring, Downey, Calif., assignor to The Coca-Cola Company, Atlanta, Ga., a corporation of Delaware
Filed Aug. 25, 1966, Ser. No. 575,118
13 Claims. (Cl. 198—31)



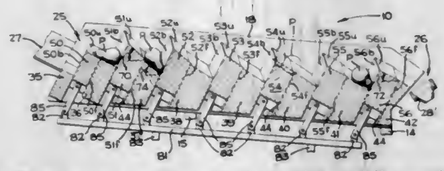
1. A container separator for separating a single row of containers into a plurality of aligned rows of containers comprising
guide means for positioning a plurality of containers of a single row of containers therein, said guide means including a pair of oppositely disposed retractable rails for supporting the ends of a predetermined number of said plurality of containers thereon,
means for detecting the presence of a predetermined

number of containers on said retractable rails, and means operatively connected to said detecting means for actuating said retractable rails in response to the detection of the presence of said predetermined number of containers on said rail means whereby said retractable rail means is retracted to dispense said predetermined number of containers simultaneously under gravity from the container separator.

3,357,538
APPARATUS FOR FEEDING AND ORIENTING PEAR-SHAPED ARTICLES

Donald W. Chamberlin, Los Gatos, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware

Filed June 8, 1964, Ser. No. 373,460
11 Claims. (Cl. 198—33)

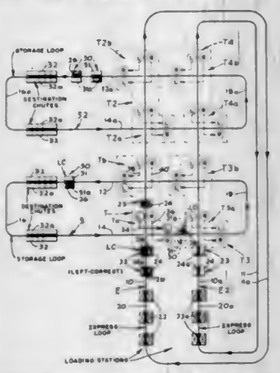


1. In an apparatus for orienting articles while moving them in a predetermined forward direction along a path, a plurality of shuffles having upper surfaces, and means mounting said shuffles along said path with their upper surfaces forwardly declined, each of said forwardly declined upper surfaces having a predetermined angle of declination relative to a horizontal, the angle of declination of the forwardly declined upper surface of a first shuffle being different from the angle of declination of the forwardly declined upper surface of a shuffle located forwardly of said first shuffle, said mounting means mounting certain of said shuffles for elevational movement with respect to the other of said shuffles between alternate positions with the upper surface of each shuffle being alternately aligned with the upper surfaces of the shuffles immediately adjacent thereto, upper surfaces of adjacent shuffles constituting means permitting said articles to roll over when said surfaces are in alignment.

3,357,539
CONVEYOR SYSTEM

Erik I. Naslund, Santa Clara, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware

Continuation of application Ser. No. 351,732, Mar. 13, 1964. This application July 6, 1966, Ser. No. 563,298
14 Claims. (Cl. 198—38)

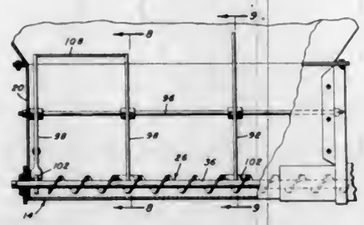


1. A conveyor system comprising an endless dual path express conveyor, an endless dual path distributing conveyor having first and second dual path legs crossing a dual path leg of said express conveyor, said first and second dual path legs moving in opposite directions, and means for selectively transferring articles from either path of said express conveyor leg to either path of said distributing conveyor legs.

3,357,540
FEED MOVING APPARATUS

Dominic M. Lippi, % A. R. Wood Manufacturing Co., Luverne, Minn. 56156

Filed Apr. 22, 1966, Ser. No. 544,580
14 Claims. (Cl. 198—64)



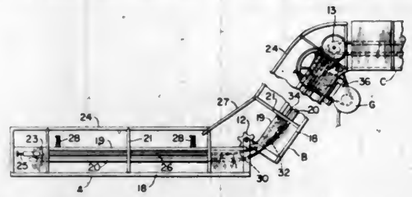
1. Feed moving apparatus comprising a feed receiving hopper, feed moving means located in the lower portion of said hopper, said means extending through and beyond said hopper for discharging feed therefrom, agitator means mounted within said hopper over said moving means, means for effecting a selective activation of said feed moving means, means operatively engaging said agitator means with said feed moving means for effecting an activation of said agitator means in response to an activation of said feed moving means, said agitator means including a shaft mounted on the opposed end walls of the hopper and spanning said hopper above and generally parallel to said feed moving means, and at least one vertical member on said shaft and rotatably mounted thereby for movement in response to a movement of the feed moving means, said vertical member projecting into close proximity to said feed moving means, said means operatively engaging said agitator means with said feed moving means for effecting an activation of said agitator means comprising striker means on said moving means for periodically engaging said vertical member upon a movement of the moving means so as to produce a rotational movement of the vertical member transversely of the feed moving means within the hopper.

3,357,541
CONVEYOR

Donald A. Skinner, Old State Road, Binghamton, N.Y. 13904

Filed Sept. 30, 1966, Ser. No. 583,345
5 Claims. (Cl. 198—88)

1. A conveyor for loading and elevating bales comprising, in combination, a first section for receiving bales to be elevated; a second section for elevating bales at any desired and steep angle of inclination having a pivotal connection with the discharge end of said first section; said sections having bottoms along which the bales are to be moved; a single pair of endless conveyor chains coextensive with said sections arranged at each side thereof and having the driving portions spaced above and parallel to said bottoms; bale moving flights arranged transversely of and connecting said chains and engageable with the bales at a point intermediate their height; power means for driving said chains to effect the loading and elevation of said bales; idler chain sprockets mounted on said pivotal connection between said sections and bearing against the upper side of said driving chain portions to enable free relative pivoting of said sections during operation and to position them for bale loading and elevating; and resiliently mounted guide rails mounted on the sides of said sections and overlapping at said pivotal

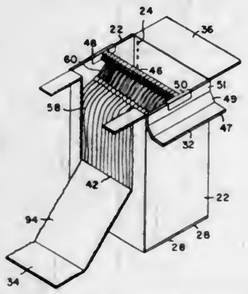


connection and being engageable with the ends of the bales to retain them against the bottoms of said sections during their loading and elevation.

3,357,542
WARDROBE CARTON AND METHOD OF ASSEMBLY OF HANGER BAR INTO CARTON

Salvatore A. Aquino, Bala-Cynwyd, and Herman Hy Wald, Philadelphia, Pa., assignors to Kardon Industries, Inc., Philadelphia, Pa., a corporation of Pennsylvania

Filed Dec. 28, 1966, Ser. No. 605,261
4 Claims. (Cl. 206—7)



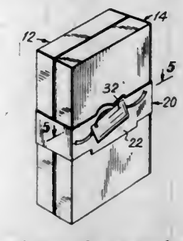
1. A top loading, front opening wardrobe carton comprising front, rear and side walls defining a top opening, and a hanger bar supported by at least certain of said walls and extending across said opening, said carton also including a front flap extending from the top edge of said front wall with said front flap being folded to a generally horizontal closed position over said top opening and sealed in such position after said hanger bar has been loaded with clothing, and at least a pair of spaced perforated lines formed in said front wall and extending toward said front flap and onto said front flap whereby said carton is loaded from the top and sealed, with said carton then being unloaded by tearing said front flap and front wall along said perforated lines to permit front access to said clothing, said carton further including flaps extending from the top edges of at least certain of said other walls, said flaps together with said front flap being folded to a generally horizontal position and sealed in such position to close off said top opening after said hanger bar has been loaded with clothing, said perforated lines being substantially parallel and extending continuously from said front wall and across said front flap to the free edge thereof.

3,357,543
DISPLAY AND GIFT BOX

Robert Bruce Taggart, Belleville, N.J., assignor to Val Mode Sleepwear, Inc., New York, N.Y., a corporation of New York

Filed July 29, 1966, Ser. No. 568,863
17 Claims. (Cl. 206—45.11)

1. A book-type display box assembly comprising two boxes hinged together at the rear and in closed face to face relation, a closure hand slidably fitted over the two boxes, said band having means to fit over the top edges of the

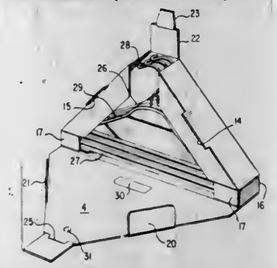


boxes when they are in angular spread relation in order to help hold them in that relation for display.

3,357,544
CLOTHES HANGER CONTAINER

Carl E. Gingher, 304–328 Depot St., Scranton, Pa. 18509

Filed Dec. 20, 1963, Ser. No. 332,031
16 Claims. (Cl. 206—46)

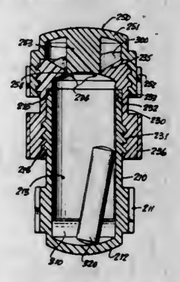


1. A folding container for clothes hangers and comprising a bottom, a pair of sides connected on opposite edges of said bottom with each side having two inclined edges and a top edge therebetween to form substantially a triangle, inclined top members connected to said inclined edges of one of said sides, flaps on said inclined top members and having slots therein, a top member on one of said side top edges and having a tab extending therefrom, a second top member from the other of said side top edges, there being a slot in said second top member receiving said top member tab, and tabs on the inclined edges of the other said side and insertable into said top member flap slots.

3,357,545
DENTAL MATERIALS AND APPARATUS FOR PREPARING THE SAME

Gerald Kobernick, San Diego, Calif., assignor to Koberly, Inc., a corporation of California

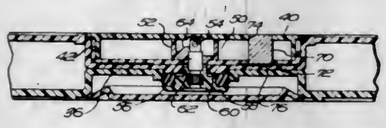
Filed Nov. 1, 1965, Ser. No. 505,946
6 Claims. (Cl. 206—47)



1. A container for handling materials which must be kept separated until used comprising a first portion open at one end and closed at the other end and having a

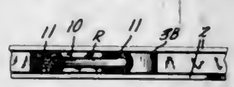
cavity intermediate the ends, a second portion detachably attached to the said first portion having both ends open and defining a passageway between the ends with a constriction in said passageway intermediate its ends; a third portion detachably attached to the said second portion having one end open and one end closed and having a cavity between the ends, said third portion having attached thereto means for temporarily closing the restriction between the ends of the second portion.

3,357,546
CASE FOR REELS
Gregory Mathus, West Hartford, Conn., assignor to Data Packaging Corp., Cambridge, Mass., a corporation of Massachusetts
Filed July 21, 1966, Ser. No. 566,987
6 Claims. (Cl. 206—52)



1. A reel case comprising a cover and a base,
a locking device including a handle rotatably mounted on the top surface of the cover with the handle having a gripper bar extending across it, said handle when turned in one direction locking the case and when turned in the other direction unlocking the case,
a transparent plastic rod extending through the handle from its top to the surface of the cover,
and a color coating applied to the top surface of the cover and disposed directly beneath the bottom of the rod when the handle is in the locked position to indicate that the case is locked.

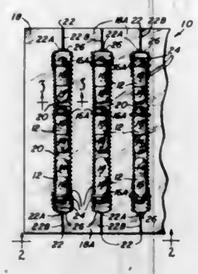
3,357,547
RETAINER FOR TAPE ON A REEL
Edward J. Thoms, 17 Davis Ave., Hackensack, N.J. 07601
Filed Mar. 14, 1967, Ser. No. 623,028
10 Claims. (Cl. 206—53)



1. A retainer for retaining tape on a reel having spaced flanges, said retainer comprising a stem portion and gripping portions at opposite ends of said stem portion, said stem portion having a transverse dimension less than the space between said flanges of the reel and said gripping portions being elastically compressible and having in uncompressed condition a transverse dimension greater than the space between said flanges, with the characteristic of gripping said flanges and tape when compressed between said flanges.

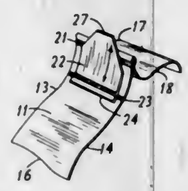
3,357,548
ARTICLE HOLDER
Ernest E. Freeman, Jr., Northfield, and Horace C. Kreinick, Chicago, Ill., assignors to Chicago Miniature Lamp Works, Chicago, Ill., a corporation of Illinois
Filed Oct. 22, 1965, Ser. No. 501,252
10 Claims. (Cl. 206—56)

1. A holder for articles, said holder comprising a sheet of flexible material formed with at least one open-sided depression having side walls extending transversely of the sheet and dimensioned frictionally to hold the article, characterized in that said sheet has a discontinuity to the edge of the sheet at least at one end of the depression,



whereby release of the held article from said depression may be effected by lateral separation of the side walls of the depression as by elongation or bowing of the sheet.

3,357,549
TEAR-OPEN SEALED THERMOPLASTIC FILM PACKAGE
James J. Staiti, Bernardsville, N.J., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York
Filed Apr. 29, 1965, Ser. No. 451,876
10 Claims. (Cl. 206—63.3)

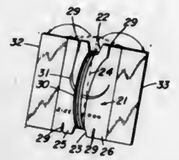


1. A tear-open sealed thermoplastic film package consisting essentially of a generally rectangular pouch having a single thickness thermoplastic film face and film back, the overlapping side edges of the film face and film back having marginal heat seals forming closures for the sides of the pouch, the pouch being closed at the opposite ends, and a tabe formed of a separate piece of film having a tear strength greater than the tear strength of the film in a direction along the sides of the pouch, and having one end secured to one of said face and said back at one of the ends of the pouch and having the opposite end free and arranged to be grasped and moved away from the package to tear the film to which it is attached along the length of the marginal heat seals and thus open the package.

3,357,550
COMBINATION REEL AND LABEL FOR SURGICAL SUTURES
Gerard Paul Holmes, New Fairfield, and John William Murphy, Ridgefield, Conn., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine
Filed June 23, 1966, Ser. No. 559,818
10 Claims. (Cl. 206—63.3)

1. A reel-label holding a surgical suture comprising:
a reel of stiff material,
at least two suture winding notches in opposed edges thereof,
a line of weakness connecting the bases of said notches permitting said reel to be separated into two definite parts along said line of weakness,

at least one suture holding slit in that portion of said reel which is to form each of said two parts, whereby a surgical suture wound about the reel and in said notches and having the two ends of the suture each removably fixed in one of said slits in the separable two portions of the reel is pulled apart and stretched as said reel is separated into two parts,
and said suture can be and is stretched out, free from



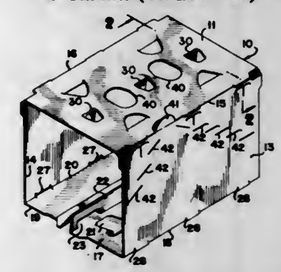
tangles, as the sheet material is separated into said two parts,
and a surgical suture loosely wound about said reel in said notches, so that the plane of the wind is adjacent the plane of the sheet, so that the radius of curvature of the suture is gradual at all points, with one of the two separate ends of the suture each passing through one of said slits in the separable two portions of said reel.

3,357,551
PACKAGE OF CANS AND A CLIP FOR INTERCONNECTING CANS
James C. De Shazor, Jr., Van Nuys, Calif., assignor to Combi-Clip Co., Hollywood, Calif., a corporation of California
Filed Feb. 12, 1962, Ser. No. 174,655
14 Claims. (Cl. 206—65)



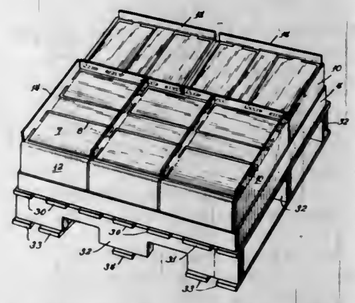
1. A fastening device for releasably securing together a plurality of symmetrically positioned cans, each having at its upper end a peripheral bead forming a downwardly-facing outer circumferential shoulder, said device comprising:
a body of resiliently flexible plastic material for positioning at the center of the plurality of cans to overlap a portion of the top of each can,
said body having arcuate shoulders on its underside to engage the inner sides of the beads of the respective cans and having a plurality of downwardly-extending, resiliently-flexible, hook-shaped teeth for cooperation with each of said arcuate shoulders to hook under the outer circumferential shoulder of the corresponding bead,
said body being apertured adjacent the root of each of said teeth on the hook side of the tooth to facilitate flexure of the tooth for engaging a bead of a can,
said teeth being tapered in thickness with downwardly pointed ends for cam action by the bead of the corresponding cans,
said body projecting downward adjacent said teeth below the ends of the teeth to guard the pointed ends of the teeth when the body is removed from the plurality of cans.
said body having marginal tongue portions to overlie the respective cans to facilitate disengagement of the body from the cans,
said body of plastic material being completely preformed for effective engagement with the plurality of cans whereby the body can be engaged with a plurality of cans simply by merely forcing the body against the ends of the cans to cause each of said teeth to flex outward to pass said outer circumferential shoulder of a can and then to flex inward into engagement with the circumferential shoulder.

3,357,552
CHIME LOCK FOR CANS
Arthur J. Weiss, Bergenfield, N.J., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Feb. 9, 1965, Ser. No. 431,305
4 Claims. (Cl. 206—65)



1. In a carton of the wrap-around type particularly adapted for holding a plurality of containers of the type having a lateral peripheral projection at at least one end thereof, a panel adapted to engage container ends, a side panel connected to the first mentioned panel along a fold line, a first cut line generally along said fold line in alignment with the intended position of a container and a second cut line in said side panel in spaced adjacent relation to said first cut line to define a strap in said side panel extending generally parallel to said fold line for engagement with a container projection, said first cut line being primarily formed in said side panel and defining a projecting flap on said first mentioned panel for overlying a container projection in spaced relation to said strap.

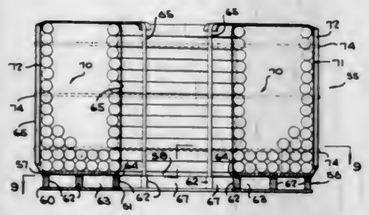
3,357,553
UNITIZED CARTON LOADS
Lloyd C. Dick, Frank C. McNutt, and Gene C. Bahls, Kalamazoo, Mich., assignors, by mesne assignments, to Brown Company, a corporation of Delaware
Filed Apr. 29, 1965, Ser. No. 451,740
15 Claims. (Cl. 206—65)



1. In a palletized load comprising a pallet base and a plurality of layers secured thereto by strap means, each of said layers comprising a plurality of paperboard trays

arranged in a substantially rectangular pattern, each of said trays comprising a bottom panel having side wall panels and end wall panels connected thereto and containing a plurality of articles therein, a vertical reinforcing member positioned in each tray comprising a body member having at least a portion extending along the width dimension of said tray and at least one end member disposed at right angles thereto, and a unitary paperboard cover having a peripheral depending flange disposed over and encircling the trays of said entire layer, the improvement wherein the sidewalls of each of said trays are each provided with a protective flap connected to the upper edge thereof resiliently biased against said unitary cover and cooperating with said cover to provide a barrier against the intrusion of foreign matter into said tray.

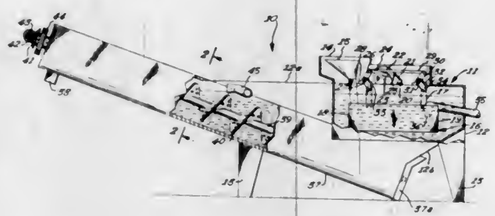
3,357,554
CAN END PACKAGE
Charles T. Walter, Lemont, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Original application Mar. 28, 1963, Ser. No. 268,633, now Patent No. 3,266,215, dated Aug. 16, 1966. Divided and this application June 3, 1966, Ser. No. 555,080
19 Claims. (Cl. 206—65)



1. The combination of a plurality of can ends and a flexible package therefor, said can ends being in face-to-face relationship to each other and forming an elongated radially shiftable column, an elongated flexible tubular member confiningly encasing said can ends and limiting the radial shifting thereof, said flexible tubular member having means at opposite end portions thereof for closing the latter whereby the can ends are maintained in face-to-face relationship while arcuate bending of the flexible tubular member is permitted in the absence of rupture thereof, said flexible tubular member being bent beyond 360 degrees to form a coiled package, and means are provided for maintaining the coiled configuration of said coiled package.

3,357,555
MATERIAL CLEANING APPARATUS
Theodore F. Garland, 1226 N. 1st, Fargo, N. Dak. 58102
Filed June 11, 1964, Ser. No. 374,517
4 Claims. (Cl. 209—18)

1. Apparatus for cleaning particulate material, such as gravel or the like, said apparatus comprising,
a liquid-confining tank,
a generally horizontally oriented stratifying structure shiftably mounted in said tank below the liquid level therein,
oscillator mechanism connected to said stratifying structure for oscillating the same and causing mixed materials thereon to move from an ingress end of the stratifying structure towards an egressed end thereof whereby to cause the lighter materials of the mixture to rise in a layer above the heavier materials, the latter being discharged over the egress end of the stratifying structure,
an overflow tube device extending into said tank and positioned adjacent the egress end of said stratifying structure for removing the lighter materials from the tank,
said tank having at least a portion thereof shaped to define an elongate inclined trough structure having the lower end portion thereof underlying said stratifying structure and receiving the heavier particulate material from the egress end of the stratifying structure, said trough structure having a discharge outlet at the upper end thereof located above the level of liquid within said tank,



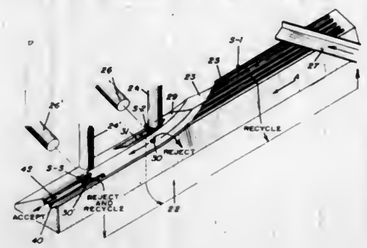
a pair of elongate shafts having blades thereon positioned and closely confined within said trough structure, said blades on said shaft being disposed in overlapping relation with respect to each other and being disposed in close proximal relation with respect to the inner wall surfaces of said trough, said shafts being revolvable about their longitudinal axes and cooperating with each other and with said trough structure for scrubbing the heavier gravel material to remove mud and the like therefrom and for conveying the gravel from the lower end of the trough towards said outlet.

3,357,556
NON-DESTRUCTIVE TESTING METHOD AND APPARATUS FOR CANNED LIQUID MATERIAL
John G. Martner, Atherton, and Phillip D. Neketin, Menlo Park, Calif., assignors, by mesne assignments, to Gerber Products Company, Fremont, Mich., a corporation of Michigan
Filed June 14, 1965, Ser. No. 463,679
8 Claims. (Cl. 209—73)



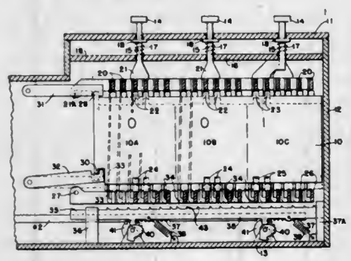
8. The method of separating uniformly-filled cans containing liquid material having first viscosity characteristics from cans containing liquid having second viscosity characteristics, comprising the steps of: advancing said cans along a path at a rate of rotation sufficient to develop internal liquid flow characteristics that correspond to the viscosity characteristics of the respective liquid materials in said cans; providing an upstanding transverse barrier in said path for preventing continued advancement of only those cans that contain liquid material having said first viscosity characteristics; and expelling from said path those cans that are prevented from continued advancement by said barrier.

3,357,557
RADIANT ENERGY METHOD AND APPARATUS OF DETERMINING PHYSICAL CHARACTERISTICS
Benson M. Austin, White House, N.J., assignor to Affiliated Manufacturing Corporation, a corporation of New Jersey
Filed July 30, 1965, Ser. No. 476,031
17 Claims. (Cl. 209—74)



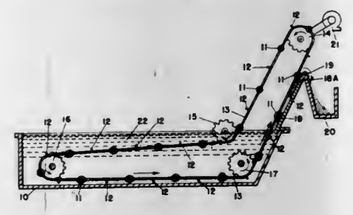
4. A method of assuring the perfectness of dimensions of each of a plurality of bodies each having a top surface comprising the steps of:
(a) placing said bodies on a support surface;
(b) continuously directing radiant energy onto said support surface at a sensing station;
(c) sensing the magnitude of said energy which is reflected at said sensing station;
(d) continuously moving said bodies over said support surface and past said sensing station so that each of said bodies passing said sensing station will, instead of said support surface, reflect off of said top surface, said radiant energy; and
(e) ejecting from said support surface any body which at said sensing station, reflects radiant energy at a level below that which would indicate that no body was at said station or that a body of proper dimensions was there.

3,357,558
MULTIPLE SELECTIVE DEVICE
Edward Rogal, 80 Mann Lot Road, North Scituate, Mass. 02060
Filed Oct. 20, 1965, Ser. No. 498,935
3 Claims. (Cl. 209—110)



1. An article selection device for displacing a desired article to a unique position relative to a plurality of other similar articles comprising; a plurality of articles normally mounted adjacent to each other, each in a uniform position; similar articles comprising; a series of coded extensions on a first edge of each article; a similar series of coded notches on a second edge of each article; a series of selection actuators for designating the desired article, said actuators each coupled to two of a first series of bars for making contact with two of said extensions and for moving some of the articles to a transfer position, said selection actuators also coupled to two of a second series of bars for making contact with the second edge of the transferred articles to return them to their original position, leaving the desired article in the transfer position and a normalizing means coupled to all the bars for returning them to their normal unactuated position, said normalizing means including a double rack positioned under the articles and formed with extensions which engage all the actuated bars.

3,357,559
ENDLESS BELT MAGNETIC SEPARATOR WITH MAGNETIC DOFFER
Arlo F. Israelson, Erie, Pa., assignor to Eriez Magnetics, Erie, Pa., a corporation of Pennsylvania
Filed July 28, 1964, Ser. No. 385,586
6 Claims. (Cl. 209—218)



1. A magnetic separator comprising a tube made of non-magnetic material,
axially spaced permanent magnets in said tube adapted to form a magnetic field through the wall of said tube,
said permanent magnets being disposed with like poles adjacent each other,
a plate made of magnetizable material and having a width greater than the diameter of said tube,
means to move said tube in an endless path from a position spaced from said plate a distance greater than the diameter of said tube through a material containing particles of magnetic material whereby said particles are attracted to said tube,
said means moving said tube into engagement with said plate and along said plate parallel thereto whereby said plate is magnetized by said magnets and said plate is adapted to attract said particles from said tube.

3,357,560
FUSE FILTER WITH PRESSURE RESPONSIVE CLOSURE MEANS
Ray J. Raupp, Madison Heights, Mich., assignor to The Bendix Corporation, a corporation of Delaware
Filed Dec. 8, 1966, Ser. No. 600,224
1 Claim. (Cl. 210—96)

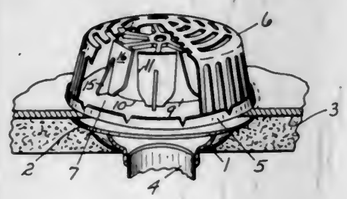
A filter unit comprising a housing having a plurality of inlet ports and a single outlet port therein, a tubular filtering element located within said housing for permitting flow of fluid therethrough from the outside of the element to the inside of the element, said tubular element having one end thereof in abutment with said housing and in alignment with said outlet port, a cup-shaped endplate member in abutment with the other end of said tubular element, said endplate member having a recess therein and passage means extending therethrough, a piston-like valve member detachably connected to said endplate member through annular tongue and groove means and located in the recess thereof, said valve member having one side thereof communicating with fluid outside the tubular element via the passage means in said

endplate member and the other side thereof communicating with the fluid inside the tubular element, said valve member coacting with said tubular element and said outlet port so that when the differential pressure thereacross increases above a predetermined value the valve member will be detached from said endplate member and moved into said outlet port to prevent further flow there-



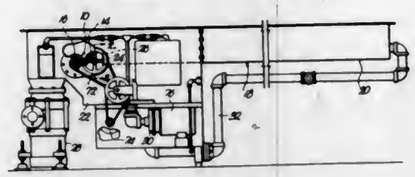
through, said tongue and groove means including a garter spring which is located in a tapered notch formed in said valve member and extends into an annular groove formed in the recess of said endplate member, said garter spring being constructed to be urged radially outwardly into said annular groove to release said valve member when the differential pressure thereacross increases above said predetermined value.

3,357,561
ROOF DRAIN
John H. Schmid and Norman J. Anderson, Erie, Pa., assignors to Zurn Industries, Inc., Erie, Pa., a corporation of Pennsylvania
Filed Oct. 15, 1965, Ser. No. 505,108
7 Claims. (Cl. 210—163)



2. A roof drain comprising a body having an open top and a discharge at its lower end for connection to a drain pipe, a dome strainer extending over the top of the body for keeping debris out of the drains, a plate beneath the strainer and above the discharge and having its peripheral edge secured to the body, an upstanding wall between the strainer and the discharge at the center of the plate through which water must flow, and said wall having at least one notch having sides widely separated at the lower end with its wider end adapted to be positioned at and form the minimum water level to offer relatively little restriction to drainage of water at the level of the lower end of the notch and the sides of the notch being progressively less widely separated toward the top to offer greater restriction to drainage as the water level rises, said wall being proportioned to have a flow rate substantially equal to a constant times the head of water above said minimum water level.

3,357,562
TABLE SCRAP SEPARATOR AND CONVEYOR
George O. Sherman, Jr., Prairie Village, Kans., assignor to The Salvajor Company, Kansas City, Mo., a corporation of Missouri
Filed Apr. 24, 1967, Ser. No. 634,425
12 Claims. (Cl. 210—196)

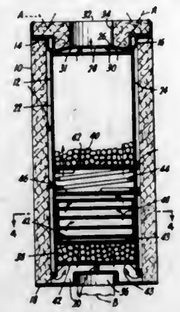


12. In combination:
an elongated trough having a weir at one end thereof and adapted to receive scrap therein;
a reservoir below said weir adapted to contain a supply of water;
pump means coupled with said reservoir and the opposite end of said trough for directing a stream of water from said reservoir through said trough and over said weir, whereby scrap received within said trough will be flushed toward and over said weir by said water stream;
a scrap receiver spaced laterally from said weir and downstream thereof with respect to the scrap-laden water passing over the weir,
said reservoir being in fluid communication with the space between said weir and said receiver;
water permeable bristle structure in said space in substantially spanning relationship to said weir and said receiver,
said structure including a rotary brush having a generally cylindrical outer surface and provided with relatively rigid, substantially radially extending bristles having free ends presenting said surface;
structure rotatably mounting the brush with its roational axis extending generally horizontally and with said surface disposed to receive the scrap-laden water as the same flows over the weir,
said brush having passage means therewithin for flow of water through the brush transversely of said axis, whereby scrap carried by the water received by said surface is retained thereon while the water gravitates through the brush into the said reservoir; and
means coupled with said brush for rotating the latter in a direction to advance the scrap on said surface toward the receiver.

3,357,563
APPARATUS FOR TREATING WATER
Marcel Clarence Sicard, Cheshire, Conn., assignor to American Machine & Foundry Company, a corporation of New Jersey
Filed Mar. 2, 1964, Ser. No. 348,390
4 Claims. (Cl. 210—209)

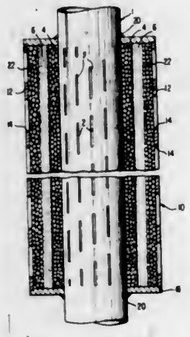
1. A unitary cartridge device for the treatment of water in a pressure vessel having inlet and outlet ports for the flow of said fluid therethrough comprising, a nonpermeable container having substantially opposed inlet and outlet openings adapted to communicate with the corresponding ports in said vessel, said container being divided into at least two serially communicating chambers one of said chambers being supplied with a quantity of a soluble bactericidal treatment agent for purifying said water by infusion therewith, the other of said chambers being supplied with a quantity of a neutralizing agent for removing said bactericidal agent from said infused water, the quantities of said bactericide and neutralizing agent

being so proportioned that the available life of one is exhausted before the other so that the remaining agent



affords a physio-sensory indication that said cartridge has reached the end of its normal useful life.

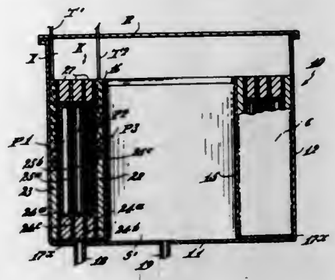
3,357,564
FILTERING APPARATUS AND METHOD OF MAKING IT
Erskin L. Medford, Jr., and Lloyd C. Knox, Duncan, Okla., assignors to Halliburton Company, Duncan, Okla., a corporation of Delaware
Filed Sept. 22, 1964, Ser. No. 398,164
8 Claims. (Cl. 210—266)



1. A screen apparatus for use in well bores, said apparatus comprising longitudinally extending conduit means having radially extending openings, a fluid permeable screen of granular material, said screen comprising a first layer of relatively coarse granular material encompassing said conduit means, a second layer of relatively fine granular material encompassing said first layer, a third layer of relatively coarse granular material encompassing said second layer, at least one of said layers being of a unitary bonded construction, and a housing connected to said conduit means and encasing said layers and including at least one generally cylindrical wall bonded to said one of said layers, said housing having radially extending openings.

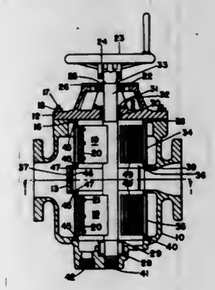
3,357,565
CLINICAL DIALYZER HAVING A FLOW PATH DECREASING IN WIDTH
Robert Burger, 28 Cunningham Road, Wellesley Hills, Mass. 02181
Filed Dec. 23, 1965, Ser. No. 516,008
2 Claims. (Cl. 210—321)

1. A dialyzer including a container comprising, in combination, a circular bottom, an outer cylindrical wall and an inner cylindrical wall coaxial with the outer wall and of a diameter such as to provide an annular space between said walls; the walls being joined leak-tight to the bottom and the inner wall being lesser in height than the outer wall, a pervious carpet, for the annular space, resting upon the bottom wall and, in combination, a removable dialyzing unit comprising an outer cylindrical sheath of resilient material of an external diameter to fit leak-tight within the cylindrical outer wall of the container, and a hollow cylindrical core member also of resilient material and of an external diameter such as to fit leak-tight against the outer surface of the cylindrical inner wall, and a spiral



of stiff pervious material with spacer means between the adjacent spires forming a flow channel, the radial width of which gradually decreases from the inlet end of said flow channel toward its outlet end, and a flattened membraneous tube forming a spiral whose spires are interposed between those of the stiff coil, said unit being of a height approximating that of the inner cylindrical casing, and means whereby dialyzing liquid, under pressure, may be introduced beneath the pervious carpet resting upon the bottom wall of said annular space.

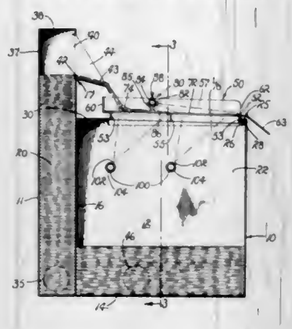
3,357,566
DUAL ELEMENT FILTER ASSEMBLY WITH BACKWASH ARMS
John H. Schmid, Erie, and Ramon J. Zentis, McKean, Pa., assignors to Zurn Industries, Inc., Erie, Pa., a corporation of Pennsylvania
Filed June 22, 1964, Ser. No. 376,991
12 Claims. (Cl. 210—333)



8. A strainer comprising
a body having an inlet and an outlet,
two axially spaced, generally cylindrical strainer elements in said body, one disposed on the opposite side of said inlet from the other,
means to admit fluid from said inlet to the inside of said elements,
a hollow shaft in said body generally coaxial with the central axes of said elements,
two backwash arms, one in each said strainer element, slidingly engaging the inside surface thereof,

and means on said backwash arms connecting the inside of said hollow shaft in fluid flow relation with the surface of said strainer elements engaged by said backwash arms.

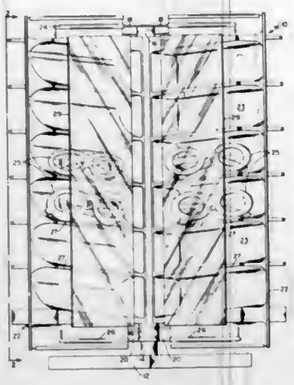
3,357,567
FLUID FILTERING DEVICE
Harold E. Wake, P.O. Box 880, Lindsay, Calif. 93247
Filed May 2, 1966, Ser. No. 546,675
6 Claims. (Cl. 210—408)



6. A fluid filtering device comprising a tank having separated inlet and outlet compartments with the inlet compartment being connected to a source of water having extraneous material entrained therein and having an upwardly disposed elongated discharge opening located above said outlet compartment, said outlet compartment including an outlet opening for directing relatively clean water from the tank; filter means mounted on the tank having a water receiving section disposed immediately below and coextensively contiguous with the elongated discharge opening of said inlet compartment for removing extraneous material from the water discharged from said discharge opening and permitting relatively clean water to pass into said outlet compartment, said filter means including a debris discharge station disposed in spaced opposed relation to said water receiving section; particle conveying means mounted immediately above said filter means between its water receiving section and its debris station including nozzle means connected to said outlet opening of the tank providing an auxiliary flow of relatively clean water for discharge angularly downwardly against the filter means to propel extraneous material thereon toward said debris discharge station; and filter sweeping means disposed below said filter means within said outlet compartment and being connected to said outlet opening of the tank for receiving therefrom a supply of relatively clean water for discharge upwardly against said filter means to loosen, dislodge and propel extraneous material trapped by the filter means into said auxiliary flow of water from said particle conveying means.

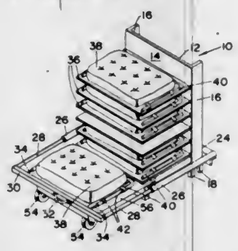
3,357,568
DISPLAY RACK
Conrad L. Leblanc and Jack Bloch, Leominster, Mass., assignors to Foster Grant Co., Inc., Leominster, Mass., a corporation of Delaware
Filed July 28, 1965, Ser. No. 475,415
3 Claims. (Cl. 211—13)

1. A display rack comprising:
a base member;
a rod upstanding from said base member;
a hub member supported by said rod;
said hub member having upper and lower spokes located adjacent the top and bottom thereof and extending radially therefrom;
a display panel, of flexible material and having shelves, supported by said spokes;
said display panel including spaced, integral guideways therein to coincide with and receive a pair of said spokes;



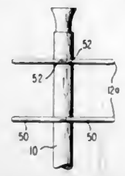
said spokes and said guideways having cooperating retaining means to releasably lock the panel in place on the display rack.

3,357,569
DISPLAY APPARATUS
Robert Goodman, 5325 Westminster Ave., Philadelphia, Pa. 19131, and Dominic Tampone, 145 E. 57th St., New York, N.Y. 10022
Filed Dec. 10, 1965, Ser. No. 513,023
6 Claims. (Cl. 211—28)



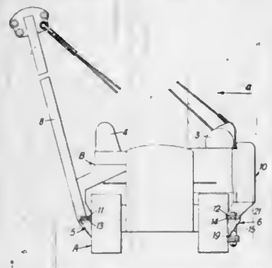
1. A storage and display apparatus comprising a supporting frame a plurality of shelves vertically-spaced from each other on said frame, each shelf extending forwardly from said frame, a vertically-movable lift fork means operatively connected to said frame, said lift fork means having a fork assembly including at least one tine extending toward the forward plane of said shelves, means for moving said lift fork means vertically, means for moving said fork assembly horizontally toward and away from said shelves, a removable article-support means on at least one of said shelves, and means for releasably interengaging said tine and said article-support means said lift fork means comprising a pair of oppositely disposed, parallel, hollow arms, one arm being arranged outwardly of one side of the frame and the other arm being arranged outwardly of the opposite side of the frame, said arms extending rearwardly of said frame and being connected by a cross-bar rearwardly of said frame, a fork assembly comprising a rod slidably positioned within each arm, each rod extending forwardly of said shelves, said rods being connected to each other by a cross-bar, and at least one tine mounted on said fork assembly and extending rearwardly toward said shelves.

3,357,570
HANGING AND STORAGE MECHANISM
Kenneth J. Hagle, Sr., 3102 Parkwood St. 48601, and Joseph J. Trogan, 904 S. Michigan Ave. 48602, both of Saginaw, Mich.
Filed July 31, 1964, Ser. No. 386,641
1 Claim. (Cl. 211—125)



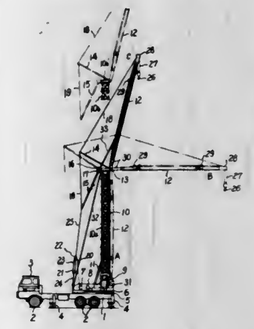
In a hanging and storage mechanism for use with articles of utility capable of being supported by association with supports extending outwardly from an upstanding element extending from an abutting base structure, complementary plug and socket configuration on said upstanding element and said base structure, said plug configuration comprising a single cylindrical pin having a uniform radius a portion of which is press fitted into an opening in the upstanding element and a further portion of the pin extending into the socket formed in the base structure, a flat retainer member associated with and readily removable from a circular detent surface provided on said plug configuration and adapted to be cooperatively engaged with the peripheral walls of said socket configuration so as to preclude separation of said plug from said socket whereby said retainer, plug and wall are in engagement, yet permit separation thereof upon the disengagement of said retainer from said wall, said plug and socket configuration being such as to permit substantial relative movement therebetween about the axis of said upstanding element, support elements disposed about said upstanding element, said support elements including a cross rod support having attached to at least one teminal portion thereof, a ring structure composed of spring material for engaging and releasably holding in engagement therewith at least one complementary shaped article of utility, said ring structure being diametrically segmented to consist of complementary overlapping terminal portions which when mated remain engaged exclusively as a result of design and material characteristics of said ring structure but one readily separable for inserting and hanging about said ring articles of utility.

3,357,571
MAXIMUM SAFE LOAD INDICATORS FOR CRANES
John H. Boughton, Amersham Common, England, assignor to T. T. Boughton & Sons Limited, Amersham, Buckinghamshire, England, a British company
Filed Jan. 18, 1966, Ser. No. 521,327
5 Claims. (Cl. 212—39)



1. A side jib mobile crane comprising a chassis, a superstructure overspanning said chassis, means at one side of said chassis and superstructure mounting the latter on the chassis and permitting angular upward movement of said superstructure relative to said chassis about a horizontal axis extending along said one side thereof, hoisting mechanism mounted on said superstructure so that loading of the crane results in an upsetting couple tending to cause angular upward movement of said superstructure relative to said chassis about said axis, a first flange on the other side of said chassis, a second flange on the other side of the superstructure overlying said first flange, said first and second flanges having registering holes therein, a plurality of bolts extending through said registering holes in said flanges, a pair of resiliently yieldable washer plates held on each bolt by a respective nut so that said bolts, washer plates and nuts force said first and second flanges together and resist movement of said second flange away from said first flange until said upsetting couple exceeds a predetermined value to cause flexing of said washer plates, and switch means operated by movement of said second flange away from said first flange.

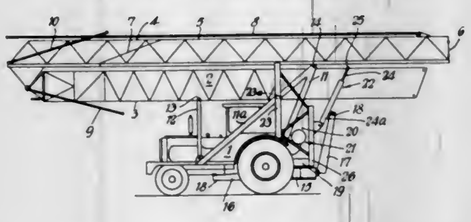
3,357,572
TOWER CRANE TRUCK
Atsushi Yoshioka, Tokyo, Japan, assignor to Kyoei Kaihatsu Co., Ltd., Chiyoda-ku, Tokyo, Japan
Filed June 15, 1966, Ser. No. 557,694
Claims priority, application Japan, Nov. 29, 1965, 40/72,880
7 Claims. (Cl. 212—46)



1. A tower crane truck comprising outrigger means mounted on the chassis frame of said truck to station the truck securely on the ground; a base member rotatably mounted on said chassis frame; at least a first and a second winch and a hydraulic cylinder means disposed on said base member; extensible column means having one end pivoted at said base member and operatively connected to said hydraulic cylinder means, so as to be turned up and down between horizontal and upright positions by said hydraulic cylinder means, said column means consisting of an outer column member, and an inner column member slidably fitted within said outer column member so as to reciprocate vertically therethrough; extension means for said column means comprising a lower cylinder secured to said outer column member, and upper piston member secured to said inner column member and slidable telescopically with the lower cylinder, and means for providing pressurized fluid into said cylinder; a boom member having one end thereof pivoted at one side of the upper end of said column means; a first link means having one end thereof pivotally supported at said one side of the upper end of the column means; a second link means having one end thereof pivotally supported at the other side of said upper end of the column means; said first and second link means being adapted to pivot at the top of said column means to such extent that the free ends of the link means are kept in contact with the outer column

member surface when the assembly is folded; a first wire rope means connecting the tip end of said boom member to said first winch through the free ends of said first and second link means; a guide pulley mounted at said other side of said upper end of the column means and extending coaxially with said one end of said second link means, said guide pulley adapted to guide said first wire rope means when the assembly is folded; hook means; a second wire rope means connected to said second winch and said hook means for reciprocating said hook means to and from the other end of the boom member, said second wire rope means extending from said hook means along said boom member and column means; and additional guide pulley means supporting said second wire rope means and including additional pulleys located at the pivoted joint between the boom member and the column means and distributed along the column means at predetermined intervals.

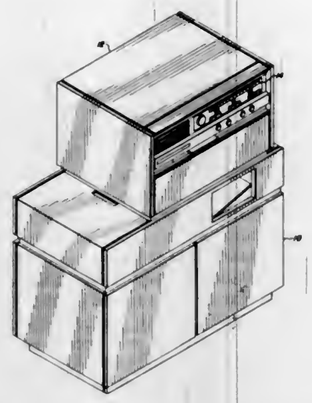
3,357,573
CRANES
Derek Allpress Stukins, Horsham, Sussex, England, assignor to Century Fabrications 100 Limited, Partridge Green, Sussex, England, a British company
Filed Nov. 8, 1965, Ser. No. 506,673
Claims priority, application Great Britain, Nov. 9, 1964, 45,682/64
6 Claims. (Cl. 212—49)



1. Apparatus comprising a tower crane form load-carrying structure, a vehicle which can be used to transport the load-carrying structure, means coupling the load-carrying structure to the vehicle, means on the vehicle for causing the load-carrying structure to be supported by the ground and the vehicle to be raised from the ground and supported, positioned substantially wholly to one side of an upright axis of rotation for the load-carrying structure, by the load carrying structure so as to act as a counter-weight for the load-carrying structure as thus supported, means on the vehicle for turning the supported load-carrying structure, with the vehicle raised off the ground and acting as a counter-weight, about said upright axis, and adjustable levelling means to ensure that said upright axis is vertical.

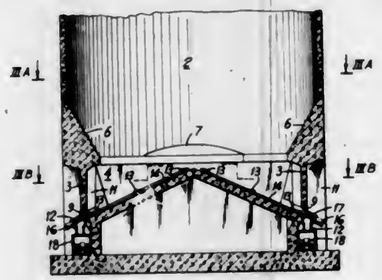
3,357,574
SEQUENTIAL CONTROL SYSTEM
Thomas C. Murray, Rochester, and Russell R. Roberts, Ontario, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed June 30, 1965, Ser. No. 468,338
2 Claims. (Cl. 214—1)

1. An apparatus for producing and controlling sequential movement of a positionable element including:
a first support means for supporting the positionable element for movement in a first direction,
first indexing means for imparting incremental movement to said first support means in said first direction, said first indexing means including a first energizable device adapted to produce a single incremental movement of said first support for each energization thereof,
a second support means for supporting said first support means and the positionable element for movement in a second direction,
second indexing means for imparting incremental movement to said second support means in said second direction, said second indexing means including a second energizable device adapted to produce a single incremental movement of said second support means for each energization thereof,
a base structure for supporting said second support means,



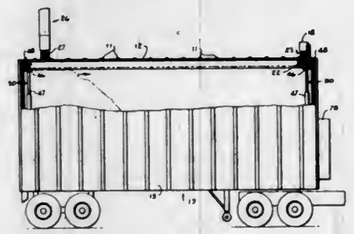
a drive mechanism mounted on said base and operatively connected to said second support means for driving the same along a path of movement parallel to one of said directions,
a control circuit connected to said energizable devices and said drive mechanism and arranged for actuating the latter for imparting driving action to said second support means after each of a predetermined set of incremental movements of one of said support means.

3,357,575
SILO UNLOADING MEANS
Otto Zuber and Silvio Semadeni, Uzwil, and Per Møller, Saint Gall, Switzerland, assignors to Gebruder Buhler, Uzwil, Switzerland
Filed Aug. 9, 1965, Ser. No. 478,257
Claims priority, application Switzerland, Aug. 11, 1964, 10,459/64
4 Claims. (Cl. 214—17)



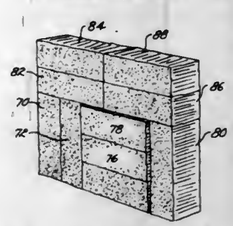
1. A silo comprising a substantially cylindrical upper section and a substantially rectangular lower discharge section spaced inwardly from said upper section, said lower section including substantially straight vertical end walls and side walls having a plurality of discharge openings therein, said side walls including vertical rib formations extending outwardly thereform and extending upwardly to support said upper section, a silo floor having a central peak and an oblique wall on each side of said peak sloping downwardly to the openings in said side walls, a scraper associated with each of said openings including a rod member overlying each oblique wall which is reciprocable in an axial direction and a wedge member secured to said rod member being movable along the associated oblique wall of said floor upon reciprocation of said rod member, means to reciprocate said rod member, said rod member including a closure lid thereon adapted to move toward and away from the opening in the associated side wall, and a projecting nose formed as an inward continuation of said upper section downwardly and inwardly to said side walls having said discharge openings.

3,357,576
APPARATUS FOR LOADING AND TRANSPORTING PARTICULATE MATERIAL
Carl E. Strombeck, P.O. Box 95, Loleta, Calif. 95551, and Chris Nicolos, P.O. Box 515, Samoa, Calif. 95564
Filed Aug. 26, 1965, Ser. No. 482,870
5 Claims. (Cl. 214—83.26)



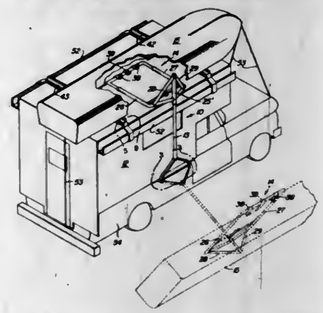
1. A load leveler for distributing wood fragments being loaded into an open top van having a bed and vertical walls defining its length and width dimensions comprising; first and second supporting members mounted in horizontal planar alignment within said van each individually proximate one of first and second opposite walls thereof defining its length dimension and extending for substantially the full length of said van; a drive shaft journally mounted at a first end thereof to said first supporting member proximate one end of said van and at a second end thereof to said second supporting member to extend perpendicularly between said supporting members; first and second driven sprockets affixed to said drive shaft proximate respectively said first and second journaled ends thereof; first and second idler sprockets rotatably supported at the second end of said van by said first and second supporting members and an idler shaft mounted therebetween, said idler sprockets mounted spaced apart the same distance as said driven sprockets; first and second continuous link chains each individually mounted to engage about one of the first and second sprocket combinations formed respectively by first driven and first idler sprockets and second driven and second idler sprockets; a plurality of bars mounted to extend perpendicularly between said first and second chains at spaced intervals to provide with said chains an apertured structure which is moveable on said sprockets, said first and second supporting members including supports extending lengthwise of said van between said driven sprockets and said idler sprockets upon which the lengthwise edges of said apertured structure slidably rest to provide support for said structure for its full length; and means for coupling a motor drive to rotate said drive shaft.

3,357,577
METHOD OF STACKING AND LOADING BALES
Richard B. Miskin, Ucon, Idaho 83454, and Merlin R. Miskin, Rte. 2, Box 194, Idaho Falls, Idaho 83401
Filed Feb. 16, 1965, Ser. No. 433,065
2 Claims. (Cl. 214—152)



1. A method of stacking a load of hay and the like on a vehicle platform for discharge therefrom as an integral unit comprising forming a predetermined number of vertical tiers extending transversely of the vehicle from individual bales and disposing the bales in adjacent tiers in non-symmetrical configuration to provide tie tiers to hold the load together upon upending it, said non-symmetrical configuration being formed of bales disposed out of alignment with each other so as to overlap the abutting portions of bales in adjacent tiers, wherein at least one tie tier is formed of two abutting vertical bales, three superimposed horizontal bales abutting a vertical bale, another vertical bale spaced from said horizontal bales, and two laterally disposed vertically stacked horizontal bales overlapping said two abutting vertical bales, superimposed bales and spaced vertical bales.

3,357,578
BOAT CARRIER FOR PICKUP MOUNTED CAMPER COACHES
John O. Koenig, 1841 S. Oakmont Drive, Bountiful, Utah 84010
Filed Feb. 7, 1966, Ser. No. 525,436
5 Claims. (Cl. 214—450)

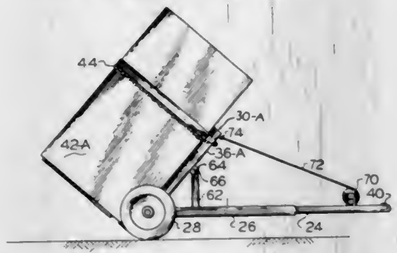


1. A boat carrier for pickup mounted camper coaches comprising
mounting brackets adapted to be fixed beneath the overhanging side of a camper coach and including arms extending from beneath the camper;
a support arm pivotally connected at one end to the arms of said mounting brackets, whereby said arm is pivotable between an upright position alongside the coach and a lowered position extending outwardly from the side of the coach;
a support frame on the other end of the support arm, said support frame including an adjustable, broad, load carrying, platform extending substantially normal to said support arm, the said platform comprising a pair of bent tubular members fixed to the support arm and each having a straight portion, said

straight portions being substantially parallel, a U-shaped tubular member, the legs of which are each adapted to telescope with respect to a straight portion of one of said bent tubular members, and means for fixing the relative telescoped positions of the bent tubular members and the U-shaped tubular member; and

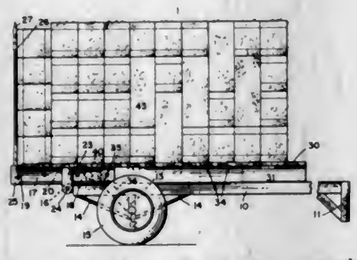
means carried by the platform for holding a boat securely thereon.

3,357,579
TRAILER
Ray C. Goodsell, Rte. 2, Coopersville, Mich. 49404
Filed Aug. 12, 1965, Ser. No. 479,138
3 Claims. (Cl. 214—501)



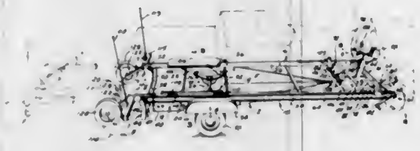
1. A towing trailer for transporting a refuse container having a bottom wall and a side wall substantially perpendicular to said bottom wall comprising in combination, frame means including axle means, a reach pole and wheel means rotatably connected to said axle means; container engagement means defining supports for said container including a foot portion and a bed portion pivotally mounted on said axle means, said foot portion and said bed portion being disposed at substantially right angles to one another, said bed portion being movable to a substantially vertical position in supporting engagement with said side wall of said container; means for pivoting said engagement means to lift said container onto said frame means; and stop means for limiting the degree of pivoting of said bed portion, said stop means being provided with a bore, said bed portion including flange means which engage said stop means, said flange means being provided with at least one bore aligned with said bore in said stop means; and pin means removably mounted through said bores to prevent pivotal movement of said engagement means.

3,357,580
BALE STACK LOADERS AND UNLOADERS
Gerhard E. Schettler and Emery L. Schettler, both of McLean, Saskatchewan, Canada
Filed Jan. 24, 1966, Ser. No. 522,431
4 Claims. (Cl. 214—501)



1. A bale stack loader and unloader, comprising: a wheel and axle supported chassis having a pivot at each of the rear corners thereof; a U-shaped framework normally resting on said chassis, with the base of the U extending thereover, and each leg of the U forked to span and hinge on one of said pivots; a series of elongated stake runners having one end of each releasably secured in spaced relation to and along the framework base, with their free ends pointed and projecting upwardly at right angles therefrom; a fluid-operable ram interposed between the axle of the chassis and the forward part of the framework, for swinging said framework on the pivots to a horizontal deposit of the runners on the ground, and for return of the framework, with the runners, to the original resting position on the chassis; a platform carried by the framework for receiving bales thereon; said bales adapted to be supported on the runners, during said framework movement; and means for connecting said ram with a source of fluid power.

3,357,581
BOAT TRAILER
Andrew Scott, 7366 Bannock Trail, Yucca Valley, Calif. 92284
Filed Oct. 13, 1965, Ser. No. 495,591
1 Claim. (Cl. 214—505)



A boat trailer comprising:

a first frame carrying a pair of wheels for rolling over the ground and including a tow bar for connection to a trailer hitch;

a second frame including a pair of spaced, parallel side members;

hinge means connecting said second frame for limited swinging movement relative to said first frame between a horizontal, lowered position over said first frame and a rearwardly and downwardly inclined, raised position;

a third frame including a pair of spaced, parallel side members;

roller means between said side members of said side members of said second and third frames for supporting said third frame for longitudinal movement along said second frame;

boat bottom supporting means carried by said third frame;

drive means for selectively moving said third frame along said second frame;

an auxiliary wheel assembly, including;

a pair of arms pivotally connected to and extending rearwardly from said side members of said third frame for swinging movement in generally vertical planes;

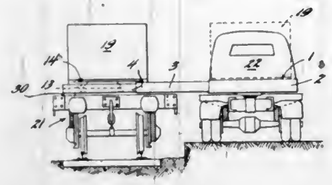
a horizontal axle carried by said arms;

a wheel carried by said axle;

and means for releasably holding said wheel in raised and lowered positions.

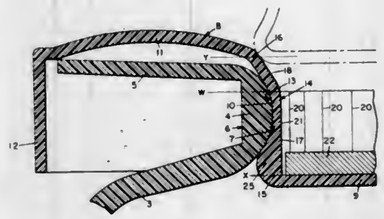
3,357,582
LOADING AND STACKING DEVICE
Hans Ludwig Wittek, Flossmoor, Ill. (P.O. Box 93, Chicago Heights, Ill. 60411)
Filed Aug. 16, 1965, Ser. No. 480,083
5 Claims. (Cl. 214—512)

1. A material handling and transport truck for stackable and containerized goods, comprising a truck frame, a bridge member mounted on the truck and having at least two telescoping sections of which one is fixed on the truck and arranged in a substantially horizontal position, a track on the telescoping sections, a platform having means to roll on the track, means to vertically adjust the platform to raise the latter against the goods to transfer the latter from a stack for transport, the bridge member



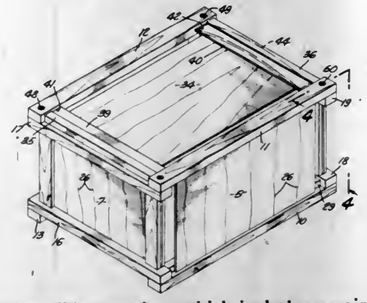
being composed of a fixed section and at least two shiftable sections, and each section being composed of a pair of symmetrical U-shaped profiles facing each other, and having lower flanges which carry track forming a continuous means, and the extendable sections being progressively reduced in overall dimensions to permit telescoping successive sections into each other.

3,357,583
PLASTIC CAPS FOR MILK BOTTLES
Russell H. Anderson, Hartsdale, and John P. Campanelli, Bethpage, N.Y., assignors to Haskon, Inc., Long Island City, N.Y., a corporation of Delaware
Filed May 16, 1966, Ser. No. 550,472
5 Claims. (Cl. 215—38)



1. A plastic closure for containers such as milk bottles and the like comprising an integrally formed wall, diaphragm, rim and skirt, said wall having a continuous periphery and a bottom edge and a top edge in planes normal to the center line of said wall, the outer side radially of said wall comprising a sealing surface adapted to cooperate in sealing engagement with the sealing surface of a container and the inner side radially of said wall comprising the outside surface of said wall, said diaphragm extending in a plane normal to the center line of said wall and disposed at the bottom edge of said wall and closing the area within said wall, said rim extending outwardly from the top edge of said wall, and said skirt depending from the outer edge of said rim and opposed to the sealing surface of said wall, said closure being characterized in that said outside surface of said wall includes a lower portion from said bottom edge to beyond the midpoint longitudinally of said wall, said lower portion being straight longitudinally of said wall and normal to the plane defined by said bottom edge and being formed in cross-section with increasing and decreasing lateral dimensions relative to said center line to define ridges, and said sealing surface being formed with a reduced lateral dimension substantially at the midpoint longitudinally of said wall and an increased lateral dimension adjacent to the bottom edge of said wall to define a bead of increased thickness about the bottom edge of said wall.

3,357,584
CONSTRUCTION OF CONTAINERS, CRATES, AND THE LIKE
Elias Blanco, 8262 Fountain Ave., Los Angeles, Calif. 90046
Filed Sept. 1, 1965, Ser. No. 484,205
6 Claims. (Cl. 217—16)



1. A collapsible container which includes a pair of side panels;

top and bottom side runners each having a groove therein receiving an edge of one of said side panels whereby each of said side panels is separately mounted between its own top and bottom runner;

a pair of end panels;

top and bottom end runners each having a groove therein receiving an edge of one of said end panels whereby each of said end panels is separately mounted between its own top and bottom runner;

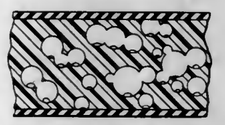
pivot means connecting the ends of said top and bottom side runners to the ends of said top and bottom end runners to form a collapsible parallelepiped;

a removable bottom panel shaped to be supported by at least a pair of said bottom runners;

a removable top panel shaped to be supported by a first pair of said top runners; and

a pair of locking members extending across said removable top panel to retain said top panel in place, the ends of said locking members fitting into slots in a second pair of said top runners and said locking members being bendable to permit the selective insertion and removal of their ends into said slots, whereby said top panel may be locked to said container or removed therefrom.

3,357,585
FOAMED PLASTIC INSULATION
Willard L. Morrison, Lake Forest, Ill., assignor to The Union Stock Yard and Transit Company of Chicago, Chicago, Ill., a corporation of Illinois
Filed Jan. 24, 1963, Ser. No. 253,695
1 Claim. (Cl. 220—9)



In an insulated container, an insulation system formed of a core of a rigid, porous, foamed synthetic resinous material having connected pores, a fluid and vapor impervious envelope enclosing the core of foamed synthetic resinous material in sealing relation and a fluid selected from the group consisting of fluorinated and chlorofluorinated hydrocarbon within the enclosed core of foamed synthetic resinous material which is in its condensed liquid state at temperatures below about —40° F. and present in the gaseous phase at temperatures above about —40° F. and which is present in an amount to fill the pores of the foamed plastic when in the gaseous state

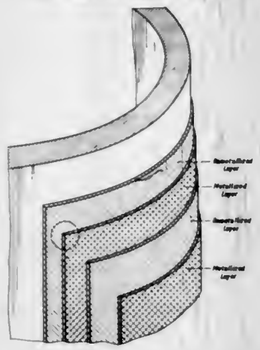
and to fill only a small fraction of the pores when in the condensed liquid state whereby vacuum conditions will exist within the enclosed core when the fluid is in its condensed liquid state.

3,357,586
APPARATUS FOR CONSERVING AND DISPENSING VALUABLE MATERIALS
Ladislas C. Matsch, Kenmore, John A. Paivanas, Williamsville, David I-J. Wang, Buffalo, and Norman Gibbon, Tonawanda, N.Y., assignors to Union Carbide Corporation, a corporation of New York
Filed Sept. 3, 1963, Ser. No. 306,371
9 Claims. (Cl. 220—9)



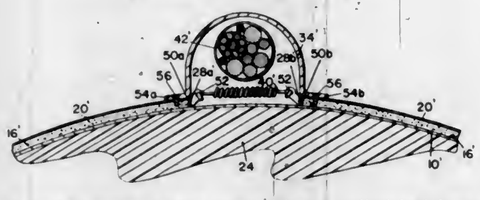
1. A thermal insulating structure comprising gas-tight walls enclosing an evacuable space; multiple layers of heat insulative and radiation-impervious composite flexible material within said space comprising a low heat conductive material component coextensive with a radiant heat barrier material component assembled sufficiently closely to provide at least 4 layers per inch of composite non-self supporting insulation with the individual radiant heat barriers being separated by the individual low conductors and disposed generally perpendicular to the direction of heat transfer across the insulation space; and, in addition, low heat conductive elastically compressible bulking material strips between at least some of the composite insulation layers, each strip having a width greater than its thickness in the installed state, said strips having a total surface area contiguously associated with only a minor part of the surface area of the composite insulation layers and having sufficient density to support the composite insulation in the major part of the insulation surface area, with adjacent bulking material strip across said evacuable space being at least partially aligned with each other.

3,357,587
THERMAL INSULATION SUITABLE FOR VACUUM BOTTLES AND THE LIKE
Josef Weishaupt, Pullach, Isartal, Germany, assignor to Linde Aktiengesellschaft, Wiesbaden, Germany
Filed Nov. 12, 1965, Ser. No. 530,739
Claims priority, application Germany, Jan. 4, 1962, G 33,943
34 Claims. (Cl. 220—9)



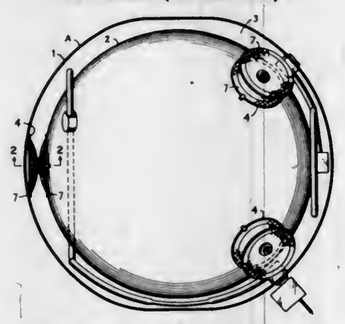
1. Thermal insulation body suitable for low temperature use, comprising a plurality of films superimposed over one another, each of said films consisting essentially of a non-metallic thermal insulating fibrous material, which fibrous material is permeable to air and which has a porosity of 88–98%, individual fibers located on at least one of the surfaces of at least one of said films being coated directly on their outward sides with a thin layer of a metal of low emissivity and high reflectivity, said layer having a thickness of $0.01–0.2 \cdot 10^{-3}$ mm., with the provision that not all of the fibers of said thermal insulation body are completely coated with said thin layer of metal.

3,357,588
ROCKET MOTOR CASING
Gilbert B. Graham, Santa Barbara, Calif., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed May 18, 1965, Ser. No. 456,646
1 Claim. (Cl. 220—10)



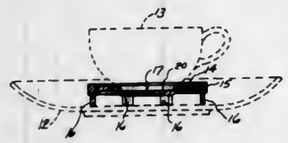
A rocket motor casing comprising a cylindrical inner shell, an insulating layer contactingly disposed around said shell and having two edges that extend longitudinally thereof in parallel, circumferentially spaced relation relative to each other, a cover sheet contactingly disposed around said insulating layer and having two edges that extend longitudinally of said shell in parallel, circumferentially spaced relation relative to each other, said longitudinal edges of said cover sheet being respectively disposed adjacent said longitudinal edges of said insulating layer, a channel of flexible U-shaped cross section extending longitudinally of said shell and spanning the space between the longitudinal edges of the cover sheet, the bight of said channel being disposed outwardly of said shell and each of the legs of said channel being respectively fixedly secured to said cover sheet adjacent and paralleling said longitudinal edges thereof, and biasing means for resiliently biasing said longitudinal edges of said cover sheet toward each other, said biasing means being disposed within the interior of said channel and extending across the space between said longitudinal edges of said cover sheet.

3,357,589
SUSPENSION SYSTEM FOR MULTI-WALLED STORAGE TANK
Roy H. Spaulding and Fred P. Snyder, St. Louis County, Mo., assignors to Essex Cryogenics Inc., St. Louis, Mo., a corporation of Missouri
Filed Dec. 27, 1965, Ser. No. 516,335
8 Claims. (Cl. 220—15)



1. In a multi-walled container having an outer vessel, an inner vessel disposed within said outer vessel and being of less diameter than said outer vessel for creating an intervening insulating space between said vessels, suspension means disposed within said insulating space for maintaining said inner vessel in spaced relationship to said outer vessel, said suspension means comprising a plurality of spaced-apart spring mounts, each spring mount comprising a pair of hollow parti-spherical members with their convex faces toward each other and their concave faces opening away from each other and means between said convex faces interengaging said members for integrating same into a unit.

3,357,590
CUP-SAUCER INSERT TO ABSORB DRIPPINGS
Earl Safford, 1958 Lawrence, Detroit, Mich. 48206
Filed Sept. 12, 1966, Ser. No. 578,540
1 Claim. (Cl. 220—23.83)



A cup-saucer insert to absorb drippings comprising:
a substantially flat disc of a perforate, absorbent material;
an outer peripheral ring around and a part of said disc;
there being a circular, centrally depressed portion in said disc adapted to receive the base of a cup;
and a series of short legs integral with, depending from and spaced around said ring at its outer edge adapted to rest upon a saucer for supportably spacing a cup thereabove;
the material of said disc selected from the group consisting of paper, cellular plastic, and sponge rubber;
said centrally depressed portion having a plurality of drain apertures therethrough.

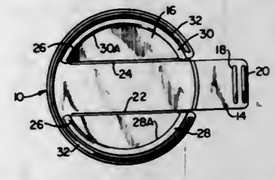
3,357,591
HYDROPNEUMATIC TANK FLOAT
Robert J. David, Orange, Conn., assignor to The American Granby Company, Milford, Conn.
Filed Sept. 15, 1965, Ser. No. 487,550
8 Claims. (Cl. 220—26)



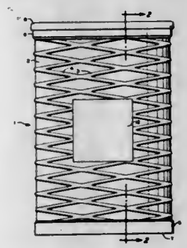
1. A flexible floating diaphragm for a hydropneumatic tank comprising a flotation ring, a pair of complementary discs of flexible sheet material on either side of said ring coaxial therewith, said discs being fused together along concentric radially spaced apart lines outwardly of said ring, the outermost of said lines defining an integral rim and the innermost defining an envelope for said ring, said lines defining a flexible flange extending radially outwardly of said ring.

3,357,592
CLOSURE
Howard F. Kusserow, Denver, Colo., assignor to Denver Plastics, Inc., Golden, Colo., a corporation of Colorado
Filed Aug. 23, 1965, Ser. No. 481,733
9 Claims. (Cl. 220—27)

1. A flexible closure for an opening comprising a circular portion, a pull tab formed integral with said circular portion and extending generally radially thereof, a pair of indented shear lines positioned in the circular portion and forming a continuation of the tab sides, said shear lines being adapted to be easily torn upon application of a pulling force to the pull tab thereby resulting in the removal of the closure from an opening, a depending flange portion formed integral with one side of said circular portion and adapted for torsional flexure with respect thereto, a depending rib portion formed integral with said one side of said circular portion and being positioned on the peripheral side of said flange portion, a part of said flange portion, upon insertion thereof within an opening, snugly embracing a portion of a peripheral surface disposed within an opening to hold said rib portion firmly in contamination preventing, sealing engagement with a surface surrounding an opening.

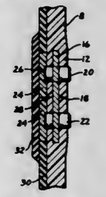


3,357,593
TUBULAR WALL STRUCTURE
Harold T. Sears, Jr., Charlotte, N.C., and William E. Wooten, East Providence, R.I., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed Dec. 20, 1965, Ser. No. 515,103
13 Claims. (Cl. 220—72)



1. An integral reinforcing structure for tubular members, said structure comprising an integral network of cross-hatched continuous surface deformations of the total side wall thickness of said tubular member extending about the circumference of said tubular member.

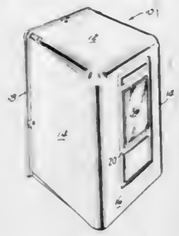
3,357,594
CLEVIS JOINT
James L. Grosh and Christian M. Frey, Los Altos, Calif., assignors to United Aircraft Corporation, a corporation of Delaware
Filed Feb. 21, 1962, Ser. No. 174,844
8 Claims. (Cl. 220—80)



1. A joint structure for a filament wound reinforced plastic pressure vessel comprising a joint having two abutting ends, an annular slot in the end walls of each of said abutting ends, a solid member extending into each of said

slots and radial pins extending through the walls of the vessel on each side of the joint and through the solid member forming a clevis.

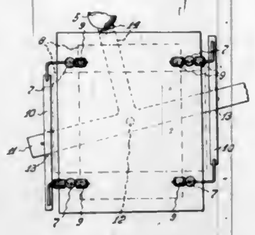
3,357,595
METER HOUSING WITH WINDOW
Robert L. Whitman, Jackson, and Frank J. Perry, Vandercook Lake, Mich., assignors to Handey Industries, Inc., Jackson, Mich., a corporation of Michigan
Filed Feb. 25, 1966, Ser. No. 530,179
10 Claims. (Cl. 220—82)



1. A meter housing comprising, in combination, a housing at least partially defined by a wall member, said housing wall member being formed of a relatively stiff, synthetic, plastic material capable of resilient deformation and having a window member receiving opening defined therein within the configuration thereof, said opening including a pair of spaced, substantially parallel, lateral edges, a transparent window formed of a substantially rigid material capable of limited resilient bending deformation, said window member including a pair of spaced, substantially parallel, lateral edges, a first end edge and a second end edge, window member retaining means defined on at least one of said members adjacent the associated lateral edges thereof forming an elongated recess adjacent and parallel to each associated lateral edge adapted to receive a lateral edge of the other member, said recesses lying within the configuration of the associated member, window member end edge retaining means defined on said wall member adapted to align with said window member end edges upon said window member being completely located within said opening to prevent movement of said window in the longitudinal direction of said recesses, said window member being installed in said opening by alignment and sliding reception of the lateral edges of said other member within said recesses causing deformation of said wall member during window member installation, said deformation being removed upon complete installation of said window member in said opening when said end edge retaining means align with said member end edges.

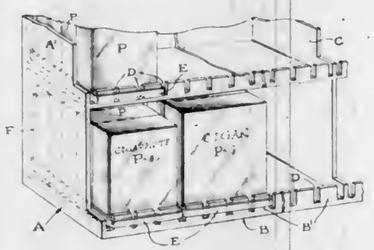
3,357,596
AUTOMATIC VENDING MACHINE FOR PICTURE POSTCARDS AND THE LIKE
Arthur Pampaluchi, Tuschgenweg 27, Zurich, Switzerland
Filed Nov. 1, 1966, Ser. No. 591,209
2 Claims. (Cl. 221—67)

1. An automatic vending machine for picture postcards and the like which are arranged crisscross in groups of at least one card each in a vertical pile, comprising rotatably mounted bars passing in the corners of the pile of cards arranged crisscross fashion for holding and guiding the said cards; stops arranged on the said bars for supporting the lowest card in the pile; means for pivoting the said bars and stops after the insertion of a coin; guide plates coupling the said bars in pairs; a double-armed lever pivotably mounted underneath the pile, the arms of this lever each engaging an indentation in each of said guide plates and one of the arms connecting with a locking device releasable by the insertion of a coin; and a



third arm on the said lever extending through a slit of a housing of the automatic vending machine.

3,357,597
CIGAR PACKAGE DISPENSER
Emory L. Groff, 4211 NE. 23rd Terrace, Lighthouse Point, Fla. 33064
Filed Sept. 9, 1966, Ser. No. 578,381
1 Claim. (Cl. 221—279)



A compartmented bin type storage and display rack open at the front to hold a multiplicity of spaced alined side by side rows of cigar or cigarette boxes of different lateral width and thickness, comprising, in combination,

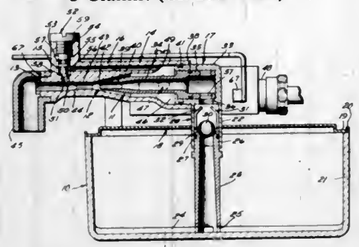
a horizontal supporting shelf,

an upstanding wall at the front edge of the shelf provided with a plurality of spaced abutments formed by slots opening at and extending downwardly from the upper edge of the wall toward the upper surface of the shelf, said slots being laterally spaced selectively to permit the arranging and gauging of different width boxes to be alined in adjacent laterally spaced individual groups from the wall toward the rear of the shelf,

and elastic bands fitted in the upper open ends of the slots and having their front portions disposed across the outer faces of adjacent abutments corresponding substantially to the width of the packets and fitted between spaced slots selected according to the width of the boxes, said bands having their rear portions looped about the rear box and their intermediate portions embracing the sides of all boxes therebetween to prevent lateral shifting and maintain rows of boxes against transverse mis-alignment and cause the front box to engage the inner face of said wall and to continuously and automatically pull all of the boxes ad seriatum toward the inner face of the said wall,

and a follower for the rearmost one of a group of alined boxes supported on the shelf and embraced by the rear portion of the elastic band opposite said slots.

3,357,598
ADJUSTABLE LIQUID DISPENSER
Elroy J. Kraft, Park Ridge, Ill., assignor to The Dole Valve Company, Morton Grove, Ill., a corporation of Illinois
Filed Sept. 21, 1965, Ser. No. 488,912
3 Claims. (Cl. 222—134)



1. A dispenser for proportioning and mixing liquids of different viscosities comprising:

a proportioner body having an inlet for connection to a source of pressurized liquid, an outlet extending therefrom, and a mixing passageway connecting said inlet and said outlet,

said mixing passageway having

a straight throat portion,

a portion converging in a downstream direction to said throat portion,

and a portion diverging in a downstream direction from said throat portion,

a suction tube disposed within said mixing passageway in spaced relation from the inner walls thereof and terminating within said converging portion at the vicinity of said throat,

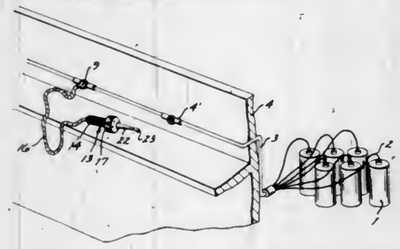
said suction tube extending through a wall of said mixing passageway for being immersed within a liquid chamber apart from said source of pressurized liquid,

means applying said source of pressurized liquid to said mixing passageway along the exterior of said suction tube and through said throat for creating a suction zone at the end of said suction tube to draw liquid therethrough from said liquid chamber,

a post-mixing passageway conducting a portion of said source of pressurized liquid from said mixing passageway at a point upstream of said converging throat to said mixing passageway at a point downstream of said diverging throat,

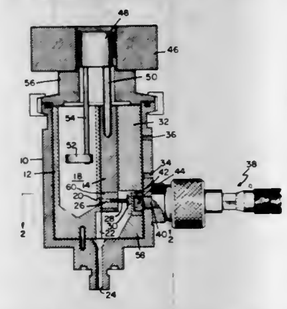
valve means disposed within said post-mixing passageway for controlling the rate of flow of said pressurized liquid therethrough.

3,357,599
COMMERCIAL TYPE HAIR LOTION APPLICATOR
George B. Douglas, 550 40th St., and Roland C. Eberhardt, 753 W. 8th St., both of San Pedro, Calif. 90731
Filed Feb. 11, 1966, Ser. No. 526,885
3 Claims. (Cl. 222—144.5)



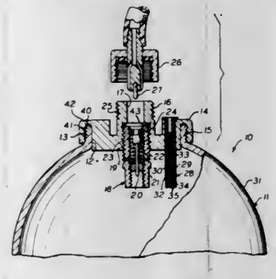
1. A commercial type hair lotion applicator comprising a plurality of pressurized containers, an outlet tube extending from each of the containers, a control fitting, said tube extending into the control fitting, valve means in said control fitting, a coupling, means on the coupling engageable with the valve means to actuate the same, a wand including a valve housing having a valve chamber therein, a manually operable valve in said valve chamber, a flexible conduit extending from the coupling to said valve chamber, a tip extending from the wand, said tip having a duct therein extending from the valve chamber to the outer end of said tip, a separate valve means in the control fitting for each of said tubes, and said coupling having separate means therein engageable with one of the valve means in the control fitting.

3,357,600
ADJUSTABLE MERCURY DISPENSING APPARATUS
David N. Brooks, West Peabody, Mass., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed Nov. 18, 1965, Ser. No. 508,459
5 Claims. (Cl. 222—217)



1. Mercury dispensing apparatus comprising, a mercury containing reservoir, a discharge orifice, a slidable member containing an opening therein and a slidable pin adjustably disposed in said opening at one end to close the same and fix the amount of mercury which can be held in the opening, means for adjusting the position of said pin in said opening at a first position of said slidable member, and means for moving said slidable member between said first position to allow mercury in said reservoir to enter said opening and a second position to cause said pin to move into said opening to push the mercury therein into said discharge orifice.

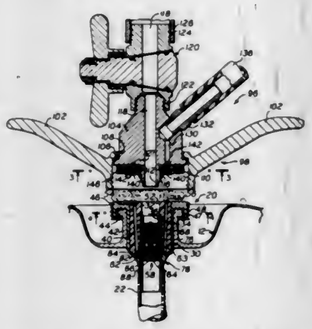
3,357,601
PRESSURIZED CONTAINER ASSEMBLY
Earle D. Crawford, Orchard Park, and Albert E. Daniels, Williamsville, N.Y., assignors to Impact Container Corporation, Alden, N.Y., a corporation of New York
Filed Feb. 18, 1966, Ser. No. 528,530
1 Claim. (Cl. 222—397)



A pressurized container assembly which comprises a container adapted to contain a pressurized fluid and having an aperture defined by a threaded neck portion, a closure

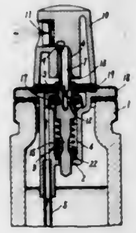
cap having a threaded peripheral portion screwed into engagement with said threaded neck to seal said container aperture, said closure cap having a bushing part defining a fluid flow passage extending therethrough to accommodate dispensing of pressurized fluid from said container, said bushing part being threaded at a first portion external to said container to accommodate the coupling thereto of a similarly threaded conduit means for receiving pressurized fluid dispensed from said container, said bushing part being threaded at a second portion communicating with the interior of said container, said closure cap having a peripheral lip portion disposed in overhanging relation to the end of said container neck, an annular gasket disposed in sealing engagement with the underside of said lip portion and with the end of said container neck to prevent escape of pressurized fluid therebetween, a dispensing valve disposed within said container and screwed into engagement with said second threaded portion of said bushing part for communication with said flow passage to control the dispensing of pressurized fluid from said container, an internally threaded sleeve member extending through said closure cap for communication with the interior of said container, and a safety valve disposed within said sleeve member and screwed into engagement therewith for relieving excess internal fluid pressure within said container.

3,357,602
BEER KEG FITTING
Joseph E. Sichler, Short Hills, N.J., assignor to P. Ballantine & Sons, Newark, N.J., a corporation of New Jersey
Filed Jan. 17, 1966, Ser. No. 521,195
4 Claims. (Cl. 222—400.7)



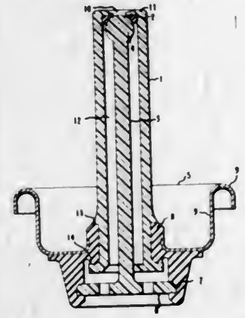
1. In apparatus for withdrawing beer from a keg that has an opening through a wall thereof and that has a keg fitting which extends into the opening through the wall, said keg fitting including a bushing having a main opening therethrough for the flow of beer and having a smaller opening therethrough radially outward from the main opening for the flow of gas, a sleeve at the lower part of the main opening extending downwardly beyond the rest of the fitting, a tube connected with the sleeve and extending to the bottom of the keg, each part of the assembly within the keg having a cross section that fits through said opening in the keg, a check valve in the main opening and part of which is in position to be displaced to open said check valve when a complementary customer's fitting is brought into assembled relation with said keg fitting, the improvement which comprises a flap-type check valve for the gas passage, the gas check valve being made of resilient plastic material and having a body portion that extends axially of the sleeve and is mounted sealingly about the sleeve and is of substantial cross section and stiffness to prevent the body portion from collapsing into the gas passage when subjected to substantial back pressure from the keg, the gas check valve also having a thin flexible portion, outward of the body portion for providing sensitive hinge action for the opening and closing of said gas check valve, the gas check valve also having a rim section radially outward beyond the thin flexible portion and of larger cross section than the flexible portion, the thin flexible portion having a bias toward the gas passage and being of insufficient stiffness to prevent its being forced into the gas passage unless restrained by the rim section, and an abutment surface on the keg fitting radially outward from the gas passage and with which the rim section of the gas check valve contacts, the rim section and the abutment surface being shaped to cooperate in holding the thin flexible portion of the gas check valve against displacement into the gas passage when the gas pressure in the keg is substantially greater than the pressure in the gas passage.

3,357,603
REFILLABLE PRACTICABLE AEROSOL DISPENSER
Seiichi Kitabayashi, 2–2246 Nishisugama, Toshima-ku, Tokyo, Japan
Filed June 15, 1966, Ser. No. 557,652
Claims priority, application Japan, June 15, 1965, 40/35,182
1 Claim. (Cl. 222—402.16)



An aerosol dispenser which comprises a container **1**, a valve housing **2** being fixedly connected to an upper inside portion of said container **1** for enclosing compressed gas and solution therein and having upper and lower valve chambers **3**, and **4**, an eductor tube **5** placing upper chamber **3** in communication with the inside bottom space of the container at all times, a valve stem **6** being provided with an axial bore **7** having a closed bottom end and extending from exteriorly of said container through valve housing **2**, a first valve for opening and closing communication between upper valve chamber **3** and valve bore **7**, a second valve for opening and closing communication between said upper and lower valve chambers **3** and **4**, and having an open position for opening communication between lower valve chamber **4** and axial bore **7** when the communication between upper and lower valve chambers **3** and **4** is closed, a third valve for opening and closing communication between upper valve chamber **3** and the outer atmosphere in cooperation with the opening and closing of said second valve, a fourth valve for opening and closing communication between lower valve chamber **4** and said container upper inside space, said first to fourth valves being controlled by valve stem **6**, said valve stem **6** having a tapering upper end for engaging a supply container feed nozzle, a spring pressing said valve stem from within said valve housing, a push button **10** detachably mounted on said valve stem and having an emission orifice **11** for communicating with axial bore **7**, and said valve stem **6** having a first position in which it is normally retained by said spring and in which position said first to fourth valves are closed, a second position in which said stem is moved against said spring and in which position said first valve is open and said second to fourth valves are closed, and a third position in which said stem is moved further against said spring and in which position said first valve is closed and said second to fourth valves are open.

3,357,604
AEROSOL TILT VALVE
Arthur Frederick Barker, Newark, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed May 31, 1966, Ser. No. 553,776
2 Claims. (Cl. 222—402.23)

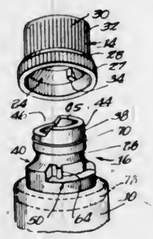


1. A valve assembly for a pressurized aerosol container comprising

(A) a tiltably operated valve closing means consisting of a tubular spout, a resilient ring-like member fitted internally at the exterior tip of said spout, and an axially fixed valve stem, positioned within said spout, having an enlarged spherical member at the top and a perforated disc at the bottom, said valve stem so positioned that the spherical member forms a valve seat by fitting within said ring-like member when said tubular spout and valve stem are in the upright position, and

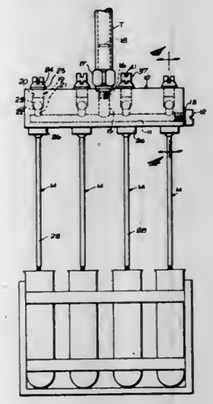
(B) an attaching means consisting of a resilient grommet, said grommet having an internal groove adapted to receive and axially fix the perforated disc of said valve stem within said spout, said grommet also adapted to receive said discharge spout.

3,357,605
DISPENSING CLOSURE
Robert W. Chadfield, Chicago, Ill., assignor to Formold Plastics, Inc., Blue Island, Ill., a corporation of Illinois
Filed May 9, 1966, Ser. No. 548,534
5 Claims. (Cl. 222—485)



1. A container closure assembly comprising: a cap member having dispensing aperture means, said dispensing aperture means being positioned radially outwardly from the center of said cap member; a neck member telescoped with said cap member and having a sidewall which includes a first dispensing wall portion and a second offset blocking wall portion; mounting means for rotatably connecting said cap member to said neck member to enable said cap member to be rotated relative to said neck member from a first position to a second position, said aperture means being open in said first position and closed by said blocking wall portion in said second position; a first latch lug connected to said cap member; a second latch lug connected to said neck member, said first latch lug abutting said second latch lug when said cap member is in said second position and said first latch lug being spaced apart from said second latch lug when said cap member is in said first position, said mounting means including a retaining ring protruding from an inner surface of said cap member and a circular groove in said sidewall of said neck member for engaging said retaining ring to fasten said cap member to said neck member; a latch recess in said sidewall of said neck member axially inwardly of said groove, said latch recess having first and second spaced apart end walls, said second latch lug being positioned in said latch recess intermediate said first and second spaced apart end walls, said first latch lug extending into said latch recess and being positioned adjacent to said first end wall when said cap member is in said first position and adjacent to said second end wall when said cap member is in said second position, said latch recess including a sidewall which interconnects said first and second end walls of said latch recess, said side wall of said latch recess intersecting a wall of said retaining groove radially inwardly of an innermost surface of said first latch lug whereby to facilitate assembly of said cap and neck members.

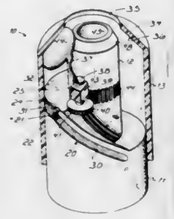
3,357,606
FLUID FLOW ADJUSTMENT DEVICE FOR MANIFOLDED DISPENSING NOZZLES
James F. Kahlenberg, P.O. Box 2803, Sarasota, Fla. 33578
Filed June 18, 1965, Ser. No. 464,897
6 Claims. (Cl. 222—486)



1. In a fluid flow adjustment device for manifolded dispensing nozzles, the combination comprising, a body member having a plurality of interior chambers, a manifold passageway having branch passageways communicating with one each of said chambers for the separate passage of fluid under pressure thereinto from a common source of supply, a nozzle having an outlet passageway communicating with one each of said chambers for the dispensing of fluid outwardly of its associated chamber, and means for individually adjusting the volumetric size of said chambers, the cross-sectional size of said chambers being substantially greater than the cross-sectional

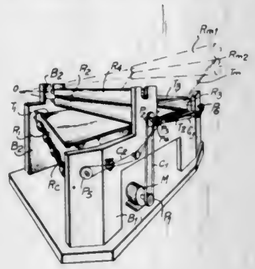
size of said branch passageways where they enter their respective chambers, whereby said chambers will act as expansion chambers with respect to fluid passing therethrough, and a check valve in each of said manifold branch passageways to prevent siphoning through said nozzles.

3,357,607
SPOUT CLOSURE CAP AND ACTUATING SLEEVE THEREFOR
David H. Trott, 3351 Stettinius, Cincinnati, Ohio 45208, and Gary W. Robinson, Cincinnati, Ohio; said Robinson assignor to said Trott
Filed Sept. 26, 1966, Ser. No. 581,890
8 Claims. (Cl. 222—507)



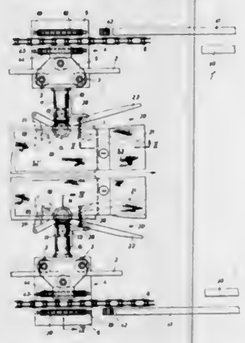
1. A closure comprising,
a hollow cylindrical base including an elongated spout,
a sleeve mounted on said base for axial and rotary movement with respect to said base, said sleeve having an opening through which said spout can project,
a gear rotatably mounted on said sleeve and meshing with gear teeth on said base whereby rotation of said sleeve with respect to said base causes rotation of said gear, and
a cap connected by a flexible resilient strap to said gear, said cap being movable between two positions upon rotation of said gear, one lying between said spout and opening and the other to one side of said spout.

3,357,608
SYSTEM FOR ASSEMBLING PLEATED FABRIC WITH OVERLAPPING INSET SHEETS
Daniel Demagny, 62 Rue Tiquetonne, Paris 2, France
Filed Apr. 26, 1965, Ser. No. 450,914
Claims priority, application France, May 27, 1964, 976,036, Patent 1,405,349
4 Claims. (Cl. 223—30)



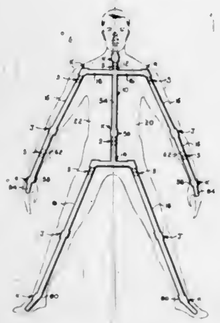
1. A system for interleaving a constantly curved pleated fabric with an inset of like curvature composed of a series of overlappingly assembled rectangular sheets, comprising:
a pleating machine including a pair of coacting tapered presser rollers adapted to discharge a pleated fabric curved about an imaginery axis;
a supporting surface for rectangular sheets to be assembled into a polygonal inset centered on said imaginary axis, said surface forming a path curved about said axis and leading toward said presser rollers;
feed means for said sheets including a plurality of driven rollers of tapered configuration tangent to said supporting surface at peripherally spaced locations, said presser rollers and driven rollers having axes and generatrices all converging toward a common point on said imaginary axis on the level of said supporting surface;
drive means for rotating said driven rollers at like peripheral speeds and in a sense to advance a sheet along said path toward said presser rollers;
and a windup spool rotatable by said drive means for jointly coiling up a pleated fabric from said presser rollers and an inset consisting of a series of sheets advanced by said driven rollers, said windup spool being of frustoconical shape substantially converging toward said common point.

3,357,609
APPARATUS FOR EVERTING POCKET-LIKE WORKPIECES
Ulrich Oberrecht, Niedermendig, Rhineland-Pfalz, Germany, assignor to G. M. Pfaff A.G., Kaiserslautern, Pfalz, Germany, a corporation of Germany
Filed Jan. 12, 1966, Ser. No. 520,197
Claims priority, application Germany, Jan. 11, 1965, P 35,846
12 Claims. (Cl. 223—39)



1. Apparatus for everting pocket-like workpieces having a closed bottom, an open side opposite thereto, and a pair of lateral edges joined by a connecting seam, said apparatus comprising in combination:
(1) a pair of movable supports operable along equal parallel paths between a starting and an end position,
(2) a pair of everting tongs pivotally mounted upon each of said supports, both said pairs of tongs coinciding with a common plane,
(3) resilient means to urge each pair of tongs to their closed position,
(4) further means to spread and lock each pair of tongs at a pre-determined spreading angle,
(5) means to position a workpiece to be everted with its open side disposed opposite to said tongs in the starting position of said supports,
(6) operating mechanism for said tongs upon each of said supports, and
(7) means to control said mechanisms in response to the movement of said supports, to effect, during the displacement of said supports from said starting position to said end position, the consecutive operations in the order named of introducing the spread pairs of tongs into said workpiece, releasing and closing the tongs of each pair by said resilient means so as to grip the insides and outsides of the lateral edges of said workpiece, and rotating in unison and through an angle of 180° each pair of closed tongs together with the workpiece gripped thereby in opposite directions towards the inside of the workpiece and within the plane of the tongs, to thereby evert the workpiece gripped by said tongs.

3,357,610
HUMAN-APPEARING MANIKIN AND METHOD OF MAKING
Ripley Quinby, Jr., Shelburne, Vt. 05482
Filed Feb. 18, 1963, Ser. No. 259,093
10 Claims. (Cl. 223—68)

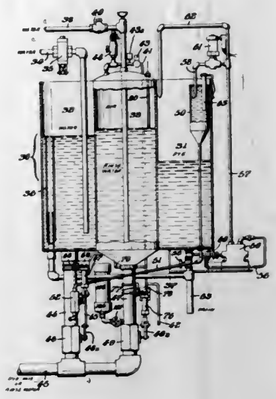


1. A human-appearing manikin having joint movements corresponding with those of a human being comprising a body of resilient material, a skeleton structure within said body, said skeleton structure including a spinal column, a pair of transverse members extending outwardly from opposite sides of the upper portion of the spinal column for supporting the shoulder portions of said body, articulated frame elements within the arm portions of the body, and a shoulder joint between each of said articulated frame elements and said transverse members comprising a double-hinge joint connected to said transverse member and a swivel joint connected to said double-hinge joint.

3,357,611
TEXTILE TREATING METHOD
Emil J. Berger and Howard K. West, Lansdale, Pa., assignors to Turbo Machine Company, Lansdale, Pa., a corporation of Pennsylvania
Original application Aug. 29, 1960, Ser. No. 57,098, now Patent No. 3,131,840, dated May 5, 1964. Divided and this application Dec. 30, 1963, Ser. No. 345,547
14 Claims. (Cl. 223—76)

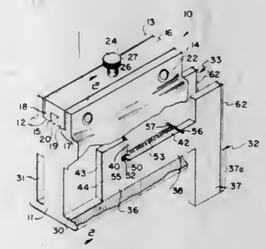
1. In a method for setting and finishing tubular textile articles composed of heat-settable yarn, the steps of mounting the articles upon shaping forms, enclosing the mounted articles in a sealed chamber and, before opening said chamber to remove said mounted articles therefrom, performing the treatment of spraying the articles with dye liquid while maintaining the interior of said chamber at a predetermined elevated temperature, then terminating spraying and thereafter introducing steam at a predetermined higher temperature for a period of time sufficient to set said articles to final shape to thereby assume the shape of the forms and then drying the articles, said articles and forms remaining stationary throughout said treatments.

11. In textile treating apparatus of the type including a treating chamber for dyeing hosiery or the like the method of dispensing measured quantities of liquid dye into a mixing fluid line comprising pumping liquid dye from a reservoir into a metering container of less capacity than the reservoir, causing the liquid dye to recirculate from the metering container to the reservoir, after the metering



container is full isolating the metering container from the reservoir and concurrently discharging the measured quantity of liquid dye from one end of the metering container into a mixing fluid line for discharge of the resulting mixture into the treating chamber to dye the hosiery therein.

3,357,612
GARMENT HANGER
Arnold Dammer, 25 E. 24th Ave., Vancouver, British Columbia, Canada
Filed Mar. 16, 1966, Ser. No. 534,874
5 Claims. (Cl. 223—95)



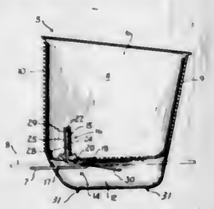
1. Garment hanging apparatus for use with a clothes hanger of the type having a horizontal garment supporting bar comprising a pair of horizontally elongated bodies, means for slidably mounting each body on the supporting bar of a standard clothes hanger for longitudinal movement therealong and including bar engaging means movable into and out of frictional engagement with the bar, a plurality of garment engaging elements, means slidably mounting said garment engaging elements in each body for movement longitudinally of the bar, resilient means connecting each of the garment engaging elements and a respective body normally urging said garment engaging elements in each body in the same direction to an outwardly extended position relative to the body, the garment engaging elements of each body being biased in opposite directions to yieldably support a garment placed about said pair of elongated bodies.

3,357,613
LOAD OR COMPONENT RESTRAINT HARNESS
Ronald G. Chase, Sepulveda, Calif., assignor to Irving Air Chute, Inc., Lexington, Ky., a corporation of New York
Filed Feb. 7, 1966, Ser. No. 525,676
4 Claims. (Cl. 224—5)



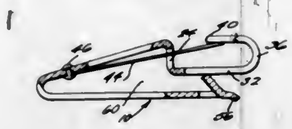
1. In an industrial harness construction, the combination of a releasable harness having means for attachment to the body of an individual with strap portions at each shoulder area and at each side of the harness at the waist area thereof, and load supporting means secured to the harness at each of said shoulder areas and at each side of the harness at the waist area, each load supporting means including a supporting frame, a rotary drum mounted on the supporting frame, a tether strap secured to said drum for winding thereon, and spring means biasing the drum to normally wind the strap thereon, each tether strap having a free end provided with load attaching means, and means to releasably lock the drum with the tether strap at a desired extension.

3,357,614
TRASH CONTAINER FOR AUTOMOBILES
Bennie L. Berg, P.O. Box 3214, Madison, Wis. 53704
Filed Oct. 7, 1966, Ser. No. 585,102
5 Claims. (Cl. 224—29)



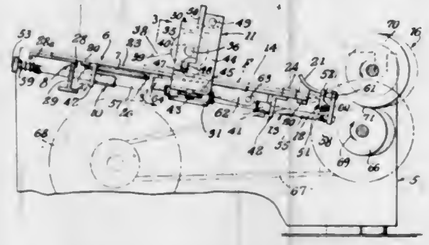
1. A trash container for an automobile front compartment comprising:
(A) a receptacle having substantially upright front, rear and side walls and a bottom wall which is downwardly concave as viewed from the front and rear of the container so as to seat conformably on an automobile transmission hump;
(B) a clip comprising a base having a pair of spaced parallel, coplanar prongs adapted to flatwise underlie a floor covering, each having an upwardly bent portion at one end adapted to extend through a hole in the floor covering; and
(C) cooperating securement means on the clip and on the receptacle, engageable upon downward motion of the receptacle relative to the clip, for holding the receptacle against horizontal motion relative to the clip, said securement means comprising
(1) an upright member on the clip rigidly connected with said upwardly bent portion on its base; and
(2) downwardly opening pocket defining means on the receptacle in which said upright member on the clip is receivable.

3,357,615
KEY SAFE
Okay Hill, E. 711 Walton Ave., Spokane, Wash. 99207
Filed Nov. 10, 1966, Ser. No. 589,867
3 Claims. (Cl. 224—5)



1. A key safe comprising a strap of heavy elongated metal, a rounded fold of said strap to form a V-shaped construction at a point generally intermediate the length of the strap, and forming thereby two substantially equal length legs, an intermediate portion of one leg having a Z-shaped turn toward the other leg and having a medial slot in the transversal portion of the Z-shaped turn, the free end of the Z-shaped turn being folded upon itself, a leaf spring secured by a rivet to the underside of said one leg and extending through the slot to resiliently engage with the extremity of the free end, the other leg having proximate to its extremity a gripper tooth formed from a die punched segment of the strap and extending toward said one leg, said gripper tooth having its extremity in general physical contact with said one leg.

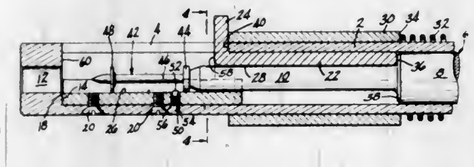
3,357,616
MECHANISM FOR SEPARATING THE SHEETS OF A MANIFOLD FORM
Ernest C. Bangert, Pasadena, Calif., assignor of one-half to Alfred H. Lowers, Downey, Calif.
Filed Feb. 14, 1966, Ser. No. 527,160
7 Claims. (Cl. 225—100)



1. Mechanism for separating the usable sheets of a manifold form along a tear line from the discardable bound end of of said form, said mechanism comprising:
(a) a slidable table that is normally retracted and adapted to support a manifold form with its bound end forwardly directed,
(b) means to clamp the opposite rearward end to the table,
(c) a gate disposed beyond the forward end of the retracted table and constituting a stop against which said bound form end is placed,
(d) a single manual means to operate the form-clamping means to simultaneously retract the gate to a position out of the path of the bound end of the gate and move the table forwardly to project said form end forwardly,
(e) continuously driven tear rollers between which the bound end of the form is introduced, said rollers turning in a direction to grip and pull on said end, of the form, and
(f) a stop for said table after the same has moved to so introduce the form end,

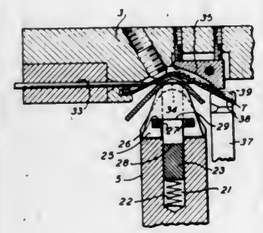
(g) said rollers having their axes at an angle to a line normal to the length of the table, the line of contact of the rollers first gripping and tearing one corner of the bound end of the form from the clamped end of the form, and then progressively gripping successive portions of the bound end across the width of the form while the table is held stationary by the stop.

3,357,617
PISTON-TYPE FASTENING TOOL
William E. Osborne, East Haven, Conn., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia
Filed Mar. 30, 1966, Ser. No. 538,657
6 Claims. (Cl. 227—10)



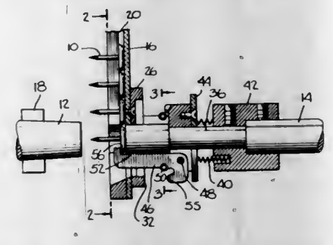
1. In a power-actuated fastening tool, a barrel member having a loading port, a piston member reciprocal in said barrel member between a breech position and a driven position, slidable means in said barrel movable between a first position closing said loading port and a second position wherein said loading port is open, said means being operable upon movement from said first position to said second position to engage said piston when said piston is in said driven position and return said piston to said breech position.

3,357,618
TAG ATTACHING MACHINE
Charles A. Parker, East Orange, N.J., assignor to Litton Business Systems, Inc., a corporation of Delaware
Filed Jan. 4, 1966, Ser. No. 518,721
4 Claims. (Cl. 227—25)



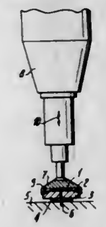
1. An apparatus having an attaching station for pinning articles to other articles; the combination of:
a fixed anvil having an indented area at said attaching station;
a movable plunger at said attaching station, said plunger including a recess within the leading edge thereof;
a compression spring mounted within said recess;
means for advancing said plunger uniformly to a given position relative to said anvil;
a secondary plunger extending forward of the first said plunger and slideable within said recess for yieldable cooperation with said anvil in the operation of said first plunger for thereby bowing and holding articles within said indented area of said anvil;
both said plungers having an open end forming a slot in common; and
a plate mounted within said in common open end slots, removably secured to said first plunger and adapted for limiting the outward movement of said secondary plunger along said recess as urged by said spring.

3,357,619
DRIVING APPARATUS
Roger E. Jeanfavre, Litchfield County, Conn., assignor to The Turner & Seymour Mfg. Co., Torrington, Conn., a corporation of Connecticut
Filed Dec. 20, 1965, Ser. No. 517,506
10 Claims. (Cl. 227—149)



1. Apparatus for driving fittings comprising a driving plunger arranged for reciprocal movement in a forward direction to a first, fully protracted, position and in a rearward direction to a second, fully retracted, position, gripping means mounted exclusively on and carried along by said driving plunger, said gripping means including a carrier element resiliently connected to said driving plunger for limited movement therealong, gripper elements mounted on said carrier element and movable laterally thereon between a closed position extending over the tip of the plunger and an open position laterally displaced from said plunger, said gripper elements having associated therewith gripper element actuating means including actuator protrusions carried along on said carrier element, and a fixed stop member positioned in the path of longitudinal movement of said actuator protrusions for intercepting their forward movement, the relative movement thus produced between said carrier element and said actuator protrusions serving to move said gripper elements to their opened position.

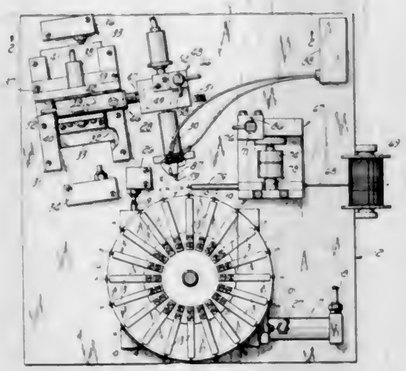
3,357,620
APPARATUS FOR WELDING OF TIME-INDICATING SIGNS ONTO A SHEET FORMING THE DIAL OF A TIMEPIECE
Robert Bratschi, Bienne, Switzerland, assignor, by mesne assignments, to Jean Nydegger, Macolin, Bern, Switzerland
Filed Mar. 20, 1964, Ser. No. 353,551
Claims priority, application Switzerland, Apr. 8, 1963, 4,447/63
2 Claims. (Cl. 228—1)



1. In an ultrasonic welding apparatus for welding a finished time-indicating sign to the surface of a timepiece dial, the improvement comprising, an active sonotrode having an indentation for receiving the to-be-welded

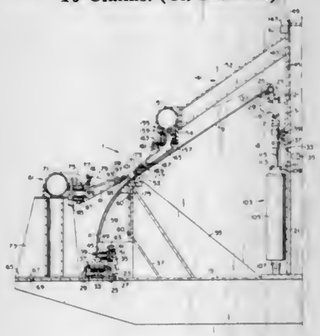
sign, and a passive sonotrode, said passive sonotrode being at least partially formed from a compressible material having a capacity for deforming in conformity to the vibratory movements of said active sonotrode as the exerted forces exceed a certain predetermined value.

3,357,621
SOLDERING APPARATUS
John A. Badini, Bronx, N.Y., and Edmund F. Yery, Old Bridge, N.J., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Aug. 19, 1965, Ser. No. 480,895
21 Claims. (Cl. 228—47)



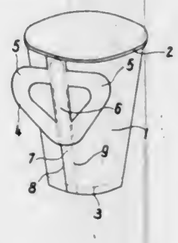
1. A soldering apparatus, comprising:
means for sequentially indexing articles to be soldered to a work position,
means responsive to an article being indexed to the work position, for advancing the tip of a soldering iron into contact with the article in the work position, and
means, responsive to the tip of the soldering iron being advanced into contact with the article in the work position, for simultaneously feeding solder material to the article and tip and moving the tip to spread the solder material about the article.

3,357,622
WELDING APPARATUS INCLUDING A PNEUMATIC CLAMPING FIXTURE
Malcolm F. Nesmith, Wichita, Kans., assignor to the United States of America as represented by the Secretary of the Army
Filed June 29, 1965, Ser. No. 468,172
10 Claims. (Cl. 228—50)



1. A clamping fixture for clamping bulkhead sections in position to be welded together including: a base; a lower pull down structure; a back-up bar; and an upper pull down structure mounted on said base in the above claimed sequence; said lower pull down structure mounted on said base for pulling down the lower end of a knuckle section, said back-up bar mounted on said base above said lower pull down structure, a lower clamping structure mounted on said base and disposed for clamping relative to a lower portion of said back-up bar; said upper pull down structure mounted relative to said base for pulling a cone section down into position, and an upped clamping structure mounted relative to said base and disposed for clamping relative to an upper portion of said back-up bar.

3,357,623
PAPER CUP
Fritz Wommelsdorf, Hamburg-Rissen, and Werner Schmidt, Hamburg, Germany, assignors to Maschinenfabrik Rissen GmbH, Hamburg-Rissen, Germany
Filed Apr. 20, 1966, Ser. No. 543,839
Claims priority, application Germany, Feb. 3, 1966, M 68,266
2 Claims. (Cl. 229—1.5)

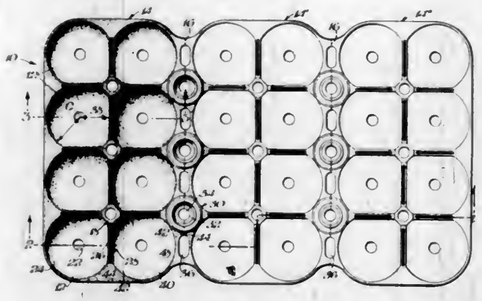


1. A paper cup comprising
(a) a bottom;
(b) a shell connected to said bottom and including an upper rolled lip portion and a pair of longitudinal edges, said edges overlapping each other in sealing relationship from the area of said bottom substantially to the area of said rolled lip portion so as to longitudinally seal said shell substantially along its entire length; and
(c) a handle including a fastening strip portion adherently connected to the outside of said shell, and grip parts freely adjustable on said fastening strip portion away from said shell, said fastening strip portion being provided with an upper extension at least partially rolled up in said lip portion, the outermost layer of said lip portion being formed by shell material so that the rolled portion of said fastening strip is enveloped by said shell material.

3,357,624
PULP PARTITION MOLDING
Kenneth L. Crabtree, Fairfield, Maine, assignor to Keyes Fibre Company, Waterville, Maine, a corporation of Maine
Filed Jan. 3, 1966, Ser. No. 518,115
2 Claims. (Cl. 229—2.5)

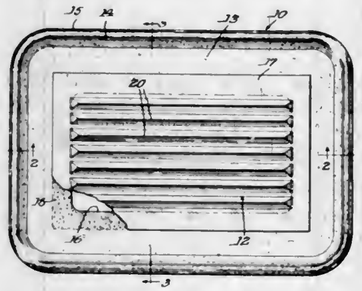
1. A unitary container integrally molded of fibrous pulp material comprising a plurality of downwardly dished and relatively deep article-receiving pockets grouped around upwardly tapering hollow post formations which extend above a substantially horizontal plane near the top of the pockets, the individual pockets being defined in part by side walls which flare upwardly and outwardly around vertical centerlines, the side walls separating two adjacent pockets comprising a pair of upwardly converging rib walls extending to substantially the same height

to provide full lateral support for articles positioned in each pocket, the internal lateral dimension from a given pocket centerline to its rib wall measured in the substantially horizontal plane near the top of the pocket on a line connecting the centerline of the given pocket with the centerline of an adjacent pocket being significantly smaller than such a dimension measured on a different line from the centerline of the given pocket in the same plane, and openings generally radially arranged with respect to the post formations to separate the upper portions of the rib



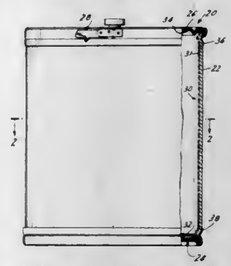
walls from each other to increase the flexibility of the pocket side walls in the zone of the smaller lateral dimension, each opening taking the form in plan view of a straight slot positioned perpendicularly across the line connecting the centerline of the given pocket with the centerline of an adjacent pocket, the width of the slot in plan view being substantially constant along its length and at least as great as the normal thickness of the molded pulp material which comprises the container.

3,357,625
MEAT TRAY WITH WINDOW
George V. Malmgren, Chicago, Ill., assignor to Malanco, Inc., Blue Island, Ill., a corporation of Illinois
Filed June 7, 1966, Ser. No. 555,741
4 Claims. (Cl. 229—2.5)



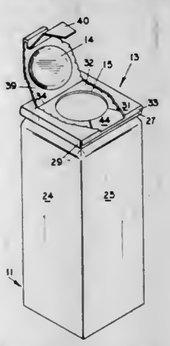
2. In a tray for displaying meat and the like, a main body portion formed of absorbent pulp board and including a flat bottom wall part, side walls integral with the bottom wall part and extending upwardly and outwardly on all four sides, said bottom wall part having an opening therein, a transparent window closing said opening and being adhesively secured to the bottom wall part around the periphery of the opening, said window being formed of a clear plastic and having corrugations therein which provide valleys between adjacent corrugations that are open at each end.

3,357,626
PLASTIC LINED FIBER CONTAINERS
Herbert L. Carpenter, decreased, late of Amityville, N.Y., by Orah M. Carpenter and Herbert L. Carpenter, Jr., Babylon, and Oliver T. Carpenter, Manhasset, N.Y., executors, and Herbert L. Carpenter, Jr., Babylon, N.Y., assignors to The Greif Bros. Cooperage Corporation, Delaware, Ohio, a corporation of Delaware
Continuation of application Ser. No. 339,049, Dec. 18, 1963, now Patent No. 3,126,797, dated Mar. 31, 1964, which is a division of application Ser. No. 134,953, Aug. 30, 1961. This application Jan. 25, 1966, Ser. No. 539,232
3 Claims. (Cl. 229—14)



1. An improved drum for substantially dry, solid, semi-liquid, liquid materials and the like, comprising a tubular shell, said shell being made from wound and adhesively secured laminated layers of fibrous material, a bottom closure fixedly secured to one end of said shell, and an integral one-piece plastic liner blown into firm surface-to-surface contact with said shell and following the contour of the interior thereof, the internal fibers of the interior surface of said shell being permeated by the plastic of said liner such that said liner and said shell are adhered to one another and resist loads as a unit, said liner being free from joints, crimps, bends and punctures, said liner having an integral bottom section proximal with and conforming to the configuration of the bottom closure, said liner completely sealing said shell and closure as well as the juncture of both to prevent penetration and leakage of the contained material therethrough, the bottom section of the liner being free from attachment with said closure and thereby remaining independent of pressure applied to the bottom closure.

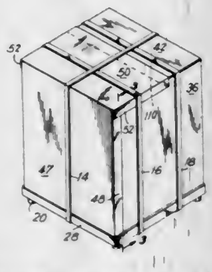
3,357,627
DISPENSING CONTAINER
Howard M. Hill, Hamilton, Va. 22068
Filed Mar. 8, 1967, Ser. No. 628,207
12 Claims. (Cl. 229—17)



1. A container comprising a tubular body of foldable material closed at its lower end; the upper edges of the side walls of said body terminating in outwardly extending end seam flanges; an integral elongated flap articulated to the upper edge of one side wall of said body,

said flap divided by a score into two rectangular portions and folded about said score and adhesively attached to said end seam flanges and to itself forming a two-ply closure, the outer of said plies having a tear strip and cut from the inner of said plies a tear tab integral with and leading into the edges of said tear strip in said outer ply; within said inner ply a bridge member partially cut from said inner ply and folded upon and adhesively attached to said inner ply; and a perforation through said outer ply said bridge member and said inner ply, said perforation encompassing an opening left in said inner ply by the partial cutting and folding if said bridge member and forming a dispensing opening having an unbroken periphery in said inner ply together with said bridge member and forming an opening in said outer ply corresponding with said dispensing opening in said inner ply.

3,357,628
PALLET CONTAINER FOR FRONT LOADING
Bernard Fish, Brooklyn, N.Y., assignor to Interstate Container Corporation, New York, N.Y., a corporation of New York
Filed July 30, 1965, Ser. No. 476,041
7 Claims. (Cl. 229—23)



1. A pallet-type front-loading shipping container of relatively large size for unit loading with and shipment of many cartons of ordinary size, said container comprising a bottom, a body and a separable front closure all made of corrugated paper board and designed for easy assembly and loading at the place of loading, said bottom having upstanding peripheral flanges on all four edges with means locking the same in upright position, said body having a back panel and two side panels dimensioned to fit in the bottom, said side and back panels having top flaps at their upper edges and anchor flanges at their lower edges, said front closure having a front panel, front flanges at the side edges of the front panel, and a top flap, said front closure being devoid of a flange at its bottom edge and thereby being insertable downwardly inside the flanges of the bottom after the container has been fully loaded while the front and top are still open, the top flaps of the container overlapping to form the container top, pallet feet secured beneath the bottom, and said container being completed and the parts thereof being held together by tapes secured therearound without need for glue or other fasteners other than the tapes.

3,357,629
EXTERNAL EAR CARTON
William P. Smith, Compton, Calif., assignor to Container Corporation of America, Chicago, Ill., a corporation of Delaware
Filed Apr. 4, 1966, Ser. No. 540,041
2 Claims. (Cl. 229—37)

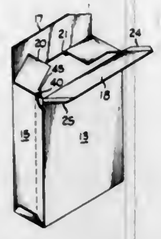
1. In a carton formed from a unitary blank of foldable paperboard and having an end closure including external ears, the combination of:

(a) opposed pairs of major and minor side wall panels;

(b) outer and inner closure flaps hinged to and folded inwardly from corresponding end edges of the major and minor side wall panels, respectively, into overlapping relation for closing the one end of the tubular body;

(c) external ears integrally hinged to opposite end edges of one outer closure flap and overlying and being secured to the adjacent minor side wall panels;

(d) a narrow glue panel hinged to a free edge of one

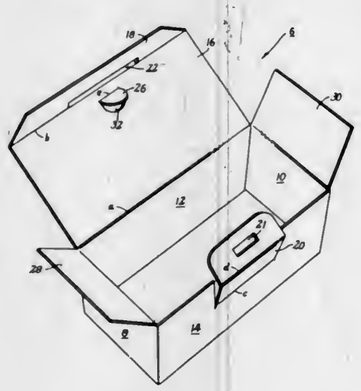


major side wall panel and underlying and being secured to the marginal edge of one minor side wall panel;

(e) a glue flap hinged to the glue panel and underlying and being secured to a marginal edge of said one minor side wall panel inner closure flap;

(f) one of said ears, said glue flap and said glue flap panel being formed along one edge of the blank, and said one ear being separated from said glue flap by a cut line.

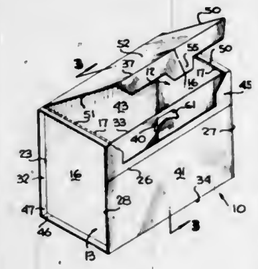
3,357,630
CONTAINER
Erwin Michelitsch, New Hyde Park, N.Y., assignor to John Krauss, Inc., Jamaica, N.Y., a corporation of New York
Filed Nov. 29, 1966, Ser. No. 597,589
2 Claims. (Cl. 229—45)



1. A container including opposing end walls and opposing side walls connected thereto, and top closure means, said top closure means including a top cover hingedly connected to the top edge of one of said side walls and extending the full width of said end walls, a flap member hingedly connected to the free side edge of said cover and having a slot therein, an extension member hingedly connected to the top edge of the other of said side walls whereby said cover is retained in closed position by said extension member the latter being flush

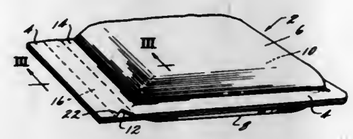
with the other side wall, said extension member extending through the slot in said flap member, the latter member being folded into the container, said cover having a locking element formed from and hingedly connected thereto, said locking element extending through the slot in said extension member when in locking position thereby providing a finger slot in said cover, the locking element being adapted to pivot within the container as said extension member is pushed outwardly through the slot in said flap to open the container.

3,357,631
RECESSED ICE-CREAM CARTON WITH TUCK-IN RECLOSURE
Joseph J. Ald, Western Springs, and Robert T. Jackson, Park Forest, Ill., assignors to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Dec. 3, 1963, Ser. No. 327,702
3 Claims. (Cl. 229—51)



1. A carton comprising a bottom panel, vertically upstanding spaced front and rear panels, opposed end panels, and a top panel, said top panel being joined to said rear panel and being normally disposed in opposed overlying relationship to said bottom panel, a locking tab panel joined to said top panel, said locking tab panel being secured in overlying relationship to an exterior surface of the front panel, tab receiving opening means in said front panel beneath said locking tab panel and normally closed thereby, a pair of spaced weakened lines in said locking tab panel defining a tear strip disposed wholely within the confines of said locking tab panel, a portion of one of said weakened lines defining a tab directed toward one of said top and bottom panels, said tab and tab receiving opening means being generally in overlying relationship in the normally closed position of said locking tab panel, said tab receiving opening means being of a size sufficient to receive said tab upon the removal of said tear strip and a subsequent reclosure of said carton, means provided interiorly of said carton defining a chamber for receiving said locking tab when said tab is passed through said tab receiving opening means to reclose said carton after said carton has been once opened, said chamber means being defined by a backing panel joined to said front panel, said backing panel being in completely interiorly overlying relationship with said opening, said locking tab panel being joined to said top panel along a fold line, said top panel being defined in part by a pair of generally parallel spaced edges, a second pair of weakened lines in said locking tab panel, said second pair of weakened lines converging toward and terminating at said one weakened line, said second pair of weakened lines being confined wholely within the confines of said locking tab panel, a third pair of generally parallel weakened lines in said top panel, and an associated one of each of said third pair of weakened lines merging with an associated one of each of said second pair of weakened lines at said fold line.

3,357,632
SELF-SEALING CONTAINER
Charles M. Stanforth, Cincinnati, Ohio, assignor to General Electric Company, a corporation of New York
Filed Sept. 26, 1966, Ser. No. 581,806
5 Claims. (Cl. 229—62.5)



1. A container for receiving and storing fluids, said container comprising,

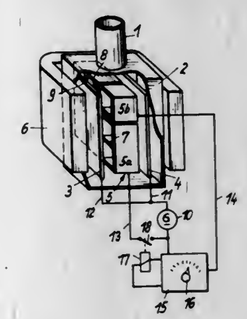
two superposed layers of flexible polyethylene terephthalate sheet material joined together by seamed portions defining an inflatable storage chamber and a passageway thereto,

said passageway being defined by elongated, generally parallel, spaced, seamed portions isolating the inlet itself from internal fluid pressures in said storage chamber,

said passageway having an inlet at one end and an exit opening into said chamber at its opposite end and further being characterized by the sheet material layers defining same being normally contiguous at least substantially throughout its length,

said layers defining said passageway being deflectable for the insertion of a tube to provide communication with said chamber and resilient to a sealing position upon retraction of said tube.

3,357,633
VACUUM PUMP
Franz Karl Petersilka and Rudolf Paul Schittenhelm, Erlangen, and Robert Georg Weiss, Uttenreuth, Germany, assignors to Siemens-Reiniger-Werke Aktiengesellschaft, Erlangen, Germany, a corporation of Germany
Filed July 22, 1965, Ser. No. 474,052
Claims priority, application Germany, July 24, 1964, S 92,249
3 Claims. (Cl. 230—69)



1. A vacuum pump arrangement, in which the electric ionization of the gas to be pumped away is employed to create a vacuum and to regulate the pumping mechanism, comprising

(a) a pump including

(1) a vacuum sealed casing,

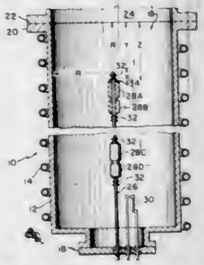
(2) a pair of cathode plates mounted within said casing,

(3) an anode formed of a plurality of cells and mounted between said cathode plates, and
(4) means for producing a magnetic field orthogonally to said cathode plates and parallel to the axes of the anode cells,

said pump being divided into electrically separated sections of different sizes, and

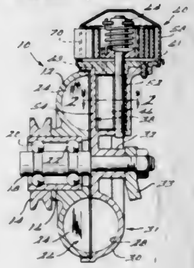
(b) control means responsive to a predetermined pressure in a smaller one of said sections for deenergizing the larger of said sections and further responsive to a pressure higher than the predetermined pressure in the smaller section for activating said larger section.

3,357,634
ORBITING ELECTRON VACUUM DEVICE AND ANODE-GETTER APPARATUS THEREFOR
Joseph C. Maliakal, Newton, Mass., assignor to National Research Corporation, Cambridge, Mass., a corporation of Massachusetts
Filed Feb. 28, 1966, Ser. No. 530,629
10 Claims. (Cl. 230—69)



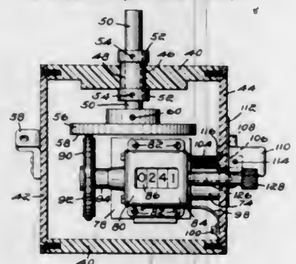
1. An improved anode-getter apparatus for use in getter ion pumps of the orbiting electron type wherein electrons are orbited about the anode-getter apparatus within a tubular pump body to ionize gas molecules and strike the getter source contained in the apparatus and having an inlet, the said apparatus comprising; an anode rod with a plurality of getter sources mounted on the rod thereon in a linear arrangement and a cap mounted over the getter source which is set on a portion of the rod to make that source the one which is closest to the inlet of the pump, the cap covering the face of said getter source nearest the inlet of the pump, said cap being made of a material having a lower vapor pressure than the getter source material.

3,357,635
PRESSURE AND TEMPERATURE RESPONSIVE PUMP CONTROL
Fred E. Ullery, Detroit, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Dec. 30, 1965, Ser. No. 517,669
4 Claims. (Cl. 230—114)



1. A centrifugal pump having a bladed rotor member, a hollow stator member cooperating therewith to define an annular fluid flow chamber therebetween, said stator member having a fluid inlet and outlet to said chamber, a source of fluid connected to said inlet, and fluid bypass control means in said stator chamber movable between positions blocking or permitting flow between said inlet and outlet in one direction, and means for controlling the movement of said bypass control means, said last-mentioned means including spring means biasing said control means to a fluid blocking position, said control means being acted upon by the fluid under pressure at said outlet and moved above a predetermined fluid pressure towards the bypass fluid flow-permitting position, and temperature responsive means movable in response to a rise in temperature of said fluid to decrease the force of said spring means and permit a pressure lower than said predetermined fluid pressure to move said control means to its bypass flow-permitting position.

3,357,636
YARDAGE INDICATING APPARATUS
Joseph J. Ferro, Sr., 54 Kennard St., Malden, Mass. 02148
Filed Dec. 30, 1966, Ser. No. 606,179
9 Claims. (Cl. 235—95)



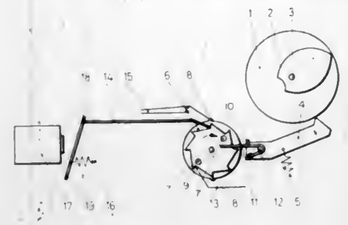
1. For use in combination with a golf bag cart and the like having a ground wheel of any diameter, a yardage indicating apparatus comprising:

(a) a hollow housing fixed with relation to the golf bag cart having an opening in one of its walls;
(b) a transmission shaft axially fixed to the golf cart ground wheel, said transmission shaft extending through and mounted for rotation in said housing wall opening;
(c) a transmission disk fixed to said transmission shaft within said housing, said transmission disk axially spaced from and positioned parallel to the golf cart ground wheel;
(d) a revolution counting mechanism mounted within said housing and having a count indicator visible exteriorly of said housing, said counting mechanism having an actuating drive wheel positioned to ride on the face of said transmission disk; and
(e) selective means for repositioning said drive wheel upon said transmission disk face at different distances from the disk face center to establish a transmission relationship whereby one unit of cart ground wheel travel produces one revolution of said drive wheel.

3,357,637
PROCESS AND APPARATUS FOR ZERO INDEXING OF A NUMBER WHEEL ON A CALCULATOR
Erich Stautmeister, Gottmadingen, Germany, assignor to Avo Apparatebau Vogt A.G., Kreuzlingen, Switzerland
Filed Aug. 10, 1966, Ser. No. 571,491
Claims priority, application Germany, Aug. 13, 1965, A 49,995; Jan. 20, 1966, A 51,375
6 Claims. (Cl. 235—144)

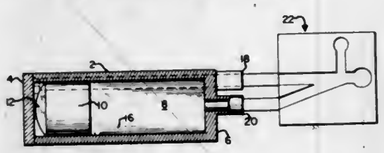
1. Apparatus for zero indexing the number wheel of an electromagnetic calculator comprising: a heart-shaped cam member operatively connected to the number wheel,

a pivoted zero index lever having one end for engaging and moving said cam member and its associated wheel to zero position, a spring device carried by the other end of said index lever, a ratchet wheel, engaging means carried by the ratchet wheel to contact said spring device and thereby move the index lever, a solenoid means, a pawl means to actuate step-by-step said ratchet wheel,



means connecting said solenoid and pawl means, an interrupter controlling the energization of said solenoid means in repeated intervals to impart a gradual movement to said engaging means and thereby gradually and yieldably move the spring device and index lever towards and against the cam member for a zero resetting operation.

3,357,638
CONTROL APPARATUS
Neil C. Sher, St. Paul, and Warren J. Olson, Minneapolis, Minn., assignors to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Feb. 17, 1966, Ser. No. 528,203
10 Claims. (Cl. 235—201)



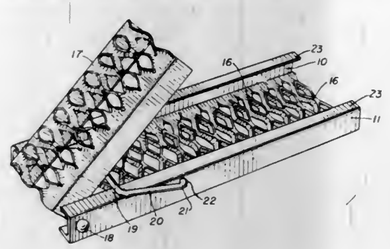
1. An annunciating device comprising a housing having first and second end portions and a chamber between said end portions, said first end portion being transparent and said second end portion having first and second pneumatic ports passing through it, said first port extending to said chamber only proximate to said first end portion and said second port entering said chamber only proximate to said second end portion,

a member located in said chamber which is slideable between a first position proximate to the transparent end portion and a second position proximate to the second end portion, activation to said first and second positions being occasioned by supplying a differential in pressure between said first and second ports respectively.

3,357,639
TRACTION MAT AND WHEEL CHOCK FOR AUTOMOTIVE VEHICLES
Howard Peterson, 825 York St., Denver, Colo. 80206
Filed Nov. 17, 1966, Ser. No. 595,255
3 Claims. (Cl. 238—14)

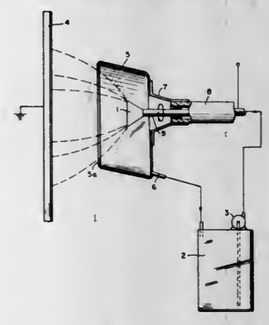
1. A combined traction mat and wheel chock unit for automotive vehicles comprising:

(a) an elongated base element consisting of an elongated rectangular perforated metal plate;
(b) a rigid, upturned side on each longitudinal edge of said plate, said sides extending longitudinally of said plate in parallel, spaced-apart relation;
(c) a pivoted element consisting of a second elongated rectangular, perforated, metal plate of less length than said base element and having rigid, downwardly-turned sides similar to the sides of said base element, the downwardly turned sides of said pivot element being positioned between the upturned sides of said base element with one extremity of each element aligned with one extremity of the other element;
(d) a hinge rod extending through the sides of both elements at said one extremity to hingedly secure said elements together at that extremity;



(e) a hasp rod having a rectangular U-shaped conformation to provide a straight portion and two angularly turned leg portions, said straight portion resting upon and extending transversally between the sides of said base element; and
(f) means pivoting the extremities of said leg portions to the sides of said base element so that said straight portion of said rod may be swung to a supporting position beneath said pivoted element to support the latter at an incline and to a non-supporting position to allow said pivoted element to nest between the sides of said base element.

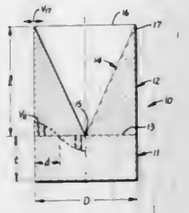
3,357,640
APPARATUS FOR ELECTROSTATIC SPRAYING OF PAINTS OR SIMILAR COATING MATERIALS
Rolf Grossteinbeck and Hans Holtz, Frankfurt am Main, Germany, assignors to Peter Stoll, Guntramsdorf, near Vienna, Austria, a corporation of Austria
Filed Oct. 23, 1962, Ser. No. 232,397
Claims priority, application Austria, Oct. 27, 1961, A 8,149/61
5 Claims. (Cl. 239—15)



1. In an electrostatic coating apparatus of the character described, a spray head for electrostatic spraying of paints and similar coating materials comprising a rotating annular spray element and an annular ring surface surrounding said spray element, said annular ring surface being of substantially larger diameter than the diameter of

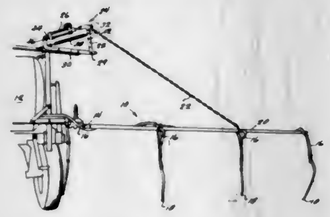
the spray element and said annular ring surface having the edge closest to the object to be coated situated in front of the plane of the spray element, whereby said annular ring surface traps and collects particles of coating material during the coating operation, which do not follow the electrical field lines.

3,357,641
AEROSOL GENERATOR
John G. Martner, Atherton, Calif., assignor to Stanford Research Institute, Menlo Park, Calif., a corporation of California
Filed Aug. 5, 1965, Ser. No. 477,522
7 Claims. (Cl. 239—102)



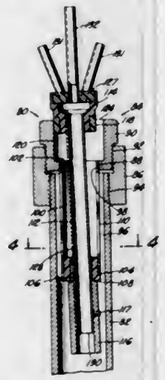
1. Apparatus of the character described comprising a piezoelectric driving member having opposite parallel faces and so shaped that, when an oscillating electric potential is applied across said faces, the member will oscillate in radial planes normal to said faces, said member having adhesively bonded to at least one of its faces one end of a driven member having an axially oriented cavity which, in axial cross section, is in the shape of a triangle having its apex adjacent the interface between the driving and driven members and having its base adjacent the other end of the driven member and forming a lip at said other end.

3,357,642
BOOM SUSPENSION DEVICE
Donelson B. Horton, Madison, Ala., assignor to John Blue Company, Incorporated, Huntsville, Ala., a corporation of Alabama
Filed Aug. 20, 1965, Ser. No. 481,273
6 Claims. (Cl. 239—159)



1. A suspension apparatus and spray boom comprising:
means for pivotally connecting a base portion of said boom to spraying equipment so that the boom may swing up and down,
a flexible, non-rigid support means connected to a terminal portion of said spray boom for supporting said boom at a normally horizontal level, and for connecting said spray boom to a shock absorbing means,
shock absorbing means carried in a frame above the spray boom, said shock absorber means comprising a single-acting shock absorber having a piston within a cylinder, said piston being easily moved in one direction but impeded in movement in an opposite direction,
means connecting said shock absorber means to said flexible support means, said connecting means having a lever arm mounted in said frame for relaying movements of the spray boom to the shock absorber means carried by the frame and, said lever being mounted at its base for pivotal swinging movement and being connected at an outer end to said shock absorber unit, whereby downward movements of said spray boom will act to extend said shock absorber means into an operative position.

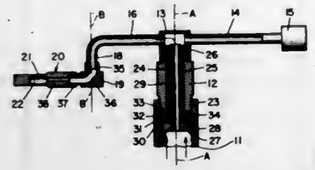
3,357,643
SPRINKLER AND FOUNTAIN DEVICES
John O. Hruby, Jr., Burbank, Calif., assignor, by mesne assignments, to Rain Jet Corp., Burbank, Calif., a corporation
Filed July 6, 1965, Ser. No. 469,788
3 Claims. (Cl. 239—210)



1. A water disperser comprising a body adapted to be mounted on a water supply riser, said body comprising a tube smaller in diameter than said riser and means connecting the tube to the riser in position wherein a lower end of the tube extends into and is spaced from the interior of the riser, said tube having vertically elongated oblique apertures through the wall thereof for passage of water, said tube having an upper end exposed above said riser, and a gyrating disperser head assembly rotatably and gyratably mounted in said body, said head assembly comprising a stem head, a hollow stem extending into and attached to said stem head, and water passage means from the interior of said stem head to the exterior, a stationary cylindrical interior bearing surface having an outside end exposed to the exterior on the upper end of said body and larger in diameter than the inside diameter of said tube, and a bushing mounted on the stem head, said bushing having an outside diameter larger than the outside diameter of said stem and smaller in diameter than the inside diameter of said cylindrical interior bearing surface, whereby said bushing comprises simultaneously a bearing and gyrating water deflector, said tube having a second bearing surface adjacent the inner end of said stem, said bushing being adapted to roll about the bearing surface of said body during operation.

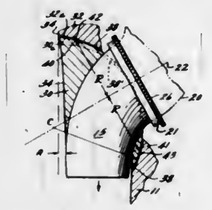
3,357,644
ROTARY SPRINKLER
Charles S. Penfield, 20 Encino, Camarillo, Calif. 93010, and Roy C. Wilson, Jr., 947 Grant Line Road, Santa Paula, Calif. 93060
Filed Oct. 28, 1965, Ser. No. 505,490
3 Claims. (Cl. 239—231)

1. A rotary sprinkler, comprising, in combination: a vertical conduit; a bearing member journalling said conduit to a source of fluid pressure for rotation about a vertical axis; a fluid conducting tube coupled to and in fluid communication with said vertical conduit, said tube extending horizontally a given distance and terminating in a vertically downwardly extending end portion; a coupling elbow pivotally connected to said end portion and including a curvilinear fluid passage communicating at one of its ends with said downwardly extending end portion and having its other end directed in a horizontal direction; and a fluid discharge nozzle rotatably coupled to said other end of said curvilinear fluid passage, said nozzle extending horizontally and being capable of rotation about its own horizontal longitudinal axis relative



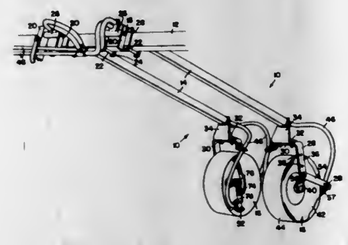
to said other end, said nozzle including an angularly disposed surface for deflecting an horizontal stream of fluid issuing from said nozzle in a desired trajectory in accord with the rotational position of said nozzle, the direction of said horizontal stream in an horizontal plane defining a moment arm from said vertical axis at said source of fluid pressure to impart rotary movement to said nozzle, tube, and conduit about said source of fluid, the speed of said rotary movement being adjustable in response to pivotal movement of said elbow and nozzle in an horizontal plane about said vertically downwardly extending end portion of said tube.

3,357,645
THRUST DIRECTING MEANS FOR AIRCRAFT
Dudley O. Nash and Lewis Holden, Cincinnati, Ohio, assignors to General Electric Company, a corporation of New York
Filed Dec. 29, 1966, Ser. No. 605,649
12 Claims. (Cl. 239—265.25)



1. In an aircraft including an airframe and gas generating means for producing high energy motive fluid, thus directing means comprising:
at least one fluid turning device communicating with the gas generating means for receiving motive fluid therefrom and discharging the motive fluid to atmosphere,
mounting means supporting said fluid turning device for rotation about an axis through a range of positions, said range of positions including a forward thrust position in which the motive fluid is discharged in a rearward direction relative to the aircraft, a reverse thrust position in which the motive fluid is discharged in a direction having at least a substantial component in the forward direction relative to the aircraft, and vectored thrust positions between said forward and reverse thrust positions in which the motive fluid is discharged in other directions relative to the aircraft,
a fixed fairing forming a portion of the airframe,
and a movable fairing secured to and carried by said fluid turning device,
said fixed and movable fairings abutting to form a substantially continuous and aerodynamically streamlined exterior aircraft surface when said fluid turning device is in said forward thrust position, said surface being a boattail surface converging in the rearward direction at a relatively small angle,
the abutting edges of said fixed and movable fairings forming a parting line disposed entirely on a surface of revolution generated about the axis of rotation of said fluid turning device,
whereby said fluid turning device can be rotated through said range of positions without interference between said fixed and movable fairings.

3,357,646
COMBINATION OILING AND LAYBY SPRAY BOOM
Vernis Henry Meyer, Granger, Iowa, assignor to Deere & Company, Moline, Ill., a corporation of Delaware
Filed Mar. 31, 1966, Ser. No. 539,198
4 Claims. (Cl. 239—288.5)

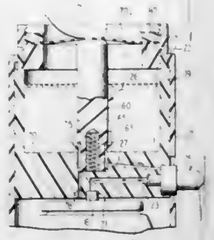


1. An apparatus adapted to be secured to a propelling device for forward movement over a field for spraying plants adjacent the ground including: support means mounted for vertical movement relative to the ground, said support means including axle means disposed parallel to the ground, ground-engaging means rotatably carried by said axle means, said ground-engaging means including radially outwardly extending means journaled for rotation about said axle, axially extending imperforate annular means carried by an outer portion of said radially outwardly extending means, nozzle means through which spray material is discharged, and means interconnecting said nozzle with said support means and disposing said nozzle within said annular means whereby when said apparatus is propelled forwardly over the ground the ground-engaging means maintains the nozzle a substantially fixed distance above the ground, protects the nozzle from any objects disposed within its path, and acts as a windshield for the spray material emerging from said nozzle.

3,357,647
SPRAY HEAD
Leonard L. Marraffino, 1824 NW. 36th Court, Oakland Park, Fort Lauderdale, Fla. 33309
Filed Apr. 1, 1966, Ser. No. 539,390
7 Claims. (Cl. 239—304)

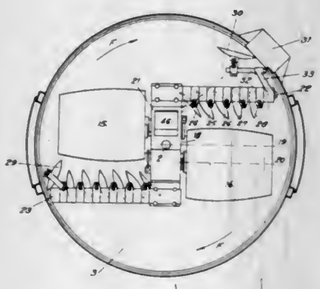
1. A spray head for containing a corrosive anti-perspirant additive fluid and adapted for use with an aerosol container of deodorant propellant fluid whereby upon actuation of the container nozzle, anti-perspirant additive fluid may be entrained with the spray of deodorant propellant fluid, said spray head comprising an outer holder adapted for attachment to said container and a tank having a base with an inlet for snugly receiving said container nozzle, said tank being mounted in said holder for

movement from a normal closed up position to a down position against the upward bias of the container nozzle for releasing propellant fluid, said base having a jet means and a propellant duct extending horizontally outwardly from said inlet and terminating at a jet orifice in said jet means, said tank having valve means for releasing said additive fluid, said base having an additive duct extending



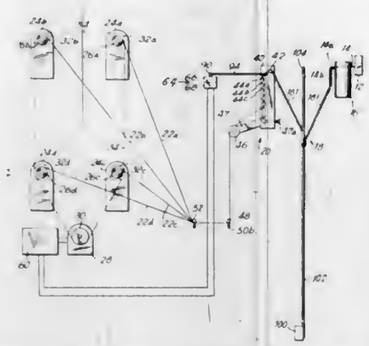
horizontally outwardly from said valve means to said jet means and in downstream progressive fluid communication with said additive duct, a vertical annular sump, a bleed duct and a horizontally-disposed frusto-conical delivery chamber surrounding said jet orifice for initial entrainment of said additive fluid as a flowing sheath around an internal spray stream of propellant fluid.

3,357,648
MIXER-GRINDER FOR FOUNDRY SAND
Robert André Marcel Ronceray, 122 Ave. des Champs Elysees, Paris 8, France; Lena Sarah Yeomans, Andree Jacqueline Laure Ronceray, Françoise Monique Mary Ronceray, and Pierre Robert Ronceray, heirs of said Robert A. M. Ronceray, deceased
Filed Jan. 29, 1965, Ser. No. 429,045
Claims priority, application France, Feb. 14, 1964, 963,819
4 Claims. (Cl. 241—110)



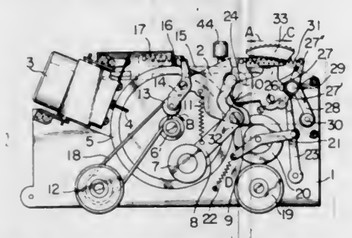
1. Mixer-grinder for foundry sand comprising in combination a central shaft stationarily mounted on a frame, a pan of relatively substantial depth which is mounted to rotate freely on said shaft, a radial unit stationarily mounted at the upper extremity of said shaft, a feed-hopper centrally carried by said unit and provided with a conduit which has its opening close to the center of the pan, two half-axles stationarily mounted on said unit and extending in opposite directions from said unit at right angles thereto, a muller of ovoid longitudinal cross-section mounted to rotate freely on each of said half-axles, two arms stationarily mounted on said unit and each arm being parallel to the half-axle which is located on the same side of the stationary unit as said arm, discs mounted on each of said arms in separately orientable manner, a discharge chute located at the periphery of said pan, a deflector orientably mounted at the extremity of that arm which is adjacent said discharge chute, and means for rotating said pan.

3,357,649
SPEED CONTROL MEANS
Victor L. Nichols, Bergenfield, and Ivan J. Garshelis, Clark, N.J., assignors to David and David, Inc., Long Island City, N.Y., a corporation of New York
Filed Aug. 12, 1965, Ser. No. 479,075
13 Claims. (Cl. 242—45)



1. Apparatus for winding a continuous length of a flexible member, comprising: a source of the member for continuously discharging the member into a loop; a receiver of the member for continuously withdrawing the member from the loop; guide means for shifting a portion of the loop laterally in continuous response to the depth of the loop; sensing means for continuously following the lateral position of the shifted portion of the loop and for providing an output signal responsive thereto; and speed control means coupled to said sensing means for receiving the output signal therefrom and coupled to one of the group consisting of said source and said receiver of the member for controlling the rate of discharge into or withdrawal from the loop responsive to the depth of the loop.

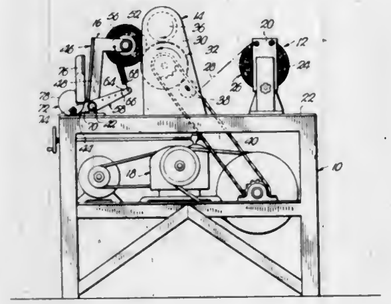
3,357,650
TAPE RECORDER OPERATING DEVICE
Isuke Sato, Machida-shi, Tokyo, Japan, assignor to Memofon Company, Limited, Tokyo, Japan, a corporation of Japan
Filed Oct. 18, 1965, Ser. No. 496,877
Claims priority, application Japan, June 21, 1965, 40/37,168
2 Claims. (Cl. 242—55.12)



1. A tape recorder operating device comprising a motor having a rotary shaft; a rubber tire having a rotary shaft and adapted to be in contact with said rotary shaft of said motor; a pulley and capstan provided on said rotary shaft of said rubber tire; a pinch roller mounted to be in contact with said capstan; a V-shaped arm pivoting said

pinch roller; a second pulley for receiving and rotating a tape winding reel; a third pulley mounted on the rotary shaft of the rubber tire; an auxiliary pulley; a first lever pivoting said auxiliary pulley, a belt adapted to connect said second and third pulleys and said auxiliary pulley; a roller rotating a tape feeding reel; a rubber roller mounted so as to be free to contact with said roller and with said rubber tire; a second lever adapted to pivotally move said rubber roller, a cam manually operable; a third lever connected to said second lever and adapted to be in contact with said cam; and a bar operatively connecting said cam and first lever with each other.

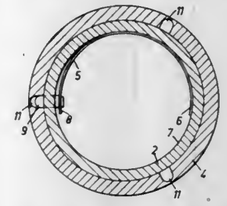
3,357,651
TAKE-UP MECHANISM FOR SHEET-FEEDING APPARATUS
Harry Robinson, Kansas City, Mo., assignor to Flexipak, Inc., St, Louis, Mo.
Filed Mar. 4, 1966, Ser. No. 531,948
11 Claims. (Cl. 242—65)



1. Take-up mechanism for winding sheet material which is continuously fed from a source, said mechanism comprising:
a base;
a take-up roller;
shiftable structure rotatably mounting said roller on said base to receive the continuously fed sheet;
apparatus for supporting and rotating said take-up roller to wind said sheet; and
means mounted on said base for shifting said roller with respect to said sheet feeding source to adjust the tension in the sheet, said shifting means including a biasing member interconnecting said base and said shiftable structure, a rotatable eccentric operably coupled to said shiftable structure and means for rotating said eccentric, the eccentric being cooperable with said base so that when said eccentric is rotated, said structure will shift against the force of said biasing member to shift said take-up roller.

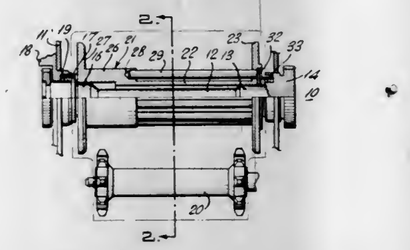
3,357,652
COUPLING DEVICE
Karl Heinz Greifenhagen, Kronach, Upper Franconia, Germany, assignor to Loewe Opta G.m.b.H., Berlin, Germany, a company of Germany
Filed Aug. 23, 1965, Ser. No. 483,904
Claims priority, application Germany, Aug. 28, 1964, L 37,833
2 Claims. (Cl. 242—68.3)

1. Coupling device comprising in combination an arbor and a tape reel, said arbor being formed as a closed hollow cylinder, said tape reel having a central hollow core adapted to slip on said tape reel on said arbor, said hollow cylinder containing exclusively a circularly bent flat spring, one end of which is fixed to the inside of said hollow cylinder, the other end of said flat spring bearing a catch element shaped as a cylindrical pin with a hemispherical end, said hollow cylinder being provided with a radial bore, said catch element being adapted to be extended through said bore of said hollow cylinder and to fit into



one of several axial grooves of said tape reel, said axial grooves being provided on the inside of the hollow core of said tape reel.

3,357,653
END FASTENER
Akira Otsuka, Kitaadachi-gun, Saitama-ken, Japan, assignor to Asahi Kogaku Kogyo Kabushiki Kaisha, Tokyo-to, Japan, a corporation of Japan
Filed July 1, 1966, Ser. No. 562,318
Claims priority, application Japan, Feb. 25, 1966, 41/11,101
8 Claims. (Cl. 242—74)

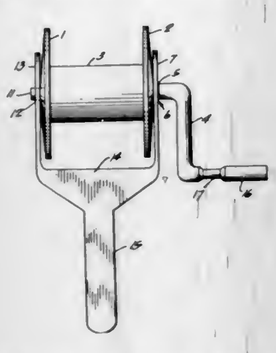


1. In a photographic camera, a film take-up spool including an axial hub terminating in peripheral end members, a plurality of longitudinally extending circumferentially located parallel rods carried by and extending between said end members and coextensive with and spaced from said hub, at least one pair of adjacent of said rods being transversely spaced a first distance sufficient for receiving a tail of said film therebetween and to effect engagement of said tail by said spool upon rotation thereof as a consequence of the flexibility and resiliency of said tail, and means for rotating said spool.

3,357,654
COMBINATION REEL AND HOLDER THEREFOR
William J. Losman, 13441 Erwin St., Van Nuys, Calif. 91401, and Kristina I. Elliott, 1527 Yale St., #1, Santa Monica, Calif. 90404
Filed June 1, 1966, Ser. No. 554,479
2 Claims. (Cl. 242—96)

1. The combination of a reel and a holder therefor, both composed of a plastic material, comprising: a reel of unitary structure having a drum and two flanges, one at each end of and concentric of said drum, the outer face of each of said flanges gradually tapering inwardly of said reel from the axis of said drum, the first of said flanges having a first axle member protruding therefrom and the second of said flanges having a second axle member protruding therefrom with a turning crank outboard of said second axle member, said crank having outward thereof and normal thereto a turning handle, all of the latter being structurally unitary with said second flange; and a holder for said reel having a cross member and

normal thereto, extending therefrom, and secured thereto two parallel arms spaced apart the distance between the outsides of said flanges adjacent said axle members, the first of said arms having a completely circular bearing hole therethrough adapted to receive said first axle member for retention therewithin, the second of said holder arms having a circular bearing hole and a slot therethrough connecting said hole with an edge of its arm, said slot being slightly narrower, restricted, than the diam-



eter of said second axle member adjacent said second flange so that said second axle member must be forced through said slot in order to be received in said connecting hole; whereby said reel is assembled with said holder by first inserting said first axle member in said completely circular hole by axial movement of said reel and then by forcing said second axle member through said slot into its connecting hole by radial movement of said feel; the fits of said axles in said holes and said flanges between said arms being close but free for rotation.

3,357,655

CONTINUOUS FILAMENT YARN HAVING LOW AND VARIABLE TWIST METHOD OF MAKING SAME

Kurt Iwnicki, Ponthir, and Derek J. Wood, Raglan, England, assignors to British Nylon Spinners Limited, Pontypool, Monmouthshire, England

Filed May 7, 1965, Ser. No. 454,138
Claims priority, application Great Britain, May 15, 1964, 20,315/64
7 Claims. (Cl. 242—159)



1. A yarn package having tapered end-portions and being built with each successive layer at a constant package winding radius greater than that of the preceding layer, the yarn in said package being a compact multifilament, continuous filament yarn having a low uni-directional twist decreasing in value from inside to outside of the package and having a compensatory degree of interfilament cohesion along its length independent of unidirectional twist and sufficient to impart to the yarn as a whole the handling properties of a similar multifilament, continuous filament yarn twisted to a twist of substantially at least 0.15 turn per inch.

4. A process for winding a yarn package having tapered end-portions comprising the steps of

(a) forwarding multifilament, continous filament yarn from the periphery of a roll rotating at a constant speed,

(b) winding the yarn into a package by a ring spindle device with a package build in which the traverse stroke decreases in length progressively throughout the build,

(c) decreasing the speed of rotation of the spindle of the ring spindle device according to a programme during the winding of the package to maintain constant the speed of rotation of the ring traveller of said device, and

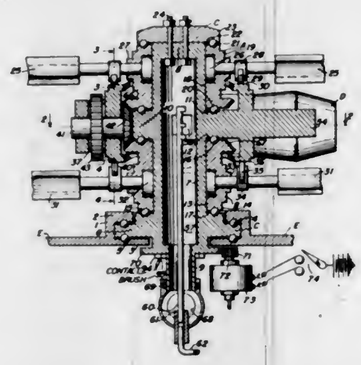
(d) interlacing the filaments of said yarn by air jet means to compensate for the decrease in twist resulting from the decrease in the speed of rotation of the spindle during passage of the yarn from said roll to said device.

3,357,656

TURBINE PROPULSION AND DRIVE FOR AIRCRAFT ROTOR MEANS

Adolphe C. Peterson, 4623 Bruce Ave. S., Minneapolis, Minn. 55424

Substituted for abandoned application Ser. No. 203,403, June 18, 1962. This application July 6, 1965, Ser. No. 474,203
17 Claims. (Cl. 244—17.23)



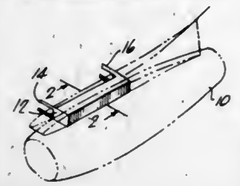
1. In a rotor means for aircraft: a pylon structure mounted on an aircraft fuselage and formed to have a rotor bearing and to have adjacent a side thereof a turbine mounting and a turbine casing affixed integrally therewith; an airfoil rotor rotatably mounted by said rotor bearing on said pylon structure; a turbine rotor means rotatably mounted in the turbine casing and having turbine blade means rotating in the turbine casing and having transmission speed reduction means transmitting to the airfoil rotor; a primary combustion turbine mounted on the aircraft fuselage and having a discharge for gaseous fluid through conduit means in said pylon structure and to said first named turbine casing to drive the turbine rotor means; the mounting of said pylon structure on said aircraft fuselage including a bearing means between said pylon structure and said aircraft fuselage whereby said pylon structure is rotatable on its axis in said last named bearing means.

3,357,657

FIRE BARRIER

Kenneth G. Ferrel, Los Alamitos, Charles O. Gunderson, Rolling Hills, and Raymond J. Palmer, Newport Beach, Calif., assignors, by mesne assignments, to McDonnell Douglas Corporation, Santa Monica, Calif., a corporation of Maryland

Filed Apr. 27, 1966, Ser. No. 545,638
8 Claims. (Cl. 244—54)



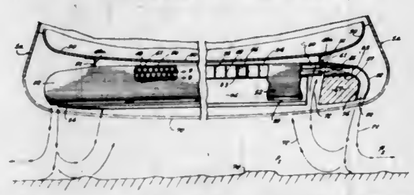
1. In combination:
an aircraft having a support structure thereon,
an aircraft engine mounted on said support structure,
a fire wall mounted between said support structure and said engine for preventing damage from an engine burn-through flame,
said fire wall comprising a sheet of light-weight heat resistant material and a fire barrier thereover,
said fire barrier comprising:
a laminate cloth material impregnated with an organic resin system whereby an engine burn-through flame is dispersed and deflected back toward the engine.

3,357,658

PERIPHERAL JET ROCKET ENGINE

Edgar G. Ewing, Thousand Oaks, Calif., assignor to Northrop Corporation, Beverly Hills, Calif., a corporation of California

Filed Sept. 8, 1965, Ser. No. 485,706
7 Claims. (Cl. 244—100)



1. In a vehicle: a rocket engine, means for attaching said engine to the base of said vehicle, said engine having means defining a peripheral jet nozzle of substantially the same exterior dimensions as the base of said vehicle, said jet nozzle directed substantially perpendicular to the base, said base forming a substantially continuous pressure seal against which a positive pressure differential is built up in operation of said engine, said peripheral jet nozzle comprising an annular space between inner and outer skirts directed slightly inwardly toward the center, and including an annular landing decelerator structure of energy-absorbing material connected to the inner side of said inner skirt and substantially co-extensive therewith.

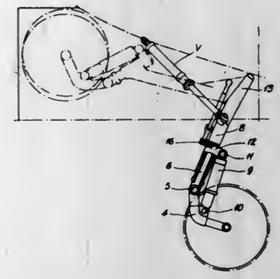
3,357,659

RETRACTION DEVICES FOR FUSELAGE UNDERCARRIAGES WITH WHEELS ARRANGED IN DIABOLO MOUNTING

Rene Lucien, Neuilly-sur-Seine, France, assignor to Recherches Etudes Production R.E.P.

Filed Feb. 3, 1966, Ser. No. 524,784
Claims priority, application France, Apr. 16, 1965, 13,654
6 Claims. (Cl. 244—102)

1. A lifting system for a fuselage undercarriage with wheels arranged in Diabolo mounting, said system comprising a lifting hinge, a leg casing articulated on said hinge, a shaft mounted pivotally with respect to said leg casing, a rocking lever articulated on said shaft, a common axle for wheels mounted in Diabolo, said axle being mounted on the rocking lever, said fuselage having a longitudinal plane of symmetry and an internal cavity in which the undercarriage is retractable, said hinge being housed in the cavity of said fuselage and disposed obliquely with respect to the horizontal and with respect to the longitudinal plane of symmetry thereof, said shaft being parallel to said plane of symmetry in the undercarriage-down position, means for extending and retract-



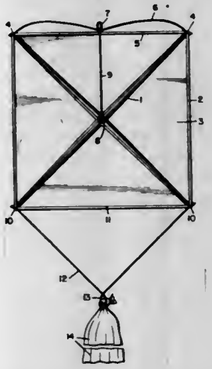
ing the undercarriage, and means for causing said shaft on the one hand to pivot outwardly through an angle of about 90° with respect to the leg casing and on the other hand the leg casing and hinge to pivot through an angle of about 90° with respect to said hinge such that the wheels undergo a total pivotal movement of 180° with respect to said hinge during the course of the extending and retracting movement of the undercarriage, the latter said means comprising a crank arm hingeably mounted on said leg casing and means connected to said crank arm and to the shaft and fuselage to cause rotation of the shaft relative to the casing as the wheels are retracted and extended.

3,357,660

RECTANGULAR MOULDED PLASTIC KITE

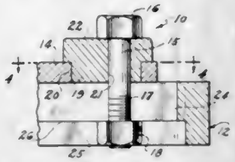
Sergei Feodore Condrashoff, 1230 St. Patrick St., Victoria, British Columbia, Canada

Filed June 1, 1966, Ser. No. 554,513
10 Claims. (Cl. 244—153)



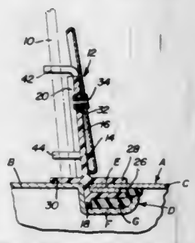
1. A kite comprising a hollow one-piece rigid rectangular plastic frame, a plastic film fused to the frame, a bridle attached to the corners at one side of the frame, and a tail harness attached to the corners at the opposite side thereof.

3,357,661
ADJUSTABLE POSITIONING DEVICE
Elmer Aakjar, 1 Maurice Ave., Ossining, N.Y. 10562
Filed Oct. 23, 1965, Ser. No. 502,888
2 Claims. (Cl. 248—23)



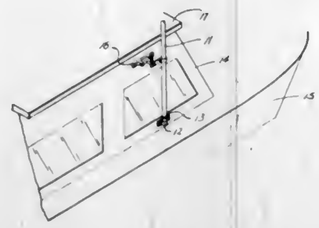
1. A device for adjustably positioning two members relative to each other, which members have registrable openings therein, said device comprising fastening means including a bolt element having a transversely extending head at one end and a longitudinal body portion extending through the registrable openings of the two members and a nut element threadedly engageable with the other end of said bolt element, one of said members having a recess around the opening therein sized to non-rotatably receive one of said bolt head and nut to permit securement of said two members upon tightening of said other of said bolt head and nut member, and selectively positionable eccentric means rotatably mounted on said bolt element intermediate said head and nut element and engageable in the opening of the other of the members to selectively position said other member relative to said one member in accordance with the selective positioning of said eccentric means on said bolt element, when said eccentric means is clamped in its selected position by tightening of said fastening means.

3,357,662
HOLDER FOR CAMPAIGN BUTTONS, FLAGS AND THE LIKE
Charles A. Peterson, Brainerd, Minn., assignor to Pan American Sulphur Company, Houston, Tex., a corporation of Delaware
Filed Feb. 15, 1966, Ser. No. 527,548
3 Claims. (Cl. 248—39)



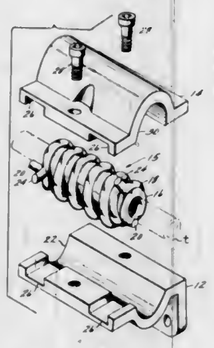
1. As a new article of manufacture, a bracket for temporarily supporting and displaying pennants, flags, ornamentally attractive political campaign buttons, self-identifying emblematic and symbolic badges and the like comprising a plate having means on one vertical side for holding and presenting a button or the like, having means on an opposite vertical side to hold and support the staff of a pennant-type flag, and having means at a bottom portion to retentively mount said plate on a marginal edge of a trunk lid, said first named means comprising a rivet and an accommodation hole for said rivet formed in a central areal portion of said plate, said second-named means comprising centrally apertured ear-like lugs struck out from said plate and laterally bent and paired for use, the means at the bottom of said plate comprising a pair of duplicate flanges disposed in spaced parallel relationship and projecting rearwardly at right angles from said plate and defining and providing an adapter and a third flange projecting forwardly at right angles from said plate and disposed in a plane below said lugs.

3,357,663
ANTENNA SUPPORT CLAMP ASSEMBLY
Leon H. Ivy, 2422 Tangley, Houston, Tex. 77005
Filed Oct. 11, 1965, Ser. No. 494,571
3 Claims. (Cl. 248—43)



1. An antenna support clamp assembly for supporting a lay-down type antenna mounted on a lay-down mount, said assembly comprising:
- an insulator base member having means for attaching to a support at a point spaced apart from said lay-down mount;
- swivel means connected to said base member for pivotal movement thereon;
- said swivel being generally T-shaped having a cross member and a central leg member, said cross member being pivotally connected to said base member for swinging said swivel between a generally horizontal supporting position and a generally vertical non-supporting position;
- adjustable friction lock means attached near the end of said swivel means; and
- separable latch means attachable to an antenna for latching engagement with said swivel means and having means for engagement with said friction lock means whereby said antenna may be detachably supported in a generally upright position by engagement of said friction lock means and said latch means, said latch means including a latch arm having a slot near one end thereof for receiving therein the free end of said leg member and adjustable clamp means near the other end thereof for securing said arm to an antenna.

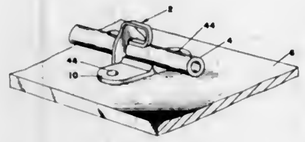
3,357,664
TUBE SUPPORTS
Howard M. Geyer, Dayton, Ohio, assignor to General Electric Company, a corporation of New York
Filed Oct. 14, 1965, Ser. No. 495,872
7 Claims. (Cl. 248—74)



1. A tube support comprising
a helical spring to be telescoped over a tube as if helically wound thereabout, and

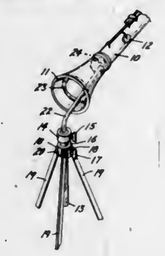
means clamping said spring relative to said tube and exerting an elongating force thereon causing the spring to firmly grip the tube substantially throughout a substantial helical length of the spring, said clamping means supporting the tube and spring at least at the extremities of the gripped length.

3,357,665
PIPE CLAMPS
William C. Hand, Kansas City, Mo., assignor to Inventions and Invention Consultants, Inc., Chicago, Ill., a corporation of Illinois
Filed Feb. 16, 1966, Ser. No. 527,916
8 Claims. (Cl. 248—74)



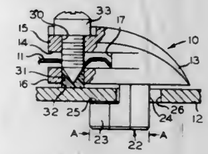
1. A clamp for holding an elongated member such as a pipe to a supporting structure; said clamp comprising a pipe-receiving portion having an aperture adapted to slidably receive the elongated member, a cradle projecting from and mounted rigidly with respect to the pipe-receiving portion, the cradle having a depressed surface located in alignment with the aperture and substantially parallel to the center axis of the aperture, and a tail portion attached to the pipe-receiving portion and extending laterally therefrom in outwardly spaced relation to the cradle, the tail portion being looped toward the cradle and under itself in the formation of a striking surface and a wedge-shaped end portion, the striking surface being located in outwardly spaced relation to the pipe-receiving portion and at an angle with respect to the wedge-shaped end portion, the wedge-shaped end portion being located in outwardly spaced substantially parallel relation to the depressed surface of the cradle and projecting into the aperture of the pipe-receiving portion adjacent the margin thereof so that when a force of a magnitude sufficient to deform the tail portion is applied to the striking surface the wedge-shaped end portion will engage the margin of the aperture and be cammed toward the depressed surface of the cradle as it moves partially through the aperture, whereby to force the elongated member tightly against the cradle.

3,357,666
CLARINET STANDS
John H. Smith, 1713 S. 8th St. 80906, and Bernard L. Ehrlich, 1505 Holmes Drive 80909, both of Colorado Springs, Colo.
Filed Mar. 4, 1966, Ser. No. 531,670
2 Claims. (Cl. 248—125)



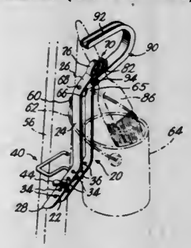
1. A stand for supporting a wood-wind instrument, of a type having a tubular body terminating in a flaring bell of increasing diameter at its lower extremity, in a playing position comprising:
- (a) an instrument rod having a vertical lower portion and an inclined upper portion extending upwardly and sidewardly at an acute angle to the vertical axis of said lower portion;
- (b) a circular bell ring eccentrically surrounding said inclined portion, the inner circumference of said bell ring being fixedly secured to said rod to maintain the bell ring at right angles to said inclined portion, the outer circumference of said bell ring being unobstructed so that it may make annular contact with the larger diameter portion of the bell of said instrument;
- (c) a circular body ring of less diameter than said bell ring similarly surrounding and similarly mounted on said inclined portion in spaced and parallel relation to and above said bell ring, the outer circumference of said body ring being unobstructed so that it may make annular contact with a smaller diameter portion of the bell of the instrument; and
- (d) an adjustable means supporting the lower portion of said instrument rod in a vertical position.

3,357,667
LICENSE PLATE ATTACHMENT
Earl M. Trammell, Jr., Ladue, Mo. (P.O. Box 435, St. Louis, Mo. 63166)
Filed July 28, 1965, Ser. No. 475,470
14 Claims. (Cl. 248—201)



1. In a license plate attachment:
- (a) a support plate provided with an opening,
- (b) a fixture comprising a first body portion and a second body portion providing a side-opening slot therebetween receiving the edge of the license plate,
- (c) a fastening means carried by one of the body portions and extending across the slot and through the license plate edge and into the other body portion to attach the license plate, and
- (d) means extending through the support plate opening and connecting the fixture to the support plate.

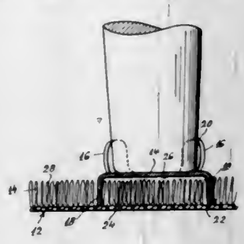
3,357,668
PAINT PAIL BRACKET
Ralph E. Carrel, 3613 Frontier Drive, Richmond, Va. 23225
Filed Oct. 22, 1965, Ser. No. 500,887
8 Claims. (Cl. 248—210)



1. A support means comprising an elongated rigid body portion having a lower end adapted to engage a ladder or the like, said body portion including an upper end, support means at the upper end of said body portion, hook

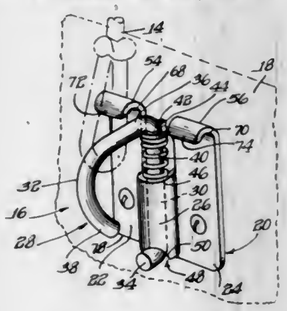
means adjustably mounted with respect to said body portion so that the support means may be used with different structures, said hook means defining a hook portion to receive a part of a ladder or the like, and said hook means being pivotally interconnected with said body portion adjacent the lower end thereof.

3,357,669
RUG PROTECTOR FOR FURNITURE
Carl D'Amato, 8784 23rd Ave., Brooklyn, N.Y. 11214
Filed Sept. 23, 1965, Ser. No. 489,719
2 Claims. (Cl. 248—346.1)



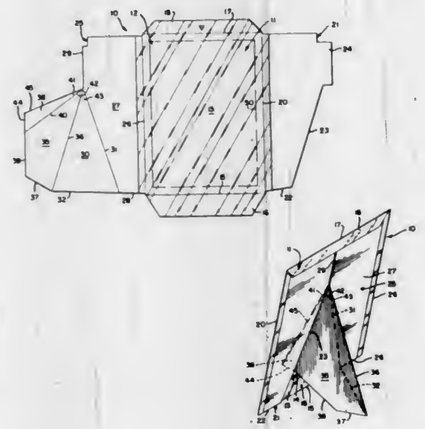
1. A furniture coaster for supporting furniture in an elevated position above a floor covering having a woven backing surfaced with pile fibres without damage to the floor covering, said coaster including a circular flat furniture-supporting platform, a plurality of spaced lugs depending from the periphery of the platform, said lugs adapted to separate and pass between the pile fibres with the ends in load-transferring engagement upon the backing without passing therethrough, when the platform is subjected to furniture load, and a plurality of spaced lugs upstanding from the periphery of the platform offset from the depending lugs, said upstanding lugs in non-displacement engagement with the leg of the article of furniture being supported, said upstanding and depending lugs having curved end edges for interchange use either as load-transferring engagement lugs or non-displacement engagement lugs.

3,357,670
TWO-WAY SPRING LOCK HOOK
Charles O. Larson, Sterling, Ill., assignor to Chas. O. Larson Co., Sterling, Ill., a corporation of Illinois
Filed July 6, 1966, Ser. No. 563,189
11 Claims. (Cl. 248—361)



1. In a tiedown assembly, the combination comprising: base means for attachment to a primary structure; a load tiedown engaging means mounted on said base means, said load tiedown engaging means being pivotable from a first storage position adjacent to said base means to a second operational position extending outwardly from said base means; a first retaining means supported by said base means for holding said load tiedown engaging means in said first storage position; a second retaining means supported by said base means for holding said load engaging means in said second operational position; and a spring means supported by said base means, said spring means urging said load tiedown engaging means into engagement with said first retaining means when said load tiedown engaging means is in said first storage position and said spring means urging said load tiedown engaging means into engagement with said second retaining means when said load tiedown engaging means is in said second operational position.

3,357,671
DISPLAY EASEL
Edward M. Ketterer, Buffalo, N.Y., assignor to The Colad Company, Inc., Buffalo, N.Y., a corporation of New York
Filed May 4, 1966, Ser. No. 547,646
6 Claims. (Cl. 248—459)

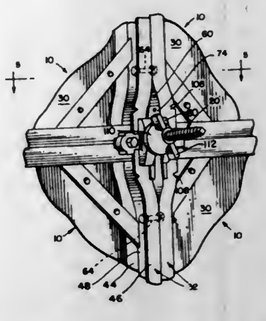


1. A display easel capable of being manually folded and unfolded, comprising, in its folded state,
(A) a body of foldable sheet material folded to provide
(a) an upright rectangular panel with its bottom forming a first bottom edge and the rectangular panel being adapted to form the upright front face of the easel,
(b) a first back panel connected to one upright edge of said rectangular panel by a first fold line and folded back against the reverse face of said rectangular panel and being formed to provide
(1) a second bottom edge extending from the bottom of said first fold line along the bottom of said rectangular panel
(2) a first outer edge extending upwardly from the outer end of said second bottom edge at an obtuse included angle thereto, and
(3) having a top part positioned above the upper end, of said first outer edge of
(c) a second back panel connected to the other upright edge of said rectangular panel by a second fold line and arranged against the reverse face of said rectangular panel and having
(1) a body part arranged against the reverse side of said rectangular panel and being formed to provide

(A) a third bottom edge extending from the bottom of said second fold line along the bottom of said rectangular panel,
(2) a first isosceles triangular panel of greater height than width arranged against the reverse side of said rectangular panel and having
(A) one longer edge connected to said body part by a third fold line extending upwardly from the outer end of said third bottom edge in upwardly diverging relation to said second fold line and
(B) its base edge forming a fourth bottom edge extending from the bottom of said body part along the bottom of said rectangular panel,
(3) a second isosceles triangular panel also arranged against the reverse side of said rectangular panel with
(A) one longer edge connected to the other longer edge of said first isosceles triangular panel by a fourth fold line and
(4) a wing arranged against the reverse face of said rectangular panel and
(A) connected by a fifth fold line to the edge of said second isosceles triangular panel opposite its said fourth fold line, and
(d) means uniting said top part of said first back panel to the body part of said second back panel,
(B) whereby upon pulling the bottom of said first isosceles triangular panel at its side remote from its said third fold line rearwardly away from said rectangular panel, it
(a) draws both said isosceles triangular panels into the form of a triangular pyramid one side of which is formed by said rectangular panel to support the latter in an upright position on a flat surface, and
(b) draws said wing so that said fifth hinge line is brought into coincidence with said first outer edge to maintain said triangular pyramid and
(C) upon pushing the rear part of the base of said triangular pyramid toward said retcangular panel, said second isosceles triangular panel slides between said rectangular panel and first back panel into coplanar relation with said body part and first isosceles panel of said second back panel.

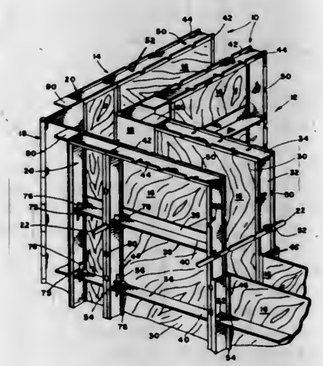
3,357,672
CONCRETE WALL FORM PANEL WITH PARTICULAR TIE ROD ASSEMBLY
Richard C. Capek, Downers Grove, Ill., assignor to Symons Mfg. Company, Des Plaines, Ill., a corporation of Delaware
Filed Aug. 7, 1964, Ser. No. 388,166
12 Claims. (Cl. 249—45)

8. In a concrete wall form side, in combination, a series of four rectangular upstanding form panels each of which comprises a rectangular panel facing and a continuous generally rectangular marginal reinforcing frame extending therearound and including opposed vertical and opposed horizontal frame bars, said panels being disposed in edge-to-edge relationship and arranged in a rectangular series and so that their four adjacent corners are in quadrilateral contiguity, said four adjacent corners having means associated therewith forming a clearance void, a she-bolt extending through said clearance void and projecting outwardly beyond said concrete wall form side, the outer end of said she-bolt being threaded, a clamping bracket loosely received on the threaded projecting end of the she-bolt, releasable interengaging means on



the she-bolt and bracket for locking said she-bolt and bracket against relative axial shifting movement, and a clamping nut threadedly received on the she-bolt and bearing against said clamping bracket.

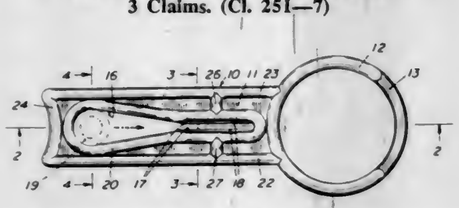
3,357,673
CONCRETE WALL FORM WITH A PARTICULAR PANEL HINGE ARRANGEMENT
Walter D. Williams, River Forest, Ill., assignor to Symons Mfg. Company, Des Plaines, Ill., a corporation of Delaware
Filed June 30, 1965, Ser. No. 468,520
1 Claim. (Cl. 249—194)



For use in a concrete wall form installation in the production of exposed angular wall corners ranging from a small acute inside angle to a large reflex outside angle, the combination of a pair of similar rectangular panels each of which is comprised of a plywood panel facing bounded by a rectangular marginal steel reinforcing frame including longitudinal and transverse frame members which extend laterally from one side of the panel facing, the longitudinal frame members being formed with respective series of longitudinally spaced slots therein, a panel hinge connecting one pair of opposed adjacent longitudnal edges of said panels together and permitting relative swinging movement of the panels toward and away from each other in either face-to-face or back-to-back relationship, said panel hinge comprising two elongated planar panel leaves hingedly connected together along adjacent proximate longitudinal edges by a piano-type hinge connection including interfitting alternately

arranged hinge eyes on the two leaves and a hinge pin loosely projecting through said hinge eyes, the distal longitudinal edge regions of said leaves being turned laterally to provide a pair of attachment flanges, said attachment flanges being formed with a series of longitudinally spaced slots therein the spacing of which is commensurate with the spacing of the slots in said adjacent longitudinal frame members, said attachment flanges being substantially coextensive with and bearing against the adjacent frame members with the slots thereof in paired register with the slots in the adjacent frame members and with the panel leaves of the hinge extending in coplanar and contiguous edge-to-edge relationship with respect to the plywood panel facings, fastening devices projecting through the paired slots and serving to draw together the attachment flanges of the panel hinge and the longitudinal frame members of the panels, and a series of longitudinally spaced gusset plates extending between each of said hinge leaves and its associated attachment flange and disposed in right angular on-edge relationship with respect to both the attachment flanges and leaves, said gusset plates on the two hinge leaves being staggered with respect to each other so that when the panel hinge is folded so as closely to approach its condition of minimum angularity, the gusset plates of the two hinge leaves will overlap one another.

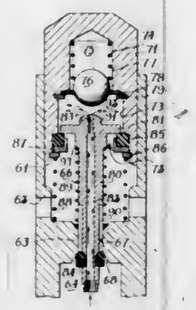
3,357,674
TUBING CLAMP
George Coanda, North Hollywood, and Roger A. Ekbom, La Crescenta, Calif., assignors to Pharmaseal Laboratories, Glendale, Calif., a corporation of California
Filed July 1, 1963, Ser. No. 291,996
3 Claims. (Cl. 251—7)



1. A flexible tubing clamp comprising: an elongated member having therein a longitudinal slot including a narrow section with inside surfaces adapted to pinch shut a flexible tube and a wide section adapted to surround an outer surface of a flexible tube while leaving a passage through the tube open, a transverse portion of the elongated member closing the end of the narrow section of said slot, said elongated member having disposed therein an opening adjacent to and spaced outwardly from an end of said narrow section of the slot, said opening being of sufficient size to accommodate a human thumb for manipulating said elongated member.

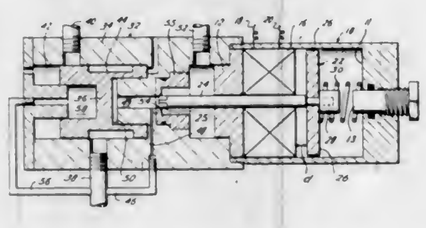
3,357,675
BUTTON BLEEDER VALVE
Karl A. Brandenberg, Alameda, Calif., and Loren R. Bart, Bryan, Ohio, assignors to Modernair Corporation, Angola, Ind., a corporation of Ohio
Filed Nov. 23, 1964, Ser. No. 413,564
11 Claims. (Cl. 251—23)

1. A button bleeder valve comprising a hollow body, a button slideably disposed within a first end of said body, said button having a recess is in its inner end, means normally urging said button to an extended position from said first end, means defining inlet and exhaust chambers in said body communicating through a passage including a valve seat, said inlet chamber being adapted for connection to a pressurized air source, said exhaust chamber being ported to atmosphere, a plunger slideably disposed within said hollow body, and projecting into said button and defining a sensing chamber therewith, a valve member carried by said plunger and movable therewith, said plunger being movable between a first position wherein said valve member engages said valve seat to block communication between said inlet and said exhaust chambers and being movable to a second position disengaging said valve member from said valve seat to establish communication between the inlet and exhaust chambers, said plunger having a passage extending between said inlet and said sensing chambers, means normally urging said plunger in the direction of the outer end of said button to said first position, said sensing chamber being placed



in communication with said exhaust chamber through said passage in the plunger when the button is initially depressed and the plunger is thereby moved to said second position, said valve member comprising means blocking said communication through said first mentioned passage when said button is held in its depressed position and said plunger is returned to its said first position, a closure element carried by said button, engageable with the adjacent end of said plunger to close the sensing chamber end of said passage of said plunger and resiliently urged with respect to said button in a direction toward said plunger, and means for returning said plunger to its first position when said sensing chamber and exhaust chamber are in communication.

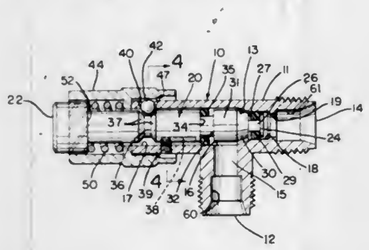
3,357,676
ACTUATING MECHANISM
Julius C. Boonshaft, Huntingdon Valley, Pa., assignor, by mesne assignments, to Weston Instruments, Inc., Newark, N.J., a corporation of Delaware
Filed Aug. 31, 1964, Ser. No. 393,110
2 Claims. (Cl. 251—30)



1. A mechanism for selective high speed opening and closing of a fluid passage having high-pressure fluid therein, comprising:
- a passageway having a source of high-pressure fluid connected to one side thereof, and a large dumping port connected to the other side thereof,
- a shaft mounted for longitudinal movement between three mutually adjustably spaced positions,
- an enlarged head portion at one end of said shaft,

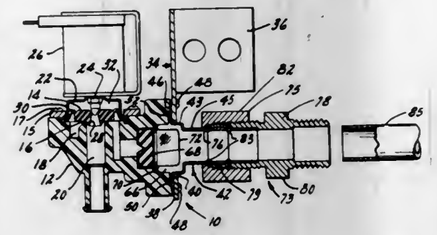
- an electromagnet adjacent to said enlarged head portion, said electromagnet having a characteristic of rapid demagnetization,
- said mechanism having a first position wherein said electromagnet is energized and said enlarged head portion is pulled into contact with said electromagnet, said shaft having a length so that in said first position, the other end of said shaft is within and closes said passageway against said high-pressure fluid,
- said mechanism having a second position wherein said electromagnet is unenergized, and said shaft is forced completely clear of said passageway by said high-pressure fluid and said enlarged head portion is so far removed from said electromagnet that the field of said electromagnet when energized is incapable of pulling said enlarged head portion into contact with said electromagnet against the force of said high-pressure fluid, the extreme distance of said enlarged head portion from said electromagnet in said third position being determined by adjustable stop means,
- a third position wherein said electromagnet is unenergized and said enlarged head is out of contact with said electromagnet but close enough so that the field of said electromagnet can pull said enlarged head into contact with said electromagnet when energized against the force of said high-pressure fluid, said shaft and said passageway being so spaced so that said shaft just clears said passageway,
- adjustable spring means bearing against said enlarged head and biased to force said enlarged head and shaft into said third position from said second position.

3,357,677
VALVE WITH DETENT LOCK
Jonathan Tasker, Ann Arbor, Mich., assignor to Crawford Fitting Company, Cleveland, Ohio, a corporation of Ohio
Filed Mar. 20, 1964, Ser. No. 353,339
7 Claims. (Cl. 251—106)



1. A positive acting on-off valve comprising body means having an inlet port and an outlet port communicated by a flow passage,
- a wall portion of said body means defining an elongated cylindrical valve seat portion in said flow passage,
- bore means in said body means intersecting said flow passage adjacent said valve seat at a first end of said bore means,
- elongated stem means slidably mounted in said bore means and said flow passage with an end of said stem means projecting from a second end of said bore means to receive forces for moving said stem means to open and closed positions,
- first sealing means slidably sealing said stem means and said valve seat when said stem means is in said closed position and permitting flow through said flow passage between said stem means and said valve seat when said stem means is in said open position,
- second sealing means slidably sealing said stem means and said bore means,
- detent means for selectively locking said stem means in closed poition and
- a sleeve means slidably mounted on said body means to interact with said detent means to alternately release and lock said detent means.

3,357,678
MECHANISM FOR MOUNTING A LIQUID VALVE
Joseph James Dyki, Inkster, Mich., assignor to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware
Filed July 26, 1965, Ser. No. 474,602
1 Claim. (Cl. 251—148)

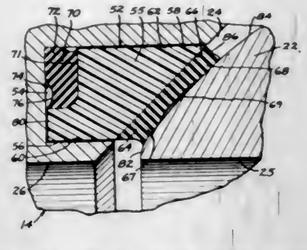


In combination: a molded plastic valve body having a face provided with an inlet flow opening; a thin-walled tubular metal coupling member of uniform wall thickness from end to end, said member having an outwardly radiating flange engaged flatwise against said valve body face; an annular groove in said valve body face surrounding the flow opening; a deformable gasket positioned in said groove in sealing engagement with the groove surface and coupling member radial flange; a mounting bracket for the valve body comprising an apertured plate portion adapted to seat on a mounting surface, and a second plate portion having a hole therethrough; said metal coupling member having its flange sandwiched between the valve body face and the second plate portion, and having its tubular portion extending through the bracket hole; and securing devices operable to draw the valve body tightly against the aforementioned radial flange of the tubular metal coupling member; the tubular portion of the coupling member including a first relatively large diameter portion extending from the radial flange through the bracket hole, and a second relatively small diameter portion extending upstream of the first portion; said coupling member having a wall of sufficient thinness to permit its upstream end portion to be deformed incident to its being clamped in a tube fitting; the first relatively large diameter portion of the coupling member forming an internal pocket, the inlet flow opening in the face of the valve body having approximately the same diameter as said pocket whereby to form a continuation thereof; and a hat-shaped strainer screen having its rim portion mounted within the flow opening, said screen having a sufficient axial length so that it extends into the coupling member pocket; the amount of strainer screen within the pocket being approximately the same as the amount thereof within the flow opening.

3,357,679
MULTI-MATERIAL ELASTOMER SEAL
Ronald A. Gulick, Sugar Land, Tex., assignor to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Filed Oct. 31, 1963, Ser. No. 320,477
10 Claims. (Cl. 251—172)

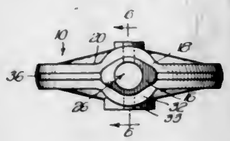
1. A plug valve comprising a valve body, closure members fixed to said body and defining with said body a valve chamber, a passage formed in each of said closure members and intersecting said valve chamber, plug means positioned within said valve chamber and movable from a

position blocking to a position permitting flow of fluid through said flow passages, means for moving said plug means, seat retaining means formed in said closure members, seat means movably positioned within said seat retaining means, said seat means comprising relatively rigid support means having a resilient face sealing means fixed



thereto, said face sealing means being engageable with said plug means at low pressure conditions to establish a plurality of relatively small sealing areas therewith, said seat means arranged to establish a single large area of sealing contact with said plug means at high pressure conditions.

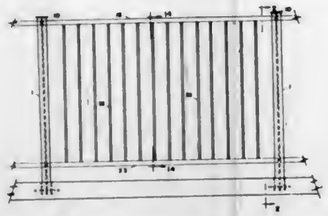
3,357,680
BUTTERFLY VALVE DISK
Hubert L. Williams, Hinsdale, Ill., assignor to Crane Company, Chicago, Ill., a corporation of Illinois
Filed Apr. 2, 1965, Ser. No. 444,965
4 Claims. (Cl. 251—305)



1. In a butterfly valve having a resilient seat in the valve body:
- a butterfly valve disk adapted to form a closure member in said valve with said resilient seat,
- said disk having an annular peripheral closure edge surface,
- each edge surface including bevel surfaces at each side of said disk,
- each said bevel surface defining a single geometric surface of revolution,
- a pair of oppositely spaced rotational bearing surfaces on said edge surface enclosed within said geometric surfaces of revolution, said bearing surfaces truncating said edge surface,
- each said bevel surface encircling one side of each of said bearing surfaces, and
- each said bevel surface being a single continuous uninterrupted surface all on said single geometric surface of revolution.

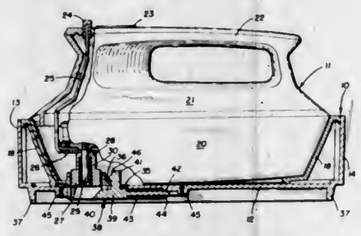
3,357,681
RAILING SYSTEM
Thomas Souza, Jr., 173 Kakahiaka St., Kailua, Oahu, Hawaii 96734
Filed Oct. 21, 1965, Ser. No. 511,574
7 Claims. (Cl. 256—65)

1. A structural system which comprises,
- a substantially U-shaped member,
- opposed inwardly and upwardly extending projections on the ends of said member,
- opposed slide retaining projections extending inwardly of the inner side surfaces of said member and near the ends of said member,
- adjacent inwardly and upwardly extending projections and slide retaining projections on each side surface of said member being spaced apart,
- and a slide member,



substantially U-shaped side ends on said slide member, the said U-shaped side ends fitting in the spaces between said inwardly and upwardly extending projections and slide retaining projections and in engagement with said projections to support said slide member on said U-shaped member.

3,357,682
FOOD MIXER WITH COMBINED BEATER EJECTOR AND LATCH RELEASE BUTTON ON HANDLE
Vincent A. Martens and Raymond B. Reynolds, Racine, Wis., assignors to Scovill Manufacturing Company, Waterbury, Conn., a corporation of Connecticut
Filed Oct. 31, 1966, Ser. No. 590,971
8 Claims. (Cl. 259—1)

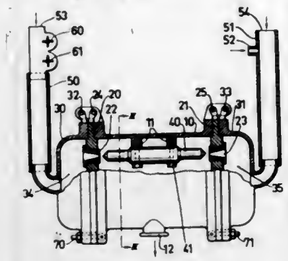


1. The combination of a food mixer and a tray for supporting the mixer when not in use, said mixer being provided with removable beaters, comprising
- (a) a mixer housing,
- (b) a combined beater ejector and latch release button mounted on the housing,
- (c) latching means mounted in the tray,
- (d) means on the mixer housing for engaging the latching means to lock the mixer in the tray, and
- (e) combined beater ejector and latch release mechanism in the housing actuated by said button for ejecting the beaters and for leasing the latching means from the mixer for removal of the mixer from the tray.

3,357,683
APPARATUS FOR GENERATING VIBRATIONS IN LIQUIDS
Rune Helmer Frykhult, Johanneshov, Sweden, assignor to Aktiebolaget A. Ekstroms Maskinaffar, Stockholm, Sweden, a joint-stock company of Sweden
Filed Apr. 20, 1966, Ser. No. 543,918
Claims priority, application Sweden, Apr. 22, 1965, 5,206/65
5 Claims. (Cl. 259—4)

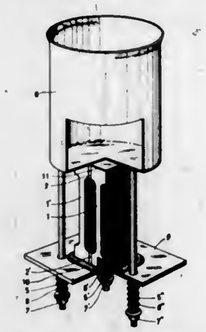
2. An apparatus for generating vibrations in liquids, preferably within the ultra-sonorous range, said apparatus

comprising a housing, opposed nozzle means within said housing, spaced away from each other, liquid inlet means at opposite end portions of said housing, liquid outlet means at an intermediary portion of said housing, said nozzle means defining in part liquid paths between said



liquid inlet means and said liquid outlet means, and at least one vibrator body provided between opposed nozzle means, to be submitted to vibrations by liquid flowing between said inlet means and said outlet means.

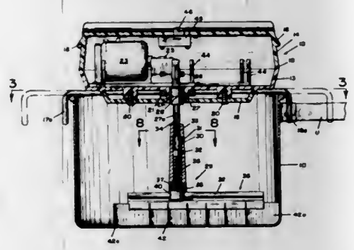
3,357,684
DEVICE FOR PRODUCING AND USING ULTRASONIC VIBRATIONS
Jan Kunnen, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Apr. 14, 1965, Ser. No. 448,071
Claims priority, application Netherlands, Apr. 17, 1964, 64—4,176
7 Claims. (Cl. 259—72)



7. Ultrasonic vibratory apparatus comprising a liquid container composed of rigid wave-transmitting material, an ultrasonic transducer having one end surface adjacent to the bottom wall of said container, and vibration transmitting means interconnecting said transducer and container comprising a thin layer of non-adhesive elastomeric material exhibiting plastic cold flow properties interposed between and in contact with said transducer one end surface and said container wall, said container and transducer being forced together to form a compressive pressure joint at the surfaces contacting said layer.

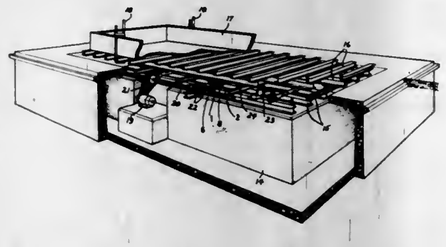
3,357,685
BATTERY-OPERATED STIRRING UNIT FOR SAUCE PANS AND THE LIKE
Anait A. Stephens, Redondo Beach, Calif. (410 Martin Lane, Beverly Hills, Calif. 90210)
Filed June 28, 1966, Ser. No. 561,181
2 Claims. (Cl. 259—122)

1. A battery-operated stirring unit for use with sauce pans or the like, comprising:
- a housing,
- a battery-operated motor in said housing,
- a stirring shaft depending through the bottom of said housing,
- a speed-reducing gear train operatively connecting said stirring shaft to the shaft of said motor,
- at least one battery in said housing electrically connected in circuit with said motor,
- a control switch in said circuit,
- an elongated stirring element,
- a connector at the lower end of said stirring shaft operatively supporting said stirring element,
- said connector including means enabling the longitudinal adjustment of said stirring element in a direction



substantially perpendicular to the axis of said stirring shaft to accommodate varying sauce pan diameters,
- adjustable means for supporting said housing on the upper rim of a sauce pan, comprising a pair of oppositely directed, telescoping yokes which are respectively projectible and retractible in a direction perpendicular to the axis of said stirring shaft,
- said telescoping yokes being interconnected by a rack and pinion mechanism for simultaneous adjusting movement in opposite directions, to accommodate varying sauce pan rim diameters.

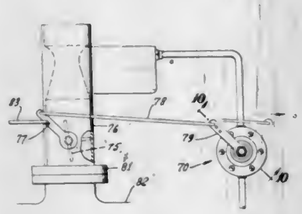
3,357,686
MACHINE FOR SHAKING MOULDS FILLED WITH CONCRETE
Hendrik J. Van Wuyckhuyse, Zwijndrecht, Netherlands, assignor to N.V. Schokbeton, Zwijndrecht, Netherlands, a limited-liability company
Filed Feb. 4, 1966, Ser. No. 525,195
Claims priority, application Netherlands, Feb. 5, 1965, 65—1,520
3 Claims. (Cl. 259—91)



1. A machine for shaking molds filled with concrete, comprising a stationary base, a table having means for securing a mold for a concrete article thereupon, means for guiding said table for free upon and down movement with respect to said base, cams rotatably mounted on said base beneath said table, a follower roller cooperating with each cam and carried by said table, and an abutment on said base in the path of downward movement of said table,

the profile of the circumference of each cam approximating at least one inclined sine curve, said curve extending around almost the entire periphery of each cam, the remaining part being composed of a short steep leg and a short lower section merging into the beginning of said inclined sine curve.

3,357,687
CALIBRATED ADJUSTABLE REGULATOR
Albert G. H. Vanderpoel, 14509 Van Ness Ave., Gardena, Calif. 90249
Filed June 28, 1965, Ser. No. 467,220
9 Claims. (Cl. 261—51)



1. For combination with a fluid pressure regulator including a chamber having inlet and outlet ports for circulating fluid therethrough, a check valve contained within the chamber for controlling said circulation, a diaphragm in the chamber and having one side exposed to receive pressure of fluid flowing past the check valve, and spring means at the opposite side of the diaphragm for urging the diaphragm in a direction to increase said circulation, an improved spring tension adjusting apparatus comprising:
a cap on the chamber,
a rotary member mounted on the cap at the spring side of the diaphragm and defining an axis of rotation which extends toward the diaphragm, said member being manually rotatable at the cap exterior,
a non-rotary member bodily movable within and relative to the cap and axially of said rotary member, but restrained against rotation about said axis,
at least three separate cam tracks on one of the members and spiraling about and lengthwise of said axis, said tracks openly facing in one direction along said axis and within the cap,
and at least three projections on the other of said members openly projecting in the opposite direction along said axis, said projections having terminals engaging the respective tracks at locations spaced about said axis and within the cap.

3,357,688
RECTIFIER FOR ABSORPTION REFRIGERATION SYSTEM
Eugene P. Whitlow, St. Joseph, Mich., assignor to Whirlpool Corporation, a corporation of Delaware
Filed Apr. 9, 1964, Ser. No. 358,514
3 Claims. (Cl. 261—114)

1. A rectifier suitable for limited space and functioning to separate solvent vapor from refrigerant vapor, comprising: a tower; a plurality of vertically spaced liquid retaining but gas permeable plates in said tower; a downcomer tube extending through each plate and maintaining a liquid level on each plate, each downcomer tube having an open upper end above its plate to receive overflow liquid from its said plate into said open end, and a liquid discharging lower end adjacent the next lower plate but spaced thereabove; means closing the lower end of each downcomer tube, and means providing lower end side passages from each downcomer tube, said side passages extending above said lower end closing means; a cup enclosing said lower end to receive liquid therefrom, said cup having a top edge above the liquid level on said lower

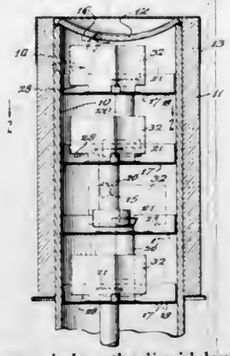
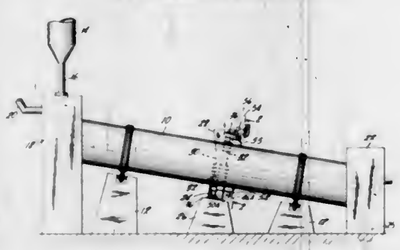


plate and a bottom below the liquid level on said lower plate, whereby the liquid flows laterally from said side passages into said cup and flows over the cup top edge onto said lower plate.

3,357,689
APPARATUS FOR FEEDING SOLID MATERIALS INTO A ROTARY KILN
Arne Georg Arnesen, Vagsbygd, near Kristiansand, and Toralv Basen, Mo i Rana, Norway, assignors to Elektrokemisk A/S, Oslo, Norway, a corporation of Norway
Filed Mar. 16, 1965, Ser. No. 440,203
Claims priority, application Norway, Mar. 17, 1964, 152,469
11 Claims. (Cl. 263—33)

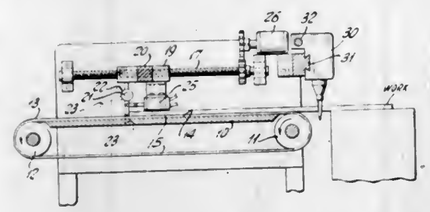


11. Apparatus for feeding solid material into a rotary kiln which comprises means for holding a supply of the solid material adjacent the exterior of the kiln, at least one conduit extending through the kiln wall and having a scoop at its end outside the kiln, said scoop having an opening through which solid material may pass into said conduit and being arranged to excavate a portion of said supply of solid material during each revolution of the kiln, a second opening adjacent said scoop opening and also leading into said conduit, means for closing said scoop opening, means for closing said second opening, and means for independently moving said closure means into and out of the respective closing positions, whereby excavated solid material may be carried to a selected angular position and then admitted into said conduit for delivery into the kiln.

3,357,690
SQUARE SHEARING DEVICE
Tibor A. Firestone, 1270 5th Ave., New York, N.Y. 10029
Filed May 4, 1964, Ser. No. 364,631
4 Claims. (Cl. 266—23)

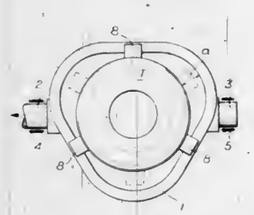
1. An apparatus for cutting end pieces successively from lengths of flat metal material of varying widths and

thicknesses, comprising supporting means for a length of said material including a plurality of laterally spaced, parallel, movable belts on which the end portion of said length rests for longitudinal movement, releasable stop means having rigid stop elements extending between said belts along a line intermediate the ends for engagement by the end edge of said length of metal material to limit longitudinal movement of said material, said stop means including means to stop movement of said belts, cutting means comprising a high energy stream cutter movable in opposite directions in a line transversely of said length



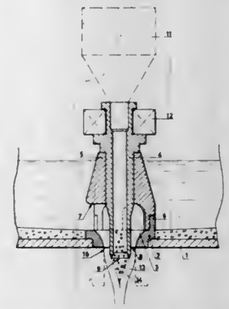
spaced from and parallel to the line of said stop means to sever the end portion from the remainder without the exertion of mechanical force so that said stop means and said cutting means form a fixed length of an end piece on each operation, means to release said stop means and start said conveyor after each cutting operation so that said conveying means moves the severed piece beyond said stop means and the new end edge of said length moves into engagement with said stop means, and said cutting means severs a new end portion on transverse movement in the opposite direction.

3,357,691
RELEASABLE BEARING FOR CRUCIBLES OR CONVERTERS
Paul Metz, Duedelingen, Luxembourg, and Peter Puxkandl, Linz, Austria, assignors to Vereinigte Osterreichische Eisen- und Stahlwerke Aktiengesellschaft, Linz, Austria, a corporation of Austria
Filed Sept. 23, 1964, Ser. No. 398,675
Claims priority, application Austria, Sept. 27, 1963, A 7,787/63
5 Claims. (Cl. 266—35)



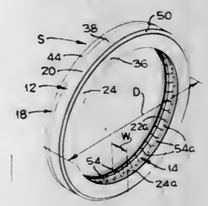
5. A releasable mounting for a refining vessel comprising a trunnion ring for supporting said vessel, said trunnion ring having an inner periphery of polygonal shape including substantially straight sides and connecting corners, pairs of upper and lower supporting members on said vessel extending outwardly therefrom, said supporting members overlapping said trunnion ring when said supporting members are directed toward said sides to support said vessel on said trunnion ring, and said supporting means being disposed inwardly of said corners to release said vessel from said trunnion ring when said vessel is rotated relative to said trunnion ring to direct said supporting members toward said corners.

3,357,692
DEVICE FOR FEEDING ADDITIONAL MATERIALS INTO A STREAM OF MOLTEN METALS
Hermanus Bakkerus, Voorburg, Netherlands, assignor to Nederlandse Organisatie voor Toegepast-Natuurwetenschappelijk Onderzoek ten behoeve van Nijverheid, Handel en Verkeer, The Hague, Netherlands, a corporation of the Netherlands
Filed Oct. 5, 1964, Ser. No. 401,612
Claims priority, application Netherlands, Oct. 14, 1964, 299,266
7 Claims. (Cl. 266—39)



1. In combination with a container for molten metals, a device for feeding additive materials into a stream of the molten metals, which additive materials have lower boiling points or lower specific weights or both than the molten metals, said device comprising, in combination:
means disposed in the bottom of said container and forming an annular outlet channel for the molten metal stream, the lowermost portion of said outlet channel forming an orifice, said outlet channel having a transverse cross section which narrows progressively toward and up to said orifice; and
means forming a cylindrical feeding chute for said additive materials and extending from within said container substantially coaxially through said outlet channel, said feeding chute being made of heat-resistant material and extending past said orifice to terminate in a lower rim.

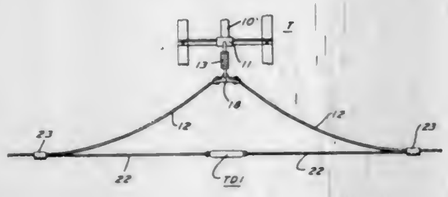
3,357,693
ENERGIZER FOR FLUID SEAL
Landis H. Perry, Newport Beach, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Original application May 28, 1963, Ser. No. 283,730, now Patent No. 3,301,568, dated Jan. 31, 1967. Divided and this application Dec. 6, 1966, Ser. No. 599,614
5 Claims. (Cl. 267—1.5)



1. A seal energizer comprising an arcuate base portion concentric with a line of reference, and a plurality of pressure applying members connected to the base portion and collectively concentric with said reference line, said members being resiliently flexible relative to the base portion, each member being in obtuse angular relation to said base portion in the unstressed condition of such member, each of said members having opposite side edges and

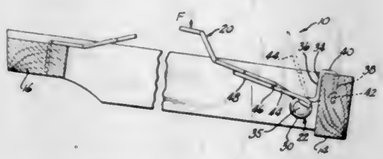
a terminal edge joining the side edges at corners, the terminal edges of all the members substantially lying on an arcuate pressure line which is concentric with said reference line, adjacent side edges of adjacent members converging from said base portion to said terminal edges, and adjacent corners of adjacent members being contiguous.

3,357,694
WAVE DAMPER FOR OVERHEAD TRANSMISSION CONDUCTORS
Allan H. Kidder, 118 Owen Ave., Lansdowne, Pa. 19050; Richard A. Mulford, 1231 Wisteria Drive, Malvern, Pa. 19355; and Frank Kahn, 1865 Edmund Road, Abington, Pa. 19001
Filed Sept. 16, 1965, Ser. No. 487,830
11 Claims. (Cl. 267—70)



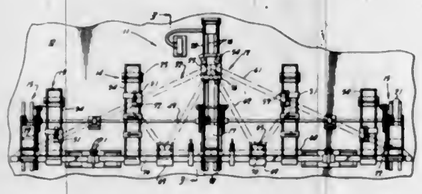
1. A wave damper for suppressing galloping oscillations in an overhead transmission conductor comprising a device having end connectors for disposition in connected relation to a conductor, said device having energy absorbing and dissipating means comprising a resilient member with an externally disposed elastomeric sheath having capacity for producing hysteresis effects, said device being so related to said conductor that oscillations thereof produce stresses in said resilient member and said elastomeric sheath, whereby hysteresis effects in said elastomeric sheath dissipate an increment of energy during each cycle of oscillation.

3,357,695
SEAT SPRING ASSEMBLY UTILIZING AUXILIARY COIL SPRING
Walter V. Slominski, Lexington, Ky., assignor to Hoover Ball and Bearing Company, Saline, Mich., a corporation of Michigan
Filed Apr. 15, 1966, Ser. No. 542,829
6 Claims. (Cl. 267—110)



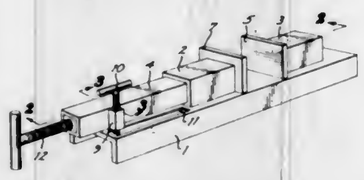
1. A spring assembly for seats comprising a longitudinally extending spring strip adapted to support a seating load directed substantially perpendicularly thereto on one side and terminating at one end in a transversely extending section, a coil spring having the coils therein extended about said section, mounting means for said assembly integral with one end of said coil spring, said mounting means including a first leg disposed closely adjacent said one coil end and extending substantially perpendicularly relative to said spring strip so as to be substantially parallel to said load direction so that said load will have a minimum bending effect on said leg, and arm means integral with the opposite end of said coil spring extended longitudinally of said strip and engaged with the opposite side of said strip, said coil spring being preloaded so that said arm means exerts a force on said strip in a direction to resist said load and such that when said strip is subjected to said load said arm means is moved in a direction to tighten said coils.

3,357,696
ROOF TRUSS FABRICATING APPARATUS
George L. Mayo and Jimmie Webb Jordan, Fort Worth, Tex., assignors to Clary Corporation, San Gabriel, Calif., a corporation of California
Filed Aug. 24, 1965, Ser. No. 482,062
6 Claims. (Cl. 269—61)



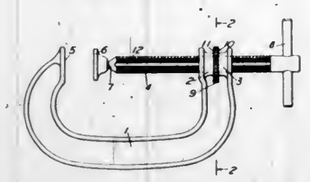
1. Fabricating apparatus comprising a frame for supporting components of a structural unit to be secured together,
means supporting said frame for pivotal movement about a first horizontal axis from a first position to a second position,
a sector,
means supporting said sector for movement about a second horizontal axis located rearwardly of said first axis,
a link,
means pivotally connecting said link adjacent one end to said frame and adjacent the other end to said sector, and
means for rocking said sector whereby to rotate said frame from said first position to said second position,
said sector and link forming a shorter lever arm relative to said frame when said frame is in said first position than when said frame is in said second position.

3,357,697
BENCH VISE
Francis A. Zanitsch, 706 S. Bruce St., Anaheim, Calif. 92804
Filed Aug. 23, 1965, Ser. No. 481,725
6 Claims. (Cl. 269—203)



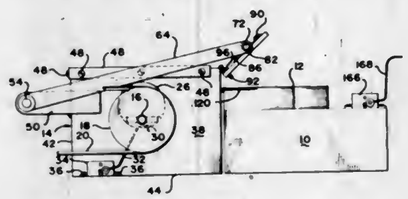
1. A vise comprising a base, a pair of spaced sleeves fixedly attached to the base and in alignment with each other, a first jaw mounted in one of said sleeves, a bar slidably mounted in the other sleeve, means on said bar engageable with the base to adjustably fix the bar on the base, a second jaw slidably mounted in said bar opposite the first jaw, and means including an adjusting screw threaded into the bar for moving the second jaw.

3,357,698
C-CLAMP
George Flynn, Durham City, England, assignor to C. & J. Hampton Limited
Filed Sept. 20, 1965, Ser. No. 488,605
3 Claims. (Cl. 269—221)



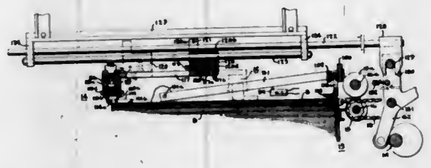
1. A C-clamp comprising a strongback, an anvil provided at one end of said strongback, an internally screw-threaded portion provided at the other end of said strongback, a screw associated with said threaded portion, said portion being provided with a slot transverse to the screw axis, a wheel received in said slot, said wheel being provided with an aperture through which said screw passes, said screw having a longitudinal relief of its circular profile and means presented by said aperture in said wheel to engage said relief.

3,357,699
DEVICE FOR SEPARATING STACKED SHEETS
John G. Attwood, Oak Park, Ill., assignor to Union Special Machine Company, Chicago, Ill., a corporation of Illinois
Filed Aug. 3, 1965, Ser. No. 476,964
30 Claims. (Cl. 271—18)



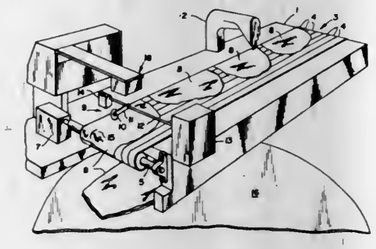
1. A sheet separator comprising means for supporting a plurality of sheets in stacked relation, means adapted for insertion between selected ones of sheets in a stack, means engageable with a terminal sheet of a stack for indexing said means adapted for insertion and means for displacing said means engageable after indexing said means adapted for insertion.

3,357,700
BLANK FEEDER WITH ADJUSTABLE STACK HOLDER
John B. Bradicich, Warner, N.H., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed June 21, 1963, Ser. No. 289,528
21 Claims. (Cl. 271—43)



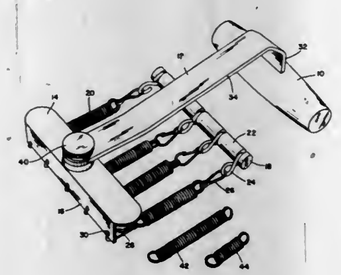
10. A machine for storing and sequentially feeding the uppermost one of a stack of blanks to a box forming machine comprising a blank feeding mechanism, an elevator for raising such stack to position the uppermost one of the blanks for engagement with said feeding mechanism, blank guides engageable with corners of the stack of blanks, means for simultaneously adjusting said guides toward and away from the longitudinal center of the box forming machine to locate the center of the blank with that of the machine, and other blank guides engageable with the sides of the blanks for laterally centering the blanks as they are fed to the box forming machine.

3,357,701
CLOTH STACKING DEVICE
William C. Cremer, 2850 Leizs Bridge Road, Reading, Pa., 19605
Filed Oct. 11, 1966, Ser. No. 585,966
6 Claims. (Cl. 271—68)



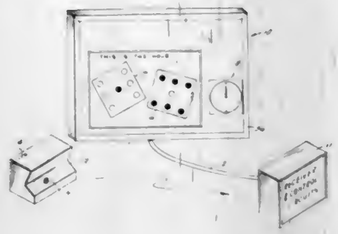
1. In a fabric processing line having a continuous belt and pulley for moving cloth through various processes, means for stacking cloth comprising the combination of a plurality of said belts in closely adjacent, side-by-side relationship, a wedging arm to wedge said cloth between said belts, and a release bar for separating said belts when beyond said pulley to release and stack said cloth at a predetermined position.

3,357,702
GRIP EXERCISING DEVICE
Robert R. Van Saders, 537 North Ave., Westfield, N.J. 07090
Filed Sept. 7, 1965, Ser. No. 485,279
4 Claims. (Cl. 272—68)



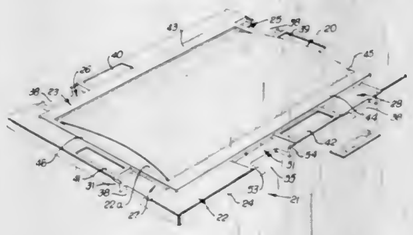
1. Exercising device comprising a handle grip, a cantilever strut having an abutment on said handle grip intermediate the ends thereof and extending transversely therefrom, a crosspiece pivoted intermediate its ends on the outer end portion of said cantilever strut, a complementary handle grip carried by said crosspiece, tension springs connecting said complementary handle grip to said crosspiece at spaced intervals therealong, and means for locking said crosspiece in selected angularly disposed positions with respect to said cantilever strut.

3,357,703
COMBINED CLOCK AND CHANCE DEVICE
Frederick A. Hurley, Miami, Fla., assignor to Elliott & Evans, Inc., a corporation of Florida
Filed Sept. 8, 1964, Ser. No. 394,761
11 Claims. (Cl. 273—138)



11. A combination dice clock and chance device comprising a display panel disposed for view by players and having thereon two means each representative of a die, each means having spaced areas adapted to be illuminated when energized; means responsive to player actuation for energizing by chance certain of said spaced areas; timer means; control means connected to said timer means and said spaced areas, said control means being operative, when the device is not responding to player actuation, to energize selected ones of said spaced areas so that the total number of areas which are illuminated is equal to the hour of the day.

3,357,704
DUPLICATE BRIDGE BOARD
Dean W. Myers, Newport Beach, Calif., assignor to Frederick H. Flam, Tarzana, Calif.
Filed Sept. 24, 1962, Ser. No. 225,684
2 Claims. (Cl. 273—148)



1. In combination: a flexible data card having a series of discrete regions for placement by the teams of information corresponding to their scores; a duplicate bridge board having pockets for reception of playing cards, said board providing a frame for reception of the data card; said frame having edges forming an opening, the dimension between two opposite edges of the frame being less than the corresponding dimension of the data card; and means forming slots beneath said two edges for insertion and removal of the data card by flexure of said data card.

3,357,705
GOLF PRACTICE PROJECTILE
Roger M. Blanchard, Tucson, Ariz., assignor of one-third to Albert E. Blanchard, Temple City, Calif.
Filed Nov. 2, 1964, Ser. No. 408,027
1 Claim. (Cl. 273—199)

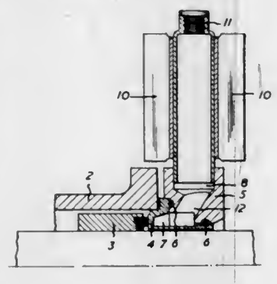
A golf practice device comprising:

a pair of spherical members joined in spaced apart relationship by a flexible member, each of said spherical members being of the approximate size and weight of a regulation golf ball,



said flexible member being about 5 to about 12 inches in length and having a maximum cross section less than the diameter of said spheres, said flexible member being substantially longitudinally inelastic so that it does not stretch appreciably when said device is struck and propelled by a fully swung golf club and substantially transversely flexible and resilient so that it bends one way and than another when said device is struck and propelled by a fully swung golf club, said device, when struck with a full swing of a golf club, substantially duplicating the directional line of flight of a regulation golf ball while absorbing sufficient of the energy of the impact of said club to reduce the length of travel of said device to substantially less than the travel of a regulation golf ball struck with the same force.

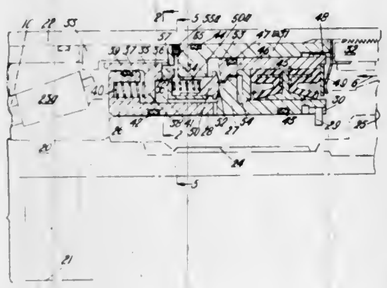
3,357,706
FACE SEAL WITH SELF-CONTAINED COOLING
Samuel Clifford Walter Wilkinson, Cookham, England, assignor to Crane Packing Limited, Slough, Buckinghamshire, England, a British company
Filed Jan. 7, 1965, Ser. No. 424,069
Claims priority, application Great Britain, Jan. 7, 1964, 652/64
4 Claims. (Cl. 277—15)



1. In a rotary mechanical face seal assembly of the kind comprising relatively rotatable annular seal face members urged into mutual rubbing contact over radial faces thereof and associated respectively with a shaft and with a housing wall, provision being made for circulating a cooling fluid past the seal face members to remove heat generated at their rubbing faces, the improvement comprising an annular groove in that seal face member which is associated with the housing wall, said groove defining a passage isolated from the rubbing face of that member,

and a heat-exchange container external to said housing wall and having a heat-dissipating external surface exposed directly to atmosphere and to no other external fluid, flow and return connections being provided between said heat-exchange container and said passage to define an independent closed fluid circuit, and a heat-exchange fluid circulating in said circuit.

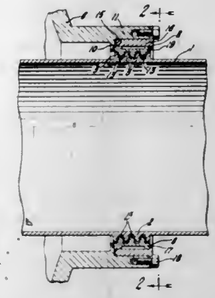
3,357,707
SHAFT SEALING SYSTEMS
Frank Whittle, Walland Hill, Chagford, and John Frank Saunders, Bristol, England; said Saunders assignor to Bristol Siddeley Engines Limited, Bristol, England, a British company
Filed July 7, 1965, Ser. No. 470,040
Claims priority, application Great Britain, July 10, 1964, 28,663/64
12 Claims. (Cl. 277—28)



1. A seal assembly for insertion in an annular space between relatively rotatable shaft and casing parts, to prevent escape of fluid from a high pressure end of the said space to a low pressure end, comprising inner and outer sleeve members for fitting on the shaft and in the casing respectively, two sealing devices each acting between the inner and outer sleeve members and separated by an inter-seal space, positive displacement pumping means arranged between the innermost inner sleeve surface and the outermost outer sleeve surface and having an inlet opening from the inter-seal space and an outlet opening to the high pressure side of the sealing device at the high pressure end and including an inlet valve and an outlet valve, pump driving means arranged so as to drive the pumping means during relative rotation of the sleeves, the pumping means preventing the pressure in the inter-seal space substantially exceeding the pressure at the low pressure end of the assembly while there is relative rotation between the inner and outer sleeves, and control means in the assembly responsive to pressure difference across the sealing device at the low pressure end and arranged to control a flow past the sealing device at the high pressure end so as to prevent the pressure in the inter-seal space being less than the pressure at the low pressure end of the assembly, at least while there is relative rotation between the inner and outer sleeves.

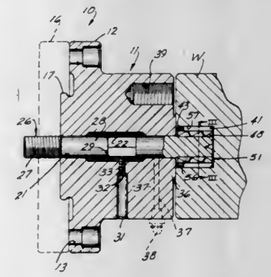
3,357,708
LABYRINTH SEAL
Max O. Parr, Indianapolis, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 17, 1965, Ser. No. 488,206
9 Claims. (Cl. 277—56)

1. A labyrinth seal comprising, in combination, an outer member having an internal generally cylindrical surface, an inner member having an external generally cylindrical surface disposed within the said internal surface, circumferential ridges defining labyrinth seal members on said inner member and extending from the said surface thereof, a resilient demountable split ring mounted on said outer member and having circumferential flanges extending from the inner surface thereof and into the grooves defined between said ridges, said ring and flanges being



changeable between an operative and an assembly diameter, and means including a positioner ring disposed radially between said outer member and said split ring retaining said split ring on said outer member in its operative diameter.

3,357,709
EXPANDABLE MANDREL FOR GRIPPING A WORKPIECE
James R. Buck, Ross Township, Kalamazoo County, Mich., assignor to Buck Tool Company, Kalamazoo, Mich, a corporation of Michigan
Filed Oct. 30, 1964, Ser. No. 407,750
7 Claims. (Cl. 279—2)



1. An expandable mandrel operable with a drawbar and adapted for gripping a workpiece by inserting a portion of the mandrel within an opening formed in said workpiece, the combination comprising:

a mounting member adapted to have one end thereof affixed to the face plate of a machine tool, said mounting having an opening therethrough and further having an abutment face means on the other end thereof adjacent said opening and extending transversely to the longitudinal axis thereof;

a spindle mounted in said mounting member opening and being axially movable with respect to said mounting member, one end of said spindle adapted to be connected to said drawbar, the other end of said spindle extending beyond said abutment face means;

radially expandable sleeve means telescoped over the extending end of said spindle with one end of said sleeve means extending at least as far forwardly as said spindle so as to define the forwardmost extent of the mandrel, the other end of said sleeve means being positioned adjacent and in abutting engagement with said transverse abutment face means, said sleeve

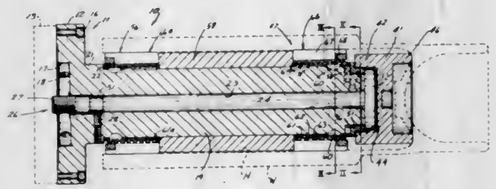
means further having an outside diameter whereby said sleeve means is adapted to be snugly but slideably disposable within said workpiece opening;

ramp means in opposed slideable contact disposed on and between said sleeve means and the extending end of said spindle for causing radial movement of said sleeve means in response to axial movement of said spindle; said sleeve means abutting said abutment face means whereby subsequent axial movement of said spindle causes only radial movement of said sleeve means;

said transverse abutment face means on said mounting member extending beyond the outer periphery of said sleeve means so as to contact and abut against one end of the workpiece for positioning same relative to the sleeve means when the workpiece is slideably received over and mounted on the sleeve means;

whereby said workpiece is adapted to be mounted on said mandrel with said sleeve means being received within said workpiece opening, one end of said sleeve means and said workpiece being in abutting engagement with said abutment face means whereby axial movement of said spindle by said drawbar causes said sleeve means, by reason of said ramp means, to move only in a radial direction whereby said sleeve means expands and uniformly grips the periphery of said workpiece opening, the mandrel thus rigidly and securely holding said workpiece.

3,357,710
EXPANDABLE MANDREL
James R. Buck, Ross Township, Kalamazoo County, Mich., assignor to Buck Tool Company, Kalamazoo, Mich., a corporation of Michigan
Filed Oct. 30, 1964, Ser. No. 407,751
10 Claims. (Cl. 279—2)



1. In an expandable mandrel supporting a workpiece, the combination comprising:

an elongated arbor;

first and second axially spaced expandable units disposed on said arbor;

said first expandable unit comprising a cylinder mounted on said arbor, a sleeve telescoped loosely on said cylinder and relatively slideable ramp means disposed on and radially between said sleeve and cylinder in opposed contact so that relative axial movement in a given direction therebetween results in expansion of said sleeve;

said second expandable unit comprising a cylinder mounted on said arbor, a sleeve telescoped loosely on said cylinder and relatively slideable ramp means disposed on and radially between said sleeve and cylinder in opposed contact so that relative axial movement in said given direction therebetween results in expansion of said sleeve;

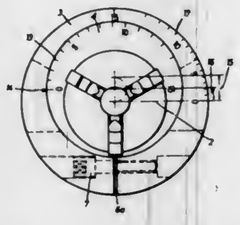
abutment means axially fixed with respect to said arbor for axially engaging one of the sleeve and cylinder of the first expandable unit at one end thereof, said one end facing axially outwardly away from said second expandable unit;

actuating means axially movable with respect to said arbor toward said abutment means, said actuating means being axially engageable with one of the sleeve and cylinder of the second expandable unit at one end thereof, said one end facing axially outwardly away from said first expandable unit, said first and second units being disposed axially between said abutment means and said actuating means and so arranged that movement of said actuating means toward said abutment means exerts an axially compressive force upon said expandable units for radially expanding same;

a spacer member slideably mounted on said arbor and disposed between said first and second expandable units, one end of the spacer member being in abutting contact with the other of the sleeve and cylinder of the first unit at the other end thereof, the other end of said spacer member being in abutting contact with the other of the sleeve and cylinder of the second unit at the other end thereof;

whereby axial movement of said actuating means will effect radial and axial movement of the second expandable unit, which in turn will effect axial movement of the spacer member, the spacer member effecting radial and axial movement of the first expandable unit.

3,357,711
ECCENTRICALLY ADJUSTABLE CHUCK
Walter Ernst Fischer, Junkerweg 5, Stuttgart-Stammheim, Germany
Filed Jan. 5, 1965, Ser. No. 423,513
5 Claims. (Cl. 279—6)



1. An eccentrically adjustable chuck comprising a flange adapted to mount the chuck on a machine tool, an outer ring having an eccentric bore therethrough positioned in said flange, an inner ring having an eccentric bore therethrough rotatably positionable in the bore of said outer ring, said inner ring having a forward face directed away from said flange, a chucking device secured within the bore of said inner ring and having a portion of its structure extending outwardly from the forward face of said inner ring, and said inner ring and said chucking device forming a plurality of cavities inwardly from the forward face of said inner ring having a volume substantially equal to the volume of said chucking device extending outwardly from the forward face of said inner ring to compensate for the unbalance caused by the portion of the chucking device extending outwardly from the forward face of said inner ring.

3,357,712
MAGNETIC SKI BINDINGS
Kenneth P. Rosenberg, 1301 Grant Ave., Novato, Calif. 94947
Filed Dec. 1, 1965, Ser. No. 510,917
19 Claims. (Cl. 280—11.35)

1. In a ski binding for securing a boot to a ski the combination comprising:

boot securing means affixed to the ski; and

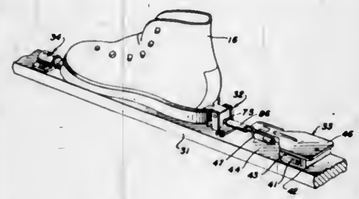
magnetic latch means disposed entirely on the ski operatively associated with said boot securing means, said magnetic latch means comprising:

a permanent magnet;

a lower pole piece of magnetic material secured to said magnet;

a keeper plate of magnetic material;

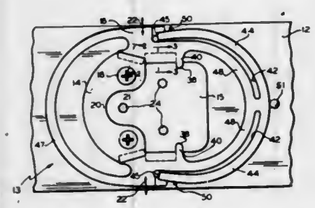
means mounting said keeper plate and said pole piece for relative movement therebetween whereby said pole piece and said keeper plate have one relative position in which they are in contact and are magnetically urged together, and another relative position in which they are spaced at a distance from one another;



said means mounting said keeper plate and said pole piece for relative movement includes a pivot connection between said keeper plate and the ski; and

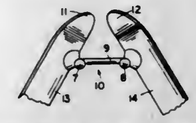
said boot securing means and said magnetic latching means are operatively associated through connecting means joined to said pivotally mounted keeper plate.

3,357,713
SAFETY SKI BINDING
Clarence W. See, Jr., 730 Cold Springs Road, Baldwinsville, N.Y. 13027
Filed Sept. 28, 1965, Ser. No. 490,850
9 Claims. (Cl. 280—11.35)



1. In a safety binding for releasably attaching a ski boot to a ski, a first plate member adapted to be permanently secured to the ski, a second plate member engageable with said first plate member and having means for connecting it to the boot, and a substantially flat resilient member adapted to simultaneously engage said plate members and hold them in engagement with one another, said plate members each having inclined edge portions engageable with oppositely inclined matching portions on said resilient member, said inclined portions when in engagement with one another being operable to cause said resilient member to be sprung outwardly upon the application of an excessive upward force to said second plate member, said outward springing of the resilient member permitting disengagement of said first and second plate members whereby a boot connected to the latter can be released from the ski.

3,357,714
DEVICE TO ASSIST IN TEACHNG SKIING
Otto L. Kuehn, Vail, Colo. 81657
Filed Mar. 15, 1965, Ser. No. 439,821
19 Claims. (Cl. 280—11.37)



1. The combination to assist in learning to ski which comprises means to provide a substantially fixed spaced relation between points above the surface of said skis and to provide for independent rotation of the skis about their center lines and independent angulation by divergence of the heels of the skis so that no part of the skis are maintained parallel, said means comprising:

a right ski having a tip and a point of inflection,

a left ski having a tip and a point of inflection,

first means attachable to the upper surface of the right ski near its point of inflection between its center line and its inner edge to provide an unimpeded inner edge in contact with the surface underlying the ski and substantially unimpeded bottom surface,

second means attachable to the upper surface of the left ski near its point of inflection between its center line and its inner edge to provide an unimpeded inner edge in contact with the surface underlying the ski and substantially unimpeded bottom surface,

a member removably attachable to said first means and extending upward to a first biplanar joint;

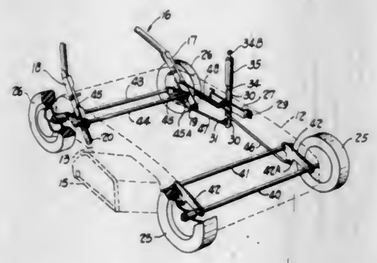
a member removably attachable to said second means and extending upward to a second biplanar joint,

a single connecting means extending from said first joint to said second joint to connect said joints and space said joints a substantially fixed distance apart, said skis being connected only by said single connecting means, the centers of said biplanar joints being respectively substantially directly over the inner edges of the skis.

3,357,715
MOWER HAVING WHEEL ADJUSTABLE MEANS
Gerhard R. Plamper and Gunter F. Plamper, Cleveland, Ohio, assignors to The M. T. & D. Company, a corporation of Ohio
Filed Feb. 10, 1966, Ser. No. 526,424
8 Claims. (Cl. 280—43.13)

1. A mechanism for raising and lowering the wheels of a mower or the like relative to the elevation of the body of the same, said body having laterally spaced frame portions extending longitudinally thereof, comprising the combination of, a first support member carrying adjacent the opposite sides of the body a forward pair of said wheels, said first support member including a first axle shaft extending laterally of said mower body between said forward wheels, and including a first pivot shaft journalled on said body to rotate on its axis relative to said body, said first axle shaft and said first pivot shaft being spaced apart and disposed parallel to each other, a second support member carrying adjacent the opposite sides of the body a rearward pair of said wheels, said second support member including a second axle shaft extending laterally of said mower body between said rearward wheels, and including a second pivot shaft journalled on said body to rotate on its axis relative to said body, said second axle shaft and second pivot shaft being spaced apart and disposed parallel to each other, a first pair of arm non-rotatively secured to said first pivot shaft at locations, respectively, adjacent oppositely spaced frame portions of the said body adjacent the forward end thereof, a second pair of arms non-rotatively

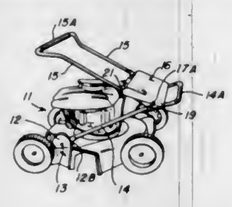
secured to said second pivot shaft at locations, respectively, adjacent oppositely spaced frame portions of the said body adjacent the rearward end thereof, said arms of said pairs of arms being swingable in upright planes extending longitudinally of said body adjacent opposite sides thereof, said first pair of arms being connected to and carrying said first axle shaft adjacent opposite ends thereof to raise and lower the same and the forward pair of wheels carried thereby relative to said body upon the pivotal swinging of said first pair of arms in unison, said second pair of arms being connected to and carrying said second axle shaft adjacent opposite ends thereof to raise and lower the same and the rearward pair of wheels carried thereby relative to said body upon the pivotal swinging of said second pair of arms in unison, an actuating lever pivotally carried by said body and extending therefrom in position for the manual swinging of the free end of said actuating lever, first connecting means operatively connecting said actuating lever and an arm of said first pair of arms at a first point located at a distance from the axis of the first pivot shaft carrying said arm to cause said first pair of arms and the first support member, including said first axle shaft, connected thereto to swing in unison upon the pivotal swinging of said actuating lever, and second connecting means operatively connect-



ing said actuating lever and an arm of said second pair of arms at a second point located at a distance from the axis of the second pivot shaft carrying said arm to cause said second pair of arms and the second support member, including said second axle shaft, connected thereto to swing in unison upon the pivotal swinging of said actuating lever, said first point being in a plane intermediate and parallel to said first pivot shaft and said first axle shaft, said second point being in a plane intermediate and parallel to said second pivot shaft and said second axle shaft, the interconnection of said first and second connecting means and said actuating lever relative to the pivot thereof being such that the first supporting member and forward wheels carried thereby and the second supporting member and rearward wheels carried thereby with the aid of force transmitted through the respective axle shafts carried by said first and second pairs of arms are simultaneously lowered relative to the said body upon the actuating lever being swung in one direction and are simultaneously raised relative to the said body upon the actuating lever being swung in an opposite direction, said first and second points of connections to the respective arms being located below a horizontal plane through the first and second pivot shafts to permit the disposition of said mechanism below said body, except for the protrusion of said actuating lever upwardly from the body.

3,357,716
HANDLE CONSTRUCTION
Alexander B. Musichuk, Parma, Ohio, assignor to The M. T. & D. Company, a corporation of Ohio
Filed Jan. 18, 1965, Ser. No. 426,093
12 Claims. (Cl. 280—47.37)

1. A handle construction for a mower or the like having a pair of laterally spaced mountings carried thereby, comprising a first handle member having spaced side portions adapted to be connected with said mountings, respectively, said first handle member having a bight portion connecting said side portions and maintaining the spacing therebetween, a second handle member having spaced side portions and a bight portion connecting said side portions and maintaining the spacing therebetween, first pivot connection means connecting side portions of the second handle member with the respective side portions of the first handle member at a distance from the bight portion of the first handle member to permit the second handle member to swing in an arcuate path about the axis of the first pivot connection means, said side portions of the first handle member being positioned outwardly of the side portions of the second handle member at the axis of said first pivot connection means to locate the bight portion of the first handle member in the path of the side portions of the second handle member swinging on said axis of the first pivot connection means to cause interference with the swinging of the second handle mem-

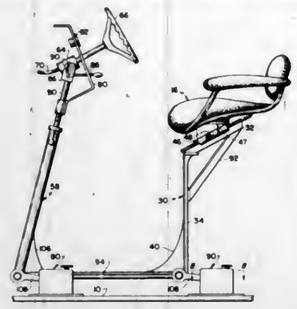


ber on said axis of the first pivot connection relative to the first handle member beyond an angle determined by the location of said interference, a plate member extended between the side portions of the second handle member, second pivot connection means connecting said plate member with the side portions of the second handle member at a distance from the axis of the first pivot connection means to permit said plate member to swing on the axis of the second pivot connection means relative to said second handle member, and coupling means for coupling said plate member at a distance from the said second pivot connection means to the said second handle member to lock said plate member against swinging away from the second handle member on the axis of the second pivot connection means, said plate member upon being locked to said second handle member being disposed to overlie the bight portion of the first handle member positioned at said location of interference and to prevent swinging of the second handle member away from said location of interference.

3,357,717
VEHICLE SEATING ARRANGEMENTS
Cloyd Archie Samford, R.R. 1, Chrisman, Ill. 61924
Filed Dec. 21, 1965, Ser. No. 515,425
4 Claims. (Cl. 280—87)

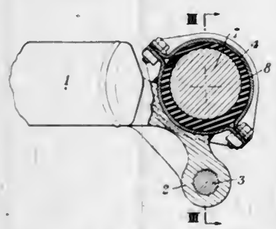
1. An operator station for a vehicle having a body, said vehicle also having steering device comprising a seat assembly for supporting the torso of the operator, a platform assembly, said spring suspensions being constructed said body extending at least from the rear of said seat assembly to the front of said platform assembly, means connecting said seat assembly on said platform assembly to dispose said platform assembly below and forwardly of said seat assembly to form a unitary operator support assembly, means mounting said steering device on the forward portion of said support assembly to dispose said steering device forwardly of said seat assembly, and means spring suspending said support assembly on said body comprising a first spring suspension interposed between said support assembly and said body adjacent the rear of said support assembly and a second spring suspension comprising laterally spaced essentially vertically acting spring

assemblies secured to said platform assembly and to said body closely adjacent the forward portion of said platform assembly, said spring suspension being constructed



and arranged to maintain said platform essentially horizontal under varying load conditions and thereby cooperating to provide stable cushioned support for said operator in both standing and sitting positions.

3,357,718
LONGITUDINAL-ELASTICITY WHEEL MOUNTING OF VEHICLE
Jean Cadiou, Paris, France, assignor to Societe Anonyme Andre Citroen, Paris, France, a French company
Filed Sept. 14, 1965, Ser. No. 487,224
Claims priority, application France, Sept. 21, 1964, 988,769, Patent 1,416,471
5 Claims. (Cl. 280—96.1)



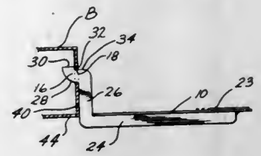
1. Wheel mounting notably for automotive vehicle, which comprises a wheel support having one end portion responsive to the vertical movements permitted by a suspension system, a cylindrical cavity formed in said end portion, a sleeve of elastic material fitted in said cylindrical cavity, an axial element, said wheel being mounted for coaxial rotation in relation to said axial element, said axial element being fitted in said elastic sleeve and carrying at least one rigid radial extension, a pin extending through said wheel support end portion and said radial extension, and having its axis parallel and substantially in the same vertical plane as the axis of said cylindrical cavity, the characteristics of elastic material of said sleeve being so calculated that the longitudinal vibrations which the wheel can perform under the action of this elastic element alone have the same frequency as the longitudinal impulses applied to the wheel by the road unevennesses.

3,357,719
REMOVABLE STEP FOR A TRUCK CAMPER
Sam E. McCrea, 1140 W. Alondra (Space 41), Compton, Calif. 90220
Filed Aug. 2, 1965, Ser. No. 476,319
4 Claims. (Cl. 280—163)

1. A removable step for use with a truck camper bumper that is formed with a pair of horizontally spaced apertures, said step comprising:

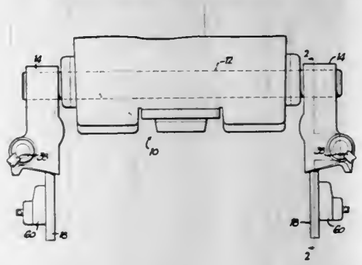
a generally rectangular plate;

a pair of brackets secured to the opposite side portions of said plate, each of said brackets having a horizontal arm extending from the front to the rear of said plate, and an upstanding arm formed at the front of said horizontal arm; and



a hook integrally formed at the upper portion of each of said upstanding arms, each of said hooks being formed with a portion projecting forwardly of the front surface of a respective one of said upstanding arms for insertion within one of said apertures, and further being formed with an upturned portion having a rearwardly facing lip for abutting the front surface of said bumper, whereby the abutment of said rearwardly facing lips of said upturned portions, in combination with the abutment of the forwardly facing surfaces of said upright arms, limit downward movement of said rectangular plate, said hooks being removed from said apertures by lifting the rear end of said plate upwardly and forwardly relative to said bumper.

3,357,720
DRAFT ARM, FLOAT-NON-FLOAT, SWAY-NON-SWAY, AND LEVELING ADJUSTMENT
Joseph A. Kulhavy and Alfred A. Wridt, Racine, Wis., assignors to J. I. Case Company, Racine, Wis., a corporation of Wisconsin
Filed Mar. 9, 1966, Ser. No. 533,043
4 Claims. (Cl. 280—474)

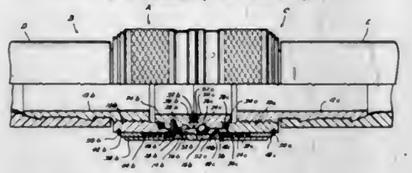


1. In a draft arm assembly for coupling an implement to a tractor having a rockshaft journalled for rotation in the tractor frame, a pair of draft arms, and means coupling said draft arms to the opposite ends of said rockshaft for movement therewith; the improvement wherein each of said coupling means comprises a housing fixedly secured to the rockshaft for movement therewith, pivot means coupling the draft arm to said housing for pivotal movement relative to the housing about a horizontal and a vertical axis, first means mounted in said housing for adjustably positioning said draft arm at a selected rest position of rotative adjustment about said horizontal axis, and second means operable in a first position in engagement with said first means to lock said shaft arm against rotation about said horizontal axis from said rest position and operable in a second position to permit rotation of said draft arm about said horizontal axis to and from said rest position.

3,357,721
IDENTICAL HALF COUPLING WITH FLUID PRESSURE SEAL

Louis J. Hollanszky and Robert L. Owens, Houston, Tex., assignors, by mesne assignments, to White Manufacturing Company of Missouri, Houston, Tex., a corporation of Missouri

Filed Aug. 30, 1965, Ser. No. 483,517
8 Claims. (Cl. 285—1)

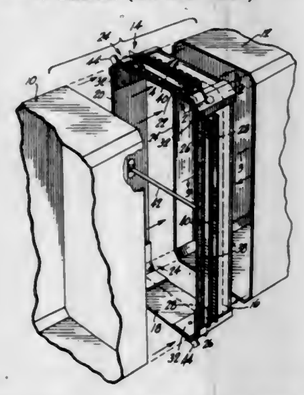


1. A coupling assembly comprising,
a pair of identical subassemblies comprising,
body members each having a bore therethrough,
a sleeve member in each of said bores mounted for limited axial movement,
means providing a seal between each sleeve member and its associated body while permitting relative axial movement therebetween,
the confronting faces of said sleeve members when engaged providing a seal,
engaging means on each body for releasably engaging the sleeve member of the other subassembly to lock the subassemblies together and for urging said sleeve members toward each other in response to pressure of a fluid contained in said coupling assembly, and
means holding said engaging means engaged when in one position and permitting release of said engaging means when in a second position.

3,357,722
FLAT SIDED DUCT CONNECTOR

Robert W. Howard, Anaheim, Calif., assignor, by mesne assignments, to McDonnell Douglas Corporation, Santa Monica, Calif., a corporation of Maryland

Filed Oct. 22, 1965, Ser. No. 501,495
4 Claims. (Cl. 285—109)

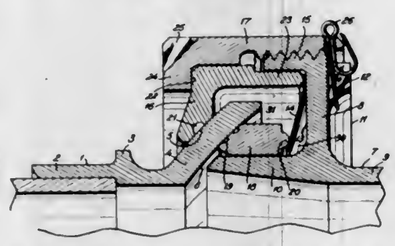


1. A duct connector capable of connecting two separate aligned end to end duct sections in an air-tight unit comprising:
a side duct connector being formed of a plurality of sidewall portions, said sidewall portions including an area substantially equal to the area enclosed by said duct sections, said sidewall portions being flexible whereby pressure within said duct sections physically force said flexible sidewall portions against said duct sections;
corner portions connecting two adjacent sidewall sections, said corner portions having means to securely clamp said duct sections into a rigid unit; and
said means to securely clamp said duct sections includes a bottom plate portion, said bottom plate portion being connected to said sidewall portions, a top plate portion mounted exteriorly of said bottom plate portion, portions of said ducts adapted to extend between said top and bottom plate portions, means connecting said top and bottom plate portions and capable of forcing together said top plate portion and said portions of said ducts and said bottom plate portion thereby creating a clamping force.

3,357,723
BALL-AND-SOCKET PIPE JOINTS, AND APPLICATIONS THEREOF

Louis Dumont and Alphonse Pierre Lacombe, Toulouse, France, assignors to Sud-Aviation Societe Nationale de Constructions Aeronautiques, Paris, France

Filed June 22, 1965, Ser. No. 466,010
Claims priority, application France, June 26, 1964, 979,787, Patent 1,407,838
3 Claims. (Cl. 285—263)



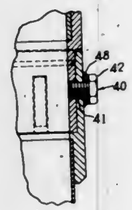
1. A ball-and-socket joint between first and second pipe sections used for transmitting pressurized fluid, comprising, in combination, a first metal end-piece rigid with the first of said pipe sections, a projecting cup rigid with said first end-piece and having concentric inner and outer spherical surfaces, a second metal cylindrical end-piece having an axis of revolution and rigidly connected to said second pipe section, said spherical surfaces having a center lying on said axis of revolution, an external annular metal part, means rigidly clamping said external metal part to said second end piece, said external metal part having a spherical surface in contact with the outer spherical surface of said cup, an internal annular metal part slidably encircling said second end-piece having a spherical surface in contact with the inner spherical surface of said cup and further having a bearing surface for axial sliding on said second end-piece, and an annular spring means rigidly retained at the outer periphery thereof between said second end-piece and said external annular metal part by the action of said clamping means, said spring means bearing freely against said internal annular metal part, whereby said internal annular metal part is urged axially towards said inner spherical surface of said cup so as to force the spherical surface of said internal annular metal part against the inner spherical surface of said cup, and thereby to force the outer spherical surface of said cup against the spherical surface of the external metal part.

3,357,724
SEALED DRILL-STRING JOINT

Charles L. Rassieur, University City, Mo., assignor to Central Mine Equipment Company, St. Louis, Mo., a corporation of Missouri

Filed July 6, 1965, Ser. No. 469,466
6 Claims. (Cl. 285—330)

1. A hollow drill-string joint comprising a hollow, female, outer part with a cylindrical socket section at one end thereof, and a cylindrical drill-string section having a bore at the other end thereof, said socket and bore sections forming a continuous through passage in said female part, said socket section having an axially extending feather key slot extending radially through the wall thereof at a distance axially from the outer end of said socket section to provide an uninterrupted smooth inner surface between said end and said slot, a feather key removably mounted in said slot, projecting radially inwardly into said socket section and secured on the outside of said socket section to the outside wall thereof, said socket section having an aperture through the wall thereof spaced circumferentially from said key; a hollow, male, inner part with a cylindrical coupling section at one end complementary to said socket section of said female part for close sliding fit therein and a cylindrical drill-string section having a bore at the other end, said coupling section and bore defining a continuous through passage in said male part, said coupling section having in the radially outer surface of its cylindrical wall a keyway extending



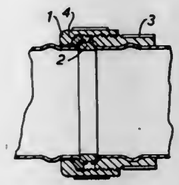
axially thereof from and opening into its axially outer end and terminating short of the other end of said coupling section, leaving an axially uninterrupted area in the outer surface of the coupling section, an annular seating channel in and extending around the radially outer surface of said coupling section within the axially uninterrupted area of said coupling section, said feather key being formed of a material different from the material forming either the said male or female part, said coupling section having an aperture positioned complementarily to said female part aperture within the axially interrupted area of said coupling section and spaced circumferentially from said keyway; a sealing element sealingly seated in said annular channel and protruding radially outwardly therefrom into snug sealing engagement with the inner uninterrupted surface of said female socket section when the joint is assembled, and retaining means extending through the aperture in said female socket section and into the aperture in said male coupling section to prevent axial displacement of said sections with respect to one another when the joint is assembled.

3,357,725
PIPE JOINTS AND SWAGING TOOLS THEREFOR

Alfred Champion, % Kings Langley Engineering Company Limited, Station Road, Kings Langley, England

Filed June 1, 1965, Ser. No. 460,293
4 Claims. (Cl. 285—353)

1. A pipe joint comprising: a first pipe; an internally threaded outer nut received on the first pipe near one end of the first pipe, the nut having a radially inwardly directed circumferential flange means thereon terminating adjacent the exterior of the first pipe and having opposite generally radial faces; a first outwardly swaged radially inwardly concave circumferential ring on the first pipe at said one end; a second outwardly swaged circumferential ring on the first pipe spaced from said one end and being immediately adjacent the generally radial face of said flange which lies furthest from said one end, whereby said nut is retained against substantial movement axially of the first pipe by the two outwardly swaged rings; a second pipe; an exteriorly threaded inner union received on the second pipe near one end of the second pipe; a first outwardly swaged radially inwardly concave circumferential ring on the second pipe at said one end; a second outwardly swaged circumferential ring on the second pipe spaced from said one end; the two outwardly swaged rings on said second pipe engaging the union at axially spaced regions of the union and restraining the union against substantial axial movement along the second pipe; a ring shaped annulus disposed between the nut and the union; said annulus having a radially exteriorly convex surface coextensively engaging both said first outwardly swaged ring on said first pipe and said first outwardly swaged ring on said second pipe; at least one of said nut



and said union being angularly rotatably mounted on the respective pipe; said nut threadedly engaging said union securing said first pipe to said second pipe; wherein the first outwardly swaged ring has a convex backside, and the face of said flange which lies nearest said first pipe one end flares radially outwardly toward said first pipe one end; and said joint further includes a nut ring received within said nut between the interior thereof and said first pipe; said nut ring having a first end surface complementary curved respecting the radially outwardly flared flange face and extensively engaging said radially outwardly flared flange face; said nut ring also having a second, opposite end surface complementarily curved respecting the backside of said first outwardly swaged circumferential ring on the first pipe and extensively engaging the convex backside of said first outwardly swaged circumferential ring.

3,357,726
CLAMPING DEVICE

Theodore C. Gabrielson, 444 Parkridge Drive, Pittsburgh, Pa. 15235

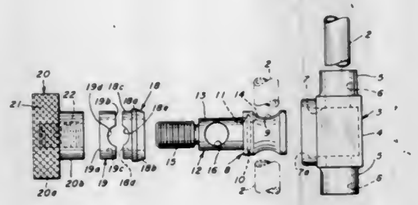
Filed Nov. 10, 1966, Ser. No. 593,462
2 Claims. (Cl. 287—14)

1. A clamp assembly for selectively maintaining a first member (17) in selective rotary and longitudinal relation to a second member, comprising
(a) a housing member having a hollow cylindrical interior with an opening through a front wall thereof and aligned openings in the top and bottom walls thereof for reception of said second named member, said front wall opening being defined by a reduced embossment having outwardly diverging inner peripheral walls contiguous with said cylindrical interior, and said aligned openings in the top and bottom walls also being defined by axially extending reduced cylindrical embossments providing additional support for said second member,
(b) a hollow cylindrical member disposed within the interior of said housing member inwardly of the outwardly diverging walls of the embossment thereon and having an annular opening therethrough in alignment with the said aligned openings in said

housing member for receiving said second named member,

(c) spindle means extending longitudinally through said hollow cylindrical member and having a head portion engaging a reduced portion of said member for rotary movement relative thereto and a shank portion extending outwardly through the cylindrical member reduced end portion,

(d) a transverse opening through said spindle shank portion, in spaced relation to the said head portion thereof for reception of said first member and a threaded end portion outwardly of said spindle shank portion opening,



(e) a first clamp member mounted on said spindle shank portion, inwardly of the transverse opening therethrough, having an enlarged annular rearwardly extending converging outer peripheral portion for matching engagement with said housing member embossment outwardly diverging inner peripheral walls and a forwardly extending recessed portion for embracing a portion of the periphery of said first member extending through said spindle shank portion,

(f) a second clamp member mounted on said spindle shank portion, outwardly of the opening therethrough, having an annular front face disposed towards said spindle threaded portion and a recessed rear face for embracing a portion of the adjacent periphery of said first member extending through the spindle shank opening,

(g) an internally threaded adjustment knob mounted upon said spindle shank threaded portion for selective abutment with said second clamp member front face for clamping said first member in fixed relation to said spindle between said first and second clamp members.

3,357,727
JOINT ASSEMBLY FOR FRAMEWORK STRUCTURES

William R. Finkenstein, Bristol, and William F. Olashaw, New Britain, Conn., assignors to General Electric Company, a corporation of New York

Filed Nov. 19, 1965, Ser. No. 508,763
6 Claims. (Cl. 287—54)

1. A joint assembly for framework structures comprising:

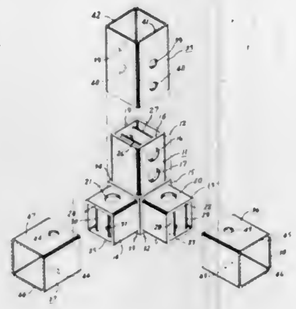
(a) a connecting member having a plurality of tubular stub portions, each of said stub portions having at least one generally planar side portion;

(b) said planar side portions each having at least one aperture therein;

(c) a plurality of elongated tubular framework members, each of said framework members having at least one generally planar side portion adjacent one end thereof, said side portions having at least one aperture therein;

(d) each of said framework members being positioned in telescoping relation with one of said tubular stub portions of said connecting member with said planar side portion of said framework member adjacent said planar side portion of said stub portion, and said aperture in said side portion of said framework member in alignment with said aperture in said side portion of said stub portion;

(e) at least one of each of said telescoping stub portions and framework members having an integral portion adjacent said aperture therein extending at least partly into the corresponding aligned aperture in the other of said telescoping members, whereby to secure said framework members to said stub portions; and

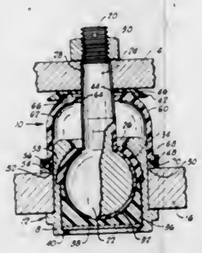


(f) each of said stub portions including a pair of reinforcing ribs extending from said planar side portion to the opposite side of said stub portion adjacent said aperture.

3,357,728
BALL AND SOCKET JOINT

James O. Melton, 1208 Cruce St., Norman, Okla. 73069; and Thomas B. Wilkinson, 5924 S. Eggleston 74734, and James H. Jackson, 1730 N. Shawnee 73107, both of Oklahoma City, Okla.

Filed Sept. 11, 1964, Ser. No. 395,692
9 Claims. (Cl. 287—90)



4. A seal for a ball joint including a ball and stud member and a housing member for receiving the ball and stud member, said seal comprising:

a disc-like member having an axial bore therethrough sized to encircle the stud portion of the ball and stud member, an axial counterbore extending partially therethrough, and a groove therein adjacent the periphery of said counterbore;

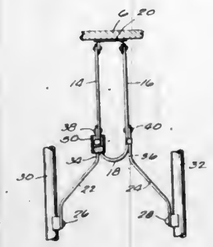
a ring-like member encircling the housing member and having upper and lower surfaces, said upper surface having an annular recess therein; and,

a hollow skirt member encircling the ball-joint and having a lower end and an upper end, said upper end having a peripheral flange thereon disposed in the groove in said disc-like member, said lower end having a peripheral flange thereon disposed in the annular recess in said ring-like member.

3,357,729
FOLDING BRACE LOCK FOR TABLE LEG

Allison F. Krueger, 226 Miramar Drive, Green Bay, Wis. 54301

Filed Aug. 3, 1966, Ser. No. 570,036
1 Claim. (Cl. 287—98)

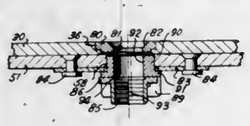


A lockable folding brace comprising an upper link having a pair of parallel legs which are laterally spaced and connected by a curved connecting bight portion integral with the ends of said legs, and lower link means comprising separate links with parallel portions pivoted to the respective legs above said bight portion for movement between a folded position and a position in which the lower legs are aligned with respective links, the links and legs having longitudinally extending portions which are lapped in the last mentioned position, and means for restraining pivotal movement between the respective links and said legs from said last mentioned position and comprising a sleeve member slideable along one of said legs from a point above said pivotal connection to a point at which the sleeve is engaged about the said lapped portions of said one leg and said one link, each of the lapped portions of the legs and links having notch and lug means interlockingly engaged in said last mentioned position, and one such notch and lug means being encircled by said sleeve member when said sleeve member engages said lapped portions, the curve of the bight diverting from the plane of the link encircled by said member and serving as a stop for the sleeve member, the distance between the bight portion and the pivot point on the leg encircled by the sleeve member being less than the length of the sleeve member so that the sleeve rests on the bight and extends along the last mentioned leg to a point just below the last mentioned pivot point.

3,357,730
METHODS AND MEANS FOR PARTS ASSEMBLY

Joseph T. Siler, 203½ E. Virginia, McKinney, Tex. 75069

Original application Oct. 27, 1961, Ser. No. 148,190, now Patent No. 3,257,720, dated June 28, 1966. Divided and this application Apr. 29, 1963, Ser. No. 276,560
6 Claims. (Cl. 287—189.36)

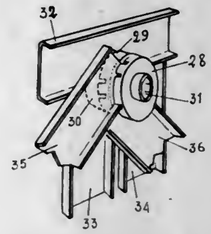


1. A locator bushing assembly for a blind fastener for joining together two parts including a first locator bushing having an annular external flange having a continuous annular face engaging in its entirety one of the parts and an eccentric fastening receiving bore, and a second locator bushing for mating with the first bushing, said second locator bushing having an annular flange for engaging the other of the parts, the annular flange of the second locator bushing having a continuous annular face engaging in its entirety the other part, said second locator bushing being in the form of an anchor nut having a fastening receiving bore of an eccentricity different from that of the fastening receiving bore of the first bushing, and means for anchoring the second locator bushing to the other of the said parts, the second bushing being rotatable about its axis with respect to said latter part while maintaining its flange in engagement with said latter part.

3,357,731
BRACKET FOR ASSEMBLING TWO METAL PROFILE PIECES WITHOUT WELDING OR RIVETTING

Maurice Piget, 2 Rue Breuvery, Saint-Germain-en-Laye, France

Filed Jan. 11, 1965, Ser. No. 424,473
Claims priority, application France, Jan. 31, 1964, 962,272
7 Claims. (Cl. 287—189.36)

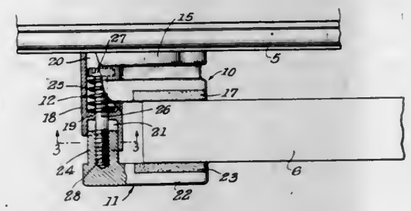


1. A clamping device for structural assembly of metal profile pieces without welding or rivetting, each of the pieces having a web and at least one angled part projecting from the web, said device comprising: a carrier member having two pair of parallel grooves formed in one surface thereof to receive the angled parts of at least two profile pieces to be joined in an assembly, each pair of said grooves intersecting the other at right angles, a tightening member having a surface to engage the profile pieces on the surface thereof opposite said carrier member, and a clamping member disposed centrally of said carrier and said tightening member to draw these latter two members toward each other against the profile pieces therebetween.

3,357,732
DOOR STOP

Edgar L. Seal, 10246 Rosewood Ave., South Gate, Calif. 90280

Filed June 13, 1966, Ser. No. 556,992
6 Claims. (Cl. 292—60)



4. A door stop comprising:

(a) a mounting part,

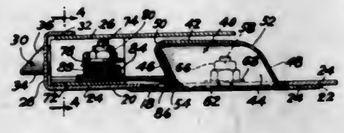
(b) a rotational and slidable part engaged with the mounting part,

(c) said parts being provided with opposed door-side-engaging buffer pads,

(d) resilient means housed in the mounting port to bias the parts toward each other to clamp a door between the pads thereof, and

(e) means to limit rotational movement of said rotational part between door-engaged and door-released positions.

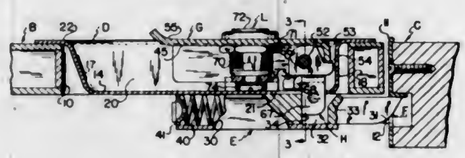
3,357,733
DOOR LOCK HARDWARE
Sidney T. Heifetz, New York, N.Y., assignor to Heifetz Metal Crafts, Inc., Wood Ridge, N.J., a corporation of New Jersey
Filed Sept. 22, 1964, Ser. No. 398,309
4 Claims. (Cl. 292—165)



1. A hinged door of the character described having a flush type movable door-pulling plate-like member having a manually engageable door-pulling recess at the front face thereof, a yieldably retractive latch-bolt carried by said door and operatively connected to said door pulling member, said latch-bolt normally projecting edgewise from said door to engage means external of the door to hold same locked against pulling in the direction normal to the plane of the plate-like member in closed position of the door, said pulling recess extending rearwardly from the front face of said door-pulling member and having an inclined side surface between said front and rear surfaces of said recess, said inclined side surface sloping rearwardly and away from the hinged edge of the door and being of such depth as to permit only fingertip engagement and of such inclination with respect to frictional purchase of operating fingertips as to require sidewise pressure to attain effective pulling purchase upon the closed and bolted door, whereby, upon manual contact and pressure sufficient for pulling purchase the said latch-bolt is first involuntarily withdrawn.

3,357,734
DOOR LOCK
John V. Pastva, Jr., Parma Heights, Ohio, assignor to The Eastern Company, Cleveland, Ohio, a corporation of Connecticut
Filed June 21, 1965, Ser. No. 465,686
1 Claim. (Cl. 292—165)

In a flush-mounted paddle-type latch of the character described: a sheet metal mounting member provided with a generally rectangularly-shaped front recess surrounded by a planar flange section, said recess being formed in part by two spaced parallel side wall sections and a planar bottom wall with a slot therein located midway between and parallel with said side wall sections; a sheet metal bolt housing secured to the rear side of said bottom wall of said recess, said bolt housing being generally channel-shaped in cross section with flanges along the edges of the sides remote from the web; means securing said flanges to said bottom wall; a slide bolt slidably supported in said bolt housing and having an end portion thereof normally projecting from said bolt housing, said slide bolt having a slot therein aligned with said slot in said bottom wall of said mounting member; spring means in said bolt housing biasing said slide bolt to a projected position with respect to said bolt housing and said mounting member; a sheet metal paddle-type handle member having a relatively planar front body portion normally flush with said flange section of said mounting member and conforming generally with the shape of said recess in said mounting member except for one side which is spaced from the adjacent side of said recess for the projection of the fingers of an operator to a position underneath said one side of said handle member, said body portion of said handle member having a rear flange along the side thereof opposite to said one side thereof normally extending about half way to the bottom wall of said recess in said mounting member and spaced parallel flanges located adjacent to and parallel with said side wall sections of said mounting member and normally extending approximately to said bottom wall of said mounting member; a pivot pin means extending underneath said planar front body portion of said handle member and spaced from said rear flange of said handle member towards said one side thereof and through said parallel side wall sections of said mounting member and said flanges of said handle member pivotally connecting said handle member to said mounting member; said flanges of said handle member limiting movement of said handle member into said recess of said mounting member to a position in which said body portion of said handle is substantially flush with said flange section of said mounting member; a sheet metal trigger member made of two identical parts fixed together, said trigger member comprising a blade section projecting through said slot in said bottom wall in said mounting member and into said slot in said slide bolt and having a dimension in said slot in said slide bolt lengthwise of the

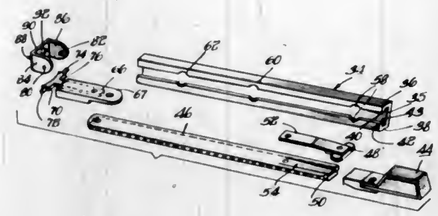


path of movement of said slide bolt in said bolt housing only slightly less than that of said slot in said slide bolt whereby said trigger member moves with said slide bolt and vice versa, said trigger member having spaced parallel flanges located in said recess in said mounting member and projecting towards but spaced from said body portion of said handle member and through which said pivot pin means extends and supports said trigger member for pivotal movement relative said handle member whereby said trigger member may be moved by movement of said slide bolt against the bias of said spring without movement of said handle member; said spaced parallel flanges of said trigger member being located adjacent to said spaced parallel flange sections of said handle member for limiting movement of said trigger member axially of said pivot pin means relative to said handle member and abutments on said spaced parallel flanges of said trigger member between the axis of said pivot means and the side of said recess in said mounting member opposite to said adjacent side of said recess engageable by said rear flange on said handle member limiting pivotal movement of said handle member relative to said trigger member in the direction for retracting said bolt against the bias of said spring upon manual movement of said handle member relative said mounting member in the direction out of said recess.

3,357,735
WINDOW HOLDER AND OPERATOR
George C. Hayman, Denver, Colo., assignor to Leslie Welding Co., Inc., Franklin Park, Ill., a corporation of Delaware
Filed June 1, 1965, Ser. No. 460,113
7 Claims. (Cl. 292—270)

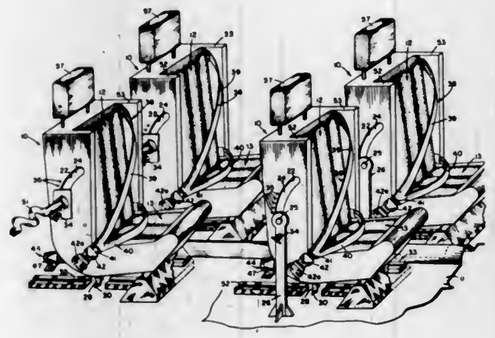
2. A pushbar device for a window structure of the type described, comprising first and second axially telescopically associated and relatively adjustable members the inner

of which has a T-shaped cross-sectional configuration and the outer of which has uniform cross section, and releasable latch means between said members for releasably locking said members in desired relatively adjusted positions, said latch means being entirely located within the



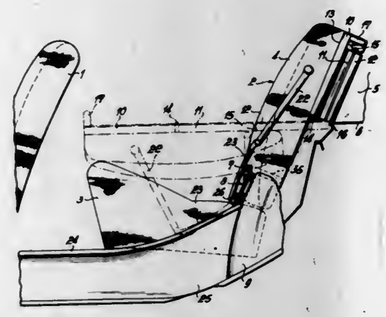
cross-sectional configuration of said members, and hinge means having a first portion connected with one of said members and being the same T-shaped cross sectional configuration as the outer of said members and a second portion connectable with a window sash.

3,357,736
VEHICLE SEAT
John J. McCarthy, 2097 Riverside Drive, Lakewood, Ohio 44107
Filed May 17, 1966, Ser. No. 550,826
12 Claims. (Cl. 296—65)



1. A safety seat for a vehicle for protecting the occupant of the seat during a sudden stop, comprising a seat mounted on a vehicle floor, said seat having back and bottom portions, said back portion of said seat having means defining a curved guide track along a portion of said back portion, means on the vehicle floor defining a floor mounted guide track for the bottom of the seat, means on said seat cooperating wth the floor mounted track to guide said seat along said track, a vertically extending cantilever beam fixed at its lower end to the frame of the vehicle and having an upper end which cooperates with said curved guide track so that said curved guide track moves in an arcuate path relative to said upper portion of the cantilever beam, said cooperating upper portion of the cantilever beam being positioned above the combined center of gravity of the seat and its occupant, and being adapted to remain in a cooperating relationship with the curved guide track upon the application of a force thereto which will bend the cantilever beam, said seat being movable with its curved guide track relative to the cooperating upper end of said cantilever beam between a first position wherein said seat is upright and a second position wherein the bottom portion of the seat is more nearly vertical than horizontal, the cooperation between the upper portion of the cantilever beam and the curved guide track obtaining when said seat is in its first and second positions so that the cantilever beam may bend when a predetermined force is applied thereto while said seat is in its second position, means retaining said seat in its first position and being releasable when the seat and its occupant are decelerated at a predetermined rate.

3,357,737
MOTOR VEHICLE, ESPECIALLY PASSENGER MOTOR VEHICLE
Karl Vettel, Ludwigsburg-Hoheneck, and Gerhard Burk, Magstadt, Germany, assignors to Firma Dr. Ing. h.c. F. Porsche K.G., Stuttgart-Zuffenhausen, Germany
Filed Jan. 28, 1966, Ser. No. 523,674
Claims priority, application Germany, Feb. 11, 1965, P 36,045
10 Claims. (Cl. 296—66)

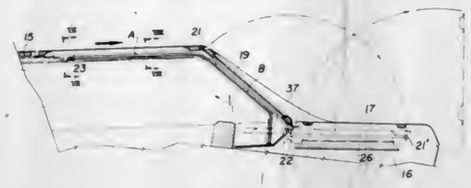


1. A motor vehicle, especially a passenger motor vehicle, having a loading surface formed by vehicle body parts and provided to the rear of the rear seats, comprising: a rear seat backrest; means for selectively extending the loading surface including pivot means supporting said backrest for pivotal movement into a substantially horizontal loading position, extension parts for the loading surface, and connecting means form-lockingly connecting the extension parts with said backrest means as well as with the body parts forming the loading surface; said extension parts abutting against the rear of said backrest folded together in the normal position of said backrest; said backrest having rearwardly projecting bulge means for covering the top of said extension parts in the normal position of said backrest, said backrest including locking means mounted beneath said bulge means for engaging said extension parts and holding said backrest in its normal position; said bulge means extending upwardly in the horizontal loading position of said backrest to provide a forward loading abutment and handle for moving the backrest between its positions.

3,357,738
AUTOMOBILE TOP
Jean Bourlier, 14 Allee Georges Braque, Fresnes, France
Filed Oct. 11, 1965, Ser. No. 494,399
2 Claims. (Cl. 296—137)

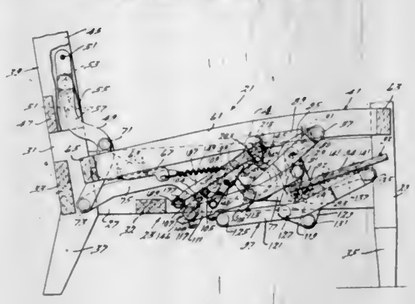
1. An automobile top, comprising
(a) spaced parallel sides having horizontal upper edge portions and rearwardly-located inclined upper edge portions,

(b) grooves formed in the sides along the said horizontal upper edge portions,
(c) a trunk having a trunk cover hingedly connected to the trunk at the rear thereof to swing upwardly,
(d) a roof section having elements slidable in the grooves and normally extending between the sides at the horizontal upper edge portions,



(e) a rear window section hingedly connected for movement about a swing axis adjacent the lower end of the inclined upper edge portions and normally lying between these edge portions,
the rear window section being hingedly connected to the roof section, so that, on occasion, the window section and the roof section can occupy the trunk together in folded relationship.

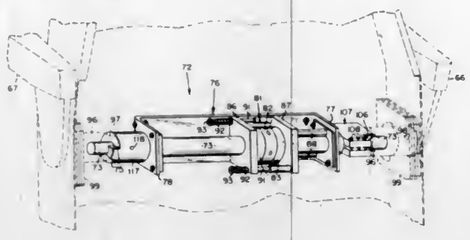
3,357,739
LOUNGE CHAIR
Edward M. Knabusch and Edwin J. Shoemaker, Monroe, Mich., assignors to La-Z-Boy Chair Company, Monroe, Mich., a corporation of Michigan
Filed Apr. 25, 1966, Ser. No. 545,133
16 Claims. (Cl. 297—69)



1. A lounge chair having a seat, a back and a substantially horizontal leg rest panel, a first linkage means at each side of the seat for solely supporting said leg rest panel for movement from a retracted position tucked under said seat to an extended position spaced forwardly and upwardly therefrom, said first linkage means being so constructed and arranged as to maintain said leg rest platform substantially horizontal in all of its positions, a base, and driving means supportably carried by said base for motivating said first linkage means, universal means interconnecting said driving means and said first linkage means.

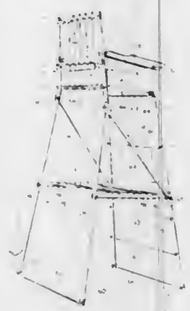
3,357,740
DENTAL CHAIR
Charles E. Vaughn and Arthur Gilbert Billin, Rochester, N.Y., assignors to Ritter Corporation, Rochester, N.Y., a corporation of Delaware
Filed Oct. 24, 1965, Ser. No. 504,664
1 Claim. (Cl. 297—416)

A dental chair comprising the combination of a seat and a back pivoted thereto:
(a) a pair of chair arms;
(b) a link pivoted to the seat and one of said arms;
(c) an oscillatable shaft extending across the back and connected to the other arm so that when the back is pivoted with respect to the seat both arms move together as a unit;
(d) a disconnectable clutch between said other arm and said chair;



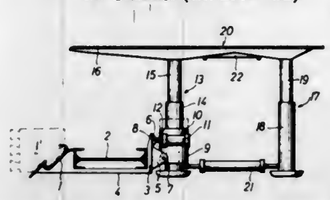
(e) means for removing said other arm from said shaft when said other arm is in a substantially vertical position; and
(f) means in connection with said shaft for braking the fall of said other arm from a position above the horizontal toward a horizontal position.

3,357,741
CHAIR
Samuel Vadner, 126 Dartmouth Road, Bala-Cynwyd, Pa. 19004
Filed Nov. 23, 1966, Ser. No. 596,647
5 Claims. (Cl. 297—445)



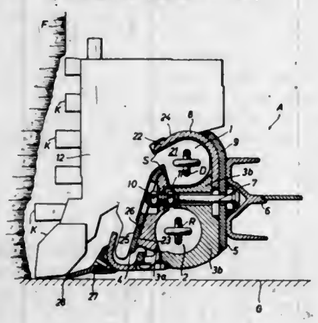
1. In a knock-down chair for lifeguards, tennis umpires and playground supervisors, the combination comprising a pair of opposite side frames each consisting of a front leg extending upwardly and rearwardly straight from the ground to arm rest level, a rear leg extending upwardly and forwardly straight from the ground to seat level approximately five feet above the ground and there curving and extending upwardly and rearwardly to a height well above arm rest level, a horizontal shelf support bar, an inclined bracing member, and a horizontal arm rest, said shelf support bar, bracing member and arm rest each interconnecting said legs, said shelf support bar being disposed approximately midway between ground and seat levels, and said side frames being disposed respectively in upwardly converging planes, a plurality of vertically spaced bars interconnecting the front legs of said side frames, a plurality of vertically spaced bars interconnecting the rear legs of said side frames, a seat spanning a pair of said bars at seat level, a back rest spanning a pair of the vertically spaced bars interconnecting said rear legs, and a shelf spanning the shelf support bars of said side frames.

3,357,742
MINING ARRANGEMENT INCLUDING ANGULARLY DISPLACEABLE GUIDE MEANS FOR A MINING MACHINE
Günther Dommann, Altlunen, Westphalia, and Armin Löbbe, Oberaden Post Kamen, Germany, assignors to Gewerkschaft Eisenhutte Westfalia, Wethmar, near Lunen, Westphalia, Germany, a corporation of Germany
Filed Nov. 12, 1965, Ser. No. 507,275
Claims priority, application Germany, Nov. 14, 1964, G 42,022
14 Claims. (Cl. 299—32)



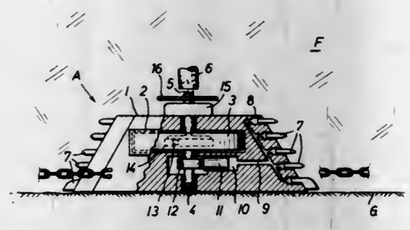
1. Mining arrangement which comprises longitudinal guide means adapted to be extended along a mine floor adjacent a mine face for slidably receiving on said guide means a mining planer for movement back and forth along said mine face in extractive engagement therewith to remove mineral therefrom, first articulating connection means, unitary base means spaced from the longitudinal axis of said guide means and operatively connected via said first articulating connection means with said guide means, adjustable effective length urging means operable between a retracted position of minimum over-all effective length and an extended position of maximum over-all effective length, and second articulating connection means, said urging means operatively interconnecting along the over-all effective length thereof said base means and said guide means via said second articulating connection means, whereby upon operating said urging means to change the effective length thereof said guide means are articulated via said first articulating connection means and displaced angularly with respect to such mine face to change correspondingly the angle of engagement of such mining planer with such mine face.

3,357,743
LONG WALL MINING PLANER GUIDE ARRANGEMENT
Armin Lobbe, Oberaden Post Kamen, and Christoph Rassmann, Lunen, Westphalia, Germany, assignors to Gewerkschaft Eisenhutte Westfalia Wethmar, near Lunen Westphalia, Germany, a corporation
Filed Sept. 7, 1965, Ser. No. 485,634
Claims priority, application Germany, Sept. 11, 1964, G 41,493
9 Claims. (Cl. 299—34)



1. Coal planer guide adapted to guide a coal planer across a mine face having means defining two substantially vertical super posed channels adapted to have chain drive means pass therethrough; the upper of said channels having a slit-like opening facing said mine face; a slanting frame plate extending from the lower edge of said slit downwardly across the lower of said channels and effectively closing said lower channel; bolt means removably connecting said slanting frame to said vertical channel defining means; and a planer having lug means operatively disposed within said upper channel operatively engaged to said chain drive means.

3,357,744
COAL PLANER HAVING ENERGY STORING MEANS TO RELATIVELY DRIVE CUTTING ELEMENTS
Willy Heyer, Bochum-Gerthe, Germany, assignor to Gewerkschaft Eisenhutte Westfalia, Wethmar, near Lunen, Westphalia, Germany, a corporation of Germany
Filed Sept. 8, 1965, Ser. No. 485,758
7 Claims. (Cl. 299—34)



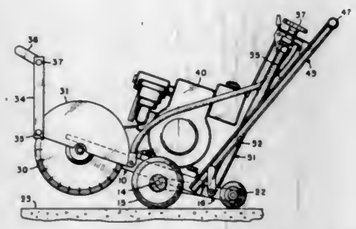
1. Coal planer comprising a base means thereon adapted to win coal from a mine face; relatively movable cutting tools carried by said base means; means for moving said base means back and forth along said mine face and to maintain said cutting tools in contact with said mine face; a high-speed flywheel mounted on said base means, transmission means operatively connecting said flywheel to said cutting tools; and disengageable means on said base means operatively connected to said flywheel adapted to intermittently engage relatively stationary motive means separate from said base means whereby to impart rotation to said flywheel and thus store kinetic energy therein which stored kinetic energy is adapted to intermittently actuate said transmission means and thus intermittently drive said cutting tools in addition to the drive imparted to said cutting tools by said moving means.

3,357,745
MOBILE CONCRETE FLOOR SAWING MACHINE HAVING PIVOTALLY ADJUSTABLE FRAME SECTIONS
William M. Cooper, St. Louis, Mo., assignor to Champion Manufacturing Company, St. Louis, Mo., a corporation of Missouri
Filed May 26, 1965, Ser. No. 459,018
2 Claims. (Cl. 299—39)

1. A saw machine comprising:
(a) a base,
(b) a saw blade mounted on the base,
(c) a power means mounted on the base and drivingly connected to the saw blade,
(d) a frame pivotally mounted to the base,
(e) a first ground-engaging means mounted on the frame,
(f) a second ground-engaging means mounted to the base and frame at their pivot axis, and located between the first ground-engaging means and the saw blade,

(g) the center of gravity of the machine as a whole, including the portion between the saw blade and the second ground-engaging means, being located in a vertical plane between the first and second ground-engaging means as close to the second ground-engaging means as possible to ensure maximum load distribution to the blade during the cutting operation yet maintaining the stability of the machine at all times,

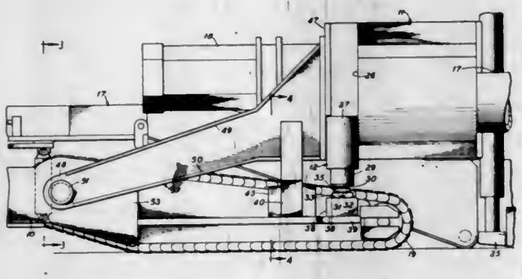
(h) a handle attached to the base,



(i) an arm having one arm portion fixed to the frame and another arm portion fixed to the handle and interconnected to the said one arm portion, and

(j) means associated with the arm extending or retracting the arm portions to adjust the pivotal position of the frame and base so as to raise selectively the second ground-engaging means from the ground to support the machine on the first ground-engaging means and saw blade only, thereby to relieve the second ground-engaging means of load and distribute the load from the machine as a whole between the saw blade and the first ground-engaging means during the cutting operation.

3,357,746
THRUST REACTION SUPPORT FOR ROTARY BORING DEVICES OF CONTINUOUS MINING MACHINE
Emil J. Hlinsky, La Grange Park, Ill., assignor, by mesne assignments, to Westinghouse Air Brake Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 5, 1965, Ser. No. 477,396
7 Claims. (Cl. 299—59)



1. In a continuous mining machine,

a mobile main frame,

a cutter frame structure at the front of said main frame and extending thereacross and in advance of the forward end thereof,

a boring assembly rotatably mounted at the forward end of said cutter frame srtucture and capable of cutting clearance for said main frame and cutter frame structure,

means supporting and adjusting said cutter frame structure with respect to said main frame at varying angles and elevations comprising,

two laterally spaced elevating jacks on opposite sides of said main frame,

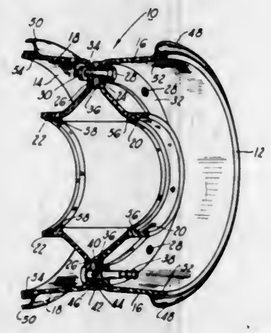
universal bearing connection between said jacks and main frame at the front end of said main frame,

means adjacent said cutter frame structure for retaining said cutter frame structure from sidewise movement with respect to said main frame, and spaced arms rigidly mounted at the back of said cutter frame structure and extending rearwardly therefrom along opposite sides of said main frame and transversely pivoted to said main frame adjacent the rear end thereof for movement about coaxial horizontal axes,

said arms having sufficient compressive stability to transfer the thrust reactions of mining from said cutter frame structure to the rear end portion of said main frame,

and having sufficient torsional instability to accommodate angular adjustment of said cutter frame structure about an axis extending longitudinally of said main frame by operation of said elevating jacks.

3,357,747
FILAMENT WHEEL
Wendell E. Eldred, South Bend, Ind., assignor to The Bendix Corporation, a corporation of Delaware
Filed Jan. 17, 1966, Ser. No. 521,089
8 Claims. (Cl. 301—63)



1. A wheel comprising:

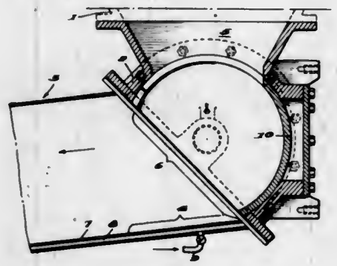
a first section formed of filaments encased in a resin, said first section having an upper and lower surface with said upper surface extending radially upwardly at an angle;

a second section formed of filaments encased in a resin, said second section having an upper and lower surface with said upper surface extending radially upwardly at an angle, said lower surface of said first section and said lower surface of said second section diverging away from each other; and

a means to removably join said first section to said second section whereby said upper surfaces of each section extend outwardly of each other and upwardly.

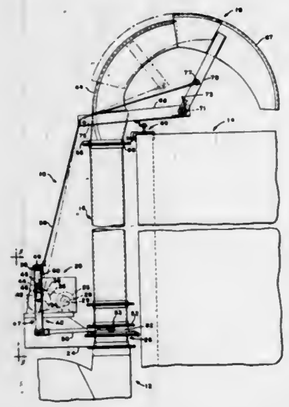
3,357,748
MATERIAL FEED REGULATOR
Herbert S. Lenhart, Allentown, Pa., assignor to Fuller Company, a corporation of Delaware
Filed July 22, 1966, Ser. No. 567,122
1 Claim. (Cl. 302—29)

An apparatus for regulating the feed of pulverulent material from a bin to a conveyor, comprising a generally cylindrical casing arranged between said bin and said conveyor, said casing carrying a material inlet communicating with said bin and a material outlet communicating with said conveyor, a generally hollow cylindrical rotary valve, having end walls, adapted to rotate axially within said casing and positioned directly beneath said material inlet, said rotary valve having a passageway extending between the end walls and through the cylindrical portion of the rotary valve, said passageway having an entry communicating with said material inlet and an exit



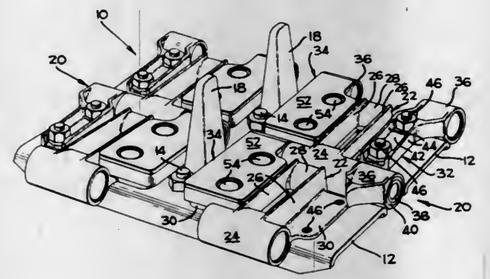
to simultaneously communicate with the material outlet, said entry defined by edges which diverge outwardly along the cylindrical portion of the rotary valve towards said exit, and a fluidized conveyor section arranged directly beneath the rotary valve to provide communication between the material outlet and the conveyor so that material introduced into the bin flows by gravity through the rotary valve and material outlet onto the fluidizing section.

3,357,749
SILAGE DISTRIBUTOR
Shaun A. Seymour, Ephrata, Pa., and William E. James, Dijon, France, assignors to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware
Filed May 25, 1966, Ser. No. 552,810
10 Claims. (Cl. 302—60)



1. A silage distributor comprising in combination an elongated feed conduit adapted to extend vertically alongside a silo and having a lower end adjacent ground level through which feed material is received from a forage blower or other mechanism and an upper end adjacent the top of the silo, a chute carried on said conduit at the upper end thereof for directing feed material from said conduit into said silo, drive means for oscillating said conduit and the chute thereon about a vertical axis, said drive means moving said chute in a first direction from one side of the silo to the other side and in a second direction opposite to said first direction, means for oscillating said chute about a horizontal axis to change the vertical position of said chute as it is being oscillated so that said material is distributed in a closed curve around the periphery of the silo, said material being distributed in a first portion of said curve when said chute is oscillated in said first direction and in a second portion of said curve when said chute is oscillated in said second direction, said first portion of the curve being substantially longer than said second portion of the curve, said first portion of the curve being opposite said conduit and said second portion being adjacent said conduit, said drive means oscillating said chute at a first rate of speed in said first direction and at a faster rate of speed relative to said first rate in said second direction, and said rates of speed being proportional to the lengths of said curve portions.

3,357,750
HINGED TRACK
Ralph K. Reynolds, Saratoga, and David L. Whitaker, San Jose, Calif., assignors to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Oct. 6, 1965, Ser. No. 493,432
8 Claims. (Cl. 305—11)



4. A crawler chain assembly comprising a plurality of ground engaging track shoes, a plurality of preassembled leaf hinges for individually pivotally interconnecting each adjacent pair of said track shoes, each hinge including at least two leaves coupled by a pivot pin, each leaf of each said hinge being superimposed on a leaf of an adjacent hinge, common attachment means securing one of the leaves of a hinge to one of said track shoes and to one leaf of a first adjacent hinge, and common attachment means securing the other leaf of said first mentioned hinge to the next adjacent track shoe and to a leaf of a second adjacent hinge.

3,357,751
VEHICLE-TRACK SYSTEM
Harry S. Brown, 209 Midstreams Road, Bricktown, N.J. 08723
Filed Jan. 10, 1966, Ser. No. 519,594
7 Claims. (Cl. 305—34)

1. A vehicle track system comprising:

(a) a plurality of vehicle wheels disposed in the same general vertical plane;

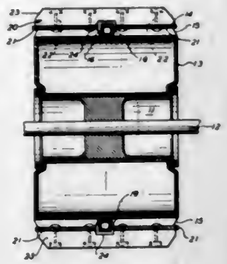
(b) an inflatable tire on each wheel;

(c) a peripheral, annular substantially centrally disposed channel in each tire;

(d) a plurality of retainers in each channel, with peripheral edges extending radially out of the channels;

(e) means attaching together the retainers in each channels in continuous separate loops on each tire and

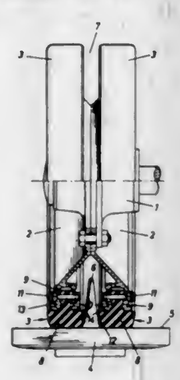
holding them seated in each channel to define guide assemblies on each tire for keeping a track centered on the tires;



(f) a pair of flexible loops defining said track positioned on and driven by a portion of the periphery of the tires, said track loops being slightly spaced apart so as to position one loop on each side of but closely adjacent to the guide assemblies, and having an internal channel with loop circumference greater than the length of a line defined by the peripheral edges of the retainers;

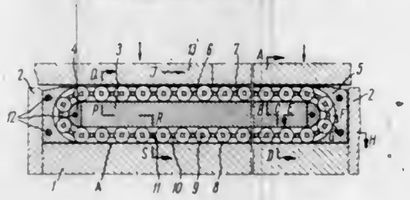
(g) a plurality of cleats, each connected to both loops and extending radially, and outwardly therefrom.

3,357,752
TRACK WHEEL FOR TRACK-LAYING VEHICLES
Walter Ruf, Landhaus am See, Thurgau, Bottighofen, Switzerland
Filed Apr. 28, 1966, Ser. No. 546,096
Claims priority, application Germany, Apr. 28, 1965, R 40,486
8 Claims. (Cl. 305—56)



1. A track-laying vehicle comprising a track member passing over a rotatably mounted track wheel, said track member including a transverse bearing surface and a plurality of teeth inwardly projecting from said surface, said track wheel comprising a rotatably mounted hub, a pair of discs mounted on said hub, a pair of elastic tires, and means for easily replaceably attaching these elastic tires to said discs, said tires being laterally spaced apart from each other and having substantially straight facing side walls which conform to a portion of the side walls of said teeth, said teeth being receivable between the facing side walls of said tires whereby said teeth are laterally supported by said facing walls, said tires being substantially T-shaped in cross section and including a cross-leg and a perpendicularly extending stem portion, the outer face of said cross-leg bearing against said track member transverse bearing surface, said cross-leg having a substantial thickness, said facing side walls of said tires being constituted by the facing sides of said cross-legs, the facing sides of said cross-legs conforming to and contacting the side walls of said teeth from the point where said teeth side walls merge into said transverse bearing surface and for a substantial distance along the side walls of said teeth.

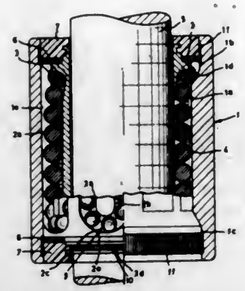
3,357,753
ROLLING BEARING FOR MACHINE PARTS OR UNITS PERFORMING STRAIGHT-LINE MOTION
Valentin Vasiljevich Ionov, Korobeinikov per. 5/8, Apt. 1, Moscow, U.S.S.R.
Filed Oct. 14, 1964, Ser. No. 403,848
1 Claim. (Cl. 308—6)



A bearing for transmitting straight line motion, said bearing comprising an elongated race member having a pair of parallel straight race-ways therein, and opposite walls bounding each race-way, said walls having slots therein opening into said race-ways and extending the entire length thereof, said race member having opposite ends and including an insert assembly at each end, said insert assemblies each comprising first and second members secured to the race member and having respective convex and concave surfaces defining a channel which connects and serves as an extension of said race-ways and a groove which connects and serves as an extension of said slots such that a continuous closed path is formed for the race-ways and slots, working rollers in said race-ways and channels, said rollers including axles rotatably supported in said slots and grooves, and needle rollers in said race-ways and channels in alternation with the working rollers and in contact therewith, one of said needle rollers being a replaceable compensating roller having a middle portion with a diameter greater than that of the other needle rollers but less than that of the working rollers.

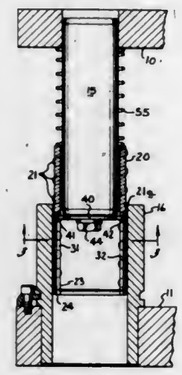
3,357,754
ARRANGEMENT FOR AXIALLY GUIDING A CYLINDRICAL MEMBER
Claude Bétrix, Peseux, Switzerland, assignor to Sferax S.A., Cortaillod, Switzerland, a firm
Filed Nov. 2, 1964, Ser. No. 408,092
Claims priority, application Switzerland, Nov. 4, 1963, 13,497/63
1 Claim. (Cl. 308—6)

In combination in an arrangement for axially guiding a cylindrical member, comprising a sleeve coaxial with said cylindrical member and provided in its inner surface with spaced annular grooves, a tubular cage fitted between said sleeve and the cylindrical member and defining annular passageways at each end of said arrangement, said sleeve also being provided with grooves opening partly into registry with said cylindrical member and with the sleeve, and with annular grooves at each end thereof, said cage and sleeve being furthermore provided with striations parallel to said cylindrical member extending over a part of the length of the bottom of the annular grooves in said cage and sleeve, balls carried inside the second-mentioned grooves and guiding the cylindrical member axially with reference to the sleeve, a pair of washers serrated along their outer edge to correspond to said striations of said sleeve and closing said passageways



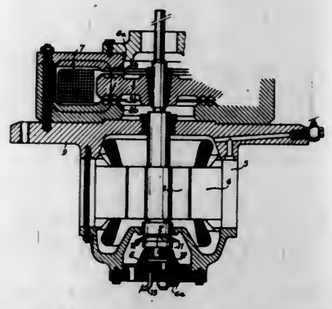
and defining an annular space at each end of said arrangement; and a mass of plastic in said space in registry with said cage and said sleeve and holding the cage in position in said sleeve, said plastic material extending at least a fraction of the length of said annular grooves and of said striations.

3,357,755
BALL BEARING DIE SET
James C. Danly, River Forest, Ill., assignor to Danly Machine Specialties, Inc., Chicago, Ill., a corporation of Illinois
Filed Oct. 23, 1965, Ser. No. 503,084
7 Claims. (Cl. 308—6)



2. In a ball bearing die set the combination comprising a post, a cooperating sleeve, a ball bearing cage of cylindrical shape having captive balls spaced axially and peripherally therein and having an inner end and an outer end, the cage having an internal groove axially along the inner surface starting at its outer end and terminating in an internal abutment midway along the length of the cage, a stop secured to the outer end of the post and extending radially therefrom into register with the groove, said cage being biased outwardly with respect to the post so that when the post and the sleeve are disengaged the stop is bottomed on the internal abutment with the cage in a semi-extended position phased for equalized travel of the cage with respect to the post and sleeve upon subsequent re-engagement, said stop being freely pivoted along the axis of the post so that the stop and the cage are both free to randomly rotate with the result that the wear of the balls is evenly distributed about the cooperating surfaces of the post and sleeve respectively.

3,357,756
BEARING MEANS FOR VERTICALLY MOUNTED MOTORS
Henri Fehr, Montmorency, France, assignor to Commissariat à l'Energie Atomique, Paris, France
Filed Aug. 9, 1963, Ser. No. 301,117
Claims priority, application France, Aug. 22, 1962, 907,477, Patent 1,338,962
3 Claims. (Cl. 308—10)

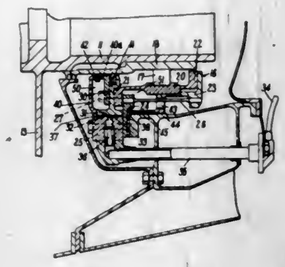


1. Improved bearing means for a vertically mounted motor, comprising: a frame; a rotor mounted in said frame for rotation about a vertical axis; a fluid bearing disposed below said rotor supporting and centering the lower end of said rotor in said frame; and magnetic centering means disposed above said rotor centering the upper end of said rotor in said frame, said fluid bearing comprising a plane abutment on said frame extending substantially normal to the axis of rotation of said rotor, a cylindrical recess extending downwardly into the frame from said plane abutment, a plane surface on the lower end of the rotor opposed to the plane abutment on the frame and forming therewith a fluid thrust bearing; and a circular pivot rigid with the lower end of the rotor disposed in said recess for rotation therein and forming therewith a fluid radial bearing; said magnetic centering means comprising a magnetic centering member having at least one generally V-shaped annular rib formed thereon rigid with the upper end of said rotor and electric exciter winding means carried by the frame and disposed adjacent said magnetic centering member, said exciter means having at least one generally V-shaped annular rib formed thereon and disposed in spaced, opposed axial relationship to said rib on said centering member.

3,357,757
TURBINE BEARING ASSEMBLY
Frederick William Walton Morley, Castle Donington, and Stanley Cooper, Littleover, Derby, England, assignors to Rolls-Royce Limited, Derby, England, a company of Great Britain
Filed Jan. 11, 1965, Ser. No. 424,742
Claims priority, application Great Britain, Feb. 21, 1964, 7,467/64, Patent 988,500
5 Claims. (Cl. 308—26)

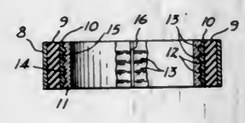
1. A bearing assembly comprising fixed structure, a bearing supported therein, a plurality of angularly spaced apart, axially extending resilient bars resiliently connecting one portion of said bearing to said fixed structure, said fixed structure and said one portion having respective

cylindrical surfaces defining a relatively narrow continuous annular gap therebetween, radially extending surfaces of said fixed structure and said one portion cooperating to completely enclose said gap, and means for supplying



lubricant under pressure to said gap whereby in operation a hydrodynamic film of lubricant is maintained in said gap to provide damping between said fixed structure and said one portion of the bearing.

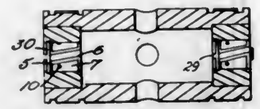
3,357,758
CUSHIONED BEARING ASSEMBLY
Harvey E. Miller, Logansport, Ind., assignor to The General Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Original application Jan. 4, 1962, Ser. No. 164,361, now Patent No. 3,188,152, dated June 8, 1965. Divided and this application Apr. 27, 1965, Ser. No. 451,125
2 Claims. (Cl. 308—26)



1. A cushioned sealing assembly comprising a rigid inner metal sleeve (**11**) having an internal cylindrical surface and an external surface of revolution containing a series of narrow circumferential ribs and grooves (**14** and **15**) spaced apart throughout the length of said sleeve, a longitudinally split resilient sleeve member (**10**) formed of a low friction plastic material and having an external cylindrical surface and an internal surface of revolution containing circumferential ribs and grooves (**12** and **13**) interfitting with the ribs and grooves of said metal sleeve, a rigid circumferentially continuous outer metal sleeve (**8**) having an inner cylindrical surface concentric to said inner metal sleeve and said sleeve member, and a tubular insert (**9**) of elastic rubber retained under radial compression between said outer metal sleeve and said low-friction sleeve member.

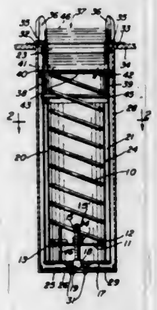
3,357,759
BEARINGS
Norman Douglas Stephenson, Wonersh, England, assignor to Servomatic Hydraulics (Guildford) Limited, Godalming, Surrey, England, a British company
Filed Feb. 23, 1965, Ser. No. 434,454
11 Claims. (Cl. 308—122)

1. In a hydrostatic bearing which is capable of holding, in a floating state, a rotor journalled therein and which comprises at least 3 pressure pads defined by edges of parallelogram configuration placed symmetrically around the circumference of the bearing surface of a journal, each pad having a central recess also defined by edges of parallelogram configuration, the pads being separated from the rotor by a fluid and from each other by exhaust channels, and inlet means in each recess by which



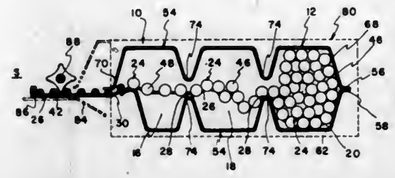
fluid under pressure may be fed into the journal via a restrictor so that it can flow between the surface of the rotor and the pressure pads into the exhaust channels, each pad extending in a direction oblique to the axis of the bearing in helical disposition.

3,357,760
STORING AND DISH DISPENSING APPARATUS
George R. Shelley, 9630 Red Road 33126, and Robert J. Shelley, Jr., 5900 SW. 113th St. 33156, both of Miami, Fla.
Filed Jan. 24, 1966, Ser. No. 522,768
5 Claims. (Cl. 312—71)



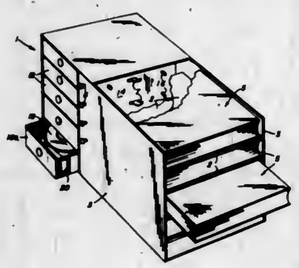
5. A self-leveling dish dispenser comprising a tubular housing having an upper dispensing opening and an apertured floor; an elongated rotatable member mounted for cylindrical movement within said housing; a first plate removably mounted adjacent said floor; lock members engageable in the aperture of said floor for immobilization of said first plate; a centrally apertured second plate connected to a lower end portion of said rotatable member; screw means fixed to said first plate and projecting upwardly into the cylinder generated by said rotatable member through the aperture in said second plate; a spring support member rotatable about said screw means and superposed relative to said second plate; a torque transmission member connected to said spring support member and constrained for rotation with said rotatable member; a compression spring carried on said spring support member and projecting upwardly therefrom within the cylinder formed by said rotatable member; a reciprocative dish carrier supported by said spring at its upper end to hold a stack of dishes in dispensable alignment with the upper dispensing opening, and manually engageable rotatable member extension means projected upwardly through said upper dispensing opening and adapted for disposition about a stack of dishes held on said dish carrier whereby said extension means is rotatable while the dispenser is dish laden to rotate said rotatable member and adjust the height of said spring support member, spring and dish carrier.

3,357,761
NAIL CARTRIDGE FOR DRIVING TOOL MAGAZINES AND FLEXIBLE NAIL STRIP THEREFOR
Arthur Langas, Chicago, and Frank C. Howard, Wheeling, Ill., assignors to Signode Corporation, Chicago, Ill., a corporation of Delaware
Filed Oct. 11, 1965, Ser. No. 494,476
10 Claims. (Cl. 312—73)



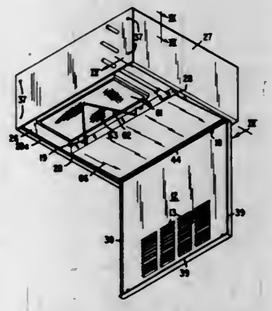
1. A nail cartridge for use in a nail magazine associated with a nail driving machine and comprising: a cartridge shell of box-like configuration, having a top wall, a bottom wall, side walls and a front end wall, a transversely extending vertical partition wall projecting between said side walls and dividing the interior of the shell into adjacent nail-receiving compartments, and a flexible nail strip disposed within said shell and, when the strip is in its extended condition, comprising a row of nails arranged in side-by-side spaced parallel relationship, and a flexible web of a width appreciably less than the length of the nail shanks, having a side face thereof adhered to each nail shank, said partition wall providing a vertically elongated nail passage establishing communication between the compartments for passage of nails therethrough, said front end wall being provided with a vertically elongated nail outlet opening, a medial region of said nail strip projecting loosely through said nail passage with the nails thereof on opposite sides of said medial region being grouped together in substantial contiguous relationship with the nails being disposed in approximate vertical positions and substantially filling said compartments whereby, upon pulling of the strip endwise outwardly through said outlet opening the nails in the adjacent compartment will be withdrawn from the nail group contained therein until substantial depletion thereof, after which the nails in the other compartment will be drawn through said adjacent compartment and withdrawn from said outlet opening.

3,357,762
COMPARTMENT ALBUM AND FILING SYSTEM
Gordon James Forsyth, 5938 Wilson Blvd., Arlington, Va. 22205
Filed Oct. 22, 1965, Ser. No. 501,001
3 Claims. (Cl. 312—215)



1. A filing unit, comprising in combination a plurality of folio or album sections, each having a rigid hinge plate along one margin and a latch engaging element and cooperative guide pin receiving opening in said plate, a portable housing having an open front side, a side wall and a rear wall, a series of shelves extending forwardly from said rear wall and forming a plurality of similar compartments each receiving one of said folio or album sections, a latch mounted on said rear wall for each compartment and engaging one of said latch engaging elements in a folio or album hinge plate, a guide pin in each compartment engaging an opening in the hinge plate of one of said folio or album sections and cooperative with said latch means to hold the engaged album or folio in place until intentionally released, and a selective latch releasing means mounted on said side wall for each of said compartments for selectively releasing a single album or folio unit without releasing the others.

3,357,763
ROOM TERMINAL CABINET CONSTRUCTION
Walter B. Toper, Syracuse, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed Dec. 10, 1965, Ser. No. 512,871
10 Claims. (Cl. 312—236)



1. An air conditioning assembly comprising an air conditioning unit, a cabinet including a shell adapted to be mounted in a suspended position for receiving said air conditioning unit and including a top panel and side panels depending from said top panel, a first of said side panels being integral with said top panel and therewith forming an L-shaped section, and means releaseably interlocking the other said panels and said L-shaped section to facilitate assembly and disassembly of the cabinet shell, said cabinet including a normally closed bottom panel adapted to be opened for servicing the air conditioning unit and for installing the unit in the cabinet and removing the unit from the cabinet, means mounting said bottom panel on said cabinet shell for movement between closed and open positions, and means removably mounting said air conditioning unit in said cabinet, the bottom panel mounting means comprising hinge means between said bottom panel and at least one of said side panels, and said hinge means retaining said bottom panel attached to said shell in said closed and open positions and during normal movement between said positions and permitting removal of said bottom panel only in an intermediate position between said closed and open positions.

3,357,764
STORAGE CABINETS
Leo A. Burling, 3955 N. Interstate Ave., Portland, Oreg. 97227
Filed Feb. 7, 1966, Ser. No. 525,427
1 Claim. (Cl. 312—253)

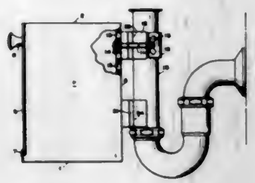
In a plumbing fixture mounted adjacent the wall of a room and having a pipe extending vertically downward therefrom, the improvement comprising,

a compartmented storage cabinet of box-like formation including a vertical back wall,

means carried by said back wall rotatably and adjustably clamping said cabinet to said pipe in selected rotated and elevated positions relative to said plumbing fixture,

said means characterized by said cabinet back wall having two series of vertically aligned apertures therethrough,

a first horizontally disposed spacer block engaging said vertical pipe and having an opening therethrough at each end thereof,



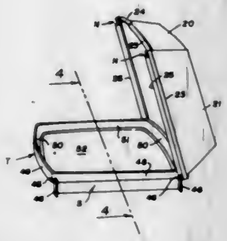
a clamping member embracing said pipe,

fastening elements extending through said vertically aligned openings and securing said clamping member and said first spacer block to said back wall of the cabinet,

a second spacer block identical with the first spacer block, and

means securing the second spacer block to said cabinet back wall in spaced relation to said first spacer block to maintain said cabinet in parallel relation to said pipe in any of its said selected adjustable positions.

3,357,765
FOOD SERVICE DEVICE
Victor D. Molitor, 2829 S. Santa Fe Drive, Englewood, Colo. 80110
Filed Aug. 2, 1965, Ser. No. 476,574
13 Claims. (Cl. 312—284)



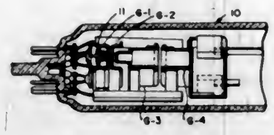
1. A food service device and the like, comprising:

means providing a horizontal surface for supporting food containers or the like, said surface having sides and ends forming corners;

means for supporting said surface means and including an upright member adjacent each corner of said surface and extending longitudinally therefrom; and

a cover for said surface having depending, lateral flange means at each end normally intersecting each upright member at the corresponding end of said surface, said lateral flange means being provided with notch means engaging said upright members for supporting said cover in horizontal position over said surface and also in a position tilted to either side.

3,357,766
METHOD OF CONTROLLING CATHODE FORMATION IN TV TUBE GUN
Robert R. Conger, Jr., Chicago, Ill., assignor to National Video Corporation, Chicago, Ill., a corporation of Illinois
Filed Aug. 17, 1966, Ser. No. 572,992
3 Claims. (Cl. 316—1)



1. In the method of controlling the forming of a cathode in a television tube, the step of reducing the filament volt while increasing the voltage of one of the pre-focus grids, the said filament voltage prior to decrease being of value such as to cause said cathode to emit when in unformed condition.

3,357,767
CATHODE RAY TUBE FABRICATION
Paul C. Shaffer, Seneca, Falls, N.Y., assignor to Sylvania Electric Products Inc., a corporation of Delaware
No Drawing. Continuation of application Ser. No. 401,258, Oct. 2, 1964. This application Mar. 1, 1967, Ser. No. 619,876
5 Claims. (Cl. 316—19)

1. In a color cathode ray tube having an annealed face panel with a patterned electron responsive screen formed on the interior surface thereof in registration with an adjacently positioned apertured mask and an envelope having at least one electron gun positioned therein to beam electrons through said mask to excite said screen, a method for fabricating said tube to insure lateral dimensional stabilization of said panel portion supporting said screen to provide improved registration between said patterned screen and said mask, said method comprising the steps of

baking said annealed panel prior to screen forming at a time-temperature combination at least equaling that subsequently encountered to shrink the glass and achieve stabilization of the lateral dimensions of said previously annealed face panel;

forming said patterned screen on the interior surface of said dimensionally stabilized panel in initial alignment and registration with said adjacently positioned apertured mask;

heat sealing said panel, with said mask positioned therein, to said envelope;

heat sealing at least one electron gun in said envelope in electron beam relationship to said screen to effect a complete tube structure; and

vacuum processing and sealing said tube structure to provide a completed tube having optimum registration of said patterned screen with said apertured mask in keeping with the initial registration alignment therebetween.

3,357,768
APPARATUS AND METHOD FOR VIEWING PROSPECTIVE MANUFACTURED RUG PATTERNS AND THE LIKE IN THREE DIMENSIONS
Kenneth W. Cox and Verna P. Cox, both of R.F.D. 1, Searsport Ave., Belfast, Maine 04915
Filed Sept. 17, 1963. Ser. No. 309,465
3 Claims. (Cl. 350—4)

1. Apparatus for viewing prospective rug color patterns, designs and the like comprising

a substantially hollow rectangular container including a normally horizontal bottom member, said bottom member having opposed front and back ends and a pair of opposed sides, said bottom member having a recess formed therein,

two side members with each fixedly connected, respectively, to one of said opposed sides of said bottom member and projecting upright therefrom,

a back member fixedly connected to said bottom member at the back end thereof and projecting upright therefrom, said back member having a pair of opposed ends and an elongated slot extending transversely therethrough intermediate its said opposed ends and opening into said recess, said slot being disposed immediately proximate said bottom member, said back member having a portion thereof overhanging said bottom member in vertically spaced relation relative thereto,

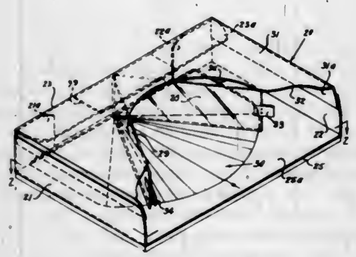
means connecting said opposed ends of said back member with, respectively, the adjacent ends of said side members,

a top member extending transversely across said bottom member in vertically spaced relation relative thereto, said top members spanning the upper ends of said side members and having a portion thereof superimposed on said extending portion of said back member, said top member having a transversely extending cutout portion formed therein opposed opposite its said superimposed portion,

means fixedly connecting said top member on said side members;

said viewing apparatus further including a pair of upright confronting mirror means each having an upper edge and opposed pairs of adjacent ends;

a first flexible hinged means connecting together one pair of adjacent ends of said mirrors;



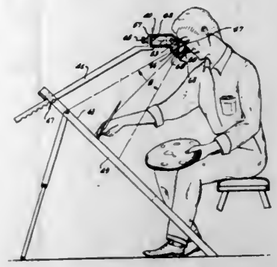
two second flexible hinge means, one means for each end of said one pair of adjacent ends of said mirrors respectively, each of said second flexible hinge means connecting its associated mirror with said back member centrally of the ends of the latter with the other adjacent pair of ends of said mirrors spanning said recess and being spaced vertically therefrom, said other adjacent pair of ends of said mirrors being freely movable towards and away from one another to selectively vary the angle therebetween, said upper edges of said mirrors at their said connected ends being vertically spaced below said overhanging portion of said back member;

means fixedly secured to said overhanging portion of said back member frictionally engaging said upper edges of said mirrors to hold said mirrors in adjusted angular relationship relative to one another;

a card slidably exposed in said recess below said mirrors and being insertable therein and removable therefrom through said slot and in directions toward and away from said one connected pair of adjacent ends of said mirrors; and

means on said card for releasably securing a swatch of material thereon for positioning between the confronting sides of said mirrors.

3,357,769
OPTICAL VIEWING APPARATUS
Kenneth B. Thompson, Lake Hughes, Calif. (P.O. Box 4, Leona Valley, Calif. 93550)
Filed Feb. 9, 1965, Ser. No. 431,348
10 Claims. (Cl. 350—121)



1. A camera lucida device, comprising:

a concave, substantially spherical mirror;

a hemispherical lens-prism having a planar reflecting face passing through the common center of curvature of the lens surface for producing a real image by refraction and reflection substantially coincident with the principal focal surface of said mirror, said lens-prism having a field curvature radius substantially equal to the field curvature radius of said mirror, the aperture stop of said lens-prism being located substantially at the center of curvature of said mirror;

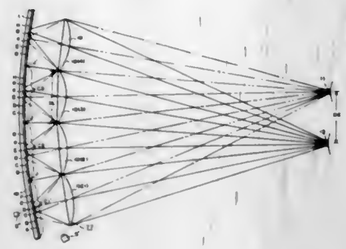
a partially reflecting, partially transmitting beamsplitter intersecting the optical axis between said lens-prism and said mirror; and

a right angle prism for reflecting light from a subject to said lens-prism.

3,357,770
STEREOSCOPIC VIEWING APPARATUS WHICH INCLUDES A CURVED LENTICULAR SCREEN IN FRONT OF A CURVED PICTURE SUPPORTING SURFACE
Wallace A. Clay, Ogden, Utah, assignor to Intermountain Research and Engineering Company, Inc., Salt Lake City, Utah, a corporation of Utah
Original application Oct. 2, 1961, Ser. No. 142,401, now Patent No. 3,225,672. Divided and this application Aug. 9, 1965, Ser. No. 478,388
9 Claims. (Cl. 350—131)

1. Stereoscopic panorama reproduction viewing apparatus including, in combination: an objective screen bearing a progressive series of mutually equally displaced, horizontally compressed, detail overlapping, stereoscopically-related viewable sections of a panoramic scene which are disposed side-by-side and are regularly successive, said sections respectively comprising complete photographic recordings of sections of a panoramic scene taken from successive camera viewpoints along a pattern which is convex toward the panoramic scene being taken; and an anamorphoscopic viewing window means disposed in front of said objective screen and comprising a multiplicity of positive, anamorphoscopically restoring elemental lens means, which have equivalent focal lengths, are disposed in side-by-side relationship, and are individually in registration with said stereoscopically-related viewable sections, respectively, for respectively, anamorphoscopically

restoring individually, visible elemental areas of said viewable sections, which depend for their selection upon the horizontal position of each eye of each viewer with respect to each of said elemental lens means, to produce two, individually continuous panoramas as seen by the respective eyes of each viewer thereof, corresponding portions of said viewable sections being stereoscopic doublets,



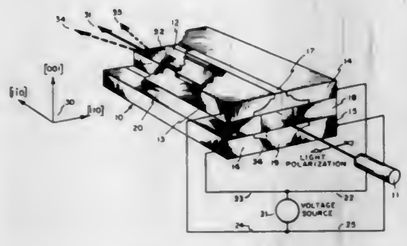
and the distance between said viewing window and said objective screen being less than the focal lengths of said elemental lens means and wherein said objective screen and said viewing window are mutually curved with respect to observers thereof and have a degree of curvature nominally equal to the degree of curvature of the adjacent camera viewpoints from which said viewable sections had been stereoscopically recorded, but opposite thereto.

3,357,771

LIGHT BEAM DEFLECTOR EMPLOYING ELECTRO-OPTIC CRYSTAL

Carl F. Buhrer, Hempstead, and Vernon J. Fowler, East Meadow, N.Y., assignors to General Telephone and Electronics Laboratories, Inc., a corporation of Delaware

Filed Oct. 1, 1963, Ser. No. 313,041
11 Claims. (Cl. 350—160)



1. Apparatus for deflecting a beam of electromagnetic energy comprising

(a) an element composed of an electrically controllable refractive medium positioned in the path of said beam, the refractive index of said element being non-uniform in the presence of an applied field, and

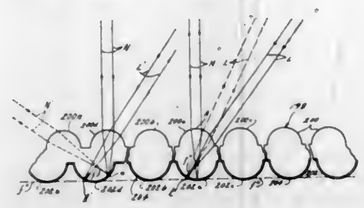
(b) means for producing a linear variation in the refractive index of said crystal comprising field generating means positioned adjacent said element, said field generating means producing said linear variation in the refractive index of said element in a direction transverse to the direction of propagation of said beam, the beam emerging from said element being deflected from said direction of propagation through an angle determined by the change in said refractive index.

3,357,772

PHASED LENTICULAR SHEETS FOR OPTICAL EFFECTS

William P. Rowland, Southington, Conn., assignor to Rowland Products, Incorporated, Kensington, Conn., a corporation of Connecticut

Filed Feb. 27, 1963, Ser. No. 261,385
14 Claims. (Cl. 350—167)



1. Synthetic plastic material for producing optical effects having a body portion of substantial length and width dimensions providing front and rear surfaces, said material being of substantially uniform thickness and having a multiplicity of closely spaced curvilinear lens-like embossments on the front surface thereof, each lens-like embossment projecting on an axis perpendicular to said front and rear surfaces, said material also having a multiplicity of closely spaced reflective embossments on said rear surface, each reflective embossment projecting on an axis perpendicular to said front and rear surfaces, each of said lens-like and reflective embossments diminishing in cross-section outwardly from said body portion in all planes which include its perpendicular axes to provide side walls tapering inwardly from said body portion towards each perpendicular axis, each of said lens-like embossments being curvilinear in cross section in all planes which include its perpendicular axis and in all planes which extend normally through its perpendicular axis, said reflective embossments phasing in and out of axial registry with said lens-like embossments in at least one direction of said surfaces to provide varying optical effects due to variation in the angle of incidence of light rays focused by said lens-like embossments of said front surface onto the tapering side walls of the reflective embossments of said rear surface, the center-to-center close spacing of said lens-like embossments deviating not more than 10 percent from the center-to-center close spacing of said reflective embossments, said close spacing of said lens-like and reflective embossments precluding any bands of flat surface therebetween in any direction of said surfaces, said tapering side walls of said reflective embossments reflecting the predominant portion of light rays impinging thereon, said material being of a thickness to effect substantial focusing of light rays passing through said lens-like embossments and impinging upon said reflective embossments for substantial reflection thereof.

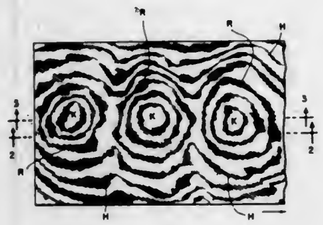
3,357,773

PATTERNED SHEET MATERIAL

William P. Rowland, Southington, Conn., assignor to Rowland Products, Incorporated, Kensington, Conn., a corporation of Connecticut

Filed Dec. 31, 1964, Ser. No. 422,842
19 Claims. (Cl. 350—167)

1. Synthetic plastic material for producing a visual moire pattern having a body portion of substantial length and width dimensions providing front and rear surfaces, said material being of substantially uniform thickness and having a multiplicity of closely spaced curvilinear lens-like embossments arranged in a first pattern on the front surface thereof, each lens-like embossment projecting on an axis perpendicular to said front and rear surfaces, said material also having a multiplicity of closely spaced reflective embossments arranged in a second pattern on said rear surface, each reflective embossment projecting on an axis perpendicular to said front and rear surfaces, each of said lens-like and reflective embossments diminishing in cross-section outwardly from said body portion in all planes which include its perpendicular axis to provide side walls tapering inwardly from said body portion toward said perpendicular axis, each of said lens-like embossments being curvilinear in cross section in all planes which include said perpendicular axis and in all planes which extend normally through said perpendicular axis, said reflective embossments phasing in and out of perpendicular axis registry with said lens-like embossments in at least one direction of said surfaces to provide varying optical effects due to variation in the angle of incidence of light rays focused by said lens-like embossments of said front surface onto the tapering side walls of the reflective embossments of said rear surface, the center-to-center close spacing of said lens-like embossments deviating not more than 10 percent from the center-to-center close spacing of said reflective embossments, said close spacing of said lens-like and reflective embossments precluding any bands of flat surface therebetween in any direction of said surfaces, said tapering side walls of said reflective embossments reflecting the predominant portion of light rays impinging thereon, said material being of a thickness to effect substantial focusing of light rays passing through said lens-like embossments and impinging upon said reflective embossments for substantial reflection thereof, said patterns of said embossments on said front and rear surfaces each having a plurality of pattern axes, the period for the lens-like and reflective embossments to phase into and out of perpendicular axis registry being greater along one pattern axis in at least some areas of the material than the period for such phasing of said lens-like and reflective embossments along another pattern axis of the same pattern, said variations in period producing areas in which said lens-like and reflective embossments are in substantially the same degree of perpendicular axis alignment over a multiplicity of consecutive embossments along said one pattern axis in at least some areas of the material, said variations in period and extended areas of perpendicular axis alignment producing bands of brightly reflective areas and of poorly reflective areas which form a visual moire pattern.



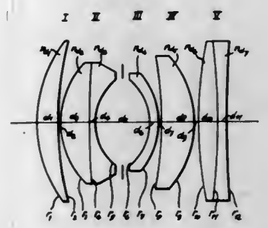
3,357,774

PHOTOGRAPHIC WIDE-ANGLE OBJECTIVE OF LARGE RELATIVE APERTURE HAVING FIVE AIR SPACED COMPONENTS

Johannes Becker, Delft, Netherlands, assignor to N.V. Optische Industrie "De Oude Delft," Delft, Netherlands, a corporation

Filed Oct. 30, 1963, Ser. No. 320,125
Claims priority, application Netherlands, Nov. 5, 1962, 285,066
2 Claims. (Cl. 350—176)

1. Photographic wide-angle objective of large relative aperture consisting of five air spaced components, the first component being a single meniscus lens of positive power which is convex to the object, the second component being a meniscus shaped doublet of negative power which is convex to the object and consists of a positive lens on the side of the object and a negative lens on the side of the image, the third component being a single meniscus lens of negative power which is convex to the image, the fourth component being a single meniscus lens of positive power which is convex to the image, and the fifth component being a meniscus shaped doublet of positive power which is convex to the object and consists of a positive lens on the side of the object and a negative lens on the side of the image, the second and third components



having the diaphragm positioned between them, characterized in that the following conditions are satisfied:

$$n_5 > 1.80$$

$$10r_7 > r_8 > 5r_7$$

$$0.22f > d_7 + d_8 > 0.16f$$

said objective more particularly having substantially the following optical data:

[$f=1$]

Component	Radius of curvature r	Lens thickness or Lens distance d	Refractive index n_d	Abbé number ν
I	$r_1 = +0.6329$	$d_1 = 0.1056$	$n_{d1} = 1.6937$	$\nu_1 = 53.5$
	$r_2 = +1.5181$	$d_2 = 0.0023$		
II	$r_3 = +0.4086$	$d_3 = 0.1414$	$n_{d3} = 1.6519$	$\nu_2 = 58.3$
	$r_4 = +4.692$	$d_4 = 0.0264$	$n_{d3} = 1.6131$	$\nu_3 = 37.0$
	$r_5 = +0.2548$	$d_5 = 0.2563$		
III	$r_6 = -0.2673$	$d_6 = 0.0451$	$n_{d4} = 1.7616$	$\nu_4 = 26.5$
	$r_7 = -0.3600$	$d_7 = 0.0155$		
IV	$r_8 = -1.8252$	$d_8 = 0.1554$	$n_{d5} = 1.8038$	$\nu_5 = 46.8$
	$r_9 = -0.4800$	$d_9 = 0.0016$		
V	$r_{10} = +1.9557$	$d_{10} = 0.0948$	$n_{d6} = 1.6424$	$\nu_6 = 58.1$
	$r_{11} = -3.0997$	$d_{11} = 0.0365$	$n_{d7} = 1.7400$	$\nu_7 = 28.2$
	$r_{12} = +6.0439$			

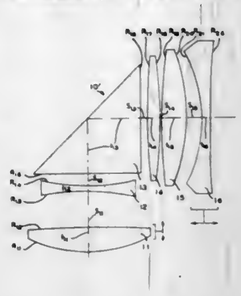
where r_n is the radius of curvature of the n^{th} refractive surface, d_n is the n^{th} lens thickness or distance in air between consecutive lenses taken along the optical axis, n_{dn} is the refractive index for the d-line of the spectrum and ν_n is the Abbé number of the n^{th} lens, n increasing from the side of the object to the side of the image.

3,357,775
PROJECTION OBJECTIVE AFFORDING VARIABLE MAGNIFICATION

Roger H. Appeldorn, White Bear Lake, Minn., and David C. Gilkeson, Rochester, N.Y., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Original application Nov. 13, 1961, Ser. No. 151,611. Divided and this application Oct. 24, 1965, Ser. No. 509,677

4 Claims. (Cl. 350—186)



4. A lens system comprising six air spaced lens elements, one of said elements being a triangular prism integrated in said system and positioned between other of said elements for changing the direction of the optic axis of the lens system, the other five of said elements being optically aligned along said optic axis from front to rear, the first of said five elements being a positive lens, the second being a negative lens positioned adjacent said first element and adjacent one side of the prism, the third being a positive lens positioned adjacent another side of said prism, the fourth being a positive lens, the fifth being a negative lens, and said first and fifth of said other five elements being movable along the optic axis for changing the magnification value and the equivalent focal length of the lens system and for focusing.

3,357,776
HIGH APERTURE OBJECTIVE OF THE EXTENDED GAUSS-TYPE

Johannes Becker, Delft, Netherlands, assignor to N.V. Optische Industrie "De Oude Delft," Delft, Netherlands

Filed Nov. 21, 1963, Ser. No. 325,335

Claims priority, application Netherlands, Nov. 30, 1962, 286,231

2 Claims. (Cl. 350—210)



1. A high aperture objective of the extended Gauss-type having a relative aperture greater than 1/1.2 and a field angle of substantially 40°, which consists of seven single lenses forming five components, of which components, taken in the order from the long towards the short conjugate side of the objective, the first and second each consist of a single meniscus lens (L_1, L_2) of positive power turning its concave side towards the diaphragm; the third is a negative meniscus component positioned on the same side of the diaphragm as the first and second components with its concave side turned towards the diaphragm, and consists of a biconvex lens (L_3) and a biconcave lens (L_4); the fourth is a meniscus of weak power positioned on the opposite side of the diaphragm with its concave side turned towards the diaphragm and consists of a biconcave lens (L_5) and a biconvex lens (L_6): and the fifth is a single biconvex lens (L_7), which objective fulfills the following conditions:

$$F=100$$

	Radius of Curvature, r	Lens Thickness or Distance, d	Refractive Index, n_d	Abbe Number, ν
L_1	$r_1 = 111.5$	$d_1 = 9.515$	$n_1 = 1.7201$	$\nu_1 = 50.3$
	$r_2 = 352.6$	$d_2 = 0.1$		
L_2	$r_3 = 65.7$	$d_3 = 8.545$	$n_2 = 1.7342$	$\nu_2 = 51.0$
	$r_4 = 104.1$	$d_4 = 0.97$		
L_3	$r_5 = 53.4$	$d_5 = 22.8$	$n_3 = 1.6422$	$\nu_3 = 58.1$
L_4	$r_6 = -329.1$	$d_6 = 4.175$	$n_4 = 1.7184$	$\nu_4 = 29.5$
	$r_7 = 28.0$	$d_7 = 22.235$		
L_5	$r_8 = -44.4$	$d_8 = 1.8$	$n_5 = 1.5481$	$\nu_5 = 45.9$
L_6	$r_9 = 80.8$	$d_9 = 11.36$	$n_6 = 1.7440$	$\nu_6 = 44.9$
	$r_{10} = -75.4$	$d_{10} = 0.1$		
L_7	$r_{11} = 150.4$	$d_{11} = 7.96$	$n_7 = 1.7342$	$\nu_7 = 51.0$
	$r_{12} = -106.5$			

wherein $L_{subscript}$ designates the lenses, $r_{subscript}$ the radius of curvature of the lens surfaces, $d_{subscript}$ the lens thickness or the distance between lenses along the optical axis, $n_{subscript}$ the refractive index for the d-line of the spectrum of the lenses, and $\nu_{subscript}$ the Abbe-number of the lenses, all subscripts increasing from the long towards the short conjugate side of the objective.

3,357,777
PORTABLE PERISCOPE FOR VIEWING PUBLIC EVENTS

Richard Keith Kallio, 4915 41st St. NW., Washington D.C. 20016; Laurie Kallio, administratrix of estate of Richard Keith Kallio, deceased

Filed July 30, 1963, Ser. No. 298,712

8 Claims. (Cl. 350—301)



1. A periscope of the character set forth, and comprising in combination:

(A) an elongated body foldable to provide a body comprising a front wall, a rear wall, a pair of side walls each connected to said front and rear walls, and a closure at each end of the body, one of said closures being hingedly connected to an end of the front wall and the other of said closures being hingedly connected to the opposite end of the rear wall, corresponding ends of said front and rear walls being longitudinally offset with respect to one another to dispose each of said closures at an angle of approximately 45 degrees with respect to said front and rear walls when said closures are positioned to close the respective opposite ends of the body;

(B) means formed with each of said closures for interlockingly engaging the wall opposite the wall to which each closure is connected;

(C) mirror supporting means disposed along the transverse end edges of said front and rear walls remote from the end thereof connected to one of said closures;

(D) a mirror disposed at each end of the body at an angle of approximately 45 degrees with respect to said front and rear walls when said closures are positioned as aforesaid, each of said mirrors being supported at one of its edges by the last-named means disposed at said end of the body and being held at its opposite edge in the apex of said angle formed by said closure at the corresponding end of the body, said interlocking means serving also to hold the closure at each end of the body in surface contact with the mirror at said end of the body; and

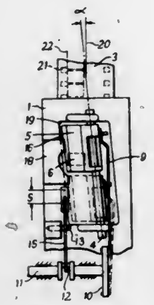
(E) said front wall and said rear wall being each formed with a viewing opening adjacent one end of the body.

3,357,778
CINEMATOGRAPHIC CAMERAS HAVING AN OBLIQUE RECIPROCATING SHUTTER

Paul Hillmann, Dresden, Germany, assignor to Veb Pentacon Dresden Kamera- und Kinowerke, Dresden, Germany

Filed Aug. 2, 1965, Ser. No. 476,428

6 Claims. (Cl. 352—207)



1. A cine camera having a reciprocating shutter-slide and with a film transport claw of which the oscillation range in the direction taken by the film is staggered in respect of the gate, wherein the shutter slide is mounted and guided obliquely in respect of the direction taken by the film, so that that edge of the shutter slide which faces towards the claw intersects the oscillation plane of the claw between the oscillation range of the claw and the gate.

3,357,779
MOTION PICTURE CAMERA

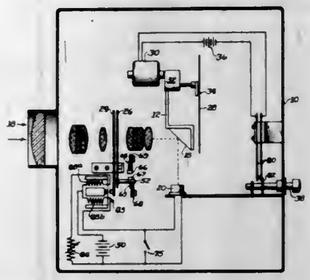
Vello Sulgussaar, Chicago, Ill., assignor to Bell & Howell Company, Chicago, Ill., a corporation of Illinois

Filed July 6, 1964, Ser. No. 380,204

5 Claims. (Cl. 352—141)

1. In a camera construction including a lens system, at least one swingable iris blade controlling passage of light through the system, and an automatically operable light sensitive iris blade actuating mechanism including a frame and powered actuating means for swinging the iris blade through a path of movement, the improvements comprising:

a deflection member movable by said iris blade through a path of movement having a predetermined physical length as said blade is moved by the actuating means;



yieldable motion resisting means on said frame being operative within an end portion of the movement path of said deflection member to dissipate energy applied through said deflection member by the actuating means and to effectively increase the length of the path of movement of that member within the physical length of said path; and

means mounting said motion resisting means for adjustment relative to said path wherein said effective path length can be varied.

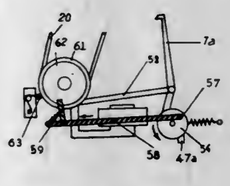
3,357,780
FILM DRIVING DEVICE FOR A MOTION PICTURE APPARATUS

Alphonse Martin, 4 Place de la Republique, Saint-Ouen, Hauts-de-Seine, France

Filed Mar. 9, 1964, Ser. No. 350,422

Claims priority, application France, Mar. 12, 1963, 927,673; Apr. 11, 1963, 931,233; Sept. 6, 1963, 946,743; Oct. 30, 1963, 952,226

2 Claims. (Cl. 352—166)



1. In a motion picture apparatus, in combination, an electro-magnet including a winding and a core, a member disposed opposite said core movable in response to the magnetizing thereof, a disc rotatable about an axis transverse to the direction of movement of said member, a link connecting a point of said disc to said member, means for resiliently opposing the displacements of said disc produced by the movement of said member resulting from the energizing of said electro-magnet, abutment means for limiting the movement of said disc to the dead center position of said disc, a film winding spool and means responsive to the movement of said disc for unidirectionally driving said film winding spool for rotations of said disc in one direction.

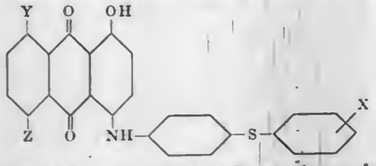
CHEMICAL

3,357,781
ANTHRAQUINONE DYESTUFFS FOR POLYESTER ARTICLES AND PROCESS FOR THE DYEING THEREOF

Argento Crotti, Cogliate, Milan, and Pietro Albanese, Milan, Italy, assignors to Aziende Colori Nazionali Affini ACNA S.p.A., Milan, Italy

No Drawing. Filed Mar. 18, 1964, Ser. No. 352,996
Claims priority, application Italy, Mar. 29, 1963, 6,506/63
10 Claims. (Cl. 8—4)

1. Dyestuffs for polyester fibers having the structure:



wherein X is hydrogen, Y and Z are chosen from the group consisting of OH, NO_2, Y being different from Z.

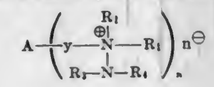
10. The process of dyeing polyethylenterephthalate fibers and films, which comprises immersing said fibers and films in aqueous dye baths containing dyestuffs according to claim 1 at temperatures in the range 100°–150° C. and autogenous pressures.

3,357,782
HYDRAZINIUM DYES, WITH MALEIC ACID OR ITS SALTS AND DYEING THEREWITH

Jose Carbonell, Viktor Sanabuja, and Hans Siegrist, Basel, Switzerland, assignors to Sandoz Ltd. (also known as Sandoz A.G.), Basel, Switzerland

No Drawing. Filed Jan. 20, 1964, Ser. No. 340,121
Claims priority, application Switzerland, Jan. 18, 1963, 613/63
13 Claims. (Cl. 8—25)

1. A process for dyeing or printing a textile fiber selected from the group consisting of an acrylonitrile polymerisation product and a linear aromatic polyester with an assistant and with a basic dye of the formula



(I)

wherein

A represents the radical of a dye free from anionic groups,
y represents a member selected from the group consisting of an alkylene group and a bridge member bound through such a group to the adjacent basic N atom,
R_1 represents a members selected from the group consisting of an alkyl, cycloalkyl and aralkyl radical and, together with R_2 and the adjacent N atom, a heterocyclic ring system, and together with the bridge member *y* and the adjacent N atom, a heterocyclic ring system,
R_2 represents a member selected from the group consisting of an alkyl, cycloalkyl and aralkyl radical and, together with R_1 and the adjacent N atom a heterocyclic ring system,
each of R_3 and R_4 represents a member selected from the group consisting of hydrogen, an alkyl, cycloalkyl, aralkyl and acyl or both R_3 and R_4 together with R_1 and R_2 and the N-atoms adjacent these substituents represent a member selected from the group consisting of a saturated and an unsaturated 5- to 6-membered heterocyclic ring system
and *n* represents an integer from 1 to 2,

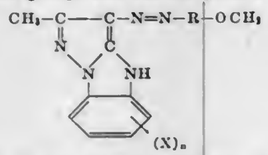
wherein the assistant is a member selected from the group consisting of maleic acid and its salts; the acrylonitrile polymerization product is a polymer of at least 80% acrylonitrile having from 0 to 20% of a copolymer selected from the group consisting of vinyl acetate, vinyl pyridine, methacrylate and methyl methacrylate; and the linear aromatic polyester is a member selected from the group consisting of aromatic dicarboxylic acid/glycol condensation product and aromatic dicarboxylic acid/aromatic alcohol condensation product.

3,357,783
PROCESS FOR DYEING AND PRINTING POLYPROPYLENE FIBERS WITH MONOAZO DYESTUFFS

Hermann Wunderlich, Cologne-Mulheim, and Karl-Heinz Menzel, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Apr. 9, 1964, Ser. No. 358,660
Claims priority, application Germany, Apr. 20, 1963, F 39,532; Oct. 26, 1963, F 41,114
5 Claims. (Cl. 8—41)

1. A process for dyeing and printing of polypropylene fibers which comprises treating polypropylene fibers with a dyestuff which is free of sulfonic acid groups and of carboxylic acid groups and has the general formula:



wherein R is an unsubstituted aromatic carboxylic radical or an aromatic carboxylic radical substituted with nonionic substituent groups, the $—OCH_3$ being attached to R in the o-position with respect to the azo group; X is halogen; and *n* is an integer from 0 to 4.

3,357,784
EXPOSURE TO INTENSE ULTRAVIOLET LIGHT TO IMPROVE CHARACTERISTICS OF CELLULOSIC FABRICS IN DIVINYL SULFONE AND GLYOXAL CROSS-LINKING PROCESSES

Andrew A. Kasper, Watertown, Mass., assignor to The Kendall Company, Boston, Mass., a corporation of Massachusetts

No Drawing. Filed Sept. 30, 1964, Ser. No. 400,548
10 Claims. (Cl. 8—116.4)

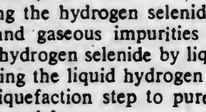
1. A process of producing a crease-resistant finish on a cellulosic fabric which comprises impregnating said fabric with a reactant selected from the group consisting of glyoxal and divinyl sulfone containing a sensitizing amount of glyoxal and subjecting the impregnated fabric to ultraviolet irradiation of an intensity of at least 10^{14} photons per square centimeter per second for a period of from 4 to 9 minutes.

3,357,785
SHRINKPROOFING WOOL THROUGH SERIAL IMPREGNATION WITH A DIISOCYANATE HAVING ONE OR TWO TERMINAL ESTER GROUPS AND A DIAMINE

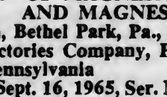
John D. Garber, Westfield, Gordon M. Ide, Morristown, and Frederick M. Melgs, Westfield, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Oct. 8, 1963, Ser. No. 314,613
12 Claims. (Cl. 8—128)

1. A process for the shrinkproofing of wool which comprises serially impregnating wool with an aqueous emulsion and an aqueous diamine dispersion, said emulsion comprising water and a diisocyanate of the formula:



wherein R_1 is selected from the group consisting of alkyl, alkoxy alkyl, aryl, alkaryl, aralkyl, and halogenated derivatives thereof, R_2 is selected from the group consisting of lower alkylene or lower alkylidene and R_3 is selected from the group consisting of hydrogen and the radical



3,357,786
PROCESS FOR THE PRODUCTION OF HIGHLY PURE SEMI-CONDUCTING SELENIUM MATERIALS

Hanswalter Giesekus, Cologne-Stammheim, and Hilla Schnöring, Wuppertal-Elberfeld, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

Filed Sept. 23, 1963, Ser. No. 310,623
Claims priority, application Germany, Oct. 9, 1962, F 37,996
9 Claims. (Cl. 23—50)

1. Continuous process for the production of highly pure semi-conducting materials selected from the group consisting of selenium and metal selenide which comprises

(I) contacting liquefied crude selenium in countercurrent flow with hydrogen under conditions of high surface exchange at a temperature below the formation temperature of hydrogen selenide yet sufficient to hydrogenate hydrogenatable impurities present to purify partially such crude selenium;
(II) converting the partially purified selenium to gaseous hydrogen selenide by reaction with hydrogen at a hydrogen selenide formation temperature below 700° C.;
(III) separating the hydrogen selenide from readily decomposable trace hydrides by decomposing such trace hydrides at a treatment temperature of about 300° C.;
(IV) separating the hydrogen selenide from entrained impurities including hydrides of a higher boiling point than hydrogen selenide by cooling to a deposition temperature just above the boiling point of hydrogen selenide;
(V) separating the hydrogen selenide from unreacted hydrogen and gaseous impurities of lower boiling point than hydrogen selenide by liquefaction; and
(VI) converting the liquid hydrogen selenide resulting from the liquefaction step to pure semi-conducting selenium material.

3,357,787
PRODUCTION OF MAGNESIUM CARBONATE AND MAGNESIA

Edward Einstein, Bethel Park, Pa., assignor to Harbison-Walker Refractories Company, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Sept. 16, 1965, Ser. No. 487,792
3 Claims. (Cl. 23—67)

1. In those methods of producing high-purity materials selected from the group consisting of magnesium carbonate and magnesia according to the carbonate process and in which required CO_2 gas is recovered from flue gas emanating from a preliminary calcination of natural carbonate rock containing magnesian values, the improvement which comprises cooling said gas below about 100° F., passing the cooled flue gas to a reaction zone where it is in intimate association with an aqueous amine-containing stream selective for the CO_2 gas in said flue gas while simultaneously removing sulfur values and fine magnesite dust from the flue gas as insoluble precipitate, maintaining a basic pH in said reaction zone, removing the insoluble precipitate from said reaction zone, removing the CO_2 from the stream containing it and passing the CO_2 to a leaching stage containing an aqueous slurry of the calcined carbonate rock, thereby precipitating said high-purity material.

3,357,788
PROCESS FOR PRODUCING FINELY DIVIDED CALCIUM FLUORIDE HAVING CONTROLLED PARTICLE SIZE

John Franklin Ross, Shaker Heights, Ohio, assignor to General Electric Company, a corporation of New York

No Drawing. Filed May 24, 1965, Ser. No. 458,425
3 Claims. (Cl. 23—88)

1. A process for producing finely divided calcium fluoride useful in the manufacture of phosphors and having controlled particle size which comprises forming a finely divided intimate admixture of calcium carbonate with an ammonium fluoride, adjusting the temperature of said admixture to initiate a reaction between said calcium carbonate and said ammonium fluoride so that ammonia and carbon dioxide gases are given off leaving as a reaction product the desired fluoride in a finely divided particulate form having about the same particle size as the calcium carbonate provided in the admixture.

3,357,789
PROCESS FOR PREPARING SOLID CUPROUS HALIDE SORBENTS

Edward Allen Hunter, Lake Jackson, Tex., and Warren Alfred Knarr, Baton Rouge, and Robert Joseph Fritz, East Baton Rouge, La., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Continuation of application Ser. No. 415,172, Dec. 1, 1964. This application Dec. 14, 1966, Ser. No. 601,806
6 Claims. (Cl. 23—97)

1. A process for preparing solid cuprous halide sorbents which comprises:

(A) dissolving a cuprous halide salt containing not in excess of 0.5 wt. percent moisture and selected from the group consisting of (1) cuprous chloride, (2) cuprous bromide, and (3) cuprous iodide in a hydrocarbon solvent mixture having a boiling range of from about 60 to about 330° F., and consisting in its essential components of C_4 to C_9 Type I to Type IV monoolefins and at least one low solubility component selected from the group consisting of (1) C_6 to C_7 monocyclic aromatics, (2) C_5 to C_7 cyclic monoolefins, and (3) mixtures of (1) and (2), said essential components constituting from 82 to 100 wt. percent of said solvent mixture with from 0 to 18 wt. percent thereof being selected from the group consisting of (1) polyolefins, (2) paraffins, and (3) mixtures of polyolefins and paraffins, the total components approximating 100 wt. percent of said hydrocarbon solvent mixture, at temperatures of about −50 to about 70° F.;
(B) contacting said cuprous halide solution at temperatures of about −40 to about 20° F. with a complex forming compound capable of forming a stable complex with said cuprous halide having a mol ratio of copper to complexing compound greater than 1:1 to form a stable cuprous halide complex which is at least partly insoluble in said hydrocarbon solvent mixture;
(C) recovering said cuprous halide complex and
(D) decomposing said complex by heating to thereby produce an active cuprous halide sorbent.

3,357,790

CALCINING METHOD FOR CONVERSION OF ALKALINE EARTH ORTHOPHOSPHATES TO THE PYROPHOSPHATE FORM

Elerington Saunders, St. Louis, and Felix Wright, Kirkwood, Mo., assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed Mar. 18, 1963, Ser. No. 266,005
9 Claims. (Cl. 23—108)

2. In a process for manufacturing an alkaline-earth metal pyrophosphate suitable for use as a dentifrice abrasive wherein a monobasic dialkaline-earth metal orthophosphate is molecularly dehydrated by calcining at a temperature below the melting point of said pyrophosphate to form said pyrophosphate, the improvement which comprises incorporating in said monobasic dialkaline-earth metal orthophosphate, prior to calcining, a neutral to basic alkali metal compound in an amount sufficient to provide from 650 p.p.m. to 20,000 p.p.m. of alkali metal content based on said monobasic orthophosphate; said neutral to basic compound being further characterized in that when dissolved in distilled water at 26° C. at a concentration of 1% by weight, it will release alkali metal cations within the aforesaid concentration range and also provides a pH above 6.5.

3,357,791

PROCESS FOR PRODUCING COLLOIDAL-SIZE PARTICLES OF ALUMINA MONOHYDRATE

Donald R. Napier, Ponca City, Okla., assignor to Continental Oil Company, Ponca City, Okla., a corporation of Delaware

No Drawing. Filed July 20, 1964, Ser. No. 385,550
5 Claims. (Cl. 23—143)

1. A process for producing colloidal-size particles of alpha-alumina monohydrate of a boehmite structure, said particles being further characterized by having only trace amounts of inorganic impurities, which process comprises hydrolyzing an aluminum alcoholate, contacting the resulting alumina with at least about 0.6 weight percent acetic acid based on alumina for at least about 1 minute so as to form the desired colloidal particle size, and recovering the thus-formed particles.

3,357,792

KNEADING PRETREATMENT FOR THE PRODUCTION OF ALUMINUM HYDROXIDE

Istvan Gebefügi, Attenhoferstrasse 45, Zurich, Switzerland

Filed Oct. 3, 1966, Ser. No. 583,909
17 Claims. (Cl. 23—143)

1. In a process for pretreating a ground alumina-bearing raw material for producing aluminum hydroxide according to the Bayer process, in which process said alumina-bearing raw material passes through a digesting step, the improvement comprising, before said digestion step, mixing said alumina-bearing raw material with at least one alkaline electrolyte and water, thereby forming a mass having a highly plastic consistency and thoroughly kneading said mass with compressing and shearing action to swell and disaggregate agglomerated particles of the said alumina-bearing raw material.

3,357,793

METHOD OF TREATING SULFURIC ACID SLUDGES

John E. Hanway, Jr., Columbus, and George R. Smithson, Grove City, Ohio, assignors, by mesne assignments, to Container Corporation of America, Chicago, Ill., a corporation of Delaware

Filed May 27, 1965, Ser. No. 459,256
8 Claims. (Cl. 23—173)

1. A method of treating liquid wastes which contain sulfuric acid and combustible carbonaceous materials comprising:

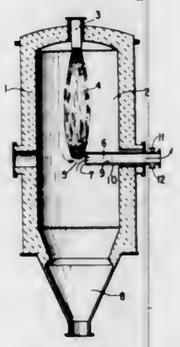
(a) neutralizing said waste with magnesia;
(b) oxidizing said neutralized waste by combustion in a vessel having a bed of magnesia particles fluidized by an oxygen containing gas;
(c) collecting the effluent gases formed by said combustion and separating the sulfur-oxygen gases therefrom; and
(d) withdrawing spheroidal magnesia particles from said bed to maintain the bed at a predetermined capacity.

3,357,794

PROCESS AND APPARATUS FOR CONTINUOUSLY PRODUCING TITANIUM DIOXIDE BY THE OXIDATION OF VAPORIZED TITANIUM TETRACHLORIDE

Robert J. Mas, Thann, and André L. Michaud, Vieux-Thann, France, assignors to Fabriques de Produits Chimiques de Thann et de Mulhouse, Thann, Haut-Rhin, France, a corporation of France

Filed July 25, 1962, Ser. No. 222,984
Claims priority, application France, July 29, 1961, 869,475
13 Claims. (Cl. 23—202)



1. In the production of titanium dioxide by the reaction of vaporized titanium tetrachloride with oxygen in a furnace chamber, whereby a hot suspension of TiO_2 in chlorine containing burned gases is formed continuously in said chamber, the process which comprises continuously evacuating said suspension as it is formed from a central zone of said chamber remote from the hot walls thereof and near the end of the zone of said reaction and continuously cooling the surfaces within said chamber by which the suspension is evacuated to keep the same at a temperature at which crusts of the TiO_2 will not accumulate thereon.

3,357,795

METHOD OF PRODUCING OR RECRYSTALLISING BORONPHOSPHIDE

Werner Kischio, Aachen, Germany, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Oct. 12, 1964, Ser. No. 403,055
Claims priority, application Germany, Oct. 28, 1963, N 23,943
5 Claims. (Cl. 23—204)

1. A method for the production of crystals of boron phosphide of the formula BP in a pure crystalline state, comprising reacting boron sulphide in the vapor form with vapors of phosphorus or a compound of phosphorus and sulphur at a temperature between 400° C. and 1100° C.

3. A method for the production of boron phosphide crystals of the formula BP in the pure crystalline state, comprising providing in a closed vessel at a first site a supply of boron phosphide and sulphur, maintaining said first site of the vessel at a temperature in excess of 1100° C. to cause the boron phosphide and sulphur to react to form boron sulphide vapor, and phosphorus vapor or



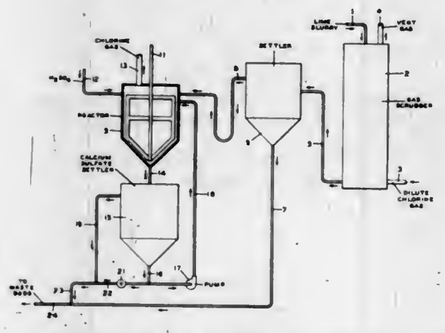
vapor compounds of phosphorus and sulphur which will travel to a second site within the vessel, and maintaining said second site at a temperature between 400° C. and 1100° C. to cause the boron sulphide vapor and phosphorus or phosphorus and sulphur compound vapors to react to deposit at said second site single crystals of boron phosphide of the formula BP reforming the sulphur for further reaction with the initial supply.

3,357,796

RECOVERY OF CHLORINE FROM WASTE GASES

Carlton J. Howard, Salina, and Eugene B. Port, Solvay, N.Y., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

Filed Aug. 10, 1965, Ser. No. 478,560
5 Claims. (Cl. 23—219)



1. A process for the recovery of chlorine in purified and concentrated form from dilute chlorine gas by passing the dilute chlorine gas in contact with a calcium hydroxide slurry to effect reaction of the chlorine and calcium hydroxide to produce an aqueous solution of calcium hypochlorite and calcium chloride, admixing sulfuric acid with the aqueous solution of calcium hypochlorite and calcium chloride to effect reaction to produce chlorine and calcium sulfate dihydrate, discharging chlorine from the reaction mixture, and maintaining a concentration of calcium sulfate dihydrate solids in the reaction mixture in an amount of at least 20% solids suspended in any part of the liquid in the reaction mixture.

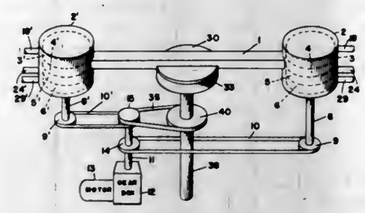
3,357,797

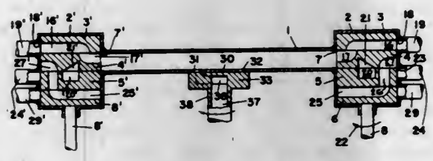
WAVE ENGINE PORTING MEANS

William B. Hansel, Media, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Oct. 20, 1964, Ser. No. 405,161
6 Claims. (Cl. 23—284)

1. In a wave engine, an open-ended stationary elongated hollow conduit, a plurality of fixed pipes at one end of said conduit, a rotatable valving arrangement for bringing individual ones of said pipes selectively into fluid communication with said one end of said conduit, a plurality of fixed pipes at the other end of said conduit, a rotatable valving arrangement for bringing individual





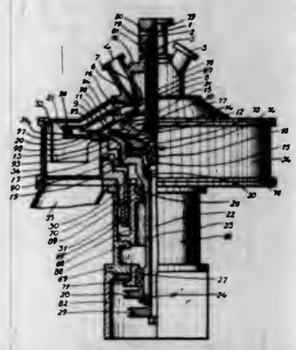
ones of said last-mentioned pipes selectively into fluid communication with said other end of said conduit, means providing a fluid flow channel near the center of said conduit, and a rotatable valving arrangement for bringing said channel into and out of fluid communication with the central portion of said conduit.

3,357,798

CENTRIFUGAL APPARATUS FOR OBTAINING CHEMICAL REACTIONS

Hachiro Yamashita, Omiya, Saitama Prefecture, Japan, assignor of one-third to Takara Koki Kabushiki Kaisha and one-third to Kiyoka Mukai, both of Tokyo, Japan

Filed Nov. 21, 1963, Ser. No. 325,510
Claims priority, application Japan, Nov. 22, 1962, 37/51,060
The portion of the term of the patent subsequent to Dec. 29, 1981, has been disclaimed
16 Claims. (Cl. 23—285)



1. In a reaction machine, in combination, a rotary member rotatable about an axis and having two concentric annular first surfaces being spaced from and independent of each other and disposed at an angle to said axis and bounded by peripheral edges, and a second surface disposed at an angle to said first surfaces and located opposite and outwardly of said peripheral edges of the first surfaces, said second surface being bounded by a peripheral edge; two supply means for supplying a first

reactant to one of said first surfaces and a second reactant to the other of said first surfaces; means for rotating said rotary member whereby said first and second reactants are spread over and move outwardly on said two first surfaces beyond said peripheral edges of the same and impinge said second surface to react with each other whereupon the reaction mass passes beyond said peripheral edge of said second surface; and means located outwardly of said peripheral edges for collecting said reaction mass.

3,357,799

DRYING LIQUID AMMONIA

William C. Klingelhoefer, Hopewell, Va., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Dec. 6, 1962, Ser. No. 242,643
2 Claims. (Cl. 23—293)

1. A process for dehydrating liquid ammonia containing small quantities of water which comprises passing the liquid ammonia in contact with alumina which had been previously activated by passing an inert gas at a temperature of 400° C. to 600° C. therethrough, maintaining the ammonia in liquid form during passage through said alumina, continuing passing said liquid ammonia through said activated alumina until the water content of the alumina is between 0.1 to 0.5 percent by weight, terminating the passage of liquid ammonia when the water content of the alumina is between 0.1 to 0.5 percent by weight, activating the alumina by passing an inert gas at a temperature of 400° C. to 600° C. therethrough, cooling the alumina and continuing alternate passage of the liquid ammonia through the alumina and activation of the alumina and recovering the dehydrated liquid ammonia exiting the alumina, the water content of the liquid ammonia being thereby reduced to less than 25 parts of water per million parts of ammonia.

3,357,800

PURIFICATION OF MAGNESIUM CHLORIDE WITH ALCOHOL

Remigius A. Gaska, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Nov. 26, 1963, Ser. No. 326,220
7 Claims. (Cl. 23—297)

1. A method of separating and recovering magnesium chloride hydrate as a high purity product from a solid acidified mixture consisting essentially of said hydrates together with small amounts of primarily sodium and potassium chlorides comprising the steps of: contacting the mixture, at a temperature with the range of about 0° to about 50° C., with an alcohol as a solvent selected from the group consisting of methanol and ethanol in a solvent-to-solid weight ratio sufficient to preferentially extract magnesium chloride therefrom, thereby concentrating said magnesium chloride in the selected alcohol, followed by separating it therefrom, thus obtaining a high purity magnesium chloride hydrate product.

3,357,801

STORAGE OF SODA ASH SLURRIES

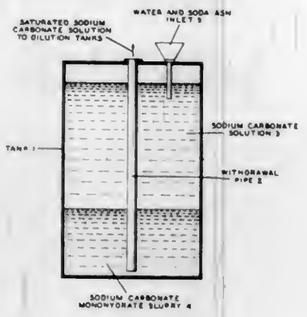
William H. Weed and John M. Price, Onondaga County, N.Y., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

Filed Nov. 12, 1963, Ser. No. 322,695
3 Claims. (Cl. 23—312)

1. A process for producing a clear, saturated sodium carbonate solution, substantially devoid of solids, from a sodium carbonate monohydrate slurry storage system comprising:

(a) providing, initially, a lower layer of said slurry and a supernatant aqueous layer;

(b) withdrawing a clear solution being substantially free of suspended crystals of sodium carbonate monohydrate from a level below the top of the layer of slurry upwardly through said slurry layer and supernatant layer in an enclosed, unobstructed path at a velocity which does not exceed 0.3 ft./min.;



(c) adding water to the top of the system; and

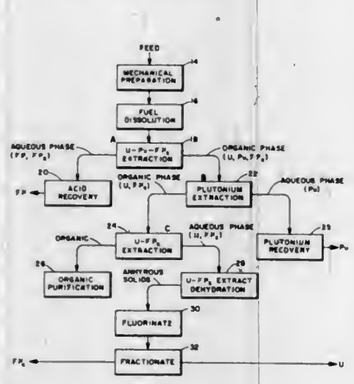
(d) adding sodium carbonate to the top of the slurry layer as required to maintain the same above the withdrawal level of the solution.

3,357,802

SINGLE CYCLE IRRADIATED FUEL REPROCESSING

Cleve R. Anderson, Portola Valley, Calif., assignor to General Electric Company, a corporation of New York

Filed Dec. 15, 1965, Ser. No. 519,811
10 Claims. (Cl. 23—339)



1. A method for treating an aqueous solution of irradiated nuclear reactor fuel which comprises subjecting said solution to a single cycle extraction with an organic solvent in the presence of an aqueous salting agent to produce an organic extract stream containing substantially all of the fissionable-fertile materials and a minor proportion of fission products including at least one fission product selected from the class consisting of ruthenium, zirconium, and niobium; treating said organic extract to remove substantially all of any fissionable-fertile materials other than uranium; further treating said organic extract to form an aqueous extract stream containing uranium and said selected fission products; dehydrating said aqueous extract stream to form anhydrous uranium trioxide (UO_3) and fission product oxides; directly and without intervening chemical treatment fluorinating said uranium trioxide and fission product oxides with elemental fluorine to form uranium hexafluoride and the corresponding fission product fluorides; and separating the relatively low boiling uranium hexafluoride from the relatively high boiling fission product fluorides.

3,357,803

PROCESS FOR THE PREPARATION OF DIFLUOROAMINE

Jeremiah P. Freeman, Huntsville, Ala., and Al Kennedy, Fayetteville, Tenn., assignors to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Mar. 31, 1959, Ser. No. 803,325
5 Claims. (Cl. 23—356)

1. A process for the preparation of difluoroamine which comprises reacting at a temperature of about 20° C. to about 70° C. tetrafluorohydrazine with a reducing agent selected from the group consisting of alkyl mercaptans, said alkyl group containing 1 to 6 carbon atoms, thiophenol, p-methylthiophenol, and arsine, and separating difluoroamine from the reaction mixture.

3,357,804

PROCESS FOR PREPARING HALOSULFONYL ISOCYANATES

Rolf Appel, Bonn, Germany, assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia

No Drawing. Filed Dec. 26, 1963, Ser. No. 333,753
Claims priority, application Germany, Oct. 29, 1963, O 9,749
3 Claims. (Cl. 23—357)

1. The method of preparing a halosulfonyl isocyanate having the formula XSO_2NCO wherein X is selected from the group consisting of chlorine and fluorine by heating a mixture of sulfuryl diisocyanate and halosulfonic acid in which the molar ratio of sulfuryl diisocyanate to halosulfonic acid is maintained in excess of 1:1 at 100° to 170° C., and distilling the said halosulfonyl isocyanate from the said mixture.

3,357,805

PROCESS FOR PREPARING P_3NCl_{12}

Margot Becke, Heidelberg, and Wendel Lehr, Schifferstadt, Germany, assignors to Olin Mathieson Chemical Corporation, a corporation of Virginia

No Drawing. Filed Nov. 29, 1962, Ser. No. 241,017
3 Claims. (Cl. 23—357)

1. Process for preparing P_3NCl_{12} comprising mixing PCl_3 with NCl_3 in a molar ratio of from 3:1 to 3.3:1, said PCl_3 in a first inert polyhalo-lower alkane solvent and said NCl_3 in a second inert polyhalo-lower alkane solvent at a temperature of −60 to +140° C. and separating the P_3NCl_{12} from the resultant mixture.

3,357,806

PROCESS FOR PREPARING ALKALI METAL ALUMINUM HEXAHYDRIDES

Joseph J. Dvorak, Denville, and Robert Ehrlich, Morristown, N.J., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware

No Drawing. Filed June 2, 1964, Ser. No. 372,124
14 Claims. (Cl. 23—365)

1. A process for preparing an alkali metal aluminum hexahydride comprising contacting an organometallic reactant of the formula: RM, wherein R is a radical selected from the group consisting of alkyl and aryl radicals, and M is an alkali metal selected from the group consisting of sodium, potassium and lithium, with an aluminum hydride trialkylaminate reactant of the formula:



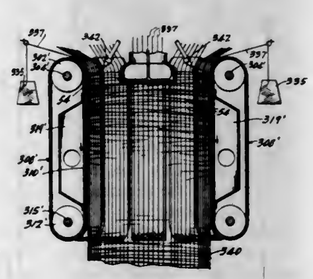
wherein R^1, R^2 and R^3 are alkyl radicals, until the alkali metal aluminum hexahydride is formed, and isolating the product contained therein.

3,357,807

METHOD AND APPARATUS FOR FORMING AND PROCESSING CONTINUOUS FILAMENTS

Charles J. Stalego, Newark, Ohio, assignor to Owens-Corning Fiberglas Corporation, a corporation of Delaware

Original application Dec. 8, 1961, Ser. No. 158,041, now Patent No. 3,250,602, dated May 10, 1966. Divided and this application Oct. 21, 1965, Ser. No. 499,180
2 Claims. (Cl. 65—6)



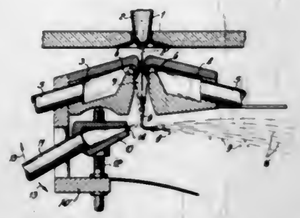
1. The method of forming and processing continuous filaments of heat-softenable mineral material including the steps of feeding a stream of the heat-softened mineral material onto a surface formed with openings, rotating the surface, discharging the mineral material through the openings, attenuating the mineral material discharged through the openings into continuous filaments by centrifugal forces of rotation, continuously collecting the filaments upon a circular support moving in a direction lengthwise of the axis of the rotating surface, applying a coating material onto the filaments, feeding linear reinforcing material into engagement with the continuous filaments concomitantly with their collection, moving the assemblage of continuous filaments and reinforcing material along the circular support, and severing the assemblage lengthwise of its direction of movement.

2. Apparatus of the character disclosed, in combination, a rotor having a wall formed with a plurality of orifices, means for rotating the rotor, means for delivering heat-softened mineral material into the rotor whereby the material is discharged through the orifices in individual bodies, the individual bodies of mineral material being attenuated into continuous filaments by centrifugal forces established by rotation of the rotor, a surface adapted to collect the continuous filaments in a mass, said surface being movable in a direction lengthwise of the axis of the rotor, means for feeding linear reinforcing material into engagement with the continuous filaments, an applicator adapted to deliver coating material onto the filaments, and means for severing the collected mass of continuous filaments as it is moved away from the rotor by the collecting surface.

3,357,808
METHOD OF PREPARING FIBERS FROM A VISCOUS MELT

Hans Eberle, Ludwigshafen (Rhine), Germany, assignor to Grunzweig & Hartmann AG, Ludwigshafen (Rhine), Germany

Filed Dec. 29, 1964, Ser. No. 426,464
Claims priority, application Germany, Oct. 24, 1960, G 30,771; Nov. 2, 1960, G 30,841; Nov. 11, 1960, G 30,848; Aug. 14, 1961, G 32,928
3 Claims. (Cl. 65—7)

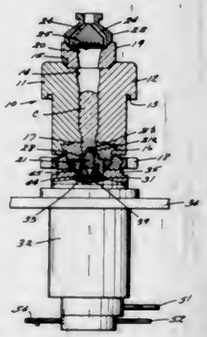


1. A method of producing fibers from a filament-forming viscous melt which comprises:
(a) discharging said melt in the fluid state from nozzle means in a continuous filament;
(b) contacting said filament with a first stream of gas flowing at a velocity greater than the rate of discharge of said material, the velocity of said stream being sufficient to disperse said filament into a plurality of elongated fibers and to move said fibers in the direction of elongation thereof;
(c) reducing the temperature of said fibers by contact with said stream below the temperature of the discharged material while maintaining a portion of said fibers in said fluid state; and
(d) contacting said partly fluid fibers with a second stream of a gas flowing transversely of said direction, the velocity of said second stream being sufficient to deflect said fibers transversely and to plastically deform said portion of said fibers.

3,357,809
GLASS FORMING APPARATUS

Robert D. Colchagoff, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio

Filed Dec. 5, 1966, Ser. No. 599,203
4 Claims. (Cl. 65—229)

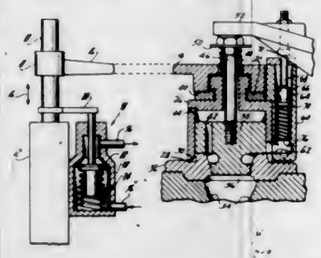


1. In a glass parison forming apparatus comprising a neck mold defining a neck finish forming cavity having an axial end opening, a blank mold, means independently supporting said neck mold and blank mold in a glass forming position defining a glass parison shaping cavity, a neck pin, and means supporting the neck pin for reciprocating movement in the axial end opening of the neck finish forming cavity and into and out of said neck cavity, the improvement wherein
the neck pin (21, 21') comprises a body (21*a*, 21*a*') and a tip (21*b*, 21*b*') attached on the forward end of said body,
the tip being inserted into the neck forming cavity by said reciprocating means to contact the glass and form a corkage bore portion surrounding a bubble forming portion in the glass in the neck finish forming cavity,
said bubble forming portion of said tip being formed with a symmetrical array of surface projections (41, 41') and intermediate spaces which result in closed bottom cavities such that the glass is contacted by said surface projections forming a plurality of symmetrically disposed relatively cool areas and intermediate relatively uncooled areas in the respective areas of the glass adjacent said projections and said spaces.

3,357,810
SETTLE BLOWHEAD AND BAFFLE ATTACHMENT FOR GLASSWARE FORMING MACHINE

John E. Crouse, West Hartford, Conn., assignor to Emhart Corporation, a corporation of Connecticut

Filed June 10, 1964, Ser. No. 373,981
3 Claims. (Cl. 65—234)



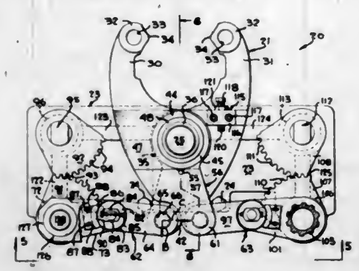
1. In a machine for blowing an inverted glassware parison in a mold having a top opening for receiving a gob of molten glass, the combination comprising a hollow blowhead, means supporting said blowhead for movement out of and into engagement with the mold around said top opening, a baffle movable in the blowhead into closed position in the top opening for the blowing of the parison and out of closed position to permit the introduction of air under pressure to the mold to settle a gob of glass, means biasing said baffle out of closed position wherein it cooperates with the blowhead to define a passage for the introduction of such air under pressure, conduit means for connecting said passage to a source of air under pressure and including a normally open first settle valve and a normally closed second activating valve, means operable whenever said blowhead engages the mold to open said second valve, and means selectively operable only when said blowhead is engaged with the mold to close said baffle and to close said first valve, said first valve being adapted to remain closed due to the pressure of air in said conduit means which pressure will be dissipated only upon closing of said second valve.

3,357,811
MOLD HOLDER ACTUATING MECHANISM

Harold A. Youkers, Wheeling, W. Va., and John Lush, Summit, Ill., assignors, by mesne assignments, to Brockway Glass Company, Inc., Brockway, Pa., a corporation of New York

Filed Nov. 12, 1963, Ser. No. 322,633
15 Claims. (Cl. 65—323)

1. A mold actuating mechanism comprising a pair of mold holder arms each pivotally journalled to a common shaft, said mold holder arms including means for securing mold sections thereto, first positioning means carried by a first of said pair of mold holder arms, second positioning means carried by a second of said pair of mold holder arms opposing said first means, said first and second positioning means being disposed between said mold holder arms, and said first and second positioning means being movable relative to each other for relatively axially adjusting said pair of mold holder arms along the common shaft in directions parallel thereto.



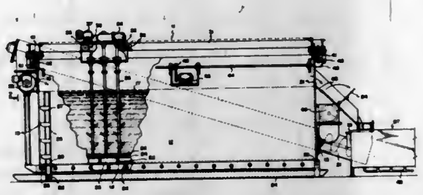
6. A mold actuating mechanism comprising a pair of mold holders each pivotally journalled to a common shaft, each of said mold holders being a first class lever with the common shaft being a fulcrum, a mold gripping end portion of each mold holder being arranged at one side of said fulcrum and a connector end portion of each mold holder being arranged at a second side of said fulcrum, a pair of togg'e linkage assemblies, each toggle linkage assembly being connected to one of a pair of shafts, said pair of shafts and said common shaft being in substantially parallel relationship to each other, at least a pair of toggle links in each toggle linkage assembly, pivot means connecting a first link of said pair of links to an associated one of said pair of mold holders at the connector end portions thereof, means connecting a second link of said pair of links with an associated one of said last-mentioned shafts, means for articuately interconnecting the first and second links of each pair of toggle links, and the axes of said pivot means and said articulately interconnecting means being disposed in generally linear relationship in the closed position of said mold holder and to said second side of the fulcrum in both the open and closed positions of the mold holders.

3,357,812
METHOD AND APPARATUS FOR THE AEROBIC COMPOSTING OF ORGANIC WASTE MATERIAL

John R. Snell, 6103 Lake Drive, Haslett, Mich. 48840

Filed Oct. 20, 1964, Ser. No. 405,032
10 Claims. (Cl. 71—9)

1. The continuous method of composting finely-divided organic material by the action of aerobic thermophilic micro-organisms comprising the steps of establishing and maintaining in a composting zone an everchanging treatment mass by supplying nondecomposed organic material to a feed receiving location in such zone while discharging a proportionate quantity of material from such zone at a point remote from the feed receiving location, and effecting decomposition of organic material in such treatment mass in such zone by maintaining such mass in a loosely piled condition by successively agitating laterally adjacent portions thereof at a plurality of vertically spaced elevations without substantial vertical displacement of material from any of said vertically spaced elevations while uniformly contacting the entire treatment mass with air by passing vertically therethrough a relatively slow moving stream of air of cross section substantially equal to the area of the treatment mass and in quantity at least sufficient to satisfy the oxygen requirements of aerobic thermophilic micro-organisms therein, and regulating the quantity of air passed through the mass to maintain a substantially constant temperature level in the treatment mass.



4. An apparatus for composting organic materials including a tank for holding a bed of said material, means for feeding raw organic material at one end of said tank and for discharging finished compost at the opposite end thereof, means supported above said tank and extending thereunto for agitating laterally successive portions of said bed of material at a plurality of vertically spaced locations without substantial vertical displacement of material engaged thereby, means to sense the temperature in said bed, aerating means including a gas-permeable solids supporting means spaced from the tank bottom and coextensive in area therewith for effecting uniform air circulation vertically through said bed, and control means connected to said means to sense the temperature to regulate the air circulated through said bed as a function of the temperature sensed therein.

3,357,813
METHOD OF ACIDULATING PHOSPHATE ROCK AND PRODUCT THEREOF

Jesse Elson, Doylestown, Pa., assignor to Delaware Valley College of Science and Agriculture, Doylestown, Pa., a non-profit corporation of Pennsylvania

No Drawing. Filed June 6, 1966, Ser. No. 555,277
20 Claims. (Cl. 71—23)

1. In the process of acidulating phosphate rock wherein an acid and rock mixture is formed, the improvement which comprises providing in such acid and rock mixture an effective amount of a particle-dispersing agent and an effective amount of a metal-complexing agent.

15. An acidulated phosphate fertilizer having intimately united therewith a water-soluble agent which is both a metal-complexing agent and a particle-dispersing agent—the proportion of said complexing-and-dispersing agent in relation to such fertilizer being not materially less than of the general order of about one pound of said complexing-and-dispersing agent to one ton of such acidulated phosphate fertilizer.

3,357,814
ARTIFICIAL SOIL PREPARED BY ABSORBING PLANT NUTRIENTS INTO EXFOLIATED VERMICULITE

John G. Getsinger, 420 Eason St., Florence, Ala. 35630

No Drawing. Filed Aug. 10, 1964, Ser. No. 388,712
4 Claims. (Cl. 71—31)

1. A process for the production of an artificial soil consisting of a dry mixture of separated particles of expanded exfoliated vermiculite having substantially uniformly dispersed in the pores thereof the essential macro and micro plant nutrients comprising the steps of
(1) introducing particles of expanded exfoliated vermiculite into a boiling slurry of the essential macro and micro plant nutrients,

(2) simultaneously maintaining the resulting mixture of said slurry of said plant nutrients and said introduced particles of expanded exfoliated vermiculite at the boiling point of said mixture and agitating said resulting mixture until said slurry of said plant nutrients is substantially absorbed into and filling the internal pores of said expanded exfoliated vermiculite, and

(3) evaporating water from the resulting plant nutrient impregnated vermiculite product,

said product further characterized by the fact that said slurry of the essential macro and micro plant nutrients is selected from the group consisting of the following plant nutrients and mixtures thereof:

Plant nutrient:	Range of composition (maximum to minimum)
N ---------- weight percent--	0.09–0.01
P_2O_5 ---------- do----	0.17–0.02
K_2O ---------- do----	0.29–0.04
Ca ---------- do----	0.33–0.04
S ---------- do----	0.29–0.04
Mg ---------- do----	0.06–0.008
Fe ---------- p.p.m--	15–0.5
Mn ---------- p.p.m--	8–0.2
Bo ---------- p.p.m--	8–0.2
Zn ---------- p.p.m--	4–0.02
Cu ---------- p.p.m--	4–0.02

3,357,815

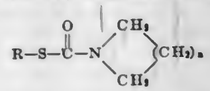
DESTROYING UNDESIRED VEGETATION WITH ALKENYL 1 - POLYMETHYLENIMINECARBOTHIOLATES

John J. D'Amico, Dunbar, W. Va., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Continuation of application Ser. No. 530,780, Mar. 1, 1966, which is a division of application Ser. No. 473,225, July 19, 1965. This application Jan. 31, 1967, Ser. No. 612,776

19 Claims. (Cl. 71—88)

1. The method of destroying undesired vegetation which comprises applying to the soil medium a phytotoxic concentration of a compound of the formula



where R is a radical containing less than six carbon atoms selected from the group consisting of alkenyl and monohalogenated alkenyl and *n* is an integer from 4 to 6, inclusive.

3,357,816

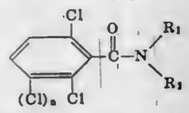
HERBICIDAL BENZAMIDES AND METHODS

Joseph W. Baker and John P. Chupp, Kirkwood, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Dec. 8, 1964, Ser. No. 416,882

10 Claims. (Cl. 71—118)

1. A method of inhibiting the growth of undesirable plants which comprises applying to the soil a compound having the formula



wherein *n* is an integer of from 0 to 1 and R_1 and R_2 are each selected from the group consisting of unsaturated aliphatic and haloaliphatic hydrocarbon radicals having up to six (6) carbon atoms, in an amount which is phytotoxic to at least one undesirable plant species.

3,357,817

PROCESS FOR THE MANUFACTURE OF FERROPHOSPHORUS IN POWDER FORM

Heinz Harnisch, Lovenich, near Cologne, Klaus Frank, Hermulheim, near Cologne, and Wilfried Gerhardt, Knapsack, near Cologne, Germany, assignors to Knapsack Aktiengesellschaft, Knapsack, near Cologne, Germany, a corporation of Germany

No Drawing. Filed Apr. 23, 1965, Ser. No. 450,525

Claims priority, application Germany, May 12, 1964, K 52,923

9 Claims. (Cl. 75—0.5)

1. A process for manufacturing ferrophosphorus in powder form, which comprises atomizing ferrophosphorus melt under pressure to effect ferrophosphorus particles, at least ⅔ of which have a diameter or grain size less than about 5 mm.

3,357,818

METALLURGICAL POWDER MIXTURES AND MIXING METHODS THEREFOR

Gerhard Findeisen, Rheydt, Germany, assignor to Mannesmann Aktiengesellschaft, a corporation of Germany

No Drawing. Filed Aug. 24, 1965, Ser. No. 482,289

Claims priority, application Germany, Sept. 2, 1964, M 62,287

9 Claims. (Cl. 75—.5)

1. In a method of producing a metallurgical powder mixture from a mixture of a metallic powder and powdery organic lubricant for reducing friction among the powder grains and between said grains and the matrix wall, said organic lubricant being evaporated during subsequent sintering of the pressed body, wherein the improvement comprises

admixing to said metallurgical powder at least one fine grained, powdery inorganic substance for improving the free flow of the mixture, said substance consisting essentially of at least one member of the group consisting of silicic acid, titanium dioxide, zirconium dioxide and silicon carbide,

said inorganic powder having a grain size below one micron, and

heating the powdery mixture to a temperature of about 100° centigrade.

3,357,819

PREPARATION OF HOMOGENEOUS POWDERS COMPOSED OF ULTRAFINE PARTICLES

Arne Landsberg, San Jose, Costa Rica, assignor to the United States of America as represented by the Secretary of the Interior

No Drawing. Filed Mar. 16, 1966, Ser. No. 536,584

11 Claims. (Cl. 75—.5)

1. A method for producing a homogeneous powder composed of ultrafine particles wherein each particle contains metal values comprising

(a) forming a homogeneous liquid dispersion comprised of metal values dispersed in a liquid dispersing medium, said metal values selected from the group consisting of a metal, mixtures of metals, a metal compound, mixtures of metal compounds, and mixtures of any of these metal values, said dispersion selected from the group consisting of solutions and colloidal dispersions, said dispersing medium having an appreciable vapor pressure below its freezing point so that it is susceptible to vaporization by sublimation under high vacuum;

(b) freezing said dispersion rapidly enough to substantially prevent precipitation of dispersoid, thereby forming a frozen dispersion;

(c) subjecting said frozen dispersion to a high vacuum while substantially preventing remelting of said frozen dispersion, said vacuum being high enough to cause sublimation of said dispersing medium and removal of the dispersing medium from said frozen dispersion thereby forming a powder composed of ultrafine particles wherein each particle contains metal values.

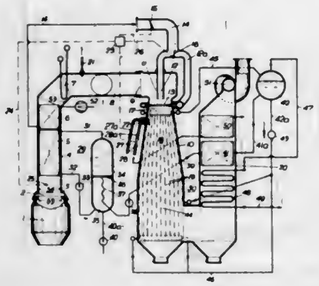
3,357,820

METHOD OF AND INSTALLATION FOR THE UTILIZATION OF HOT WASTE GASES FROM FURNACES OF METALLURGICAL WORKS

Heinrich Rasworschegg, Demeter Markow, and Alfred Sandri, Graz, Austria, assignors to Waagner-Biro Aktiengesellschaft, Vienna, Austria, a corporation of Austria

Filed Feb. 11, 1964, Ser. No. 344,016

11 Claims. (Cl. 75—60)



1. A method of utilization of combustible hot waste gases from furnaces of metallurgical works, in particular from steel converters, in an installation for the utilization of waste heat, comprising the steps of

first cooling the hot combustible waste gases for removing at least partially the enthalpy of said gases by passing them in indirect heat exchange relationship with water and air, respectively, to thereby preheat the water and air,

burning the so cooled waste gases in a combustion chamber with said preheated air and without intermediate storing of said waste gases, and

flowing the products of combustion so produced through the combustion chamber and feeding said preheated water to said combustion chamber and flowing it therethrough in indirect heat exchange relationship with said products of combustion to generate steam, whereby both the enthalpy of the waste gases and the heat of combustion thereof are utilized in the generation of the steam.

3,357,821

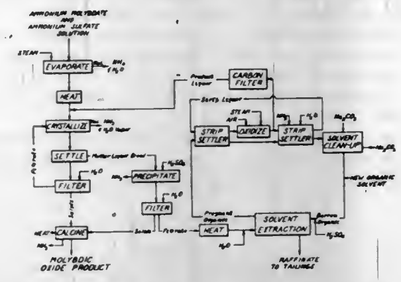
PROCESS FOR EXTRACTING METAL VALUES

Angus V. Henrickson, Golden, Colo., assignor, by mesne assignments, to American Metal Climax, Inc., New York, N.Y., a corporation of New York

Filed Mar. 24, 1965, Ser. No. 442,408

29 Claims. (Cl. 75—103)

1. A continuous process for recovering molybdenum values from an aqueous solution containing ammonium molybdate comprising: heating the solution under a vacuum in a continuous crystallizer to drive off water and ammonia, thereby precipitating molybdenum as ammonium paramolybdate crystals; bleeding off a sufficient portion of the mother liquor from the crystallizer to prevent the concentration of other substances which may be therein from reaching the saturation point and precipitating; heating the ammonium paramolybdate crystals to drive away ammonia and thereby form a molybdic oxide final product; acidifying the mother liquor bleed to cause a precipitation of further molybdenum as ammonium paramolybdate crystals; heating the resulting paramolybdate crystals to drive off ammonia and form a molybdic oxide final product; extracting molybdenum from the remaining bleed liquor with an organic extractant; and stripping the molybdenum values from the pregnant organic extractant.



3,357,822

LOW-CARBON ALUMINUM KILLED STEEL FOR HIGH TEMPERATURE APPLICATIONS

Eiji Miyoshi and Takayasu Okada, Nishinomiya-shi, Japan, assignors to Sumitomo Kinzoku Kogyo Kabushiki Kaisha, Osaka-shi, Japan

No Drawing. Filed June 11, 1965, Ser. No. 463,367

Claims priority, application Japan, June 26, 1964, 39/36,570

8 Claims. (Cl. 75—124)

1. A low carbon aluminum killed steel having great high-temperature strength which is adapted for use at elevated temperatures, consisting essentially of 0.05 to 0.25% of carbon, not more than 0.04% of silicon, 0.3 to 1.8% manganese, 0.005 to 0.040% of aluminum, 0.010 to 0.025% of nitrogen, said nitrogen and aluminum satisfying a relation $0.005 < (\text{nitrogen \%}) - \frac{1}{2}(\text{aluminum \%})$ therebetween, and the remainder substantially of iron and incidental impurities.

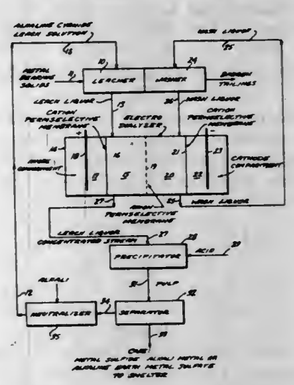
3,357,823

RECOVERY OF GOLD, SILVER, COPPER AND ZINC BY ALKALINE CYANIDING WITH ELECTRODIALYSIS

Sidney B. Tuwiner, Baldwin, N.Y., assignor to Treadwell Corporation, New York, N.Y., a corporation of New York

Filed May 8, 1964, Ser. No. 365,883

5 Claims. (Cl. 75—135)



1. The process of recovering a metal from the group consisting of gold, silver, copper and zinc from solid material containing same, which process comprises:

step 1, leaching the solid material with an alkaline

cyanide leaching medium to dissolve the metal in the alkaline cyanide leaching medium and produce a leach liquor containing the dissolved metal;

step 2, flowing the leach liquor from step 1 in contact with one side of an ion exchange membrane of an electrodialyzer while flowing on the other side a stream of wash liquor obtained from step 3, thus transferring metal cyanide from the wash liquor to the leach liquor; and

step 3, washing the denuded solid material from step 1 to remove adherent metal cyanide values, employing the wash liquor effluent from step 2.

3,357,824

COPPER ALLOY

Matti J. Saarivirta, Marquette, Mich., assignor to Calumet & Hecla, Inc., a corporation of Michigan

No Drawing. Filed July 6, 1965, Ser. No. 469,858
4 Claims. (Cl. 75—153)

1. A copper base alloy having a small and substantially uniform grain size with resulting high degree of ductility, as well as high strength, hardness and conductivity at room and elevated temperatures, consisting essentially of chromium between a small but measureable amount and about 2%, from about 0.05–1.5% of zirconium and about 0.02–0.8% of arsenic, and the balance a member of the class consisting of initially oxygen free copper and deoxidized copper, the percentages being by weight of the alloy.

3,357,825

PRODUCTION OF METALS

Richard W. Douglass, Needham, Mass., assignor to National Research Corporation, Cambridge, Mass., a corporation of Massachusetts

No Drawing. Filed Jan. 11, 1965, Ser. No. 424,802
2 Claims. (Cl. 75—172)

1. A wrought platinum alloy having a fine grain structure and being resistant to grain coarsening upon annealing, said alloy consisting essentially of platinum and between about .05 and about .2 weight percent yttrium, said alloy being essentially free of oxygen.

3,357,826

POWDER METALLURGICAL PRODUCTION OF CHROMIUM-CONTAINING ALLOYS

Harold H. Honaker and James C. Judd, Huntington, W. Va., assignors to The International Nickel Company, Inc., New York, N.Y., a corporation of Delaware

Filed Nov. 14, 1966, Ser. No. 594,012
15 Claims. (Cl. 75—206)

1. The process for producing wrought chromium-containing metal articles essentially devoid of chromium oxide inclusions which consists essentially of preparing an initial powder mixture contaminated with chromium oxide and consists essentially of, by weight, about 5% to about 60% of chromium, up to about 20% molybdenum, up to about 10% tungsten, up to about 5% columbium, up to about 4% copper, at least 0.1% up to about 0.8% carbon, at least about 0.01% to about 0.5% of a spacing agent, and the balance substantially an iron-group metal, pressing said mixture into a billet, heating said billet to sintering temperature under nonoxidizing conditions, sintering said billet at a temperature of at least about 1900° F. in a flowing gas atmosphere reducing to chromium oxide to provide a sintered billet substantially devoid of chromium oxide inclusions and thereafter working said sintered billet to a consolidated alloy shape substantially devoid of chromium oxide inclusions.

3,357,827

METHOD OF PRODUCING METAL ALLOYS HAVING A HIGH NITROGEN CONTENT

Gerhard Naeser, Werner Scholz, Otto Wessel, and Norbert Dautzenberg, Duisburg, Germany, assignors to Mannesmann Aktiengesellschaft, Mannesmannufer, Dusseldorf, Germany, a corporation of Germany

No Drawing. Filed May 31, 1966, Ser. No. 558,540
Claims priority, application Germany, June 2, 1965, M 65,428
7 Claims. (Cl. 75—224)

1. In a process for producing chromium containing steel alloys with high nitrogen content, the steps comprising

(a) melting the metal,

(b) producing a metal powder by atomizing the molten metal and

(c) annealing the so produced metal powder at atmospheric pressure in the presence of gaseous nitrogen at temperatures ranging from about 800° C. to about 1100° C.

3,357,828

ELECTROPHOTOGRAPHIC RINSE AND METHOD

Clyde A. Moe, Sanford, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Nov. 9, 1964, Ser. No. 409,963
7 Claims. (Cl. 96—1)

1. In the electrophotographic preparation of etchable photoengraving plates including: (a) providing a photoconductive composition comprising, a photoconductive zinc oxide suspended in a cross-linking resinous insulating binder coated on a metal plate, (b) electrostatically charging said coated plate, (c) exposing the charged plate to an illuminated image to form a latent electrostatic image, (d) contacting said latent image with a cross-linking promoting catalyst material, (e) rinsing the plate so-contacted in a rinsing liquid, (f) curing the plate at elevated temperatures, (g) removing the non-image areas, and (h) contacting the so-treated plate with a powderless etching bath; the improvement comprising, rinsing the catalyst-contacted plate with a rinse composition comprising: (1) from about 47.5 to about 49.75 parts by volume of a stable, low toxicity, non-flammable fluorinated hydrocarbon liquid characterized by a Kauri-Butanol value of about 31, an evaporation rate of 170 seconds (based on CCl_4 being 100), a boiling point of about 117.63° F. and a molecular weight of about 187.39; (2) from about 47.5 to about 49.75 parts by volume of a high purity, low toxicity, isoparaffinic solvent, having a Kauri-Butanol value of about 29, an evaporation rate of about 353 seconds, and a flash point (TCC) of about 50° F.; and (3) from about 0.5 to about 5 parts by volume of odorless mineral spirits characterized by a Kauri-Butanol value of about 25, an evaporation rate of about 2400 seconds, and a flash point of about 133° F. (TCC).

3,357,829

RINSE COMPOSITION FOR AND METHOD OF ELECTROPHOTOGRAPHIC PRINTING

Clyde A. Moe, Sanford, and John A. Easley, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Nov. 9, 1964, Ser. No. 409,990
8 Claims. (Cl. 96—1)

1. In the electrophotographic preparation of etchable photoengraving plates including: (a) providing a photoconductive composition comprising, a photoconductive zinc oxide suspended in a cross-linking resinous insulating binder coated on a metal plate, (b) electrostatically charging said coated plate, (c) exposing the charged plate to an illuminated image to form a latent electrostatic image, (d) contacting said latent image with a cross-link-

ing promoting catalyst material, (e) rinsing the plate so-contacted in a rinsing liquid, (f) curing the plate at an elevated temperature, (g) removing the non-image areas, and (h) contacting the so-treated plate with a powderless etching bath; the improvement comprising, rinsing the catalyst-contacted plate with a rinse composition comprising: (1) from about 30 to about 50 parts by volume of a stable, low toxicity, non-flammable fluorinated hydrocarbon liquid characterized by a Kauri-Butanol value of about 31, an evaporation rate of 170 seconds (based on CCl_4 being 100), a boiling point of about 117.63° F. and a molecular weight of about 187.39; (2) from about 40 to about 60 parts by volume of a high purity, low toxicity, isoparaffinic solvent, having a Kauri-Butanol value of about 29, an evaporation rate of about 353 seconds, and a flash point (TCC) of about 50° F.; and (3) from about 10 to about 30 parts by volume of an isoparaffinic hydrocarbon characterized by a Kauri-Butanol value of about 27, an evaporation rate of about 3180 seconds, a flash point of about 104° F. (TCC), and a boiling range of from 318° F. to 350° F.

3,357,830

DYED IMAGE XEROGRAPHY

William E. Bixby, Deerfield, Ill., assignor, by mesne assignments, to Xerox Corporation, Rochester, N.Y., a corporation of New York

Filed Aug. 3, 1961, Ser. No. 129,167
18 Claims. (Cl. 96—1.2)

1. A method of image reproduction comprising forming through xerography a powder reproduction on a dye receptive surface of an original to be reproduced, fusing the powder to form a resist pattern, and applying a dye to said fused powder bearing surface for absorption of said dye at uncover.d points along said surface.

11. A method of reproducing a color original in full color comprising separating the color original into first, second, and third color separations representing first, second and third colors in the original, xerographically forming resist images corresponding to each of the color separations, transferring the resist image of the first color separation to a color-absorbent paper, applying a first complementary color complementary to said first color to the paper so that it is absorbed in the areas not protected by the resist image, removing the resist image, transferring the resist image of the second color separation to the color-absorbent paper in register, applying a second complementary color complementary to said second color to the paper so that it is absorbed in the areas not protected by the resist image, removing the resist image, transferring the resist image of the third color separation to the color absorbent paper in register, and applying a third complementary color complementary to said third color to the paper so that it is absorbed in the areas not protected by the resist image.

3,357,831

PHOTOPOLYMER

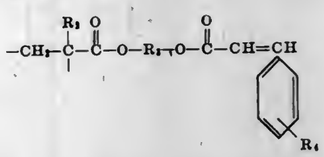
Chisung Wu, South Charleston, W. Va., assignor to Harris-Intertype Corporation, Cleveland, Ohio, a corporation of Delaware

No Drawing. Filed June 21, 1965, Ser. No. 465,698
9 Claims. (Cl. 96—33)

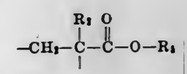
1. A photopolymer containing from about 15 to 60 mol percent of recurring units having the general structure



wherein R is a monovalent substituent selected from the group consisting of hydrogen and methyl and R_1 is the residue of an organic solvent-soluble, substantially water-insoluble polymerizable monoethylenically unsaturated monomer; about 10 to 60 mol percent of recurring units having the general structure



wherein R_2 is a monovalent substituent selected from the group consisting of hydrogen, methyl, ethyl, and the halogens, R_3 is the residue of a monoepoxide having a three membered epoxy ring and being substantially free of other reactive groups, and R_4 is a monovalent substituent selected from the group consisting of hydrogen, methoxy, ethoxy, nitro and the halogens; and about 20 to 50 mol percent of recurring units having the general structure



wherein R_2 is the same as described above and R_5 is a monovalent substituent selected from the group consisting of hydrogen, sodium, potassium, lithium, ammonium, methyl ammonium, dimethyl ammonium, trimethyl ammonium, ethyl ammonium, diethyl ammonium and triethyl ammonium.

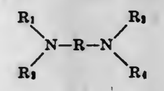
3,357,832

WATER-SOLUBLE POLYTERTIARY AMINO COMPOUNDS FOR DECREASING THE VISCOSITY OF PHOTOGRAPHIC GELATIN-POLYMER SOLUTIONS

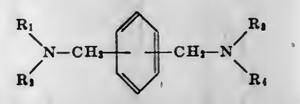
Marcel Nicolas Vrancken and August Jean Van Paesschen, Hove, and Jozef Frans Willems, Wilryjk-Antwerp, Belgium, assignors to Gevaert Photo-Producten, N.V., Mortsel, Belgium, a Belgian company

No Drawing. Filed May 4, 1964, Ser. No. 364,822
Claims priority, application Belgium, May 6, 1963, 42,606, Patent 631,905
4 Claims. (Cl. 96—94)

1. Process for decreasing the viscosity of aqueous gelatin solutions containing hydrophilic polymers comprising adding to said solutions while maintaining a pH of up to about pH 7 water-soluble compounds which contain at least two tertiary amino groups and which correspond to one of the following formulae:



or



wherein:

each of R_1, R_2, R_3 and R_4 represents an alkyl group, and

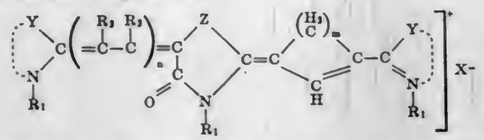
R represents a member selected from the group consisting of a straight alkylene radical and a branched alkylene radical, wherein some of the carbon atoms may be replaced by a nitrogen atom substituted by a member selected from the group consisting of alkyl and dialkyl.

3,357,833
PHOTOGRAPHIC EMULSIONS SENSITIZED WITH CYANINE DYESTUFFS

Oskar Riester, Leverkusen, Germany, assignor to Agfa Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Mar. 12, 1964, Ser. No. 351,548
Claims priority, application Germany, Nov. 23, 1962, A 41,696
9 Claims. (Cl. 96—105)

1. A light-sensitive photographic material comprising a supported light-sensitive silver halide emulsion layer which contains in an effective amount a sensitizing dye of the following formula:

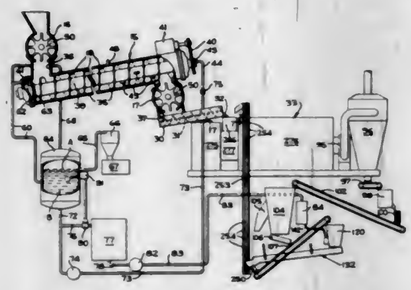


wherein R_1 represents a radical of the group consisting of hydrogen, alkyl, unsaturated alkyl, alkyl substituted by a radical of the group consisting of carboxyl, sulfo, sulfonamide, hydroxy, and phenyl; R_2 represents a member of the group consisting of lower alkyl, lower alkyl substituted by phenyl, and phenyl; Y represents the ring members necessary to complete a heterocyclic ring of the group consisting of oxazole, benzoxazole, thiazole, benzthiazole, thiodiazole, pyrimidine, pyrroline, benzimidazole, tetrazole, azocycloheptamethylene, selenazole, benzselenazole, naphthoxazole, oxadiazole, pyridine, pyridiazine, quinoline, triazine, thiazine, triazole, triazoline, pyrazoline, and indoline; Z represents a bivalent radical of the group consisting of —S—, —O—, —Se— and $=NR_3$; R_3 is a substituent of the group consisting of hydrogen and lower alkyl; X^- is an anion; n is an integer from 0 to 2 and m is an integer from 1 to 3.

3,357,834
METHOD FOR PROCESSING FAT-CONTAINING SOLIDS

Frank D. Hickey and Katsuji Hirahara, San Jose, Calif., assignors to FMC Corporation, San Jose, Calif., a corporation of Delaware

Original application Nov. 22, 1963, Ser. No. 325,668. Divided and this application Oct. 15, 1965, Ser. No. 510,725
3 Claims. (Cl. 99—7)



1. In a process for producing protein-enriched meal from animal material, the process being of the type wherein the starting animal material is cooked in a steam cooker, the cooked material is run through a drier, and wherein the protein-rich stickwater by-product of the cooking step is re-incorporated in the material; the improvement comprising the steps of granulating the cooked and dried material leaving the drier into a meal, adding stickwater to the granulated meal and agitating the enriched mixture so that a portion of the meal agglomerates into protein-enriched pellets of selected size, there being an excess of enriched meal which is not agglomerated to selected pellet size; enriching subsequently formed pellets by separating the excess but enriched meal from the selected enriched pellets, and re-cycling the excess enriched meal by adding it to granulated meal from the drier which is to receive stickwater in preparation for the pelletizing step; enriching the cooked material in the drier by re-cycling the selected enriched pellets into the drier and mixing them with the material therein so that said granulation of the material leaving the drier includes granulation of re-cycled, previously enriched pellets and thus builds up the net protein content of the granulated meal; and withdrawing granulated meal for use, at a selected level of protein enrichment.

3,357,835
FEED ARTICLE FOR ANIMALS

Joseph Molitorisz, East Lansing, Mich., assignor to Michigan State University, East Lansing, Mich.

Filed Mar. 18, 1963, Ser. No. 265,959
4 Claims. (Cl. 99—8)

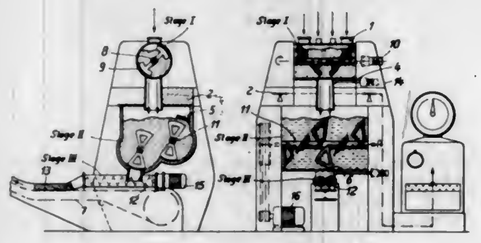


1. A feed article for animals comprising a bite-size body of hay in the form of an axially open-center cylinder, compacted interlocking layers of said hay extending spirally around said axially open center, said layers having a relatively higher density near the outer perimeter relative to the layers near the open-center core.

3,357,836
METHOD AND APPARATUS FOR THE PRODUCTION OF CHOCOLATE MASSES

Rolf Beetz, Tonndorfer Weg 17, Hamburg-Rahlstedt, Germany

Filed Apr. 8, 1964, Ser. No. 358,210
Claims priority, application Germany, Apr. 8, 1963, B 71,450
6 Claims. (Cl. 99—23)



1. A method for producing chocolate mass in a masticating plant from individual components, comprising the steps of preselecting the weights of said individual components by means of a program switching device, weighing said components in a predetermined sequence within a premasticating zone and premixing said components for a given time interval after the desired total weight has been reached, controllably conveying the premixed mass to a main masticator to maintain a preselected amount of mass within the main masticator, masticating said mass for a given time interval in the main masticator, continuously controllably conveying the masticated mass to an after-masticator, after-masticating said masticated mass, and continuously discharging said mass onto conveyor means.

3,357,837
METHOD AND APPARATUS FOR CONTINUOUS LAUTERING

Thomas Halasz and Richard C. Quittenton, London, Ontario, Canada, assignors to John Labatt Limited, London, Ontario, Canada

Filed Jan. 30, 1963, Ser. No. 254,941
Claims priority, application Canada, June 20, 1962, 852,012
17 Claims. (Cl. 99—52)

1. A method of continuous lautering which comprises the steps of feeding a mixture of grains and wort liquid from a mashing operation in a brewing process onto the upper flight of a moving continuous perforate belt at a point adjacent one end of the upper flight, regulating the speed of the belt and the rate of feed of the mixture thereto to form a moving filtering bed of grain on said belt, collecting a filtrate of wort liquid which has passed downwardly through said bed of grains and perforate belt, subjecting the filtering bed to liquid spraying, maintaining a substantially constant head of liquid above a portion of said bed of grains by dam means, and removing said bed of grains from said belt in the region of the other end of said upper flight.

3,357,838
SOUR CREAM POWDER

Peter P. Noznick, Evanston, Ill., assignor to Beatrice Foods Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed Mar. 5, 1965, Ser. No. 437,551
18 Claims. (Cl. 99—56)

1. A process of preparing a powdered sour cream type product comprising cooling a dairy product of the group consisting of cream, whole milk and skim milk to a temperature between the freezing point of said dairy product and 40° F., acidifying the cooled dairy product with a non-toxic acid and spray drying the acidified dairy product at a temperature not over 40° F. by passing it through a spray drier to form said powder.

3,357,839
DRIED HONEY-MILK PRODUCT

David Torr, Ripley Lane, Oyster Bay, N.Y. 11771

No Drawing. Continuation of application Ser. No. 436,948, Mar. 3, 1965. This application Mar. 3, 1966, Ser. No. 531,361
3 Claims. (Cl. 99—56)

1. A dry, non-caking composition, comprised of dried honey, a dried milk product, and moisture, wherein the weight ratio of the honey and milk is about 10–75 parts honey solids to about 90–25 parts milk solids, said moisture being approximately 2%.

3,357,840
DRY CONFECTION MIXES AND PROCESSES FOR PRODUCING SAME

Calvin D. Fisher, Ralston, Nebr., assignor to Roberts Dairy Company, Omaha, Nebr., a corporation of Nebraska

Filed Dec. 9, 1963, Ser. No. 329,028
11 Claims. (Cl. 99—136)

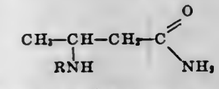
1. A process for producing a dry mix comprising the steps of:
(1) separating whole milk into a cream portion and skim milk portion wherein said cream portion contains about 35% to 45% butter fat;
(2) treating said skim milk portion by process steps consisting essentially of:
(a) heating the skim milk portion separately for about 1–4 minutes at a temperature in the range of about 200–230° F., and
(b) condensing the heated skim milk portion to at least 35% total solids,
(3) combining said cream and condensed skim milk portions;
(4) adding thereto at least 30% of the sugar content to be employed in the total mix and the other ingredients to be used in the mix;
(5) heating all the ingredients to at least 152° F.;
(6) vigorously agitating the mix so as to incorporate air into said mix;
(7) spray drying said mix to form dry particles; and,
(8) rapidly cooling the dry particles.

3,357,841
CORROSION INHIBITING COMPOSITION AND METHOD

Nallan C. S. Chari and Gus S. Scarvelis, Toledo, Ohio, assignors to Owens-Illinois, Inc., a corporation of Ohio

No Drawing. Filed Dec. 7, 1964, Ser. No. 416,586
14 Claims. (Cl. 106—14)

2. A corrosion inhibiting composition which consists essentially of a starch or protein emulsion containing about 1:2 to 3:1 parts, respectively, of an alkali metal nitrite and an N-alkyl-beta-amino butyric amide of the formula



wherein R is an alkyl having from 6 to 18 carbon atoms.

3,357,842
FURNACE AND REFRACTORY

Jan Bowman, Los Gatos, Calif., assignor to Kaiser Aluminum & Chemical Corporation, Oakland, Calif., a corporation of Delaware

No Drawing. Filed May 28, 1965, Ser. No. 459,919
7 Claims. (Cl. 106—58)

1. A refractory gunning composition consisting essentially of from about 67% to about 73% by weight refractory grain retained on a 100 mesh screen, from about 0.05% to about 2% by weight plasticizer, from about 1% to about 5% by weight monosodium dihydrogen orthophosphate, an amount up to about 25% by weight of a reactive alkaline earth metal oxide containing compound passing a 100 mesh screen, said compound being present in at least an amount sufficient to provide enough alkaline earth metal oxide to react with half the monosodium phosphate to form alkaline earth metal monohydrogen orthophosphate, the balance of the composition being nonreactive refractory grain passing a 100 mesh screen, the total amount of said gunning composition passing 100 mesh being from 27% to 33% by weight.

3,357,843
REFRACTORY BONDING COMPOSITION

Jan Bowman, Los Gatos, Calif., assignor to Kaiser Aluminum & Chemical Corporation, Oakland, Calif., a corporation of Delaware

No Drawing. Filed Jan. 10, 1966, Ser. No. 519,529
12 Claims. (Cl. 106—58)

1. In a refractory composition consisting essentially of refractory aggregate, from 0 to 2% by weight plasticizer, and, as cold setting bond, a finely divided reactive alkaline earth metal oxide containing compound and

NaH_2PO_4

the improvement wherein said composition also contains a glassy alkali metal polyphosphate in an amount from 10% to 200% of the weight of the NaH_2PO_4.

3,357,844
PAPER SIZING LUBRICANT COMPOSITION COMPRISING A FATTY ACID AND NON IONIC LUBRICANT

Robert L. Wood and Charles Galusha, West Linn, Oreg., and Herman F. Mader, Lakewood, Calif., assignors, by direct and mesne assignments, to Crown-Zellerbach Corporation, San Francisco, Calif., a corporation of Nevada

No Drawing. Filed Oct. 23, 1964, Ser. No. 406,172
6 Claims. (Cl. 106—159)

2. In the manufacture of a paper coating composition from an aqueous mixture including a mineral pigment, and a binder selected from the group consisting of protein, starch, and mixtures thereof the method of adding lubricity to the coating composition comprising preparing a nonemulsified blend of an unsubstituted predominantly hydrogen-saturated fatty acid and a nonionic dispersant for the acid having a chain length of from 14 to 22 carbon atoms which blend functions as an oleaginous material in the coating composition, said blend of fatty acid and dispersant being a hard solid at room temperature, reducing said blend while in solid form to a particulate state to promote the mixing thereof, preparing the aqueous mixture for the reception of said blend by heating the mixture to a temperature above the melting point of the blend, and with said temperature maintained adding said blend to the aqueous mixture, in an amount ranging from about 2.5 to 6% by weight of the binder in the mixture, with the blend on addition melting and becoming mixed thoroughly in the aqueous mixture, an emulsion of the fatty acid in the aqueous mixture forming with mixing of the blend and the dispersant being in sufficient quantity to maintain the fatty acid dispersed in such emulsion.

3,357,845
SHAPED ARTICLES CONTAINING CELLULOSE CRYSTALLITE AGGREGATES HAVING AN AVERAGE LEVEL-OFF D.P.

Orlando A. Battista, Yardley, Pa., assignor to FMC Corporation, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Jan. 8, 1965, Ser. No. 424,207
13 Claims. (Cl. 106—193)

1. An article of manufacture consisting essentially of a shaped article of a cellulosic material selected from the group consisting of cellulose, cellulose ethers and cellulose esters, and cellulose crystallite aggregates having an average level-off D.P. in an amount ranging from about 0.01 up to about 90% based on the weight of said cellulosic material.

3,357,846
GLYOXAL-POLYHYDROXY BINDER-PIGMENTED COATING

Bert Growald, Kalamazoo, Mich., assignor to Allied Paper Corporation, Kalamazoo, Mich., a corporation of Illinois

No Drawing. Filed Jan. 25, 1965, Ser. No. 427,941
10 Claims. (Cl. 106—214)

1. A coating composition comprising a water dispersion of a pigment taken from the group consisting of kaolin, talc, barytes and titanium dioxide, said pigment containing from 0 to less than 0.1% by weight of phosphate dispersing agents, a binder taken from the group consisting of substituted starch and polyvinyl alcohol, and glyoxal as an insolubilizing agent for the binder, said glyoxal being present in amounts from 2 to 10 parts by weight on an anhydrous basis per 100 parts of binder.

3,357,847
METHOD OF TREATING THE OUTER SURFACE OF SOFTBOARD PRODUCTS

Edgar R. Wengenroth, Jr., Wayne, N.J., assignor to The Flintkote Company, New York, N.Y., a corporation of Massachusetts

Filed Dec. 13, 1963, Ser. No. 330,465
4 Claims. (Cl. 117—8)

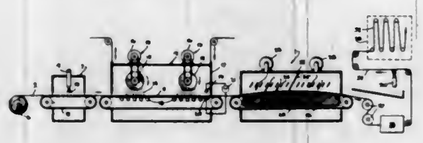


1. A method of treating the relatively smooth outer surface of a softboard material comprising the steps of forming a plurality of elongated fissures and substantially circular holes which break the surface and extend into the body of said softboard material, thereafter painting the unbroken portion of said surface, and then forming a plurality of relatively shallow indentations in said unbroken portion of said surface, said indentations having a depth such as to create visible variations in the light reflectivity off of said unbroken portion of said surface without destroying the paint film thereover.

3,357,848
FLOCKING METHOD AND MACHINE

John P. Donahue, Hawthorne, and Sheldon T. Wright, Ridgewood, N.J., assignors to D. & S. Processing Company, Clifton, N.J., a corporation of Delaware

Filed Nov. 5, 1962, Ser. No. 235,411
5 Claims. (Cl. 117—28)



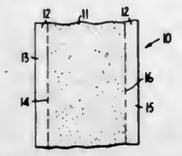
1. An apparatus for flocking a web of material of soft, stretchable fabric coated with a flexible layer of expanded vinyl comprising the combination of a supply of indeterminate length of said fabric material, an adhesive sprayer for applying an adhesive coating of uniform thickness and a predetermined pattern onto the vinyl surface of said fabric material, means for directing an evenly distributed flow of flock downwardly onto the adhesive coating, an adhesive curing oven, a first conveyor means having a flat upper surface for carrying said fabric material in an unstressed condition with the vinyl layer uppermost through said sprayer and the flocking means whereby a uniform coating of flock is applied thereto, and a second conveyor means having an upwardly facing convexly curved surface for thereafter carrying the flocked fabric material through said oven over said curved surface with said vinyl layer and said web of material in a wrinkle free condition for retaining said uniformity during the adhesive curing.

3. The method of flocking a web of material of indeterminate length of soft, stretchable fabric coated with a stretchable layer of expanded vinyl comprising the steps of feeding a supply of said fabric material, spraying an adhesive coating of uniform thickness and a predetermined pattern onto the vinyl surface of said fabric material, planting flock on the adhesive, heating the flocked adhesive, transporting the fabric material on a conveyor means in an unstressed condition with the vinyl surface uppermost during said adhesive applying and flock planting whereby a uniform coating of flock is applied and thereafter transporting the fabric material over an upwardly facing convexly curved path while heating said flocked fabric material with the vinyl in an unwrinkled condition for retaining said flock uniformity during the drying of the adhesive.

3,357,849
SELECTIVELY FINISHED TEXTILE WEB

Johan Meulenbeld, Enschede, Netherlands, assignor to J. F. Scholten en Zonen N.V., Enschede, Netherlands, a corporation of the Netherlands

Filed Apr. 13, 1964, Ser. No. 359,299
Claims priority, application Netherlands, May 1, 1963, 292,195
2 Claims. (Cl. 117—37)



1. A web of textile material formed of a continuous inter-weaving from side to side of homogenously constituted fibers having a cellulose base, said web having a main portion and at least one strip disposed alongside said main portion to provide a continuous longitudinal border at one side of said web, said strip occupying 25% at most of the total width of said web, and each of said main portion and said strip of said web being pliably creasable, said main portion having a chemical finish imparting thereto crease recoverability, the property of non-retentiveness of creases inadvertently formed in said main portion, and said strip having a degree of said chemical finish which at the least is zero and at the most is lesser than that of said main portion so as to render said strip more wear-resistant than said main portion.

3,357,850
VIBRATION DAMPING TURBOMACHINERY BLADE

John E. Baker, Loveland, Ohio, assignor to General Electric Company, a corporation of New York

Filed May 9, 1963, Ser. No. 279,271
2 Claims. (Cl. 117—69)



1. A turbomachinery blade comprising;
a structural blade element,
a relatively stiff outer sheath element surrounding at least a portion of said structural blade element,
a relatively thin layer of material separating said elements and being bonded to one of said elements and not the other,
said thin layer of material frictionally engaging said other element at the interface therebetween,
the coefficient of friction between said thin layer of material and the element frictionally engaged thereby being at such a level that limited damping movement of the thin layer of material relative to the element frictionally engaged at the interface therebetween is permitted,
whereby vibration of said structural blade element is damped.

3,357,851
HEAVY CONCRETE PIPE COATING COMPOSITION AND METHOD

Joseph B. Montgomery III, Birchrunville, Pa., assignor of fifty percent to Richard M. Colgate, Princeton, N.J.

No Drawing. Filed July 20, 1966, Ser. No. 566,488
7 Claims. (Cl. 117—70)

3. In a method of coating a pipe with a heavy concrete composition constituting ballast and reducing the buoyancy of the pipe when submerged in a fluid, the step of depositing on the pipe a slurry consisting essentially of Portland cement, water and a heavy aggregate, the ratio of cement to aggregate being in the range of by weight from about 1:3 to about 1:4 the heavy aggregate consisting essentially of specular hematite having a size distribution in which, by weight, at least 90% passes a #8 mesh screen and not more than 10% passes a #100 mesh screen, and being substantially free of microfines passing a #200 mesh screen.

4. A method according to claim 3 wherein the slurry is deposited on the pipe by moving the pipe surface past a continuous stream of the slurry, the pipe surface being moved through the stream at a rate established relative to the rate of the slurry stream to deposit the slurry on the pipe to the desired thickness, the slurry being impacted onto the surface of the pipe and sticking thereto.

7. A method according to claim 4 wherein the pipe has a plastic coating.

3,357,852
PROCESS OF PRODUCING MONOCRYSTALLINE LAYERS OF INDIUM ANTIMONIDE

Günther Ziegler, Erlangen, Germany, assignor to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, a corporation of Germany

Filed Dec. 2, 1963, Ser. No. 327,471
Claims priority, application Germany, Dec. 1, 1962, S 82,678
10 Claims. (Cl. 117—106)



1. The process of producing monocrystalline layers of indium antimonide on substrates having a compatible crystalline lattice structure, which comprises stacking in a reaction vessel a number of indium antimonide plates and a number of substrate plates and forming interspacial chambers of 0.1 to 2 mm. width between said plates, each chamber being bordered by a substrate plate and by an indium antimonide plate to serve as a source; providing the vessel with halogen and placing granular indium antimonide into the vessel but outside of the stack of plates for subsequently producing a transport-reaction gas whose composition is preserved by the presence of the granular antimonide; heating the vessel to a transport-reaction temperature decreasing 5 to 20° per cm. from one axial end of the stack to the other, each of the antimonide source plates being at a higher temperature than the substrate plate adjacent to the same chamber, whereby the substrate plates are coated with indium antimonide precipitating in the chamber from gaseous halogenides of indium and antimony.

3,357,853
LUBRICOUS COATING FOR GLASS CONTAINING POLYVINYL ALCOHOL, EMULSIFIED POLYETHYLENE AND AN INORGANIC ACID
John E. Pickard, Selma, Ind., assignor to Ball Brothers Company Incorporated, Muncie, Ind., a corporation of Indiana
No Drawing. Filed Jan. 2, 1964, Ser. No. 335,390
21 Claims. (Cl. 117—124)

1. A glass article coated with a durable, lubricous coating comprising the reaction product of polyvinyl alcohol having less than about 5% by weight of residual acetate groups, an aqueous emulsion of polyethylene having a molecular weight less than about 3,000, and an inorganic acid, said polyethylene being present as a reactant in amounts between about 40% and 90% by weight of the amount of polyvinyl alcohol present as a reactant, and said acid being present as a reactant in amounts between about 80% and 300% by weight of the amount of polyvinyl alcohol in said coating.

3,357,854
NICKEL PLATING PROCESS
Darrell D. Hays, Kennewick, Wash., assignor to the United States of America as represented by the United States Atomic Energy Commission
No Drawing. Filed Oct. 30, 1964, Ser. No. 407,940
13 Claims. (Cl. 117—130)

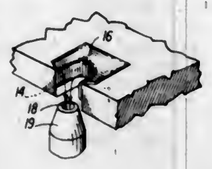
1. A process of plating a metal article with nickel, comprising adding 10^{-7} to 10^{-3} mole per liter of an inorganic metabisulfite to an aqueous solution containing a water-soluble nickel salt and a hypophosphite in an amount sufficient to reduce said nickel salt; immersing said metal article in said solution, whereby nickel metal is deposited thereon; and replenishing the metasulfite content to the initial concentration as it is depleted and the plating rate diminishes, until a deposit of the desired thickness is obtained.

3,357,855
METHOD OF MANUFACTURING RECORDING TAPE WITH IMPROVED CROSS-LINKED BINDER FOR THE RECORDING LAYER
Johan Heinrich Bisschops, Berchem-Antwerp, and André Jan Conix, Antwerp, Belgium, assignors to Gevaert Photo-Producten N.V., Mortsel, Belgium, a Belgian company
No Drawing. Filed July 6, 1964, Ser. No. 380,615
Claims priority, application Great Britain, July 26,1963, 29,730/63
6 Claims. (Cl. 117—138.8)

1. A process for the manufacture of a magnetic recording material, which comprises applying to a support a dispersion comprising magnetic susceptible particles in a solution of (*a*) a polymeric binding agent, which contains groups being capable to react with isocyanate groups, and (*b*) of a polycarboxylic acid azide, drying the recording layer below the reaction temperature of the polycarboxylic acid azide, and heating said polycarboxylic acid azide to decompose the same into a polyisocyanate, whereby said polyisocyanate cross-links said polymeric binding agent.

3,357,856
METHOD FOR METALLIZING OPENINGS IN MINIATURE PRINTED CIRCUIT WAFERS
Randall C. Ragan, Tarzana, and Clinton E. Maiden, Canoga Park, Calif., assignors to Electra Manufacturing Company, Independence, Kans., a corporation of Missouri
Filed Feb. 13, 1964, Ser. No. 344,748
5 Claims. (Cl. 117—212)

1. A method of forming films of electrically conductive metal around openings in miniature printed circuit wafers and the like, which method comprises disposing the wafer in a substantially horizontal position, depositing a land of a metallizing liquid around the periphery of each opening on the upper surface of the wafer, the metal in said liquid being electrically conductive and capable of being bonded to said wafer upon the solidification of said liquid, drawing a vacuum directly beneath each opening to effect a velocious flow of fluid across the surface of each liquid land and down through the corresponding opening so as



to draw the metallizing liquid downwardly over the side walls of the opening whereby a continuous film of said liquid is uniformly distributed over said side walls and the adjacent portion of the wafer surface covered by said land, and solidifying the distributed metallizing liquid so as to form a continuous electrically conductive metal film bonded to said side walls and said adjacent portion of the wafer surface.

3,357,857
METHOD OF PASSIVATING SUPPORTS FOR SEMICONDUCTOR SULPHIDES, SELENIDES AND TELLURIDES
Henri Provisor, St. Maurice-Suresnes, and Gerard Lapluye, Versailles, France, assignors to North American Philips Company, Inc., New York, N.Y, a corporation of Delaware
No Drawing. Filed May 8, 1964, Ser. No. 366,183
4 Claims. (Cl. 117—213)

1. In a method for making a semiconductor device employing semiconductor sulphides, selenides or tellurides as the semiconductor material wherein a layer of the semiconductor material is applied to a support constituted at its surface of a borosilicate glass which when heated in direct contact with the semiconductor material degrades its properties, the improvement comprising before the semiconductor material is applied passivating the surface of said support by contacting it with an aqueous solution of at least one water soluble inorganic metal compound different from the semiconductor material, said metal being selected from the group consisting of beryllium, magnesium, calcium, strontium, barium, aluminum, zinc and cadmium, and thereafter heating the support at a temperature of at least 400° C. and up to about the order of 600° C.

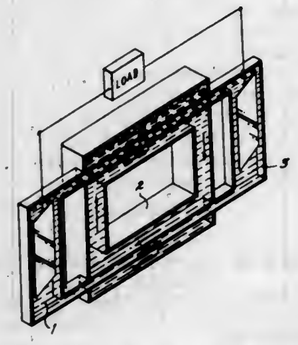
3,357,858
PLATINIZING PROCESS
Guy Gravey, Pomblière-Saint-Marcel, Savoie, France, assignor to Societe d'Electro-Chimie, d'Electro-Metallurgie et des Acieries Electriques d'Ugine, Paris, France, a corporation of France
No Drawing. Filed June 16, 1964, Ser. No. 375,637
Claims priority, application France, June 18, 1963, 938,911
5 Claims. (Cl. 117—213)

1. A process for producing an adhesive deposit of a metal of the platinum group on a piece of titanium, of a titanium alloy, of a material coated with titanium, and of a material coated with titanium alloy, said process comprising activating the surface of said piece which is to receive said deposit by treating same with a mixture containing 20–30% by weight hydrochloric acid, 12–30% by weight nitric acid and 50–60% by weight water, washing and drying said activated piece, depositing said metal on said activated surface and heating said piece with said metal deposited thereon in air to a temperature between 200° C. and 300° C. for 1 to 3 hours.

3,357,859
THERMALLY ACTIVATED ELECTRIC POWER SUPPLY
Burnham W. King, Columbus, and Walter A. Hedden, Worthington, Ohio, assignors, by mesne assignments, to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 19, 1961, Ser. No. 111,389
4 Claims. (Cl. 136—6)

1. A source of electric energy comprising, an iron electrode layer adapted to have electrons removed therefrom, a vitreous ceramic layer which includes lithium oxide over and adhered to said iron electrode layer and comprising material having a negative temperature coefficient of electrical resistance due to ionic conductivity, a silver layer which is pervious to passage of oxygen over and adhered to said vitreous ceramic layer, an additional layer containing silver orthophosphate over and adhered to said silver layer, and a silver electrode layer over and adhered to said additional layer.

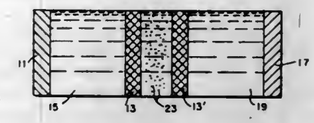
3,357,860
ELECTROCHEMICAL THERMO-GENERATOR
Zbigniew O. J. Stachurski, 4005 Baltimore Ave., Philadelphia, Pa. 19104
Filed Oct. 26, 1962, Ser. No. 233,386
6 Claims. (Cl. 136—83)



1. An electrochemical thermal cell comprising first and second electrodes in an electrolyte, means for maintaining said second electrode at a higher temperature than said first electrode, means including first and second conduits providing for closed circuit circulation of the electrolyte between said electrodes, and heat exchanger means for cooling a portion of said first conduit so that heat will be absorbed from electrolyte therein moving from said second electrode toward said first electrode, and said heat exchanger means including a portion for heating said second conduit so that heat may be introduced into the electrolyte therein moving from said first electrode toward said second electrode, said heat exchanger means being a closed circuit system having a heat exchange medium traveling in a direction opposite to the direction of flow of said electrolyte.

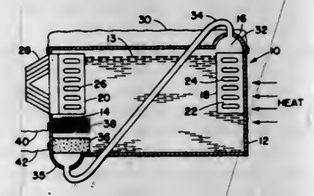
3,357,861
BARRIERS FOR FUEL CELLS
Herbert F. Hunger, Long Branch, N.J., assignor to the United States of America as represented by the Secretary of the Army
Filed May 6, 1963, Ser. No. 278,811
3 Claims. (Cl. 136—86)

1. A fuel cell for the direct production of electrical energy from an electrolyte soluble liquid fuel and a gaseous oxidant, said fuel cell comprising a porous fuel electrode, a porous oxidant electrode, a pair of spaced ion exchange membrane electrolyte separators positioned between and spaced from said porous fuel electrode and said porous oxidant electrode, and a diffusion barrier between said spaced separators wherein said diffusion barrier consists of a dispersion in an electrolytic liquid of catalysts capable of converting fuel and oxidant by catalytic reac-



tion into species which are no longer dangerous to the operation of said oxidant electrode and said fuel electrode and thereby prevent the diffusion of fuel and oxidant to the counter electrode.

3,357,862
COMBINED ELECTROLYSIS DEVICE AND FUEL CELL AND METHOD OF OPERATION
Jacob Greenberg, Parkview, and Lawrence H. Thaller, Cleveland, Ohio, assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Feb. 4, 1964, Ser. No. 342,574
9 Claims. (Cl. 136—86)



1. A fuel cell and regenerator system comprising: a first and second pair of electrodes; said first pair of electrodes disposed in spaced relation in a molten electrolytic salt; a wire externally shorting said first pair of electrodes; a gas conducting conduit disposed adjacent to and in communication with said first pair of electrodes and leading to said second pair of electrodes, whereby electrolysis of said salt at said first pair of electrodes provides decomposed constituents for recombination at said second pair of electrodes.

5. A method of producing electric current comprising: providing a cell containing a fused salt electrolyte selected from the group consisting of cadmium bromide, cadmium chloride, lead chloride, zinc chloride, lead bromide, zinc bromide, silver nitrate, silver chloride, silver bromide, silver iodide and stannous chloride; heating said fused salt above its melting point; imposing a temperature gradient across said salt; providing an external electrical short-circuit connection between the hot and cold portions of said salt to decompose said salt into its constituents by electrolysis; and recombining the constituents to provide an electric current.

3,357,863
RHODIUM CATALYST AND FUEL CELL
Lance Kenneth Ziering, Stamford, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine
Filed Jan. 21, 1966, Ser. No. 522,244
6 Claims. (Cl. 136—86)

1. A solid rhodium catalyst polycomponent mixture consisting essentially of: (a) from about 0% to about 47.5% platinum, (b) from about 40.0% to about 95% rhodium, and (c) from about 5% to about 20% of an amorphous tungsten oxide, all percentages being by

weight and wherein said platinum is present in an amount not greater than 50% by weight of said rhodium, said catalyst mixture being adapted for use in a fuel cell electrode that is incorporated in a fuel cell operative on the fuel side of said cell while utilizing hydrogen gas contaminated with from about 0.01% to about 20% carbon monoxide.

4. In a fuel cell which employs oxygen as the oxidant and hydrogen gas as the fuel contaminated with from about 0.01% to about 20% carbon monoxide and utilizing catalytic electrodes separated by an electrolyte matrix, the improvement in combination therewith which consists essentially of: a waterproofed-catalytic electrode, said electrode consisting essentially of the rhodium catalyst mixture of claim 1.

3,357,864

PRIMARY BATTERY HAVING ONE OF THE ELECTRODES WOUND UP ON A ROTATABLE SHAFT

Richard Huber, Ellwangen(Jagst), Germany, assignor to Varta Aktiengeselschaft, Frankfurt am Main, Germany, a corporation of Germany

Filed Dec. 11, 1964, Ser. No. 417,754
Claims priority, application Germany, Dec. 14, 1963, V 25,032
12 Claims. (Cl. 136—113)

1. Primary battery comprising a cell having two dissimilar electrodes and an electrolyte, being characterized by having one of its electrodes wound up on a rotatable shaft and, in such wound up condition, being kept separate from and out of contact with the other components of the electrochemical system of the battery before its use, said primary battery being provided with means to unwind said electrode and to bring it in contact with the electrolyte upon putting the battery into operation, and being further characterized in that the means for unwinding the wound electrode comprises a rotatable shaft and a plastic strip attached at its one end to the free end of the wound electrode and at its other end to the rotatable shaft, said plastic strip and other electrode being in contact with the electrolyte, said rotatable shaft being adapted on rotation thereof to put the battery into operation by winding up the plastic strip and unwinding the wound electrode, therein causing the latter electrode to contact the electrolyte of the battery.

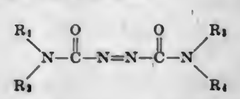
3,357,865

DRY CELLS

Stanley M. Davis and Charlotte M. Kraebel, Somerville, and Richard A. Parent, Piscataway, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

Filed Feb. 23, 1966, Ser. No. 529,475
6 Claims. (Cl. 136—137)

1. In a cell comprising in combination an anode of a highly electropositive metal and a cathode composition comprising a mixture of carbon, a depolarizer compound and an electrolyte, the improvement wherein the depolarizer compound has the formula:



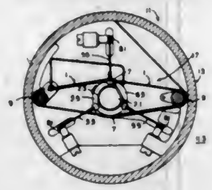
in which R_1, R_2, R_3 and R_4 are selected from the group consisting of hydrogen, alkyl of 1 to 8 carbon atoms, mono- and dicarbocyclic aryl, and substituted aryl, cycloalkyl, aralkyl, alkoxyalkyl, cyanoalkyl, haloalkyl, nitroalkyl, alkenyl, R_1 and R_2 and/or R_3 and R_4, when alkyl may be joined directly or through a nitrogen, sulfur or oxygen atom to form a heterocyclic ring, and not more than three of R_1, R_2, R_3, and R_4 are hydrogen.

3,357,866

THERMOELECTRIC GENERATOR

Harold Belofsky, Verona, N.J., assignor to the United States of America as represented by the United States Atomic Energy Commission

Filed Jan. 28, 1965, Ser. No. 428,888
3 Claims. (Cl. 136—202)



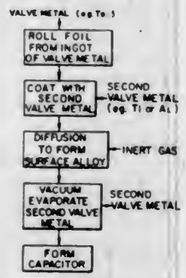
1. A thermoelectric generator, comprising two opposite end plates separated by a cylindrical container, a radioisotope fuel capsule forming a single hot post having insulating means between said hot post and said end plates comprising thin, high strength steel wires between the hot post and end plates having springs with multiple points of contact with the steel wires to reduce stresses and vibration in the steel wires, two electrically insulated cold posts on opposite sides of said hot post between said end plates; and series connected, sequentially clad, duplex thermocouple wire wound in a single continuous spiral having a plurality of adjacent spaced coils around the cold posts and tangent to the hot post whereby each coil of said wire forms two thermocouples having hot junctions on said hot post and cold junctions on said opposite end posts for producing electromotive forces in said wire while said source heat is conserved to produce a large temperature gradient across said thermocouples for providing a high voltage output therefrom.

3,357,867

PROCESS FOR MANUFACTURING CAPACITOR GRADE FOIL

Gerard J. Villani, Newton, Mass., assignor to National Research Corporation, Cambridge, Mass., a corporation of Massachusetts

Filed May 13, 1965, Ser. No. 455,454
4 Claims. (Cl. 148—4)



1. A method of producing foil for electrolytic capacitor anodes and the like comprising the steps of forming a foil of tantalum, depositing on said foil a coating of aluminum, heating the coated foil under a partial pressure of an inert gas to diffuse the aluminum into the tantalum to form a surface alloy and thereafter heating the foil to evaporate the second metal from the foil to leave a porous foil, the heating for evaporation being carried out in a vacuum zone and at a temperature below the melting point of the tantalum and above a temperature corresponding to a vapor pressure of aluminum higher than the prevailing pressure in the vacuum zone.

3,357,868

STAINLESS STEEL AND METHOD

Harry Tanczyn, Baltimore, Md., assignor to Armco Steel Corporation, Middletown, Ohio, a corporation of Ohio

No Drawing. Filed Nov. 17, 1964, Ser. No. 411,730
8 Claims. (Cl. 148—12.3)

1. In the production of cold-formed chromium-nickel-copper stainless steel which is substantially magnetic, the method which comprises: providing a chromium-nickel-copper stainless steel essentially consisting of 10% to 22% ingredient of the group consisting of chromium and molybdenum, with chromium at least 10% and with molybdenum up to 5% substituted for the chromium on a 1 to 1 basis, 5% to 16% ingredient of the group consisting of nickel and manganese, with nickel at least 4% and manganese up to 12% substituted for nickel on a 2 to 1 basis, 1% to 5% copper, .3% to 4% ingredient of the group consisting of titanium and columbium, and remainder substantially all iron; cold-reducing the same up to about 95% reduction; and ageing at a temperature of about 700° F. to 900° F.

3,357,869

METHOD OF HEAT-TREATING STEEL MACHINE PARTS

Konstantin Zakharovich Shepeljakovsky, Moscow, U.S.S.R., assignor to Moskovsky Automobilny Zavod "I. A. Likhachev," Moscow, U.S.S.R.

No Drawing. Filed Jan. 29, 1965, Ser. No. 430,242
2 Claims. (Cl. 148—16.5)

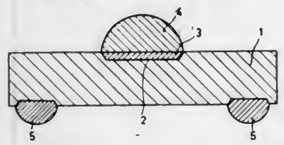
1. Method of heat-treating machine parts comprising manufacturing said parts from a lower hardenability steel, induction heating said parts being treated for hardening to a temperature of about 850° C. with a simultaneous supply into the zone of induction heating of substances containing carbon and nitrogen selected from the group of ammonia, hydrocarbons, cyanide salts, and cyano containing compounds, a subsequent holding of said parts during 30 to 100 seconds at a temperature of about 830 to 850° C. followed by quenching said parts with the water shower such that each such part has three hardened zones: a carbonitride hardened zone 0.02–0.1 mm. deep, HR_c=67–70 (H_v=1,000–1,200), a martensite-hardened zone with HR_c=58–62 and a troostite and sorbite core with HR_c=30–35.

3,357,870

SEMICONDUCTOR DEVICE

John Robert Dale, Westdene, Brighton, England, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Dec. 22, 1964, Ser. No. 420,287
Claims priority, application Great Britain, Dec. 23, 1963, 50,672/63
20 Claims. (Cl. 148—175)



1. A semiconductor device comprising at least first and second adjacent regions forming a junction, said first region consisting essentially of manganese arsenide isomorphous with the compound Mn_2As and having approximately the same empirical formula, said secnd region being selected from the group consisting of a III–V compound and a substituted III–V compound, wherein the III element is at least one member selected from the group consisting of boron, aluminum, gallium and indium, and the V element is at least one member selected from the group consisting of nitrogen, phosphorus, arsenic and antimony.

3,357,871

METHOD FOR FABRICATING INTEGRATED CIRCUITS

Robert E. Jones, Jr., Poughkeepsie, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Jan. 12, 1966, Ser. No. 520,245
12 Claims. (Cl. 148—175)



1. A process of fabricating semiconductor devices comprising the steps of
forming isolation channels in the upper surface of a monocrystalline semiconductor wafer,
forming an oxide layer over said surface and into said channels,
forming openings in said oxide layer to said surface,
growing a layer of semiconductor material over said oxide layer and into said previously formed openings to contact said surface,
removing the monocrystalline material of said original wafer by electropolishing, the contact between said grown layer and said wafer at said openings providing a current path therefor,
said removal step being continued until said oxide layer is reached, whereby said removal is automatically stopped, and
forming devices in the isolated islands of monocrystalline material.

3,357,872

SEMICONDUCTOR DEVICES AND METHODS FOR MAKING SAME

Melvin Belasco, Dallas, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Oct. 18, 1965, Ser. No. 496,844
6 Claims. (Cl. 148—175)

1. The method of diffusing magnesium antimonide into gallium arsenide comprising the step of heating magnesium antimonide in the presence of heated gallium arsenide.

3,357,873

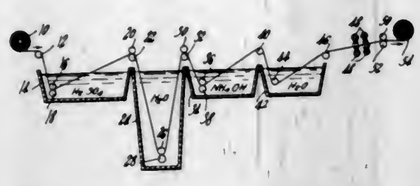
EXPLOSIVE COMPOSITION COMPRISING A NITRIC ACID ESTER OF A POLYVALENT ALCOHOL AND THE TERNARY SALT MIXTURE OF AMMONIUM CHLORIDE, AN ALKALI NITRATE, AND AN ALKALINE EARTH CARBONATE

Adolf Berthmann, Leverkusen, Gotthard Kuhn, Ettlingen, and Paul Lingens, Leverkusen, Germany, assignors to Dynamit Nobel Aktiengesellschaft, Troisdorf, Germany, a corporation of Germany

No Drawing. Filed Aug. 22, 1966, Ser. No. 575,219
Claims priority, application Germany, Aug. 21, 1965, D 48,032
3 Claims. (Cl. 149—66)

1. A safety explosive characterized by an increased resistance to deflagration having a high specific energy comprising a mixture of 6 to 15 weight percent referred to the explosive of a sensitizing component selected from the group consisting of nitric acid esters of polyvalent alcohols and a ternary mixture of inorganic salts, the latter comprising ammonia chloride, alkali nitrate and alkaline earth carbonate wherein the molar ratio of ammonium chloride to alkali nitrate amounts to 1.67, ammonium chloride to alkaline earth carbonate amounts to at least 5, and alkali nitrate to alkaline earth carbonate amounts to at least 3.

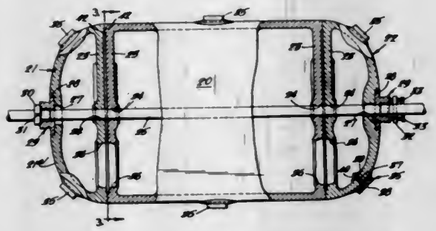
3,357,874
PROCESS FOR TREATING POLYESTER FILMS
William J. Kennedy, Jr., Charlotte, N.C., assignor to The Kendall Company, Boston, Mass., a corporation of Massachusetts
Filed Feb. 27, 1964, Ser. No. 347,781
18 Claims. (Cl. 156—308)



14. A process for producing a heat sealed laminate which comprises exposing the surface of a polyethylene terephthalate film to the action of sulfuric acid of at least about 85% concentration at room temperature for a period of not more than 300 seconds, arresting the action of the sulfuric acid by quenching the surface-treated film in an aqueous medium, washing residual acid from the film surface, and combining the treated film with at least one other sheet of material by the use of heat and pressure.

15. The process according to claim 14 in which the other sheet is a non-woven fabric.

3,357,875
MULTI-PART HOLLOW CASTING
George T. Corbin, Jr., 821 Byberry Road, Huntingdon Valley, Pa. 19006
Filed Jan. 21, 1963, Ser. No. 252,863
4 Claims. (Cl. 156—425)

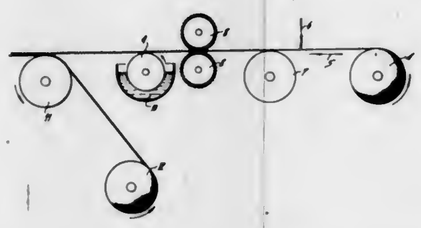


1. A composite, hollow, liquefiable mandrel, comprising a plurality of hollow sub-unit castings of a liquefiable material, each having an exterior wall forming a part of the exterior surface of said composite mandrel and each having at least one interior transverse wall integral with said exterior wall and extending inwardly from said exterior wall; and means securing together said sub-unit castings with said interior transverse walls of adjacent ones of said sub-units disposed adjacent and confronting each other.

3,357,876
METHOD OF STRENGTHENING A GLASS ARTICLE BY ION EXCHANGE
Dale Welling Rinehart, Natrona Heights, Pa., assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania
No Drawing. Filed Jan. 19, 1965, Ser. No. 426,676
13 Claims. (Cl. 161—1)

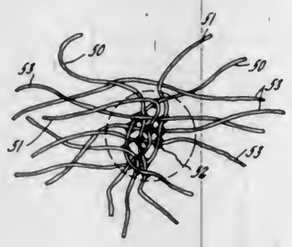
1. In a method of chemically tempering a glass article by introduction therein of a larger alkali metal by alkali metal ion exchange below the strain point of the glass article the improvement comprising, using as said glass article a lithia-P_2O_5-alumina-silica glass containing from about 1 to 25 percent by weight P_2O_5 and an alkali metal oxide selected from the group consisting of Na_2O, K_2O and mixtures thereof.

3,357,877
METHOD OF STIFFENING THE CORRUGATIONS OF CORRUGATED CARDBOARDS AND THE RESULTANT PRODUCT
Louis Gandon, Trosly-Breuil, France, assignor to Nobel-Bozel, Paris, France, a joint-stock company of France
Filed Jan. 2, 1964, Ser. No. 335,128
Claims priority, application France, Jan. 9, 1963, 920,915
9 Claims. (Cl. 161—133)



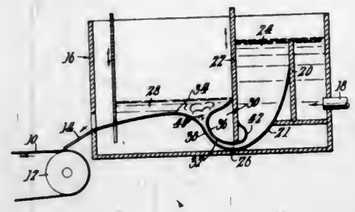
8. A corrugated paper of high wet strength comprising paper impregnated with a composition consisting essentially of 10 parts by weight glyoxal, 1–5 parts by weight guar gum and an acidic condensation catalyst selected from the group consisting of non-alkaline metal chlorides and sulfates.

3,357,878
AUTOGENOUSLY-BONDED NEEDLED NONWOVEN FABRIC AND METHOD OF MAKING SAME
Nicholas S. Newman, West Newton, Mass., assignor to The Kendall Company, Boston, Mass., a corporation of Massachusetts
Filed Oct. 5, 1965, Ser. No. 493,044
5 Claims. (Cl. 161—150)



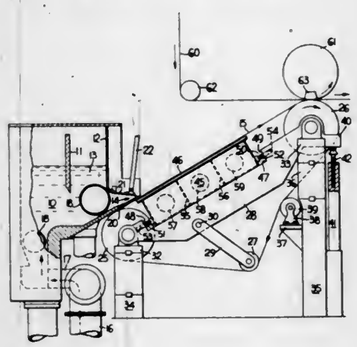
4. An autogenously-bonded needled nonwoven fabric which comprises
an unspun and unwoven needled array of textile-length fibers,
said fibers being bonded together at at least some of their crossover points,
said bonding being derived from the adhesion of fiber to fiber by means of fiber substance,
said bonding occurring principally in the internal region of said fabric,
the fibers at and near the surfaces of said fabric being substantially unbonded.

3,357,879
STOCK DISPERSION APPARATUS UTILIZING PRESSURE DIFFERENTIAL TO UNIFORMLY DISPERSE THE STOCK
William N. Bennett, Fitchburg, Mass., assignor to Fitchburg Paper Company, Fitchburg, Mass., a corporation of Delaware
Filed Feb. 21, 1964, Ser. No. 346,467
9 Claims. (Cl. 162—336)



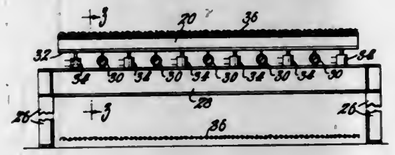
1. Apparatus for dispensing fluid material, comprising:
(a) box like receptacle means for receiving fluid material including first fluid material means and second fluid receiving material means, separated by separating means providing a passageway permitting movement of fluid material from said first material receiving means to said second material receiving means;
(b) said first fluid material receiving means being constructed to accumulate fluid material to a sufficient depth to create a first pressure of a first predetermined magnitude;
(c) said second fluid material receiving means being constructed to restrict the depth of fluid material so as to create a second pressure the magnitude of which is sufficiently reduced with respect to the magnitude of said first pressure to create an explosive type dispersing action as the fluid material enters said second fluid material receiving means; and
(d) fluid moving means for moving the said fluid material into said first fluid material receiving means, said passageway, and said second fluid material receiving means.

3,357,880
APPARATUS FOR MAKING FIBROUS WEBS
Donald R. Curtis, Appleton, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Mar. 23, 1965, Ser. No. 442,125
4 Claims. (Cl. 162—344)



1. A paper making machine comprising an inclined web forming assembly having a longitudinally spaced breast roll and couch roll and an endless screen looped over said breast roll and couch roll, support structure supporting said breast roll at a first elevation and said couch roll at an elevation higher than said breast roll with the top strand of said screen at an angle of incline upwardly toward said couch roll, driving means connected to said screen to move the top strand thereof up an inclined path from said breast roll toward said couch roll, a suction box assembly mounted beneath said top strand and on said support structure, an adjustable spacing device connecting a portion of said support structure to a portion of said box assembly for positioning said box assembly along said support structure toward and away from said breast roll upon adjusting said spacing device, and a headbox having a slice discharge and walls for containing pulp therein under a head higher than said slice to discharge pulp from said slice under the pressure of said head, said headbox being arranged with said slice over said top strand and transverse thereto to discharge pulp up said incline of said web forming screen.

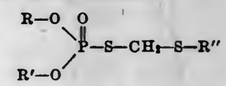
3,357,881
WIRE SUPPORT FOR PAPERMAKING MACHINES
William N. Bennett, Fitchburg, Mass., assignor to Fitchburg Paper Company, Fitchburg, Mass., a corporation of Delaware
Filed Oct. 15, 1964, Ser. No. 404,141
6 Claims. (Cl. 162—354)



1. A papermaking machine: comprising
(a) a Fourdrinier wire;
(b) an elongated wire supporting means extending across and under said Fourdrinier wire to support same;
(c) support means for supporting said wire supporting means at the ends thereof;
(d) pressure applying means coacting with the underside of said wire supporting means for exerting pressure thereupon to move the central portion of said wire supporting means to a substantially full level condition to thus counteract any sags in said Fourdrinier wire; and
(e) sag indicating means for indicating the degree of sag in said Fourdrinier wire when said Fourdrinier wire sags.

3,357,882
THIOL-PHOSPHORIC ACID ESTERS FUNGITOXIC AGENTS
Hans Scheinpflug, Leverkusen, Germany, Herbert Ferdinand Jung, Tokyo, Japan, and Gerhard Schrader, Wuppertal- Cronenberg, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation
No Drawing. Filed Oct. 21, 1964, Ser. No. 405,889
Claims priority, application Germany, Nov. 7, 1963, F 41,215
15 Claims. (Cl. 167—30)

1. Method of combating fungi which comprises applying to such fungi a fungitoxic amount of a thiol-phosphoric acid ester of the formula



in which R is selected from the group consisting of alkyl having 1–12 carbon atoms, haloalkyl having 1–12 carbon

atoms, cycloalkyl having 3–8 ring carbon atoms, and alkyl-substituted cycloalkyl having 3–8 ring carbon atoms and 1–6 alkyl carbon atoms substituted on the ring, R′ is selected from the group consisting of alkyl having 1–12 carbon atoms and haloalkyl having 1–12 carbon atoms, R″ is selected from the group consisting of phenyl and substituted phenyl which is substituted with a substituent selected from the group consisting of alkyl having 1–6 carbon atoms, halo, and mixtures thereof.

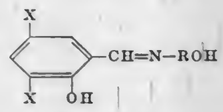
3,357,883

FUNGICIDAL N-SUBSTITUTED DERIVATIVES OF HALOGENATED SALICYLIDENEIMINES

Daniel Pillon, Lyon, Henri Pacheco, Bron, and Lucien Cronenberger, Lyon, France, assignors to Pechiney-Progil, Societe pour le Developpement et la Vente de Specialites Chimiques, Paris, France

No Drawing. Filed Feb. 15, 1965, Ser. No. 432,823
Claims priority, application France, Feb. 18, 1964, 964,168
8 Claims. (Cl. 167—31)

1. In the treatment of fungus, the steps of applying to said fungus a composition containing as an essential ingredient a fungicidal effective amount of an agent selected from the group consisting of a compound having the following structural formula and copper, zinc, iron, manganese and nickel chelates thereof:



in which X is a halogen and R is a lower alkylene or hydroxy lower alkylene having from 2 to 10 carbon atoms.

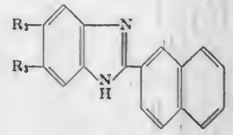
3,357,884

ANTHELMINTIC COMPOSITIONS CONTAINING BENZIMIDAZOLE DERIVATIVES

Lewis H. Sarett, Princeton, and Horace D. Brown, Plainfield, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Original application May 25, 1961, Ser. No. 112,545, now Patent No. 3,192,226, dated June 29, 1965. Divided and this application Sept. 13, 1963, Ser. No. 308,679
5 Claims. (Cl. 167—53)

1. An anthelmintic composition which comprises an animal feed having dispersed therein a compound selected from the class consisting of a benzimidazole of the formula



and non-toxic acid addition salts thereof, where R_2 and R_3 are selected from the class consisting of hydrogen, lower-alkyl, and loweralkoxy groups, at least one of R_2 and R_3 being hydrogen.

3,357,885

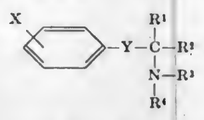
APPETITE-INHIBITING COMPOSITIONS

Larry Stein, Belmont Hills, Pa., assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware

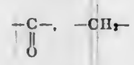
No Drawing. Filed Jan. 16, 1963, Ser. No. 251,746
6 Claims. (Cl. 167—55)

1. An appetite controlling therapeutic composition which comprises a pharmaceutically effective dose of

(A) a compound of the group consisting of
(1) a phenethylamine of the formula:



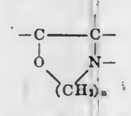
and
(2) the pharmaceutically-acceptable acid salts thereof; wherein R^1 represents lower alkyl; R^2 represents a substituent selected from the group consisting of hydrogen and methyl; R^3 and R^4 each represent a substituent selected from the group consisting of hydrogen and lower alkyl of up to six carbon atoms; X represents a substituent selected from the group consisting of hydrogen, halogen and trifluoromethyl; and Y represents a substituent selected from the group consisting of



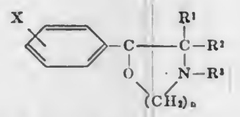
and



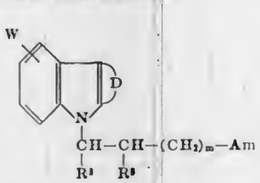
wherein Z when alone represents hydrogen, and when concatenated with R^4 forms therewith a heterocyclic ring of the structure:



wherein *n* represents an integer from 2 to 3, to result in a compound of the formula:



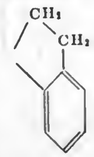
wherein R^1, R^2, R^3, X and *n* each has the meaning defined hereinbefore, and
(B) an aminolkylpolycyclic compound capable of alleviating depression in mammals and selected from the group consisting of
(1) compounds of the formula:



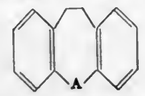
and pharmaceutically acceptable salts thereof; wherein W is a member selected from the group consisting of hydrogen, halogen, lower alkyl, nitro, amino, hydroxy and lower alkoxy; R^5 and R^6 are each substituents selected from the group consisting of hydrogen and lower alkyl; *m* is an integer of from 0 to 4; Am is selected from the group consisting of primary, secondary, and tertiary amine groups containing up to eight carbon atoms, and D represents a bivalent organic group selected from the group consisting of:

(a) polymethylene groups containing 5 to 13 carbon atoms, and

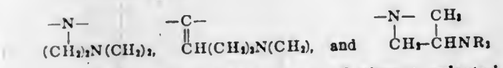
(b) aryl of the formula:



(2) compounds having the formula:



and pharmaceutically acceptable acid salts thereof; wherein A is selected from the group consisting of:



wherein R_2 represents a substituent selected from the group consisting of hydrogen and methyl.

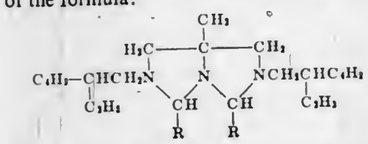
3,357,886

ORAL ANTISEPTIC COMPOSITION CONTAINING 1,3,7-TRIAZABICYCLO [3.3.0] OCTANES

Freeman H. McMillan, Dover, N.J., assignor to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware

No Drawing. Filed Aug. 20, 1964, Ser. No. 391,025
1 Claim. (Cl. 167—65)

An oral antiseptic composition which comprises as active ingredient from 0.1% to 1% by weight of a compound of the formula:



wherein R is a member of the group consisting of hydrogen, ethyl, hexyl, propyl and phenyl in combination with an inert pharmaceutical diluent.

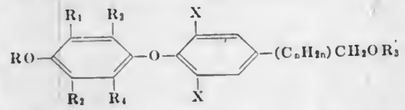
3,357,887

4-PHENOXY-3,5-DIHALOPHENYLALKANOLS AND HYPOCHOLESTEREMIC COMPOSITIONS CONTAINING THE SAME

Fred Kagan and William J. Wechter, Kalamazoo, Mich., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Apr. 2, 1965, Ser. No. 445,269
17 Claims. (Cl. 167—65)

1. A hypocholesteremic composition comprising as principal active ingredient from about 0.5 to about 500 mg. of a compound having the formula:



wherein R is selected from the group consisting of hydrogen, alkyl of 1 to 4 carbon atoms, inclusive, and acyl, wherein acyl is derived from an alkanoic acid containing 2 to 4 carbon atoms, inclusive; R_1 and R_2 are selected from the group consisting of hydrogen, alkyl of 1 to 4 carbon atoms, inclusive, and halogen; R_3 and R_4 are selected from the group consisting of hydrogen and alkyl of 1 to 4 carbon atoms, inclusive; R_5 is selected from the group consisting of hydrogen, phosphono, and acyl, wherein acyl is derived from an alkanoic acid containing 2 to 4 carbon atoms, inclusive; X is halogen; and *n* is an integer from 0 to 3, inclusive, dispersed in a pharmaceutically acceptable carrier.

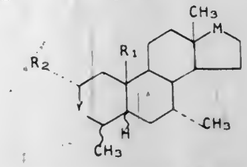
3,357,888

4,7-DIMETHYL ANDROSTENE DERIVATIVES

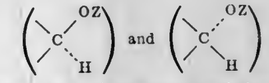
J Allan Campbell and John C. Babcock, Kalamazoo, Mich., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Apr. 7, 1965, Ser. No. 446,418
13 Claims. (Cl. 167—65)

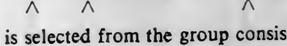
13. A method for reducing blood cholesterol in mammals comprising: administering to mammals a compound of the formula



wherein ∫ is a generic expression denoting α- and β-bonds and mixtures thereof; the 4(5)-carbon atom linkage is selected from the group consisting of single bonds and double bonds, with the proviso that the 5-hydrogen atom is absent when the 4(5)-carbon atom linkage is a double bond; R_1 and R_2 are selected from the group consisting of hydrogen and methyl; Y is selected from the group consisting of the methylene radical (>CH_2), the carbonyl radical (>C=O),



Z being selected from the group consisting of hydrogen, tetrahydropyranyl and the lower acyl radical of a hydrocarbon carboxylic acid containing from one to twelve carbon atoms, inclusive; M is selected from the group consisting of



wherein A is selected from the group consisting of hydrogen, lower alkyl of from one to twelve carbon atoms, inclusive, chlorine, bromine and trifluoromethyl, R_3 is selected from the group consisting of hydrogen, lower alkyl of from one to twelve carbon atoms, inclusive, and alkylene of from two to twelve carbon atoms, inclusive, and Z has the same meaning as above.

3,357,889

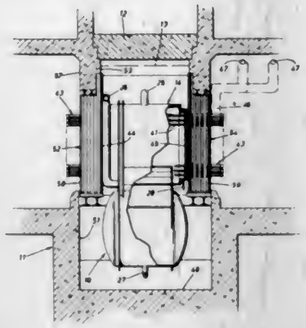
LIQUID MODERATED, LIQUID COOLED NUCLEAR REACTOR INSTALLATION

Robert William Blackburn, Ottawa, Ontario, and William Marriott Brown and Edward James Adams, Peterborough, Ontario, Canada, assignors to Canadian General Electric Company, Limited, Toronto, Ontario, Canada, a corporation of Canada

Filed Aug. 2, 1965, Ser. No. 476,610
Claims priority, application Canada, May 29, 1965, 931,950
3 Claims. (Cl. 176—52)

1. A liquid moderated, liquid cooled nuclear reactor installation comprising a closed vessel divided by transverse wall means into an upper calandria portion and a lower moderator dump tank portion; a nuclear chain reaction assembly located within said calandria portion including a plurality of individual calandria fuel tubes each having at least one end thereof extending from said calandria portion to the outside of the vault through a window plate mounted in sealing relation with adjacent wall portions of

the vault, the outer periphery of each said tube being sealingly attached to said window plate; integral moderator dump port structure in said transverse wall means for holding liquid moderator in said calandria by means of gas under pressure in said dump tank, and allowing moderator to flow freely from said calandria into said dump tank on decrease in the pressure of the holding gas; a water filled vault surrounding said vessel to provide



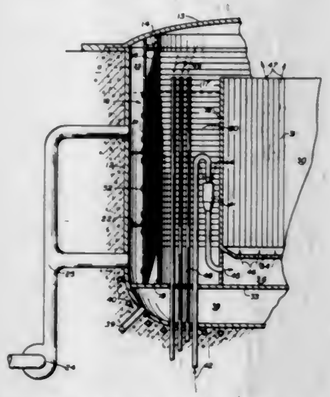
cooling to the walls of the vessel to maintain the temperature thereof substantially uniform serving to shield the reactor, said window further having submerged free-standing shielding plates interposed between said aforementioned window plate and said calandria portion, mounted substantially parallel and spaced to permit circulation of cooling water in cooling and shielding relation therebetween.

3,357,890

PRESSURE VESSEL THERMAL INSULATION

Ronald W. Friis and John E. Hench, San Jose, Calif., assignors to the United States of America as represented by the United States Atomic Energy Commission

Filed Nov. 21, 1966, Ser. No. 596,016
7 Claims. (Cl. 176—54)



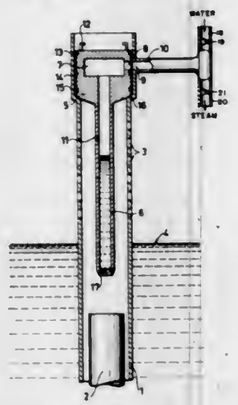
1. An apparatus for use in proximity to a high temperature heat source comprising, in combination, means defining a vessel containing said high temperature heat source, and thermal barrier means disposed between said heat source and the interior wall of said vessel and comprising a vertical support plate means and a plurality of spaced apart, elongated laminae each affixed at only one end to said support plate, laterally arranged, projecting upwardly and at an angle to the direction of flow of heat from said heat source, said spaced apart laminae having upstanding open ends and defining passages therebetween in substantially unimpeded communication with the interior of said vessel for introduction of coolant in fluid communication with coolant on the heat source side of said barrier.

3,357,891

NOZZLE DEVICE IN FLOW TUBES OF A NUCLEAR REACTOR OF THE BOILING WATER TYPE

Lars Olof Tor Wadmark, Nasby Park, Sweden, assignor to Aktiebolaget Atomenergi, Stockholm, Sweden, a company of Sweden

Filed June 11, 1965, Ser. No. 463,208
Claims priority, application Sweden, June 25, 1964, 7,784/64
4 Claims. (Cl. 176—54)



1. In combination with a nuclear reaction of the boiling water type in which nuclear fuel is positioned in vertical flow tubes containing water which vaporizes and ascends therethrough, the improvement comprising a nozzle supported in the upper portion of each flow tube, each said flow tube having in its wall openings for the ascending water and steam mixture, said nozzle comprising a head connected to a conduit adapted to alternately supply cooling water or provide for the discharge of steam, said nozzle further comprising a tube situated centrally in the flow tube and having its upper end connected to the head and having its lower end situated comparatively close to the fissile fuel to allow cooling water to be sprayed onto the fissile fuel, the wall of the nozzle tube containing at least one opening comparatively close to the head for discharging steam from the flow tube.

3,357,892

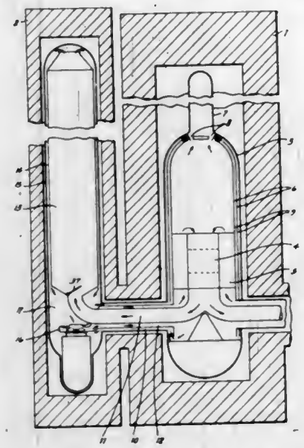
GAS COOLED NUCLEAR REACTOR

Gerhard Schmidt, Leopoldshafen, Germany, assignor to Gesellschaft fur Kernforschung m.b.H., Karlsruhe, Germany

Filed Apr. 23, 1965, Ser. No. 450,693
Claims priority, application Germany, Apr. 29, 1964, G 40,488
6 Claims. (Cl. 176—60)

1. A gas-cooled nuclear reactor arrangement comprising, in combination, a high-pressure vessel; a reactor core arranged within said vessel spaced from the inner surface thereof; a heat shield arranged also within said high-pressure vessel at least between said core and the inner surface of said high-pressure vessel spaced from the latter and thus forming an annular cooling space between itself and the inner surface of the vessel; a gas-coolant circulating means having an intake side and an output side; pressure conduit means connected at one end to the output side of said coolant circulating means and terminating at the other end in said high-pressure vessel inside of said heat shield for guiding gas coolant into the same for

cooling of said reactor core; a heat exchanger; exhaust conduit means leading from said high-pressure vessel to said heat exchanger for guiding the coolant medium heated in said high-pressure vessel to said heat exchanger for cooling thereof; return conduit means connected at one end to said heat exchanger and at the other end to said intake side of said coolant circulating means for guiding the coolant back to said coolant circulating means; and additional conduit means connecting said return conduit means carrying the gas coolant cooled in



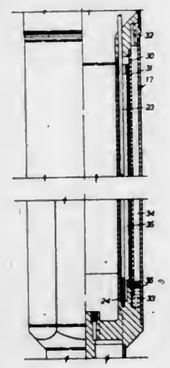
said heat exchanger with said annular cooling space between said inner surface of said high-pressure vessel and said heat shield, whereby in the event a leak develops in said high-pressure vessel cooling medium will be admitted through said additional conduit into said annular cooling space and cool the leaking portion of said high-pressure vessel so as to prevent any further damage thereto by the heat created in said high-pressure vessel during nuclear reaction.

3,357,893

VENTED NUCLEAR REACTOR FUEL ELEMENT

John Andrew Gatley, Appleton, John Webb, Bryn, and Reginald Robert Gallie, Seascale, England, assignors to United Kingdom Atomic Energy Authority, London, England

Filed Aug. 23, 1965, Ser. No. 481,815
Claims priority, application Great Britain, Aug. 28, 1964, 35,424/64
12 Claims. (Cl. 176—68)



1. For a nuclear reactor, a fuel element of the vented type having a fuel-containing protective sheath of elongated form and comprising means defining a vent path unobstructed by fuel and having permanently open communication with the fuel adjacent one end, the other end of the vent path being an outlet in open communication with the exterior surroundings of the sheath for discharge into these surroundings of gases released by the fuel during operation of the element and the length of the vent path between said one end and the outlet being longer than the fuelled length of the sheath in order to promote the decay before discharge of short-lived gaseous phase fission products included in the released gases.

3,357,894

PROTEOLYTIC ENZYMES OF PIG PANCREAS

José Uriel, Paris, and Stratis Avrameas, Villejuif, France, assignors to Etablissement Public: Centre National de la Recherche Scientifique, Paris, France, a corporation of France

Filed Oct. 19, 1964, Ser. No. 404,615
Claims priority, application France, Oct. 18, 1963, 951,110
8 Claims. (Cl. 195—66)

1. A method for producing proteolytic enzymes from pig pancreas capable of digesting egg white albumin in native state, comprising the steps of dissolving powdered pig pancrease in demineralized water at a strongly acid pH value, whereby a first aqueous pancreatic solution and a remaining first undissolved pancreatic fraction are obtained, separating said first pancreatic solution from said first undissolved pancreatic fraction, dissolving said first undissolved pancreatic fraction in deminearlized water at a pH value just below neutrality, whereby a second aqueous pancreatic solution and a remaining second undissolved pancreatic fraction is obtained, separating said second pancreatic solution from said second undissolved pancreatic fraction, freeze drying and second pancreatic solution, whereby a first solid fraction is obtained, dissolving at least part of said first solid fraction in a buffer phosphate solution at a pH value just below neutrality, passing said dissolved first solid fraction through a first ion exchanger column thereby obtaining an elastase fraction, a carboxypeptidase fraction and an impure pancreatic protease fraction, dialysing and freeze drying said pancreatic protease fraction, whereby a second solid fraction is obtained, dissolving said second solid fraction in a buffer phosphate solution at a pH value just below neutrality, passing said dissolved second solid fraction through a second ion exchanger column whereby a desired first protease fraction is separated, adjusting the pH value of said first aqueous pancreatic solution just below neutrality, dialysing said adjusted first pancreatic solution, whereby a solid protease-carboxypeptidase-elastase fraction and a third aqueous pancreatic solution are obtained, separating said solid protease-carboxypeptidase-elastase fraction from said third aqueous pancreatic solution, freeze drying said third aqueous pancreatic solution, whereby a third solid fraction is obtained, dissolving said third solid fraction in a phosphate buffer solution at a moderately acid pH value, passing said dissolved third solid fraction through an ion exchanger column, whereby four fractions are obtained, one of which shows two peaks corresponding to two sub-fractions, one of said sub-fractions being an esterase and the other a pancreatic protease-elastase-esterase sub-fraction, dialysing and freeze-drying said other sub-fraction, whereby a fourth solid fraction is obtained, dissolving said fourth solid fraction in demineralized water, adding an ammonium sulfate solution to said dissolved fourth solid fraction up to 50% of final saturation, whereby a first precipitate and a first supernatant are obtained, separating said first precipitate from said first supernatant, adding an ammonium sulfate solution to said first supernatant up to 60% of final saturation, whereby a second precipitate and a second supernatant are obtained, separating said second precipitate from said second supernatant, dissolving said second precipitate

in demineralized water, dialysing said dissolved second precipitate first in the presence of water then in the presence of a phosphate buffer solution at a pH value just below neutrality, passing said dialysed dissolved precipitate through an ion exchanger column, whereby two extreme fractions and one medium desired second protease fraction are obtained.

3,357,895
PROCESS FOR PRODUCING FUNGUS SPORES
Edward Cherry, Frederick, Md., assignor to the United States of America as represented by the Secretary of the Army
No Drawing. Filed May 26, 1964, Ser. No. 370,380
3 Claims. (Cl. 195—81)

1. In a process for the production of fungus spores which comprises growing the fungus upon a grain substrate selected from the group consisting of corn, wheat, oats, sorghum, rye, barley, and rice until sporulation has occurred and recovering the spores from the substrate, the improvement comprising: the addition of a non-aqueous organic solvent to the dried spore containing substrate, agitating to remove the spores from the substrate, drawing off the resulting spore suspension and recovering the fungus spores.

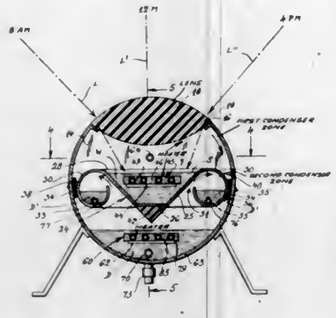
3,357,896
DECAKING OF CAKING COALS
Stanley J. Gasior, Pittsburgh, Albert J. Forney, Coraopolis, and Joseph H. Field, Pittsburgh, Pa., assignors to the United States of America as represented by the Secretary of the Interior
Filed Jan. 25, 1966, Ser. No. 522,992
1 Claim. (Cl. 201—34)

A process for decaking particulate caking coal having a particle size of from about 8 mesh to about ⅜ inch consisting of

(a) preheating said caking coal to its softening point;
(b) allowing said preheated coal to fall substantially freely;
(c) rapidly heating said freely falling coal through its plastic range with a hot gas composed of from about 1.0 to 10% by volume oxygen and a gas inert with respect to said coal, said oxygen being present in an amount sufficient to prevent agglomeration of said coal while it is being heated by said hot gas but in an amount insufficient to cause uncontrolled rises in the temperature of said coal while it is being heated by said hot gas, said hot gas being at a temperature of from about 560° C. to 670° C. and a pressure of from about 250 to about 350 p.s.i.g.; and
(d) removing said coal from said hot gas just after it has been heated through its plastic range, and collecting said removed coal as a particulate noncaking coal char.

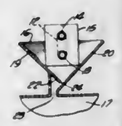
3,357,897
WATER PURIFICATION APPARATUS
Alexander Salzer, 157 E. 2nd St., New York, N.Y. 10002
Filed Sept. 23, 1965, Ser. No. 489,609
1 Claim. (Cl. 202—174)

Water purification apparatus, comprising an elongated metal cylindrical casing closed at the bottom and ends and being open at the top, a double convex removable cylindrical lens in said open top for passing solar rays into the casing, for heating water therein, a container in the casing, said container comprising a horizontally disposed pan having integral cylindrical side troughs for collecting condensate, means for feeding nonpotable water into said container from outside the casing, said casing having a bottom defining a trough underneath said container to collect water evaporated from the container and condensing as a distillate on interior walls of the casing, a heating member in said container for heating water therein to supplement heating of the nonpotable water by said solar rays, another heating member in



said casing trough for heating and evaporating the said distillate therefrom, whereby said nonpotable water is doubly distilled, and a faucet fitted on the inside of the casing bottom to drain off the waste.

3,357,898
FLOATABLE SOLAR STILL FOR PRODUCING POTABLE WATER FROM IMPURE WATER
Milan M. Novakovich, Orange County, Calif. (215 Apolena Ave., Newport Beach, Calif. 92662)
Filed Dec. 3, 1964, Ser. No. 415,740
5 Claims. (Cl. 202—234)



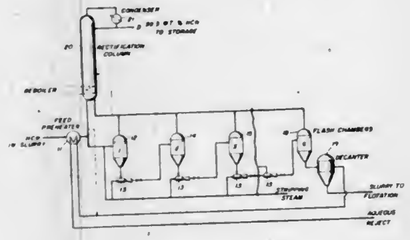
1. A purification apparatus comprising: an air tight enclosure having an open end, said open end capable of being submerged below the surface of an ambient liquid so as to captivate a quantity of air atmosphere and maintain the same in constant contact with the surface of said ambient liquid; condenser means comprised of a plurality of flat vanes positioned in said air atmosphere for condensing water vapor in said atmosphere; cooling means comprised of substantially hollow conduits for circulating fluid coolants therein attached to said condenser means; a collecting trough positioned below said condensing means; a collecting tank secured to said collecting trough; means for removing said condensed water vapor; means secured to said enclosure for buoying same at a predetermined position relative to the surface of the liquid ambient; and means engaged with said enclosure for limiting lateral movement thereof.

3,357,899
METHOD OF RECOVERING FORMIC ACID FROM A WASTE LIQUOR
Max O. Robeson, Corpus Christi, Tex., assignor to Celanese Corporation, a corporation of Delaware
No Drawing. Filed Aug. 30, 1963, Ser. No. 305,835
15 Claims. (Cl. 203—15)

1. The method of recovering formic acid from pentaerythriotol waste liquor containing water, sodium formate and other impurities which comprises:

(A) evaporating from the said liquor about 40% to 90% by weight of the water initially present therein;
(B) acidifying the residue from Step A with a strong acid selected from the group consisting of sulfuric acid, hydrochloric acid, phosphoric acid, oxalic acid, p-toluenesulfonic acid and dichloroacetic acid and trichloroacetic acid in an amount sufficient to convert at least about 75% by weight of the sodium formate present in said residue to formic acid and the sodium salt of the said acid;
(C) filtering sodium salt of the said acid from the residue from Step B; and
(D) distilling the liquor from Step C under heat and reduced pressure while it is in contact with added water thereby to minimize esterification of the formic acid component of the said liquor and to obtain an aqueous distillate containing, by weight, a major proportion of water and a minor proportion of formic acid.

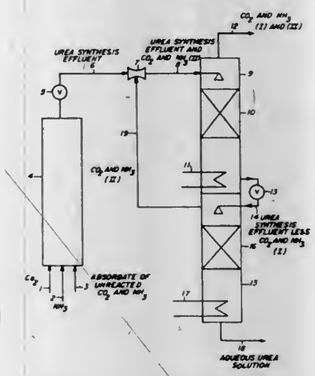
3,357,900
SERIES FLASH DISTILLATION FOR RECOVERY OF HCN FROM AQUEOUS Cu-CONTAINING SLURRIES
George Joseph Snell, Fort Lee, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine
Filed May 17, 1965, Ser. No. 456,380
4 Claims. (Cl. 203—47)



1. A process for the recovery of HCN from an acidic aqueous slurry comprising HCN, finely divided cuprous sulfide and calcium sulfate from the acidification of a cyanide leach solution which comprises:

(a) introducing steam directly into said slurry, thereby heating said slurry;
(b) passing the resultant heated slurry in series through a plurality of flash evaporating zones;
(c) flashing the heated slurry in each of said flash evaporating zones, thereby vaporizing part of the HCN, and separating the gaseous phase containing said part of the HCN and water in the overhead, and the liquid slurry containing the solids as bottoms;
(d) at least once additionally, introducing additional steam into the resultant slurry to reheat said resultant slurry after its passage through a flash evaporating zone, and again flashing the reheated slurry, in a subsequent zone of said series of flash evaporating zones, thereby vaporizing additional HCN, and again separating the gaseous phase containing the additional HCN and water in the overhead, and the liquid slurry containing solids as the bottoms;
(e) separating said solids from the liquid slurry, and recovering said solids including cuprous sulfide;
(f) discarding the residual liquid;
(g) introducing the HCN-containing vapor phases as produced in said flash evaporating zones into a rectifying column;
(h) supplying indirect heat to the bottom of said column;
(i) rectifying the HCN and water in said column; and
(j) condensing and recovering for reuse an HCN rich liquor from the vapor phase zone at the top of the rectifying column.

3,357,901
AMMONIA, CARBON DIOXIDE RECOVERY FROM UREA SYNTHESIS UTILIZING AN EJECTOR
Eiji Otsuka and Kazumichi Kanai, Fujisawa, and Shigeru Inoue, Kamakura, Japan, assignors to Toyo Koatsu Industries, Incorporated, Tokyo, Japan, a corporation of Japan
Filed Oct. 11, 1965, Ser. No. 494,736
Claims priority, application Japan, Oct. 16, 1964, 39/58,587
1 Claim. (Cl. 203—78)



In a two stage distillation process for separating unreacted carbon dioxide and ammonia from the effluent containing same and urea from a urea synthesis wherein said effluent is fed through a high pressure distillation zone and thence through a low pressure distillation zone, and gaseous mixtures containing unreacted carbon dioxide and ammonia are removed respectively from said high pressure distillation zone and said low pressure distillation zone, that improvement comprising, feeding said effluent through an ejector to reduce the pressure thereof prior to feeding it to said high pressure distillation zone, aspirating in said ejector said gaseous mixture from said low pressure distillation zone to increase the pressure of said gaseous mixture and feed same with said effluent to said high pressure distillation zone for removal with said gaseous mixture from said high pressure distillation zone.

3,357,902
USE OF ANODIZING TO REDUCE CHANNELLING ON SEMICONDUCTOR MATERIAL
Eddi Benjamini, San Jose, and Edward F. Duffek, Los Altos, Calif., assignors to Fairchild Camera and Instrument Corporation, Syosset, N.Y., a corporation of Delaware
No Drawing. Filed May 1, 1964, Ser. No. 364,751
7 Claims. (Cl. 204—38)

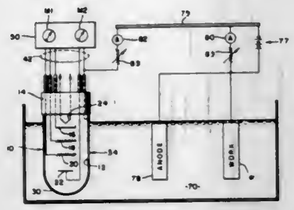
1. In the process for making diffused silicon semiconductor devices having a permanent semiconductor oxide coating on one surface thereof, said process including at least one diffusing step which results in the growth of a coating of oxide of the semiconductor material on said surface, the improvement which comprises removing said grown oxide from said surface of said semiconductor material by etching and thereafter anodically depositing in a substantially non-aqueous electrolyte a new coating of an oxide of a semiconductor material, the new coating having much less tendency to induce the formation of channels at said surface.

3,357,903

MONITORING SYSTEM AND METHOD FOR ELECTROPLATING STEEL OR OTHER HYDROGEN-PERMEABLE METALS

Samuel C. Lawrence, Jr., 1814 S. 142nd Place, Seattle, Wash. 98168

Filed May 12, 1961, Ser. No. 109,716
9 Claims. (Cl. 204—45)



1. In a monitoring method for treatment of objects in an electroplating solution,
   - introducing into said electroplating solution an object subject to hydrogen permeation by said solution;
   - introducing into said solution an electronic vacuum tube probe having a shell similarly subject to hydrogen permeation whereby the pressure of hydrogen within said shell increases as a function of time depending on the hydrogen effusion characteristics of said solution;
   - supplying electric current to said object and said probe to effect electroplating of said shell and object simultaneously,
   - separately measuring the currents supplied to said shell and said object,
   - generating within said shell an electron current that ionizes the hydrogen gas therein thereby producing an ion current that varies with the pressure of the hydrogen within said shell,
   - measuring at successive times the ion current developed in said tube probe during the period while hydrogen is permeating said shell and said object,
   - and adjusting the hydrogen effusion characteristics of said solution in accordance with the rate of change of said ion current.

8. In apparatus for measuring hydrogen permeation of work being plated:
   - a hydrogen-effusing electroplating bath receptacle for receiving work to be plated;
   - a hollow hydrogen detector probe having a metal shell subject to being electroplated in a plating bath;
   - first cathode means for supporting a work piece in a plating bath in said receptacle;
   - second cathode means for supporting said probe in said plating bath in said receptacle;
   - circuit means for applying cathodic plating potentials to said work piece and to said metal shell simultaneously; and
   - means for measuring the amount of hydrogen that has entered said probe during said plating process.

3,357,904

PROCESS OF PRODUCING OXIDES OF PLATINUM AND PALLADIUM

Raymond Steele, West Chester, Pa., assignor to J. Bishop & Co. Platinum Works, Malvern, Pa., a corporation of Pennsylvania

No Drawing. Filed Mar. 3, 1967, Ser. No. 620,282
10 Claims. (Cl. 204—61)

1. A process of producing oxides of platinum or palladium, which comprises maintaining a molten bath of a nitrate of an alkali metal in the presence of from about ½% to 10% by weight of a chloride of an alkali metal, and electrolyzing said molten bath with a noble metal containing anode of the class consisting of platinum, palladium, alloys of platinum and palladium, platinum base alloys with other metals, palladium base alloys with other metals and platinum-palladium base alloys with other metals and recovering said oxide from said molten bath.

3,357,905

ELECTROLYTE COMPOSITION AND METHOD OF ELECTROLYTICALLY REMOVING STOCK FROM WORKPIECE

Charles L. Faust and John E. Clifford, Columbus, Ohio, assignors, by mesne assignments, to The Cleveland Twist Drill Company, Cleveland, Ohio, a corporation of Ohio

Filed Mar. 28, 1960, Ser. No. 17,982
The portion of the term of the patent subsequent to June 7, 1977, has been disclaimed
10 Claims. (Cl. 204—143)

1. A universal multi-component electrolyte for the electrolytic removal of stock from a metallic workpiece selected from the group consisting of steel, a cemented metal carbide, silver solder, and composite workpieces of at least two of said metals, characterized in that said multi-component electrolyte consists essentially of an aqueous alkaline solution of an ionizable hydroxide for solubilizing the oxide formed from the metal of said metal carbide, a water-soluble salt of a saturated polybasic aliphatic organic acid for solubilizing the cementing agent of the cemented metal carbide, a water-soluble compound furnishing the chloride ion for the electrolytic dissolution of steel, and a silver solubilizer selected from the group consisting of sodium cyanide, ethylene diamine, and tetrasodium ethylenediaminetetraacetate.

2. In the method of electrolytically removing stock from a composite workpiece, including steel and a carbide body having a metallic cementing matrix, without contacting the workpiece with a rigid forming or scraping tool; the improvements comprising contacting such workpiece with at least a tri-component electrolyte consisting essentially of an aqueous alkaline solution of an ionizable hydroxide, a water-soluble compound furnishing a halogen ion, and a water-soluble solubilizing agent for the metallic cementing matrix selected from the group consisting of a salt of a saturated polybasic aliphatic organic acid, an ammonium halide, and an alkaline amine; applying a direct current voltage between said workpiece and electrolyte with the workpiece as the anode; carrying a resultant direct current substantially by said ionizable hydroxide while simultaneously dissolving by such hydroxide the metal of said carbide removed from the body at a rate at least equal to its rate of electrolytic removal to prevent the formation of water-insoluble compounds of said carbide metal; and simultaneously dissolving said metallic cementing matrix by the defined water-soluble solubilizing agent and dissolving the steel by said water-soluble halogen compound also at rates at least equal to their respective rates of electrolytic removal to prevent the formation of water-insoluble compounds of either of said matrix metal and steel.

3,357,906

METHOD OF MAKING A WORKING SURFACE OF A TOOL-ELECTRODE FOR AN ELECTROCHEMICAL MACHINING APPARATUS

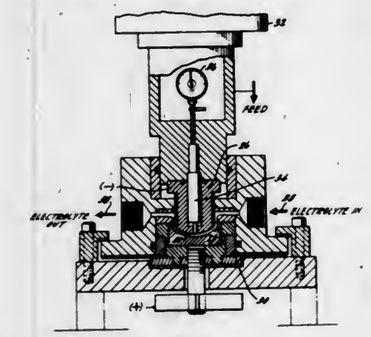
Allen Ulrich Jollis and Marcus Augustus Cummings, Cincinnati, and Joseph Bayer, Middletown, Ohio, assignors to General Electric Company, a corporation of New York

Filed Mar. 1, 1965, Ser. No. 436,034
10 Claims. (Cl. 204—143)

1. A method for making a working surface of a tool-electrode of electrolytic apparatus for use with a specific metallic workpiece material and a specific electrolyte to

produce a known shape of a workpiece electrode surface, the method comprising the steps of:

(A) producing the threshold voltage (ΔE) and workpiece material constant (K) for the specific system of workpiece material-tool electrode material-electrolyte-electrolytic apparatus by producing, under a condition of electrolytic equilibrium, data of voltage, current, operating gap, electrode movement rate one with respect to the other, and current density from a plurality of electrolytic processing steps, the threshold voltage being a function of the voltage, current and gap and the workpiece material constant being a function of the current density and electrode movement rate,
   - (1) all of the steps having substantially the same fixed conditions of electrolyte composition, temperature and flow, and
   - (2) each step having fixed conditions of voltage, current, gap, electrode movement rate and current density,
   - (3) each step, with respect to the other of the plurality of steps, varying at least one of the conditions of voltage, gap and electrode movement rate while maintaining electrolytic equilibrium



   - (4) each step comprising:
     - (a) placing a first surface of a first specimen of the workpiece material in spaced relation with a second surface of a second second specimen of the tool-electrode so that the first and second surfaces define a uniform gap in the range of 0.002–0.04";
     - (b) flowing the electrolyte at a fixed rate of at least 10 ft./sec. through the gap in contact with both the first and second surfaces;
     - (c) passing predominantly direct electrical current between the first and second specimens through the electrolyte in the gap to produce a fixed current density of at least 100 amps/in.^{2} on the surface receiving current; while at the same time.
     - (d) moving the first and second surfaces with respect one to the other at a fixed rate in the range of 0.002–0.2 in./min. to maintain substantially constant the uniform gap between the surfaces during electrolytic processing

(B) graduating a model of the workpiece surface into a first grid of a plurality of incremental plane areas;

(C) graduating the working surface of the tool-electrode into a second grid of a plurality of incremental plane areas equal in number to those of the first grid, the equal numbers of incremental areas on the first and second grids providing pairs of cooperating incremental areas; and then

(D) making the working surface of the tool-electrode by producing each of the plurality of incremental plane areas of the second grid from the distance (L_{11}) between each cooperating pair of incremental areas when each cooperating pair of incremental areas are disposed in spaced apart relationship substantially parallel one to the other, the distance (L_{11}) being determined from the relationship:

$$L_{11}=\frac{L^*_{11}}{2}+\frac{1}{2}\left[L^{*2}_{11}+\frac{4A_{11}}{\frac{A_{el}\rho}{(E-\Delta E)Kt}-\sum_{j=2}^{m}\frac{A_{1j}}{L_{1j}(L_{1j}-L^*_{11})}}\right]^{1/2}$$

where:
- L^*_{11} is the original starting gap distance normal to the known workpiece surface;
- L^*_{1j} is the original starting gap distance other than normal to the known workpiece surface;
- L_{11} is the operating gap distance normal to the known workpiece surface at any time;
- L_{1j} is the operating gap distance other than normal to the known workpiece surface at any time;
- A_{el} is an increment of area on the known workpiece surface;
- A_{11} is an increment of area on the unknown working surface of the tool-electrode;
- A_{1j} is the cross-sectional area of a projection of one of A_{el} and A_{11} on one electrode to the other;
- E is the applied electrical potential;
- ΔE is the threshold voltage which must be applied before electrolysis can proceed;
- ρ is the specific resistance of the electrolyte;
- K is a workpiece material constant;
- t is time of operation;
- $\sum_{j=2}^{m}$ is the summation of all increments to m not including the direct effect $j=1$;
- $i=1, 2, \ldots n$, and n is the number of surface increments on an electrode;
- m=those increments included in the stray effect out of a total of n increments.

3,357,907

PROCESS FOR PREPARING 1,1,1-TRICHLOROETHANE

Paul Riegger, Bonn, and Hermann Richtzenhain, Cologne-Sulz, Germany, assignors to Dynamit Nobel Aktiengesellschaft, Troisdorf, Bezirk Cologne, Germany, a corporation of Germany

Filed Apr. 7, 1965, Ser. No. 446,208
Claims priority, application Germany, June 10, 1964, D 44,651
6 Claims. (Cl. 204—163)

1. Process of preparing 1,1,1-trichloroethane, which comprises introducing gaseous chlorine into a reaction zone, passing 1,1-dichloroethane as a liquid into said reaction zone wherein said liquid 1,1-dichloroethane is initially brought into contact with said gaseous chlorine and is converted into gaseous 1,1-dichloroethane, irradiating said gaseous reaction mixture with light having a wave length within the visible to ultraviolet range, and recovering the 1,1,1-trichloroethane thereby produced.

3,357,908

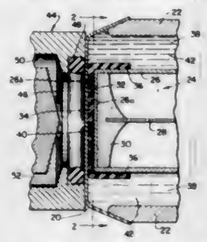
ELECTROLYTIC SENSOR WITH WATER DIFFUSION COMPENSATION

John H. Riseman, Cambridge, and James W. Ross, Newton, Mass., assignors to Corning Glass Works, Corning, N.Y., a corporation of New York

Filed Feb. 7, 1964, Ser. No. 343,352
7 Claims. (Cl. 204—195)

1. In an electrode assembly for determining the concentration of an electrochemically active species in a test fluid, which assembly includes an aqueous electro-

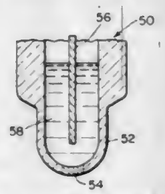
lyte solution with at least two ionic species therein, a selectively permeable membrane comprising at least a portion of an enclosure for said solution and adapted to separate said solution and said fluid, said membrane being water permeable and permeable to said active species with which said solution is capable of interacting at a predetermined location to vary the activity of a first of said two ionic species, the activity of the second of said two ionic species being substantially independent of



said interacting, and a first electrode responsive to said activity of said first of said ionic species at said location for providing corresponding electrical potential said location being formed as the interspace between the selectively permeable membrane and the sensing portion of the electrode, the improvement comprising,

a second electrode responsive to the activity of said second of said two ionic species, a portion of which is disposed in said location for providing a corresponding electrical potential.

3,357,909
GLASS ELECTRODES
John H. Riseman, Cambridge, and James W. Ross, Newton, Mass., and George Eisenman, Salt Lake City, Utah, assignors to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed June 2, 1964, Ser. No. 379,757
9 Claims. (Cl. 204—195)



1. In a method of producing glass electrodes for determining the activity of ions in solution, the improvement comprising the steps of:

forming a membrane of an alkali aluminosilicate glass composition containing an oxide of a first alkali metal;

contacting a predetermined portion of the outer surface of said membrane with a material containing a second alkali metal; and

heating said membrane and said material to a temperature and for a sufficient time to permit ion exchange by the second alkali metal for the first alkali metal.

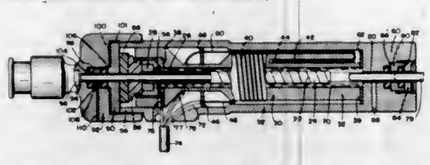
3,357,910
ELECTRODE STRUCTURE INCLUDING TEMPERATURE CONTROL MEANS
Stanley L. Shiller, Needham, Mass., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Dec. 8, 1964, Ser. No. 416,746
12 Claims. (Cl. 204—195)

1. An electrode structure for measuring ionic concentrations in fluid, said structure comprising, in combination:

an elongated hollow tube of ion-sensitive material;

an electrically conductive lead spaced from the outer surface of said tube;

a solid fused integral mass of an ionic crystalline material in intimate physical and electrical contact with both said surface and said lead;

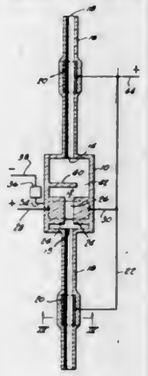


a solid heat-conductive and electrically-conductive sleeve encasing at least a portion of said tube, lead and crystalline material;

electrical means for heating said sleeve; and

means for sensing the temperature of said sleeve for providing feedback signals adapted to control the heating of said sleeve.

3,357,911
ELECTROCHEMICAL TIMER
Garrett Gruner, Jackson, and Clifford J. Vander Yacht, Michigan Center, Mich., assignors to Sparton Corporation, Jackson, Mich., a corporation of Ohio
Filed Dec. 31, 1964, Ser. No. 422,636
11 Claims. (Cl. 204—195)



1. An electrochemical timing device comprising, in combination,

(a) a dielectric housing defining a cell,

(b) an inlet conduit communicating with said cell,

(c) an outlet conduit communicating with said cell,

(d) a control electrode within said cell,

(e) a conductor electrode to be etched within said cell, said conductor including opposed end portions,

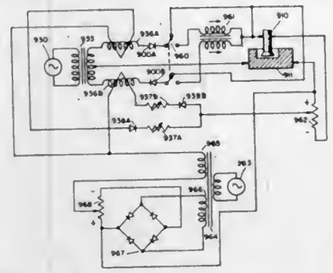
(f) a shielding device located within each of said conduits, and

(g) a conductor connected to each end portion of said conductor electrode.

3,357,912
ION-CONTROL SYSTEM FOR ELECTRO-CHEMICAL MACHINING
Kiyoshi Inoue, 182 3-chome, Tamagawayoga-machi Setagaya-ku, Tokyo, Japan
Filed Oct. 17, 1963, Ser. No. 316,955
Claims priority, application Japan, Oct. 19, 1962, 37/46,310; Apr. 2, 1963, 38/16,835; Apr. 13, 1963, 38/19,277; May 7, 1963, 38/23,448; May 20, 1963, 38/26,686; Aug. 15, 1963, 38/43,178
2 Claims. (Cl. 204—224)

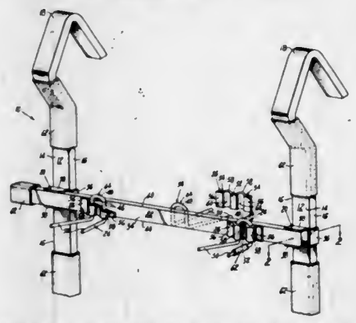
1. Apparatus for machining a conductive workpiece, comprising an electrode spaced from said workpiece to form a machining gap, means for providing an electrolyte

fluid flow through said gap, servo means for maintaining a predetermined gap spacing between said workpiece and electrode, a machining power source comprising a source of alternating current potential, a transformer primary connected across said source, a transformer secondary, a



center tap of said secondary connected to one terminal of said gap, and a pair of oppositely poled rectifiers, each connected between a different terminal of said secondary and the other terminal of said gap, and a variable impedance connected in series with at least one of said rectifiers and said secondary.

3,357,913
ELECTROPLATING RACK
Savin Zavarella, Manchester, Conn., assignor to Pilot Company, Inc., East Hartford, Conn., a corporation of Connecticut
Filed Apr. 2, 1965, Ser. No. 445,058
6 Claims. (Cl. 204—297)



1. An electroplating rack devoid of apertures and unencumbered by protrusions comprising an elongated bus bar of rectangular cross section having a longitudinally extending flat face; a holder for a workpiece electroconductively joined to the bar; and an unperforated sheet metal clip securely joining said bar and said holder in a fixed relative position, said clip being provided with a flat generally rectangular body portion parallel to and in juxtaposition with the flat face of said bar and an integral flange portion form-fitted against and tightly engaging said holder, said clip being fixedly secured to said bar and said assembly solely by a flowable bonding material having a melting point above 375° F. and below 850° F.

3,357,914
HYDROGENATED PRODUCT OF AN OXIDIZED DEBUTANIZED AROMATIC CONCENTRATE
Wayne V. McConnell and Paul T. Von Bramer, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Jan. 15, 1964, Ser. No. 337,759
1 Claim. (Cl. 208—22)

An organic composition having a viscosity of about 10 to about 300 centistokes at 100° F., an iodine number of about 5 to about 80, a density of about 0.93 to about 1.05, a refractive index of about 1.495 to about 1.520, and containing about 78 to about 86 percent carbon and about 10.5 to about 12.5 percent hydrogen, said organic composition being prepared by (A) oxidizing DAC-B with air by contacting said DAC-B with air at a rate of about one to about five cubic feet of air per hour per pound of DAC-B at a temperature of about 70° C. to about 150° C. and (B) hydrogenating said oxidized DAC-B by contacting said oxidized DAC-B with hydrogen at a temperature of about 100° C. to about 300° C. and a hydrogen pressure of about 1500 to about 4500 p.s.i. in the presence of a nickel hydrogenation catalyst, said DAC-B being a liquid residual fraction of the debutanized residue from the pyrolysis of a natural gas stream predominantly comprising propane and having an iodine number of about 195 to about 350 and containing about 87 to about 91 percent carbon and about 9 to about 13 percent hydrogen.

3,357,915
REGENERATION OF HYDROCRACKING CATALYSTS
Dean Arthur Young, Yorba Linda, Calif., assignor to Union Oil Company of California, Los Angeles, Calif., a corporation of California
No Drawing. Filed Mar. 28, 1966, Ser. No. 537,678
7 Claims. (Cl. 208—111)

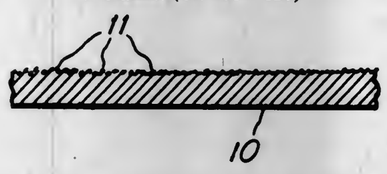
4. A process for hydrocracking a hydrocarbon feedstock to produce lower boiling hydrocarbons, which comprises contacting said feedstock plus added hydrogen and under hydrocracking conditions with a hydrocracking catalyst comprising a zeolitic alumino-silicate molecular sieve cracking base and a Group VIII noble metal hydrogenating component, said hydrocracking catalyst having been previously utilized for hydrocracking a sulfur-containing feed to a point of substantial deactivation with concomitant deposition of deactivating carbonaceous deposits and at least about 0.1 percent by weight of sulfur thereon, and having been then regenerated by:

(1) substantially completely stripping volatile hydrocarbons from said deactivated catalyst;

(2) subjecting the stripped catalyst to reduction by contacting with a stream of gas consisting essentially of hydrogen at a temperature between about 650° and 1,300° F. for a length of time extending at least about five hours beyond the point at which the sulfur content of the catalyst has been reduced to a substantially constant level; and

(3) subjecting the reduced catalyst to oxidation by contacting with an oxygen-contalning gas at elevated temperatures to burn off said carbonaceous materials.

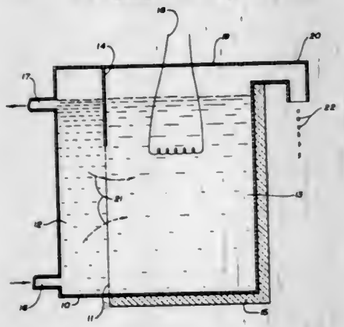
3,357,916
CATALYTIC REACTOR FOR THE CONVERSION OF HYDROCARBONS EMPLOYING HIGH SPACE VELOCITIES
Fritz A. Smith, Cherry Hill, N.J., assignor to Mobil Oil Corporation, a corporation of New York
Filed June 25, 1965, Ser. No. 467,045
9 Claims. (Cl. 208—120)



1. A process for catalytically converting hydrocarbons which comprises; contacting a hydrocarbon material at reaction temperature with crystalline aluminosilicate catalyst particles having an alpha (α) activity above 100 at

a liquid hourly space velocity from about 170 to about 50,000 whereby hydrocarbon products and coke are formed, said catalyst particles being embedded on a surface of at least one closed hollow member formed of a heat conductive metal, effecting heat transfer through said heat conductive metal to maintain reaction temperature during said contact, recovering said hydrocarbon products, purging hydrocarbons from contact with said catalyst particles, regenerating said catalyst particles at elevated temperature with a free-oxygen containing gas, regulating regeneration temperature by effecting heat transfer through said heat conductive metal, and purging free oxygen containing gas from contact with said catalyst particles.

3,357,917
DESALINATION BY OSMOSIS AND CHANGE OF STATE
George B. Humphreys, Lafayette, Calif., assignor to Kaiser Industries Corporation, Oakland, Calif.
Filed Sept. 21, 1964, Ser. No. 398,020
5 Claims. (Cl. 210—22)



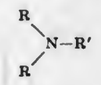
1. A process for producing fresh water from saline water which comprises maintaining a flowing body of relatively dilute brine and a substantially non-flowing body of relatively concentrated brine on opposite sides of a semi-permeable membrane, changing the phase of water within said relatively concentrated brine and harvesting the resultant non-liquid phase.

3,357,918
FLUIDIZED LECITHIN COMPOSITION AND METHOD
Paul F. Davis, Addison, Ill., assignor to Central Soya Company, Inc., Fort Wayne, Ind., a corporation of Indiana
No Drawing. Filed May 27, 1964, Ser. No. 370,718
6 Claims. (Cl. 252—1)

1. In a method of lecithin fluidization, the step of adding to said lecithin a cation selected from the group consisting of calcium, magnesium and aluminum and an anion selected from the group consisting of chloride, acetate and nitrate in a quantity sufficient to provide a cation concentration of the order of about 0.4–0.6% of the lecithin, considered as divalent metal based upon lecithin as having 70% acetone insoluble matter and then drying the resulting mixture.

3,357,919
FINISH COMPOSITIONS FOR TEXTILE MATERIALS
Lawrence R. Blake and Milton E. Abraham, Cumberland, Md., and William T. Burr, Jr., Asheville, N.C., assignors to Celanese Corporation, a corporation of Delaware
No Drawing. Filed Sept. 18, 1964, Ser. No. 397,631
5 Claims. (Cl. 252—88)

1. Process for the treatment of textile materials in the form of filaments, threads, yarns and the like which comprises applying thereto a finish composition consisting essentially of from about 30% to about 75% by weight of a mineral oil; from about 10% to about 45% by weight of an ester of phosphoric acid and an unsaturated alcohol having up to 18 carbon atoms; from about 10% to about 30% by weight of a fatty textile lubricating oil; from about 2% to about 10% by weight of an alkylolamine being represented by the formula



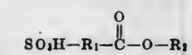
where R may be selected from the group consisting of hydrogen, an alkyl group having from 1 to 8 carbon atoms and an alkanol group having from 1 to 8 carbon atoms, and R′ is an alkanol group having from 1 to 8 carbon atoms; from about 0.01% to about 0.5% by weight of a substituted phenol; and from about 2% to about 20% by weight of an amine condensate surfactant consisting essentially of from about 10% to about 30% by weight of an alkylolamine from about 40% to about 70% by weight of an amide derived from an alkylolamine and a fatty acid having from 8 to 18 carbon atoms and from about 10% to about 30% by weight of an amine soap of fatty acids having from 8 to 18 carbon atoms.

3,357,920
NON-ASH CONTAINING LUBRICATING OIL COMPOSITIONS
George Nacson, Chester, England, assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Apr. 19, 1962, Ser. No. 188,853
Claims priority, application Great Britain, Aug. 18, 1961, 29,984/61
3 Claims. (Cl. 252—49.9)

1. A lubricating composition consisting essentially of a major amount of lubricating oil and from about 0.1% to about 10% by weight of (I) an oil-soluble succinimide of a mono-(C_{20-300} olefinic hydrocarbyl)succinic anhydride and a poly(C_{1-6} alkylene)polyamine having at least 2 amino groups in the molecule, (II) from about 0.1% to about 5% by weight of bis(dialkyl hydroxy phenyl)methane and (III) from about 0.01% to about 5% by weight of tri(monoaryl)phosphate.

3,357,921
POWDERLESS ETCHING BATH
John A. Easley, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed July 6, 1966, Ser. No. 563,034
2 Claims. (Cl. 252—79.4)

1. An etching bath consisting essentially of (A) 30 to 200 grams per liter of bath of nitric acid; (B) 3 to 150 grams per liter of bath of a water-immiscible organic fluid substantially stable in the presence of dilute nitric acid; (C) 1 to 15 grams per liter of bath of a monosulfonate-containing filming agent which is soluble in both the water-immisible organic fluid and in the bath in the proportions used characterized by the formula



wherein R_1 is a member selected from the group consisting of saturated and unsaturated hydrocarbon hydrophobic radicals containing about 16 to 20 carbon atoms, including the carbonyl carbon atom, in continuous carbon-carbon bonds and which may contain up to two hydroxy substitutions, and R_2 is an organic hydrocarbon radical containing from 1 to 12 carbon atoms, inclusive; and (D) the balance being water.

3,357,922
NOVEL DISINFECTANT AND DRY CLEANING COMPOSITIONS
Horst-Gunter Bellinger, Dusseldorf, Germany, assignor to Bohme Fettchemie, G.m.b.H., Dusseldorf-Holthausen, Germany, a corporation of Germany
No Drawing. Filed July 20, 1965, Ser. No. 473,505
Claims priority, application Germany, Aug. 18, 1964, B 78,153
14 Claims. (Cl. 252—106)

1. Compositions for simultaneous dry cleaning and disinfecting of textiles consisting essentially of 0.1 to 5.0 grams of a saturated dialdehyde of 2 to 10 carbon atoms per liter of a liquid organic dry cleaning solvent, selected from the group consisting of lower aliphatic hydrocarbons, aromatic hydrocarbons and saturated aliphatic hydrocarbons.

3,357,923
SURFACE CLEANING PREPARATION
Marvin S. Wool, Sanford Lebman, and Irvin Feldman, St. Louis County, Mo., assignors to St. Louis Janitor Supply Co., doing business as Navy Brand Manufacturing Company, St. Louis, Mo., a corporation of Missouri
No Drawing. Filed June 10, 1965, Ser. No. 463,025
3 Claims. (Cl. 252—157)

1. A cleansing agent for treating surfaces of a liquid receptacle for effecting removal of deposits therefrom and to restore liquid flow consisting essnetially of .1% to 10% by weight of finely divided powdered aluminum having a mesh size of approximately 325, said aluminum powder being coated with a salt of stearic acid, and of 86% to 95.9% by weight of a strong inorganic alkali from the class consisting of sodium and potassium hydroxide, said alkali being in powdered form, the powdered aluminum adhering to the surfaces of said powdered alkali, and of 4% by weight of a relatively weak inorganic acid salt from the class consisting of sodium bicarbonate.

3,357,924
CORROSION INHIBITOR
Georges Molinet, Pau, and Alexis Lavion, Mourenx, France, assignors to Societe Nationale des Petroles d'Aquitaine, Paris, France
No Drawing. Filed Aug. 9, 1965, Ser. No. 478,468
Claims priority, application France, Aug. 13, 1964, 985,085
5 Claims. (Cl. 252—171)

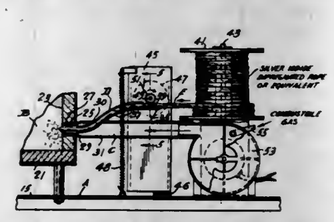
1. A composition of anhydrous liquid dimethyl sulfoxide and as a corrosion inhibitor, therefore a substance selected from the group consisting of ethylene diamine, diethylene tetramine and hexamethylene tetramine derivatives of mono, di, tri and tetra acetic, propionic and butyric acid and their alkali metal, alkaline earth metal, ammonia, amine and quaternary base of ammonium salts in a concentration of 0.002–0.5 equivalent per liter of the dimethyl sulfoxide.

3,357,925
METHOD OF PREPARING VANADATE PHOSPHORS
Albert K. Levine, Beechhurst, Frank C. Palilla, Maspeth, and Maija Rinkevics, Brooklyn, N.Y., assignors to General Telephone and Electronics Laboratories, Inc., a corporation of Delaware
Filed Oct. 29, 1964, Ser. No. 407,336
6 Claims. (Cl. 252—301.4)

4. A method of preparing a phosphor composition of predetermined average particle diameter having the formula $A_{1-x}B_xVO_4$ wherein A is one or more trivalent metals selected from the group consisting of yttrium and the type 4*f* rare earth metals, B is an activator selected from the group consisting of the type 4*f* rare earth elements, and *x* is between 0 and 0.2, said method comprising the steps of

(a) dissolving a trivalent metal oxide R_2O_3, wherein R equals *A*+*B*, in an acid solution,
(b) precipitating said trivalent metal as an oxalate in a soluble of oxalic acid,
(c) blending said precipitate with a flux consisting of a material selected from the group consisting of ammonium vanadate and vanadium pentoxide, the mole ratio *V*/*R* being between 0.8 and 10.0 depending upon the average particle diameter desired,
(d) firing said blend by heating it in air in a furnace to a temperature in the range 825° C. to 1400° C., and
(e) removing said blend from the furnace and allowing it to cool to room temperature.

3,357,926
CLOUD SEEDING APPARATUS
Robert F. Power, 510 Lakeshore Drive, and Bernard A. Power, 37 Touzin Ave., both of Dorval, Quebec, Canada
Filed Feb. 17, 1965, Ser. No. 433,333
11 Claims. (Cl. 252—359)



1. An apparatus for generating silver iodide crystals, comprising, a cylindrical fire-pot having a refractory-lined base and refractory-lined cylindrical wall extending upwardly therefrom to terminate in an open end serving as a flue, said wall having a feed opening near the base for introducing a combustible gas and an oxygen-containing gas into said fire-pot at an angle such as to cause a swirling motion, a gas feed tube for combustible gas leading to the feed opening from a source of the combustible gas and oxygen-containing gas, a blower having a connection with the feed tube, a silver iodide-impregnated cord and a feed tube for said cord leading into the gas tube near the fire-pot and means for propelling the cord into the cord tube whereby it is fed to the feed opening as required for combustion.

3,357,927
PROCESS OF CORROSION-INHIBITION
Erwin Marsh, Redlands, Calif., and James F. Shea, Jr., Marshall, Tex., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
No Drawing. Filed Jan. 3, 1964, Ser. No. 335,666
5 Claims. (Cl. 252—389)

1. The method of protecting steel surfaces which are exposed to a humid atmosphere from corrosive attack comprising applying an aqueous solution consisting essentially of from 1.5% to 4% by weight of sodium nitrite and 0.1–0.5% by weight of monosodium phosphate, and allowing said solution to dry.

3,357,928
CO-CATALYST COMPOSITIONS FOR THE PREPARATION OF TETRAMETHYLLEAD
Paul Kobetz and Francis M. Beaird, Jr., Baton Rouge, La., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia
No Drawing. Filed Mar. 31, 1965, Ser. No. 444,384
12 Claims. (Cl. 252—429)

1. A co-catalyst system for the preparation of an organolead compound consisting of,

(A) an aluminum catalyst being at least one selected from the group consisting of,
(1) aluminum,
(2) aluminum alloyed with a material substantially inert to said co-catalyst system,
(3) aluminum halides,
(4) hydrocarbon aluminum compounds containing at least one hydrocarbon radical selected from the group consisting of alkyl and aryl, and
(5) mixtures thereof, and
(B) an ether catalyst having only one ethereal oxygen with at least two carbon atoms connected to each oxygen bond present in the range of from about 0.1 to about 15 mols per atom of aluminum in said aluminum catalyst and being at least one selected from the group consisting of,
(6) simple aliphatic ethers,
(7) mixed aliphatic ethers,
(8) simple aromatic ethers,
(9) mixed aromatic ethers,
(10) mixed aliphatic-aromatic ethers,
(11) ethers in which the ethereal oxygen is a part of a ring system containing at least four carbon atoms, and
(12) mixtures thereof.

3,357,929

METHOD OF SORBING LIQUIDS

Franciszek Olstowski, Freeport, Tex., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Mar. 22, 1965, Ser. No. 441,899

2 Claims. (Cl. 252—444)

1. In a method of sorbing liquid materials using a solid sorption agent, the improvement which comprises using as the sorption agent vermicular expanded graphite having an apparent bulk density of less than about 2.0 pounds per cubic foot.

3,357,930

ELECTRICALLY CONDUCTIVE TRANSPARENT MATERIALS

Alvin M. Marks and Mortimer M. Marks, both of 153—16 10th Ave., Whitestone, N.Y. 11357

No Drawing. Filed Dec. 9, 1963, Ser. No. 329,229

3 Claims. (Cl. 252—518)

1. A transparent, electrically conductive film composition consisting essentially of:
(a) 10–65% by weight of a polymer selected from the group consisting of polyvinyl alcohol, agar, carboxymethylcellulose, polyvinyl acetal, polyvinyl acetate, polyvinyl butyral, polyvinyl formal, polymethyl methacrylate and polyethyl acrylate,
(b) 25–60% by weight of a plasticizer dissolved in said polymer selected from the group consisting of glycerine, ethylene glycol, diethylene glycol, triethylene glycol, phosphoric acid and iso-erythritol,
(c) 5–50% by weight of an ionizable compound material selected from the group consisting of phosphoric acid, oxalic acid, the halides, sulfates, carbonates, thiocyanates, dihydrogen phosphates, nitrates and oxalates of the alkali metals ammonia, the alkaline earth metals, magnesium, the hydroxides of sodium, potassium and lithium,
(d) up to 50% by weight of a cross-linking agent for said polymer,
(e) 5–25% by weight of a solvent,
said percentages being based on the total weight of the composition.

3,357,931

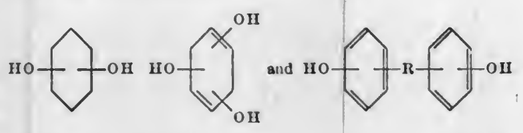
SULFONATED POLYMERIC PHOSPHONITRILES

Rip G. Rice, Ashton, and Michael V. Ernest, Baltimore, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Filed Mar. 23, 1964, Ser. No. 354,151

10 Claims. (Cl. 260—2.2)

1. A sulfonated phosphonitrilic polyhydroxy aromatic condensation product prepared by sulfonating with an excess of fuming sulfuric acid the product of condensing, in the presence of a tertiary amine for about 0.5 to 10 hours at a temperature of about 60 to 150° C., a compound selected from the group consisting of cis 2,4,6-trichloro-2,4,6-triphenyltriphosphonitrile and trans 2,4,6-trichloro-2,4,6-triphenyltriphosphonitrile and mixtures thereof, and a polyhydroxy aromatic compound selected from the group consisting of



wherein R is selected from the group consisting of alkylene having 1–4 carbon atoms, oxygen, sulfur and NH, said product having from 2–10 cyclic trimeric phenylphosphonitrilic units bonded together and substantially esterified with said polyhydroxy aromatic units.

3,357,932

POLYURETHANES PREPARED FROM CHLOROCARBONIC ACID ESTER REACTION PRODUCTS WITH N-ALKYLALKANOLAMINES

Wolfgang Heydkamp and Erwin Müller, Leverkusen, and Wilhelm Kallert, Cologne-Stammheim, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed June 3, 1964, Ser. No. 372,383

Claims priority, application Germany, June 6, 1963, F 39,932

3 Claims. (Cl. 260—2.5)

1. A polyurethane plastic prepared by the process which comprises reacting (A) an organic polyisocyanate with (B) an organic polyhydroxy compound having a molecular weight of from about 500 to about 4000, said organic polyhydroxy compound having been prepared by reacting (C) a polyfunctional chlorocarbonic acid ester of a polyalkylene ether glycol with (D) essentially 1 mol of an N-alkylalkanolamine per chlorocarbonic acid ester group.

3,357,933

GRAFT POLYMERIZATION OF THIOATED HYDROXY CONTAINING POLYMERS WITH ETHYLENICALLY UNSATURATED MONOMERS

Robert W. Faessinger, Media, and John S. Conte, Ridley Park, Pa., assignors to Scott Paper Company, Delaware County, Pa., a corporation of Pennsylvania

No Drawing. Original application July 6, 1966, Ser. No. 563,055. Divided and this application Dec. 7, 1966, Ser. No. 599,704

35 Claims. (Cl. 260—17)

1. The process which comprises the steps of wetting with an alkaline solution a water-insoluble, synthetic, hydroxyl group-containing polymer or a water-insoluble, synthetic polymer containing a group hydrolyzable to a hydroxyl group; bringing the alkaline-wet polymer in intimate contact with carbon disulfide or carbonyl sulfide to produce a water-insoluble thioated derivative of the polymer; washing the resulting thioated derivative to remove the water-soluble by-products of the thioate formation or thioate substrate decomposition; and reacting the resulting thioated derivative, via free radical initiation, with at least one ethylenically unsaturated monomer.

3,357,934

ORGANO-SILICA AEROGEL DEFLOCCULENT FOR AQUEOUS MEDIUMS

Ralph Marotta and Harry Teicher, St. Louis, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed July 7, 1964, Ser. No. 380,948

6 Claims. (Cl. 260—17)

1. A film forming composition comprising an aqueous medium having dispersed therein a finely divided water insoluble organic polymer and an amount, sufficient to maintain said finely divided polymer in a dispersed state during and after the application of said composition to a surface to form a film, of a finely divided amorphous organo-silica aerogel comprising a silica polymer having siloxy groups and containing carbon and hydrogen atoms chemically bound to a portion of the siloxy groups in said aerogel, said aerogel being further characterized in having an SiO_2 to carbon atom ratio of from about 10:1 to about 50:1 and an SiO_2 to hydrogen atom ratio of from about 0.77:1 to about 2:1, said aerogel being present in an amount of from about 0.2% to about 2.0% by weight, based on the total weight of the composition.

3,357,935

POLYAMIDE COMPOSITIONS BASED ON DIAMINES DERIVED FROM DIPHENYL OXIDE

Richard W. Fulmer, Minneapolis, and Edgar R. Rogier, Minnetonka, Minn., assignors to General Mills, Inc., a corporation of Delaware

No Drawing. Filed June 1, 1965, Ser. No. 460,524

7 Claims. (Cl. 260—18)

1. A polyamide resin comprising the reaction product of polymeric fat acids prepared from fat acids containing 8 to 24 carbon atoms and p,p'-bis(β-aminoethyl) diphenyl oxide.

3. A polyamide composition comprising the reaction product of p,p'-bis(β-aminoethyl) diphenyl oxide and a mixture of (A) polymeric fat acids prepared from fat acids containing 8 to 24 carbon atoms and (B) a compound selected from the group consisting of

(a) $R''OOC-COOR''$
(b) $R''-OOC-R'-COO-R''$
(c) $H_2N(CH_2)_xCOOR$
(d) $HN(CH_2)_xCO$

where R' is selected from the group consisting of aliphatic hydrocarbon radicals having from 1 to 20 carbon atoms, alicyclic and aliphatic substituted alicyclic hydrocarbon radicals having from 6 to 20 carbon atoms and aromatic and aliphatic substituted aromatic hydrocarbon radicals having from 6 to 20 carbon atoms, R'' is selected from the group consisting of hydrogen and alkyl groups having from 1 to 8 carbon atoms and x is an integer from 2 to 15.

3,357,936

COATING COMPOSITIONS COMPRISING ALKYD RESINS PREPARED FROM STYRENE-MALEIC ANHYDRIDE COPOLYMERS, POLYOL AND FATTY ACID

Robert L. Zimmerman and Eugene R. Moore, Midland, and Dale M. Pickelman, Auburn, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Feb. 5, 1964, Ser. No. 342,790

16 Claims. (Cl. 260—22)

1. Coating composition comprising the reaction product of (A) a vinylidene aromatic copolymer having more than 10 up to 20 weight percent of an α,β-unsaturated cyclic anhydride and a number average molecular weight of less than 10,000, at least 90 percent of said copolymer having an anhydride component composition within a range of 5 percent by fractionation analysis, (B) a polyol and (C) a fatty acid in a proportion such that the hydroxyl to carboxyl ratio is from 0.6 to 1.6.

3,357,937

PETROLEUM WAX COMPOSITION

Harold E. Pohl, Kankakee, Ill., assignor to General Mills, Inc., a corporation of Delaware

No Drawing. Filed Feb. 18, 1965, Ser. No. 433,791

8 Claims. (Cl. 260—28.5)

1. An improved wax composition consisting essentially of 5 parts by weight of a petroleum wax, from 0.5 to 5 parts by weight of a copolymer of ethylene and vinyl acetate and from 0.1 to 5 parts by weight of a polymeric fat acid polyamide.

3,357,938

COATING COMPOSITION COMPRISING WATER-SOLUBLE RESIN, WATER AND VARIOUS SOLVENT REGULATORS

Johannes Eisenwiener, Guntramsdorf, near Vienna, Austria, assignor to Peter Stoll, Guntramsdorf, near Vienna, Austria, a corporation of Austria

Filed Oct. 31, 1962, Ser. No. 234,460

Claims priority, application Austria, Nov. 3, 1961, A 8,274/61

8 Claims. (Cl. 260—29.2)

1. Coating agents, especially suitable for covering objects in a flow-coater, consisting essentially of at least one water soluble synthetic resin; water; pigments; at least one first solvent regulator selected from the group consisting of higher alcohols having a flash point of at least about 80° C., and higher glycols and glycol derivatives having a flash point of at least about 38° C.; said first solvent regulators being present in an amount such that the weight parts of said first solvent regulators to weight parts solids is up to approximately 4:1 and the weight parts of said first solvent regulators to weight parts water is up to approximately 15:1; said coating agents having a vapor-air mixture under practical operational conditions beneath the ignition and explosion limit.

3,357,939

POLYURETHANES CONTAINING URETDIONE GROUPS MODIFIED WITH VINYL POLYMERS

Artur Reischl and Erwin Müller, Leverkusen, and Wilhelm Göbel, Cologne-Flittard, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Sept. 29, 1966, Ser. No. 583,085

Claims priority, application Germany, Nov. 10, 1961, F 35,330

6 Claims. (Cl. 260—30.6)

1. A novel plastic composition obtained by blending a preformed vinyl polymer selected from the group consisting of polyvinyl chloride, polyvinyl acetate, polyvinylidene chloride, polystyrene and mixtures thereof with a preformed polyurethane composition containing from 2 to 75 weight percent of uretdione groups, said polyurethane obtained from the reaction of dimeric toluylene-2,4-dissocyanate with a composition containing active hydrogen atoms as determined by the Zerewitinoff test, wherein the vinyl polymer is blended with the polyurethane composition in a ratio of 100:1 to about 100:200 by weight.

3,357,940

SILICONE RUBBER CONTAINING ANTIMONY TRISULFIDE AND CURED WITH PEROXIDES

Samuel J. Rutherford, Whittier, Calif., assignor to Purolator Products, Inc., Rahway, N.J., a corporation of Delaware

No Drawing. Filed Mar. 18, 1964, Ser. No. 352,945

28 Claims. (Cl. 260—37)

24. A mixture which, on heating, forms a cured silicone elastomer, which comprises (1) a major proportion of a

silicone rubber in the form of a copolymer of diphenyl siloxane and dimethyl siloxane and including a minor amount of methylvinyl siloxane, (2) a minor proportion of antimony trisulfide and (3) about 0.1% to about 6% by weight of a curing agent selected from the group consisting of ditertiary butyl peroxide, dicumyl peroxide, and 2,5-dimethyl-2,5-di(tertiary butyl peroxide) hexane.

3,357,941
3-(N,4-DINITROSOANILINO)PROPIONITRILE AND PROCESS COMPRISING HEATING BUTYL RUBBER IN PRESENCE OF SAME

Ching C. Tung, Kirkwood, Mo., assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed Aug. 1, 1963, Ser. No. 299,190
3 Claims. (Cl. 260—41.5)

2. The process which comprises heating within the range of 250° F.–370° F. for a time within the range of about one minute to sixteen hours butyl rubber which is a copolymer of at least 85% isobutylene and a small amount, not more than 15% of conjugated diolefin hydrocarbon, said rubber having incorporated therein carbon black within the range of 25–60 parts per 100 parts by weight of rubber and 3-(N,4-dinitrosoanilino)propionitrile within the range of 0.01–3.0 parts per 100 parts by weight of rubber in amount which increases the resilience of the vulcanizate prepared from the rubber treated as aforesaid, any vulcanizing ingredients, if present, being present in amounts insufficient to cause vulcanization.

3,357,942
FIRE-RETARDANT POLYCARBONATES

Winston J. Jackson, Jr., and John R. Caldwell, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Apr. 5, 1965, Ser. No. 445,721
10 Claims. (Cl. 260—45.7)

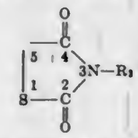
1. A composition comprising a polycarbonate having an inherent viscosity of at least 0.4 and decachlorooctahydro-1,3,4-metheno-2H-cyclobuta(cd)pentalen-2-one.

3,357,943
STABILIZATION OF FORMALDEHYDE POLYMERS WITH THIAZOLIDIONE-2,4'S

Pierre Raoul, Epinay-sur-Orge, France, assignor to Produits Chimiques Pechiney-Saint-Gobain, Paris, France

No Drawing. Filed Feb. 18, 1965, Ser. No. 433,806
Claims priority, application France, Feb. 25, 1964, 965,052
8 Claims. (Cl. 260—45.8)

1. A heat stabilized polymer of formaldehyde of high molecular weight and blocked chain ends containing a stabilizing amount of a compound represented by



in which position 5 is occupied by one of the group



and



and R_1, R_2, and R_3 are from the class consisting of hydrogen, alkyl, cycloalkyl, aryl, aralkyl, thienyl and furyl radicals, the radicals of which may bear hydroxy, alkoxy, alkyl, alkylamino, amido, and sulfamido substituents attached to carbon of the radical nucleus.

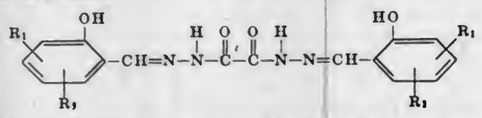
8. A polymer according to claim 1 including an antioxidant selected from the group consisting of hydrazine aromatic amines and phenols.

3,357,944
STABILIZATION OF SYNTHETIC ORGANIC POLYMERIC SUBSTANCES WITH OXALO-BIS(SALICYLIDENE HYDRAZIDES)

Martin Dexter, Briarcliff Manor, N.Y., assignor to Geigy Chemical Corporation, Greenburgh, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 26, 1963, Ser. No. 326,242
6 Claims. (Cl. 260—45.9)

1. A composition of matter comprising a synthetic organic polymeric substance normally subject to oxidative deterioration and a stabilizing amount of a compound of the formula:



wherein R_1 and R_2 (a) taken separately are hydrogen, alkyl, chloro or phenyl and (b) taken on adjacent carbon atoms together with the ring carbon atoms of the benzene ring to which they are attached, are o-phenylene, thereby forming, with said phenyl ring, a naphthyl ring.

3,357,945
POLYOLEFINS STABILIZED WITH A SYNERGISTIC ADDITIVE COMBINATION OF A PHENOL AND A DIALKYLTHIODIPROPIONATE

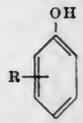
Francis M. Seger, Metuchen, N.J., assignor to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed Mar. 27, 1964, Ser. No. 355,465
5 Claims. (Cl. 260—45.85)

1. A homogenous composition comprising a tactic poly-α-olefin and a minor amount of a stabilizer synergist combination comprising a diester of 3,3'-thiodipropionic acid having the formula:



wherein R is an alkyl radical having 8 to 20 carbon atoms and a non-hindered phenol having the formula



wherein R is a polybutene chain having a molecular weight of about 300 to about 1200.

3,357,946
POLYMERIC OLEFIN COMPOSITIONS STABILIZED WITH A THIODIALKANOIC ACID ESTER AND A TRIHYDROXYARYL HYDROCARBON

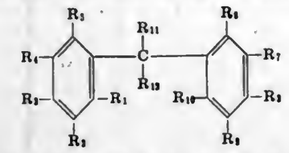
Robin Henry Burgess, Market Drayton, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed June 28, 1965, Ser. No. 467,742
Claims priority, application Great Britain, July 29, 1959, 25,999/59; Aug. 12, 1959, 27,567/59
10 Claims. (Cl. 260—45.85)

1. A polymeric composition comprising a solid polymer of an aliphatic mono-alpha olefin and a stabilizer composition comprising as the sole essential anti-oxidants,

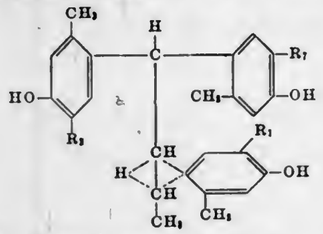
(1) a thio compound selected from the group consisting of diesters of a monohydric aliphatic alcohol having from 10 to 20 carbon atoms and of a thiodialkanoic acid and

(2) a phenolic compound having the formula



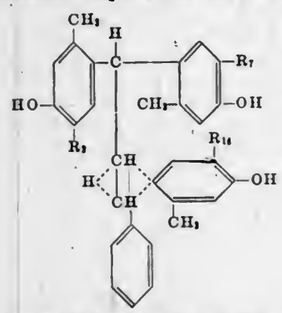
in which at least one of R_1, R_3 and R_5 and at least one of R_6, R_8 and R_{10} is a hydroxyl group, the remaining nuclear substituents being selected from the class consisting of hydrocarbon and hydrogen atoms, and in which R_{11} and R_{12} comprise at least one hydroxyaryl group and R_{11} and R_{12} being selected from the class consisting of hydrocarbon groups having as a substituent a hydroxyaryl group and hydrogen atoms, the said polymeric composition containing from 0.001 to 5% by weight of the said phenolic compound and from 0.1 to 1 molecules of the said diester to each phenolic hydroxyl group present in the said phenolic compound.

5. A polymeric composition as set forth in claim 1 in which said phenolic compound has the formula



in which R_2, R_7 and R_{14} are tertiary butyl.

7. A polymeric composition as set forth in claim 1 in which said phenolic compound has the formula



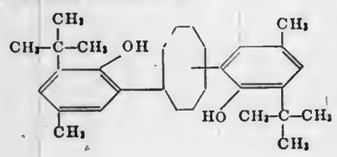
in which R_2, R_7 and R_{14} are tertiary butyl.

3,357,947
BISPHENOL COMPOUND HAVING ANTIOXIDANT PROPERTIES

Hans H. Stockmann, Plainfield, N.J., and Horace W. Blakeslee, Jr., Havertown, Pa., assignors to FMC Corporation, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed July 15, 1964, Ser. No. 382,934
3 Claims. (Cl. 260—45.95)

1. A composition comprising a resinous polymer of an alpha-mono-olefin having from 2 to 8 carbon atoms and an anti-oxidant amount of a compound having the following structural formula:



said compound having been formed by the reaction of ortho-tertiary-butyl-para-cresol with cyclo-octadiene.

3,357,948
PHENOLIC COMPOUND HAVING ANTIOXIDANT PROPERTIES

Hans H. Stockmann, Plainfield, N.J., and Horace W. Blakeslee, Jr., Havertown, Pa., assignors to FMC Corporation, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed July 15, 1964, Ser. No. 382,960
3 Claims. (Cl. 260—45.95)

1. A composition comprising a resinous polymer of an alpha-mono-olefin having from 2 to 8 carbon atoms, and an antioxidant amount of 2,6-di(3a,4,5,6,7,7a-hexahydro-4,7-methanoindanyl)-para-cresol.

3,357,949
POLYMERIC ORGANIC BORON-NITROGEN-SULFUR COMPOUNDS

Elmar-Manfred Horn, Aachen, and Hans Niederprum, Monnheim, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed May 1, 1964, Ser. No. 365,563
Claims priority, application Germany, May 9, 1963, F 39,692
30 Claims. (Cl. 260—46.5)

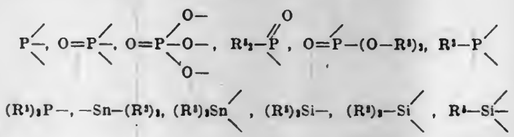
1. Process for the production of polymeric organic boron-nitrogen-sulfur compounds which comprises mixing at a temperature between about 0–600° C. borane amine having the formula

$$R \rightarrow BH_3$$

in which R is a member selected from the group consisting of pyridine, alkylated pyridine, piperidine, alkylated piperidine, and primary, secondary and tertiary amines substituted with a substituent selected from the group consisting of C_{1-18} alkyl, cyclohexyl, phenyl and corresponding mixtures of such substituents, with thiocyanate having the formula

$$R_p^3—(Z—SCN)_m$$

in which m is an integer from 1 to 6 and p is an integer from 0 to 1, such that when p is 0, Z is R^4 which is a member selected from the group consisting of alkyl, alkenyl, alkynyl, cyclohexyl, phenyl, naphthyl, and each such member which is substituted with a substituent selected from the group consisting of alkyl, phenyl, alkoxy, halo, haloalkyl, halophenyl, alkyl substituted amino, and mixtures thereof, and such that when p is 1, Z is a member selected from the group consisting of alkylene, oxyalkylene, phenylene and oxyphenylene, and R^3 is a member selected from the group consisting of



and corresponding disiloxane and polysiloxane groups having 1 to 6 free valences, in which m in each instance corresponds in value to the number of free valences present in each said R^3 member and in which R^5 is a member selected from the group consisting of hydrogen, alkyl, alkenyl, phenyl, alkoxy, and phenoxy, and recovering the resultant polymeric compound.

7. Process according to claim 1 wherein said mixing is carried out in the presence of a nitrile having the formula

$$R^2(CN)_n$$

in which R^2 is a member selected from the group consisting of alkyl, alkenyl, cyclohexyl, phenyl, naphthyl and

each such member which is substituted with a substituent selected from the group consisting of phenyl, halo, and alkyl-substituted amino, and *n* is an integer from 1 to 6.

13. Polymeric boron-nitrogen-sulfur compound produced according to claim **1**.

14. Polymeric boron-nitrogen-sulfur compound produced according to claim **7**.

3,357,950

PROCESS FOR MAKING A RESINOUS DENTIFRICE CLEANING AGENT

Elwood L. La Follette, Lawrenceburg, Ind., assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

No Drawing. Filed June 17, 1965, Ser. No. 464,829
2 Claims. (Cl. 260—59)

1. A process for preparing a light colored particulate phenol-formaldehyde resinous dentifrice cleaning agent, which comprises:

(1) refluxing an aqueous reaction mixture of phenol, formaldehyde, and sodium hydroxide at a temperature ranging from about 70° C. to about 105° C. for a period of time ranging from about 30 minutes to about 50 minutes, the molar ratio of formaldehyde to phenol ranging from about 1:1 to about 3:1 and the molar ratio of sodium hydroxide to phenol ranging from about 0.01:1 to about 0.50:1;

(2) after said period, maintaining the temperature of the reaction mixture within the range of from about 80° C. to about 97° C., and adding thereto maleic anhydride and citric acid, the molar ratio of maleic anhydride to original phenol ranging from about 0.005:1 to about 0.15:1 and the molar ratio of citric acid to original phenol ranging from about 0.05:1 to about 0.2:1;

(3) dehydrating the reaction mixture by heating at a temperature of from about 100° C. to about 105° C.;

(4) curing the dehydrated material by placing it in boiling water;

(5) drying and further curing the resin thus obtained at a temperature of from about 70° C. to about 130° C. for a period of time ranging from about ½ hour to about 18 hours;

(6) reducing the size of the dry resin to a mean particle diameter ranging from about 5μ to about 40μ;

(7) additionally curing the particulate resin by placing it in boiling water;

(8) drying the particulate resinous product.

3,357,951

PROCESS FOR MAKING A RESINOUS DENTIFRICE CLEANING AGENT

Frank S. Adams, Jr., Wyoming, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

No Drawing. Filed June 17, 1965, Ser. No. 464,836
2 Claims. (Cl. 260—59)

1. A process for preparing a light-colored particulate phenol-formaldehyde resinous dentifrice cleaning agent, which comprises:

(1) dissolving paraformaldehyde in a reaction mixture of molten phenol and citric acid at a temperature ranging from about 75° C. to about 130° C., the molar ratio of paraformaldehyde to phenol being from about 1:1 to about 3:1, the molar ratio of citric acid to phenol being from about 0.005:1 to about 0.05:1;

(2) subjecting the reaction mixture to a temperature ranging from about 60° C. to about 77° C. for about 50 minutes to about 200 minutes, then raising the temperature to a range of from about 80° C. to about 104° C. for a period of about 15 minutes to about 60 minutes;

(3) after said period, maintaining the temperature of the reaction mixture at a level of from about 75° C. to about 108° C., and adding thereto additional citric acid in an amount of from about 0.007 mole to about 0.07 mole per mole of original phenol;

(4) refluxing the reaction mixture for about 1 hour to about 3 hours at a temperature ranging from about 103° C. to about 115° C. to polymerize the material;

(5) dehydrating the polymerized material by heating at a temperature of from about 103° C. to about 150° C.;

(6) curing the dehydrated polymer by heating in a vacuum at a temperature ranging from about 70° C. to about 132° C.;

(7) reducing the size of the resin thus obtained to a mean particle diameter ranging from about 5μ to about 40μ;

(8) additionally curing the particulate resin by heating at a temperature ranging from about 110° C. to about 130° C.

3,357,952

POLYMERIZATION OF FORMALDEHYDE USING A PHOSPHOAMINEESTER CATALYST

François Meiller, Palaiseau, France, assignor to Produits Chimiques Pechiney St. Gobain, Neuilly-sur-Seine, France

No Drawing. Filed Jan. 28, 1964, Ser. No. 340,795
Claims priority, application France, Jan. 29, 1963, 922,989
18 Claims. (Cl. 260—67)

15. The method of polymerizing formaldehyde which comprises bringing formaldehyde into contact with an ester containing at least trivalent phosphorus coupled to at least one alkylamine by oxygen.

3,357,953

POLYMERIZATION OF TRIOXANE

Michael William Baumber, Colchester, Essex, England, assignor to Bakelite Xylonite Limited, London, England, a British company

No Drawing. Filed Feb. 7, 1964, Ser. No. 343,217
Claims priority, application Great Britain, Feb. 12, 1963, 5,616/63; May 24, 1963, 20,756/63
10 Claims. (Cl. 260—67)

1. A process for the production of trioxane polymers which comprises polymerizing trioxane in the presence of fluoroboric acid at a temperature of from —20° C. to 180° C., and recovering the formed polymers.

3,357,954

SYNTHETIC ELASTOMERIC FILAMENTS FROM (A) POLYESTER DIOLS, (B) ALIPHATIC OR CYCLOALIPHATIC DIOLS AND (C) ALIPHATIC OR CYCLOALIPHATIC DIISOCYANATES

David Kirkaldy, Raglan, England, assignor to British Nylon Spinners Limited, Pontypool, England

No Drawing. Filed Feb. 1, 1965, Ser. No. 429,646
Claims priority, application Great Britain, Feb. 20, 1964, 7,233/64, Patent 1,040,365
1 Claim. (Cl. 260—75)

An elastomeric filament consisting of a polyester-urethane obtainable by heating together (1) a diol being a hydroxyl-terminated linear copolyester with a number average molecular weight between 1500 and 3500 and being a reaction product of aliphatic and cycloaliphatic glycols having from 2 to 20 carbon atoms and adipic acid optionally together with other dibasic acids selected from the group consisting of saturated aliphatic dibasic acids and aromatic dibasic acids, (2) from 2 to 20 moles, per mole of the aforesaid polyester diol, of a diol having not more than 20 carbon atoms and selected from the group consisting of aliphatic diols optionally containing arylene groups and cycloaliphatic diols and (3) from 96 to 100 moles, per 100 moles of the total weight of the foregoing diols, of a diisocyanate having from 4 to 24 carbon atoms, selected from the group consisting of aliphatic and cycloaliphatic diisocyanates and optionally containing aromatic nuclei provided the latter are separated from the isocyanato groups by at least one methylene group, which filament has an Elastic Recovery from 50% extension of at least 95%, a work recovery from 50% extension of at least 75% and does not discolour when exposed to a Xenon Arc or bleached with sodium chlorite in accordance with the light resistance and bleaching resistance tests in which the filaments are immersed for a period of 45 minutes in an aqueous solution containing 0.1% by weight of sodium chlorite and 0.5 c.c. per litre of glacial acetic acid maintained at 85° C. and the colour of the filaments is determined before and after the bleaching treatment.

3,357,955

CONTINUOUS PREPARATION OF POLYAMIDES WHEREIN RELATIVE VISCOSITY AND AMINE-END VALUE OF FINAL PRODUCT ARE MAINTAINED CONSTANT

James C. Bryan, Waynesboro, Va., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Feb. 14, 1964, Ser. No. 345,042
2 Claims. (Cl. 260—78)

1. In a continuous system of polymerization wherein (1) a polymer is produced by continuous polymerization of an initial aqueous solution of a salt of a diamine and a dicarboxylic acid; (2) final quantities of water are separated from the resultant polymer under pressure; and (3) the polymer is transferred from the point of final water separation to a zone of extrusion while holding it up for a fixed, predetermined time interval under constant temperature, a process for maintaining the relative viscosity and the amine-end value of the final product constant during an increase in throughput rate by:

(1) increasing the salt concentration in the aforesaid initial aqueous solution within the range of about 50 to 70 weight percent;

(2) decreasing the steam pressure under which the final quantities of water are separated from the polymerized product within the range of about 0 to 10 p.s.i.g.; and

(3) holding the temperature and the time interval for the transfer of polymer from the point of last water separation to the point of extrusion constant.

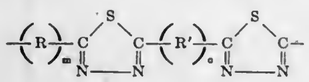
3,357,956

POLYMERIC 1,3,4-THIADIAZOLES AND THE PROCESS FOR THEIR PREPARATION

August Henry Frazer, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

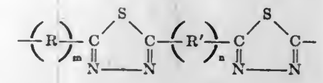
No Drawing. Filed Mar. 30, 1965, Ser. No. 444,051
10 Claims. (Cl. 260—79)

1. A high melting polymeric 1,3,4-thiadiazole which consists essentially of repeating units of the formula:

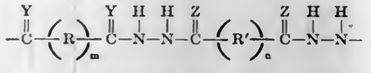


wherein R and R′ are divalent hydrocarbon radicals containing up to 20 carbon atoms, *m* is 0 or 1 and *n* is 0 or 1, the number of said repeating units being sufficient to provide an inherent viscosity of at least about 0.2 in concentrated sulfuric acid at 30° C.

9. A process for the preparation of a polymeric 1,3,4-thiadiazole having an inherent viscosity of at least about 0.2 in concentrated sulfuric acid at 30° C. and consisting essentially of repeating units of the formula:



wherein R and R′ are divalent hydrocarbon radicals containing up to 20 carbon atoms, *m* is 0 or 1, and *n* is 0 or 1; which comprises heating in the form of a shaped structure, a polyhydrazide consisting essentially of repeating units of the formula:



wherein R, R′, *m*, and *n* are as defined above and wherein Y and Z are members of the class consisting of oxygen and sulfur, at least one of Y and Z being sulfur, the number of said repeating units in said polyhydrazide being sufficient to provide an inherent viscosity of at least about 0.2 at 30° C. in at least one solvent of the group consisting of dimethyl sulfoxide, methane sulfonic acid, sulfuric acid, said heating being carried out at a temperature between 150° C. and the temperature at which decomposition occurs.

3,357,957

VULCANIZATION PROCESS FOR RUBBER

Norman Gunning Bromby and David Buchanan Wootton, Manchester, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed May 27, 1963, Ser. No. 283,527
Claims priority, application Great Britain, June 1, 1962, 21,193/62
11 Claims. (Cl. 260—79.5)

1. In a process for the vulcanization of rubber which comprises heating rubber with sulfur or a sulfur-bearing substance, a vulcanization accelerator and a retarder;

the improvement in which the retarder is a quaternary ammonium salt wherein the quaternary nitrogen atom is connected

(a) directly to a first aryl nucleus,

(b) directly to a second aryl nucleus or through a methylene or methylene group substituted with alkyl group to said second aryl nucleus,

(c) to two groups selected from the group consisting of unsubstituted alkyl, alkenyl, cycloalkyl and aralkyl groups and such groups substituted with a member of the class consisting of hydroxy, alkoxy, hydroxypolyalkenoxy, acetoxy, sulfonic acid, sulfato, carboxyl and hydroxyalkoxy or which are joined and together with the nitrogen atom form a heterocyclic ring,

the amount of said retarder being between 0.1 and 1.0% of the weight of the rubber.

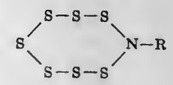
3,357,958

VULCANIZATION WITH HEPTASULFUR IMIDE

Kamal Naguib Ayad, Ruabon, Wrexham, Wales, assignor to Monsanto Chemicals Limited, London, England, a British company

No Drawing. Filed June 7, 1965, Ser. No. 462,064
7 Claims. (Cl. 260—79.5)

1. A process for the vulcanization of a sulfur-vulcanizable rubber which comprises heating said rubber in the presence of a compound containing a hepta-sulfur imide grouping of the formula



as a vulcanizing agent wherein R is a radical that will not destroy the effectiveness of the heptasulfur imide moiety as a vulcanizing agent.

3,357,959

PROCESS OF PREPARING CRYSTALLINE POLY(2-NITROPROPENE)

Harold Jabloner, Wilmington, Del., assignor to Hercules Incorporated, a corporation of Delaware

No Drawing. Filed Mar. 31, 1964, Ser. No. 356,036

1 Claim. (Cl. 260—80)

A process for preparing high molecular weight, crystalline poly(2-nitropropene) comprising:

(a) preparing a catalyst slurry consisting essentially of from 0.0165 to 0.11 mole of potassium hydroxide per liter, from 5.6 to 12.3 milligrams of water per milliliter, and 1,2-dimethoxyethane,

(b) adding 2-nitropropene to said catalyst slurry and polymerizing at a temperature of from about 0 to about 25° C., and

(c) recovering solid polymer product from said admixture whereby the solid polymer product is characterized by an intrinsic viscosity of from 0.16 to 0.37 deciliter per gram in methyl ethyl ketone at 25° C., insolubility in 1,2-dimethoxyethane at 25° C., and crystallinity on X-ray examination.

3,357,960

BUTADIENE-ISOBUTYLENE COPOLYMERS PREPARED BY USING CATALYST COMPOSED OF A GRIGNARD REAGENT AND TITANIUM TETRAHALIDE

Bernard Charles Barton, Butler, Walter Nudenberg, West Caldwell, and Edward Axel Delaney, Morris Plains, N.J., assignors to Texas-U.S. Chemical Company, Parsippany, N.J., a corporation of Delaware

No Drawing. Filed July 20, 1965, Ser. No. 473,497

8 Claims. (Cl. 260—85.3)

1. A process for preparing linear elastomeric copolymers of butadiene and isobutylene, said polymers consisting essentially of about 2 to 40 weight percent of isobutylene and about 60 to 98 weight percent butadiene which comprises (a) contacting a reaction mixture of isobutylene and butadiene with a catalyst comprising a Grignard reagent and titanium tetrahalide in ratio of 1–10 moles Grignard per mole of titanium tetrahalide and (b) maintaining the unreacted butadiene monomer content of said reaction mixture below 20 weight percent of total unreacted monomer in the system, adding butadiene thereto as necessary to form the ultimate butadiene-isobutylene copolymer, and after reaction is completed, recovering the polymer.

4. A process for preparing linear elastomeric copolymers of butadiene and isobutylene consisting essentially of about 2 to 40 weight percent of isobutylene and about 60 to 98 weight percent butadiene in the copolymer, said butadiene component of the copolymer having at least 90 weight percent cis configuration which comprises (a) contacting a reaction mixture of isobutylene and butadiene with an iodine-containing catalyst system comprising a Grignard reagent and titanium tetrahalide in ratio of 1–10 moles Grignard per mole of titanium tetrahalide, (b) said catalyst system containing said Grignard reagent and titanium tetrahalide in a mol ratio of at least 2:1, (c) and maintaining the unreacted butadiene content of said reaction mixture below 20 weight percent of total unreacted monomer present, adding butadiene thereto as it is copolymerized, and recovering copolymer upon completion of the reaction.

3,357,961

COPOLYMERS OF ETHYLENE AND HEXADIENE 1,5

Henry S. Makowski, Scotch Plains, N.J., Benjamin K. C. Shim, Erie, Pa., and William P. Cain, White Plains, N.Y., assignors to Esso Research and Engineering Company, a corporation of Delaware

Filed May 24, 1965, Ser. No. 459,531

2 Claims. (Cl. 260—88.2)

1. A copolymer consisting essentially of from 23 to 75 mol percent ethylene units and from 25 to 77 mol percent hexadiene-1,5 units, the hexadiene units of said polymer composed predominantly of cyclopentane rings, said copolymer being from 25 to 75% crystalline as determined by X-ray analysis, and at least about 75 wt. percent insoluble in boiling n-heptane and having a melting point of at least about 117° C.

3,357,962

HOMO- AND COPOLYMERIZATION OF VINYL MONOMERS USING TAUTOMERIC ANHYDRIDE OR KETONE DERIVATIVES AS CATALYSTS

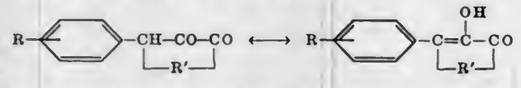
Heinrich Hopff, Zurich, Switzerland, and Eduard Kleiner, Ardsley, N.Y., assignors to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler, Frankfurt am Main, Germany

No Drawing. Filed Nov. 10, 1964, Ser. No. 410,304

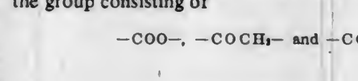
Claims priority, application Germany, Nov. 14, 1963, D 42,934

6 Claims. (Cl. 260—89.5)

1. In a process for the polymerization of at least one vinyl monomer containing a terminal $CH_2=C<$ group, the step of carrying out such polymerization in contact with a catalytically effective amount of at least one tautomeric compound of the formulae:



in which R is selected from the group consisting of hydrogen, alkyl of 1–3 carbon atoms, hydroxy alkyl 1–3 carbon atoms, amino and halogen and R′ is selected from the group consisting of



3,357,963

PROCESS FOR PRODUCTION OF POLYCYCLOHEXADIEN

Boris Vasiljevich Erofeev, Sofia Fadeevna Naumova, and Inna Vladimirovna Kulevskaja, Minsk, U.S.S.R., assignors to Institute Fiziko-Organisheskoi Khimii, Minsk, U.S.S.R.

No Drawing. Filed Sept. 1, 1964, Ser. No. 393,718

8 Claims. (Cl. 260—93.1)

1. A process for the production of polycyclohexadien-1,3 comprising polymerizing cyclohexadien-1,3 at a temperature above room temperature in an organic solvent in the presence of butyl lithium.

3,357,964

PROCESS FOR THE POLYMERIZATION OF VINYL AROMATIC COMPOUNDS

Nicolaas J. H. Gülpen, Schalkhaar, and Hans G. Gerritsen, Deventer, Netherlands, assignors to Koninklijke Industrieele Maatschappij Noury & van der Lande N.V., a corporation of the Netherlands

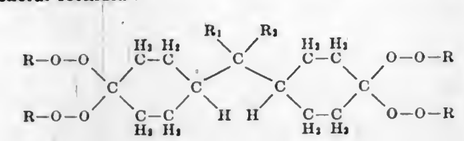
No Drawing. Filed July 1, 1964, Ser. No. 379,741

Claims priority, application Great Britain, July 2, 1963, 26,249/63

3 Claims. (Cl. 260—93.5)

1. In the peroxidic polymerization of vinylaromatic compounds, the step which comprises mixing the vinyl-

aromatic compound with a peroxy compound having the general formula



in which R represents a radical selected from the class consisting of tertiary alkyl and tertiary aralkyl radicals and R_1 and R_2 each represents an alkyl radical having from 1 to 2 carbon atoms, in an amount of about 0.05 to 1.00% by weight calculated on the starting vinylaromatic compound, and heating the mixture at a temperature from about 70° to 200° C.

3,357,965

PREVENTION OF COLD FLOW IN ELASTOMERS

James N. Click, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Nov. 30, 1964, Ser. No. 414,839

7 Claims. (Cl. 260—94.7)

1. A method for reducing the tendency of a rubbery essentially hydrocarbon unsaturated polymer of a conjugated diene to cold flow when in the unvulcanized state which comprises contacting said polymer with a chlorine-containing bleaching agent, selected from the group consisting of chlorine dioxide, chlorites of alkali metals, chlorites of alkaline earth metals, hypochlorites of alkali metals and hypochlorites of alkaline earth metals.

3,357,966

STATIC CHARGE ELIMINATION IN POLYETHYLENE

Hans R. Larsen, Montreal, Quebec, Canada, assignor to Union Carbide Canada Limited, East Toronto, Ontario, Canada, a company of Canada

No Drawing. Filed Jan. 15, 1965, Ser. No. 425,947

12 Claims. (Cl. 260—94.9)

1. An extrudable composition of matter comprising a mixture containing (*a*) polyethylene which has been polymerized in the presence of a complex co-ordination catalyst, and (*b*) di(2-ethylhexyl) phosphoric acid.

3,357,967

POLYMERIZATION CATALYST AND PROCESS

Hermann Wesslau, Mulheim (Ruhr), Germany, assignor to Studiengesellschaft Kohle m.b.H., Mulheim (Ruhr), Germany, a corporation of Germany

Filed Nov. 12, 1965, Ser. No. 539,225

Claims priority, application Germany, Aug. 14, 1957, St 12,884

29 Claims. (Cl. 260—94.6)

11. A process for the polymerization of ethylene to solid polymers having a narrow molecular weight distribution range (U value) below 6, which comprises polymerizing the ethylene at a temperature below the melting point of the polyethylene formed with a polymerization catalyst comprising the product formed by mixing:

(a) Titanium trichloride
(b) $Ti(R)_4$
(c) $R'Al(R)_2$

R′ being alkyl and R halogen, alkoxy or aroxy radicals, wherein between (b) and (c) there is present at least one halogen atom and at least one alkoxy or aroxy radical.

3,357,968

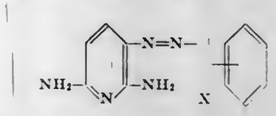
FLUORO-SUBSTITUTED PHENYLAZO-PYRIDINES

Godfrey Wilbert, Carmel, and Henry Wetstein, Monroe, N.Y., assignors to Nepera Chemical Co., Inc.

No Drawing. Filed Aug. 10, 1964, Ser. No. 388,713

3 Claims. (Cl. 260—156)

1. A compound of the formula:



wherein X is fluorine attached in the para or ortho position.

3,357,969

MONOAZO DYES

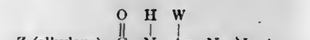
Milton Green, Newton Centre, Helen P. Husek, Lincoln, and Sidney Kasman, Newton, Mass., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

No Drawing. Filed Jan. 23, 1964, Ser. No. 339,615

8 Claims. (Cl. 260—199)

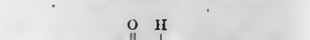
1. A compound selected from the group consisting of monoazo dyes of the formulae:

(1)



and

(2)



wherein Z is p-dihydroxyphenyl or methoxy-o-dihydroxyphenyl; Z^1 is p-dicathyloxyphenyl or methoxy-o-dicathyloxyphenyl; said alkylene moiety contains from 1 to 5 carbon atoms; *n* is 0 or 1; Ar represents an arylene group of the benzene or naphthalene series; W is primary amino, N,N-diethylamino or hydroxyl; and A represents a member of the benzene, pyrazolone or thiazole series; each of said Ar and A having a nitrogen atom of said —N=N— group directly attached to a first nuclear carbon atom, said W being directly attached to a second nuclear carbon atom of said Ar group ortho or para to said first carbon atom of said Ar group attached to said nitrogen atom; said Z moiety providing the only dihydroxyphenyl in said first-named class of dyes and said Z^1 being the only dicathyloxyphenyl in said last-named class of dyes.

3,357,970

OXYALKYLATION OF SOLID POLYOLS

Jeffrey M. Ulyatt, Swansea, Glamorgan, Wales, assignor to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed June 4, 1965, Ser. No. 461,553

Claims priority, application Great Britain, June 10, 1964, 24,152/64, 24,153/64

7 Claims. (Cl. 260—209)

1. In a process for preparing a polyether by reacting a heat-sensitive solid polyhydroxy compound having at least four hydroxy groups in the molecule and melting above about 115° C. with an excess in moles of a vicinal lower alkylene oxide of at least three carbon atoms, in the presence of a strongly basic organic amine catalyst, at a temperature of about 60°–160° C. until the number of moles of alkylene oxide which has reacted is in excess of the number of hydroxy groups in the polyhydroxy compound, whereby there is obtained a uniform product which is a polyether condensation product having more than 1, up to about 5, oxyalkylene units per each hydroxy group in the original polyhydroxy molecule, the

improvement which comprises initiating and conducting said reaction in a suspension medium for said polyhydroxy compound, said suspension medium being a polyether condensation product of the composition just stated, there being at least about 0.75 parts by weight of said polyether present per part by weight of the polyhydroxy reactant employed in said process.

4. The process of claim 1 wherein the polyhydroxy compound is sucrose.

3,357,971

MIXED CELLULOSE ETHERS

Eugene D. Klug, Wilmington, Del., assignor to Hercules Incorporated, a corporation of Delaware

No Drawing. Filed July 6, 1964, Ser. No. 380,686
14 Claims. (Cl. 260—215)

1. Process of preparing a mixed cellulose derivative comprising mixing cellulosic material, alkali, water and a water miscible inert organic diluent, and then causing the alkali cellulose to react with hydroxypropylating agent and a second agent which imparts ionic character to the cellulose derivative, continuing the reaction until said derivative has a hydroxypropyl M.S. and an ionic D.S. of at least 2 and 0.001–0.4, respectively the alkali/cellulose ratio being 0.02–0.5, the water/cellulose ratio being 0.1–4 and 0.1–2 in the alkali cellulose period and etherification period, respectively.

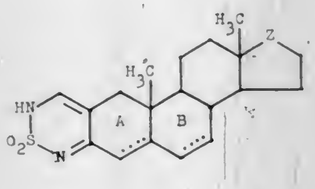
3,357,972

1-OXYGENATED 1,2,3,3a,3b,4,5,9,11,11a,11b,12,13,13a-TETRADECAHYDRO - 11a,13a - DIMETHYLCYCLOPENTA[7,8]PHENANTHRO[2,3 - c][1,2,6]THIADIAZINE 8,8-DIOXIDES AND CONGENERS

James R. Deason, Skokie, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed Mar. 2, 1966, Ser. No. 531,080
6 Claims. (Cl. 260—239.5)

1. A compound of the formula



wherein the dotted line in ring A represents an optional double bond, the dotted line in ring B represents an optional double bond when there is a double bond in ring A, and Z represents a member of the class consisting of the carbonyl radical and a radical of the formula



wherein R' represents a member of the class consisting of hydrogen and a radical of the formula

—CO-lower alkyl

and R'' represents a member of the class consisting of hydrogen and an alkyl of the formula

$$-C_nH_{2n+1}$$

wherein *n* represents a positive integer less than 4.

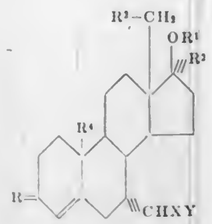
3,357,973

7α-MONO- AND DIHALOMETHYL STEROIDS

Colin C. Beard, Boulder, Colo., and Alexander D. Cross, Mexico City, Mexico, assignors to Syntex Corporation, Panama, Panama, a corporation of Panama

No Drawing. Filed Dec. 13, 1965, Ser. No. 513,548
17 Claims. (Cl. 260—239.55)

1. Steroids of the formula



wherein R represents an oxygen atom or the group



in which R^5 represents hydrogen, tetrahydropyranyl, or a hydrocarbon carboxylic acyl group of less than 12 carbon atoms;

R^1 represents hydrogen, tetrahydropyranyl, or a hydrocarbon carboxylic acyl group of less than 12 carbon atoms;

R^2 represents hydrogen, cyclopropyl, (lower)alkyl, (lower)alkenyl, (lower)alkynyl, or halo(lower) alkynyl group;

each of R^1, R^2, R^3, R^4, X and Y is as therein defined and

X represents hydrogen, chloro, or fluoro; and

Y represents chloro or fluoro.

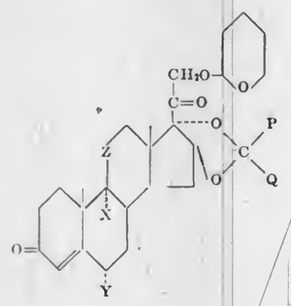
3,357,974

PROCESSES FOR PREPARING 16α,17α-ACETALS AND KETALS OF 16α,17α,21-TRIHYDROXY-Δ⁴-PREGNENE-3,20-DIONES

David Taub, Metuchen, N.J., assignor to Merck & Co., Rahway, N.J., a corporation of New Jersey

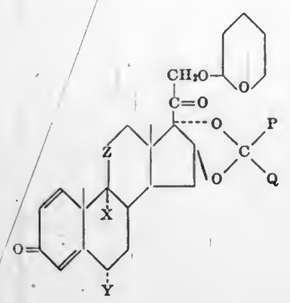
No Drawing. Filed Dec. 28, 1965, Ser. No. 517,065
9 Claims. (Cl. 260—239.55)

1. A process for the preparation of a compound of the formula:



wherein X is hydrogen or fluorine, Y is hydrogen, fluorine, or methyl, Z is methylene, β-hydroxy methylene, or a carbonyl group, X being hydrogen when Z is a methylene group, and P and Q are each hydrogen, or an alkyl or aryl group, or together with the carbon to which they

are joined, P and Q are a cycloalkyl group, which comprises reducing a compound of the formula:



wherein X, Y, Z, P, and Q have the same significance as above, by adding a solution thereof in an organic solvent to liquid ammonia and adding lithium gradually to the liquid ammonia-steroid solution.

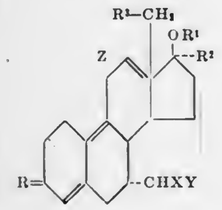
3,357,975

7α-MONO- AND DIHALOMETHYLESTRA-4,9(10)-DIENES AND 4,9(10),11-TRIENES AND THEIR PREPARATION

Colin C. Beard, Boulder, Colo., and Alexander D. Cross, Mexico City, Mexico, assignors to Syntex Corporation, Panama, Panama, a corporation of Panama

No Drawing. Filed Feb. 3, 1966, Ser. No. 524,870
19 Claims. (Cl. 260—239.55)

1. Steroids of the formula



wherein R is an oxygen atom or the group



in which R^4 is hydrogen, tetrahydropyranyl, or a hydrocarbon carboxylic acyl group of less than 12 carbon atoms;

R^1 is hydrogen, tetrahydropyranyl, or a hydrocarbon carboxylic acyl group of less than 12 carbon atoms;

R^2 is hydrogen, cyclopropyl, (lower)alkyl, (lower)alkenyl, (lower alkynyl, or a halo(lower)alkynyl group;

R^3 is hydrogen or methyl;

Z is a carbon-carbon single bond or a carbon-carbon double bond;

X is hydrogen, chloro, or fluoro; and

Y is chloro or fluoro.

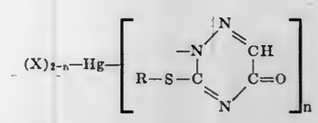
3,357,976

MERCURY DERIVATIVES OF CERTAIN AS-TRIAZINE-5(2H)-ONES

Albert R. Restivo, Belleville, N.J., assignor, by mesne assignments, to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Original application June 30, 1960, Ser. No. 39,768, now Patent No. 3,135,737, dated June 2, 1964. Divided and this application Aug. 7, 1963, Ser. No. 306,648
8 Claims. (Cl. 260—242)

1. A compound of the formula:



wherein R is a hydrocarbon radical of less than twelve carbon atoms, X is halide, and *n* is a positive integer less than 3.

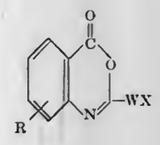
3,357,977

NOVEL ANTHRANYL INTERMEDIATES

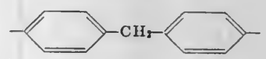
Louis A. Errede, Roseville, Minn., assignor to Minnesota Mining & Manufacturing Company, St. Paul, Minn., a corporation of Delaware

No Drawing. Filed Jan. 6, 1964, Ser. No. 336,033
8 Claims. (Cl. 260—244)

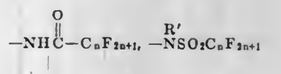
1. A compound of the formula:



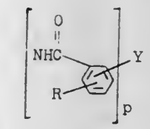
wherein W is $(CH_2)_q$



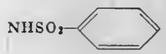
or phenylene; X is $-C_nF_{2n+1}$,



or



Y is hydrogen or



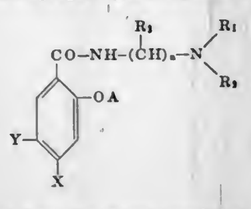
R' is hydrogen or an alkyl group containing up to 6 carbon atoms; R is hydrogen, nitro or halogen, *q* is 1–18, *n* is 1–12 and *p* is 1–20.

3,357,978
PROCESS FOR PREPARING NEW BENZAMIDES

Michel Leon Thominet, Paris, France, assignor to Societe d'Etudes Scientifiques et Industrielles de l'Ile-de-France, Paris, France

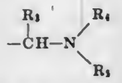
No Drawing. Filed Feb. 28, 1964, Ser. No. 348,255
Claims priority, application France, Mar. 5, 1963, 926,941
7 Claims. (Cl. 260—247.1)

1. A method of preparing a compound of the formula:



in which

A is selected from the group consisting of lower alkyl and the group



X is selected from the group consisting of amino, alkylamino, dialkylamino and alkanoylamino;

Y is selected from the group consisting of halogen, hydroxy, lower alkoxy, nitro, amino, alkylamino, dialkylamino, alkanoylamino, alkanoyl, mercapto and sulfamoyl;

n is a positive whole number less than 4 and greater than 1;

R_1, R_2, R_4 and R_5 are selected from the group consisting of lower alkyl and together with the nitrogen form morpholino, piperidino, pyrrolidino, N-alkylpiperazino and N-alkylsulfonylpiperazino; and R_3 is selected from the group consisting of hydrogen and lower alkyl, which comprises, in combination, the successive steps of:

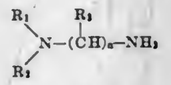
(a) esterifying p-aminosalicylic acid;

(b) acylation of the amino group of the resulting p-aminosalicylate with a lower alkanoic acid;

(c) alkylating the o-hydroxy group of the product of step (b) with a group A, as defined above;

(d) introducing the group Y into the product of step (c);

(e) heating the product of step (d) with an amine of the structure:



to form an amide; and

(f) deacylating the p-amino group.

3,357,979
PROCESS IMPROVEMENT FOR PREPARING CYANURIC ACID

Eugene C. Sobocinski, Hazelwood, and William F. Symes, Webster Groves, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Oct. 1, 1965, Ser. No. 492,280
10 Claims. (Cl. 260—248)

1. A process for preparing substantially pure cyanuric acid which comprises the steps of admixing an aqueous solution containing crude cyanuric acid with an aqueous alkali metal hydroxide solution to form a di-alkali metal cyanurate solution; contacting said cyanurate solution with carbon; removing said carbon from said cyanurate solution; feeding said cyanurate solution and an aqueous solution of a mineral acid into an acidic water heel, maintained at a temperature greater than 20° C., at a rate sufficient to form cyanuric acid particles having a particle size distribution such that less than 20% by weight thereof will pass through a No. 200 mesh U.S. Standard screen; and separating said cyanuric acid particles from the resultant solution, said acid addition rate being sufficient to maintain the heel and resultant slurry at a pH of from about 0.75 to about 3.0.

3,357,980
PREPARATION OF MELAMINE

Franz Kaess, Traunstein, Horst Prietzel, Trostberg, and Kurt Scheinost, Tacherting, Germany, assignors to Suddeutsche Kalkstickstoff-Werk Aktiengesellschaft, Trostberg, Germany

Filed Nov. 12, 1965, Ser. No. 507,373
Claims priority, application Germany, Nov. 16, 1964, S 94,202
8 Claims. (Cl. 260—249.7)

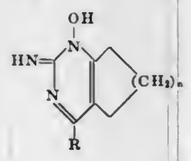
1. A method of preparing melamine from dicyanodiamide comprising maintaining a catalyst at a temperature of 300 to 400° C. as a fluidized bed in a reaction zone by means of a current of ammonia, injecting dicyanodiamide with part of said ammonia current serving as carrier gas laterally at a high rate of speed into said reaction zone, thereby producing a homogeneous dispersion of said dicyanodiamide, said dicyanodiamide having a smaller particle size than the catalyst, passing the gas from the reaction zone through a precipitation zone to recover therein sublimed melamine, and maintaining said precipitation zone at a temperature above 150° C. but not higher than 230° C.

3,357,981
1,2-DIHYDRO-1-HYDROXY-5,6-TRI- AND 5,6-TETRAMETHYLENE PYRIMIDINES

Joseph J. Ursprung and William C. Anthony, Kalamazoo, Mich., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Dec. 27, 1965, Ser. No. 516,786
9 Claims. (Cl. 260—256.4)

1. A compound selected from the group consisting of the free base form, acid addition salts, and carboxyacylates of a compound of the formula:



wherein R is a moiety selected from the group consisting of moieties of the formula



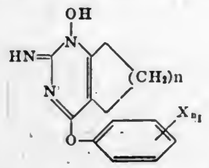
wherein R_1 and R_2 are selected from the group consisting of hydrogen, lower alkyl, lower alkenyl, lower aralkyl, and lower cycloalkyl, with the proviso that both R_1 and R_2 are not hydrogen,

and the heterocyclic moieties aziridinyl, azetidinyl, pyrrolidinyl, piperidino, hexahydroazepinyl, heptamethyleniimino, octamethyleniimino, morpholino, and 4-loweralkylpiperazinyl,

each of said heterocyclic moieties having attached as substituents on carbon atoms thereof zero to 3 lower alkyls, inclusive,

a nitrogen atom of each of said heterocyclic moieties being the point of attachment of R to the ring in said formula, and *n* is 1 or 2.

4. A compound selected from the group consisting of the free base form and acid addition salts of a compound of the formula:



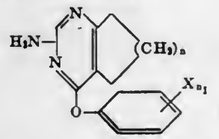
wherein

X is selected from the group consisting of fluorine, chlorine and bromine,

n is 1 or 2, and

n_1 is zero to 3, inclusive.

7. A compound of the formula:



wherein

X is selected from the group consisting of fluorine, chlorine, and bromine,

n is 1 or 2, and

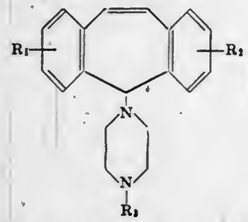
n_1 is zero to 3, inclusive.

3,357,982
1-(5H-DIBENZO[a,d]CYCLOHEPTEN-5-YL)-4-ALKYLPIPERAZINES

Cornelis van der Stelt, Haarlem, Netherlands, assignor to N.V. Koninklijke Pharmaceutische Fabrieken v/h Brocades Stheeman en Pharmacia, Amsterdam, Netherlands, a corporation of Dutch law

No Drawing. Filed May 17, 1965, Ser. No. 456,476
Claims priority, application Great Britain, Aug. 18, 1964, 33,749/64
2 Claims. (Cl. 260—268)

1. A compound selected from the group consisting of a compound having the formula



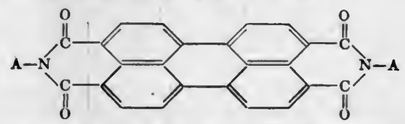
wherein R_1 and R_2 are selected from the group consisting of hydrogen, halogen and lower alkyl, and R_3 is lower alkyl, and the acid-addition salts thereof.

3,357,983
PERYLENE PIGMENTS

Earl Weener and John Herman Vander Ploeg, Holland, Mich., assignors, by mesne assignments, to Chemetron Corporation, Chicago, Ill., a corporation of Delaware

No Drawing. Filed Oct. 13, 1965, Ser. No. 495,729
8 Claims. (Cl. 260—281)

1. A compound of the general formula:



wherein each A is a pyridine substituted by methyl or hydrogen on the nuclear carbons wherein the pyridine group is linked to the imide nitrogen through a nuclear carbon atom.

8. N,N'-bis(3-methyl-2-pyridyl)3,4,9,10-perylene tetracarboxylic diimide.

3,357,984
PREPARATION OF TETRACHLORO- AND PENTACHLOROPYRIDINE-1-OXIDES

Eric Smith, Madison, Conn., assignor to Olin Mathieson Chemical Corporation, New Haven, Conn., a corporation of Virginia

No Drawing. Filed July 20, 1965, Ser. No. 473,492
4 Claims. (Cl. 260—290)

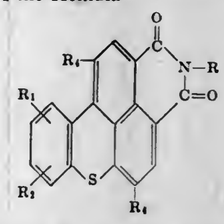
1. 2,3,5,6-Tetrachloropyridine-1-oxide.

3,357,985
BENZOTHIOXANTHENE DICARBOXYLIC ACID IMIDE DYESTUFFS

Otto Fuchs and Helmut Troster, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed July 18, 1966, Ser. No. 565,680
Claims priority, application Germany, July 30, 1965, F 46,762
9 Claims. (Cl. 260—281)

1. Dyestuff of the formula



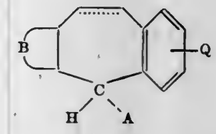
wherein R is hydrogen, hydroxy, amino, lower alkyl, lower alkoxy lower alkyl, cyclohexyloxy lower alkyl, phenyl or lower alkyl phenyl, R_1 and R_2 are hydrogen, lower alkyl, lower alkoxy or halogen, R_3 is lower alkoxy, hydroxy lower alkoxy, phenyl lower alkoxy or -O-carboxylic acyl lower alkoxy and R_4 is hydrogen or lower alkoxy.

3,357,986
1,2,3 OR 4, AZA,-[5-PIPERDYL OR HYDROCARBYL AMINO] - 10,11 DIHYDRO - 5H - DIBENZO - [a,d]-CYCLOHEPTENE

Frank J. Villani, West Caldwell, N.J., assignor to Schering Corporation, Bloomfield, N.J., a corporation of New Jersey

No Drawing. Filed Sept. 19, 1966, Ser. No. 580,169
11 Claims. (Cl. 260—293)

1. A compound of the group consisting of aza-5H-dibenzo-[a,d]-cycloheptenes having the molecular formula:



wherein the dotted line represents an optional double bond, B, together with the carbon atoms to which it is attached, represents a fused pyridine ring, and A is a member of the group consisting of 3-piperidyl, 4-piperidyl, N-lower alkyl-3-piperidyl, N-lower alkyl-4-piperidyl, and $—XNR_1R_2$; R_1 and R_2 being members of the group consisting of hydrogen, lower alkyl and together with the nitrogen atom to which they are attached form a heterocycle having 5–6 cyclic atoms, one of said cyclic atoms other than the aforesaid nitrogen atom being selected from the group consisting of C, O, and N and all other

cyclic atoms being carbon, said heterocycles being selected from the group consisting of pyrrolidino, piperidino, morpholino, piperazino, lower alkyl piperazino, hydroxy lower alkyl piperazino, and hydroxy lower alkoxy piperazino; X being a lower alkylene having 2–9 carbon atoms and Q is a member of the group consisting of hydrogen, hydroxy, halogen, lower alkyl, lower alkoxy, and trifluoromethyl.

10. A 4-aza-10,11-dihydro-5H-dibenzo-[a,d]-cycloheptene compound of claim **1** wherein A is N-methyl-4-piperidyl and Q is chloro.

3,357,987

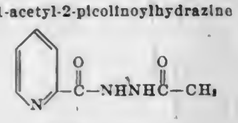
1-ACETYL-2-PICOLINOYL HYDRAZINE

Carl J. Buck, Berkeley Heights, N.J., and Nathan Belcher, East Lyme, Conn., assignors to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 6, 1965, Ser. No. 446,100
1 Claim. (Cl. 260—295)

A compound of the formula

1-acetyl-2-picolinoylhydrazine



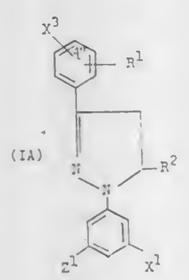
3,357,988

PYRAZOLINE OPTICAL BRIGHTENERS

Heinrich Haüsermann, Riehen, and Siegfried Rosenberger, Munchenstein, Basel-Land, Switzerland, assignors to Geigy Chemical Corporation, Greenburgh, N.Y., a corporation of Delaware

Filed Nov. 12, 1965, Ser. No. 507,309
Claims priority, application Switzerland, May 27, 1964, 6,917/64; June 28, 1965, 9,021/65
8 Claims. (Cl. 260—310)

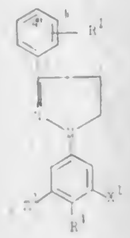
1. A 1,3-diphenyl-pyrazoline selected from the group consisting of the compounds of the formula



(IA)



(IB)



(IC)

wherein

R^1 is a member selected from the group consisting of hydrogen, lower alkoxy-carbonylamino, lower alkanoylamino, from 1 to 2 lower alkyl, and from 1 to 2 lower alkoxy;

Each of R^2 and R^3 represents a member selected from the group consisting of hydrogen and lower alkyl,

R^4 represents lower alkyl,

each of X^1 and X^2 represents a member selected from the group consisting of chlorine, fluorine and bromine,

each of X^3 and Z^1 represents a member selected from the group consisting of hydrogen, fluorine, chlorine and bromine.

3,357,989

METAL FREE PHTHALOCYANINE IN THE NEW X-FORM

John F. Byrne and Philip F. Kurz, Columbus, Ohio, assignors, by mesne assignments, to Xerox Corporation, Rochester, N.Y., a corporation of New York

Filed Oct. 29, 1965, Ser. No. 505,723
2 Claims. (Cl. 260—314.5)

1. Metal-free phthalocyanine in the "X"-form having an X-ray diffraction pattern exhibiting strong lines at Bragg angles of 7.5, 9.1, 16.7, 17.3 and 22.3.

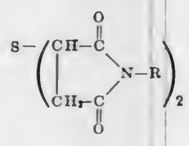
3,357,990

THIO BIS SUCCINIMIDES

Billy D. Vineyard, Bellefontaine Neighbors, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Original application Nov. 6, 1961, Ser. No. 150,202, now Patent No. 3,299,121, dated Jan. 17, 1967. Divided and this application Aug. 16, 1966, Ser. No. 592,247
7 Claims. (Cl. 260—326.3)

1. A thio bis succinimide having the formula



wherein R is hydrocarbon selected from the group consisting of alkyl, alkenyl, aryl or alkylaryl and is of a maximum of 20 carbon atoms.

4. Thio bis(3-oleylaminopropyl succinimide).

7. Thio bis(3-dimethylaminopropyl succinimide).

3,357,991

ALKYLENEMONOTHIOLCARBONATE PREPARATION

Edward A. Swakon, Hammond, Ind., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana

No Drawing. Filed June 6, 1962, Ser. No. 200,324
2 Claims. (Cl. 260—327)

1. A method of preparing monothiolpropylene carbonate or monothiolstyrene carbonate which comprises reacting carbonyl sulfide with propylene oxide or styrene oixde respectively at a temperature in the range of 25 to 50° C. in the presence of tetramethyl guanidine as catalyst in a vented reaction zone, cooling the reaction mixture to ambient temperature, acidifying the cooled reaction mixture with p-toluene sulfonic acid, and recovering the monothiolcarbonate product by distillation at a reduced pressure in the range of 0.5 to 2.5 mm. Hg absolute.

3,357,992

PROCESS FOR PREPARING SULTONES

Ernst Hieronymus, Therese Quadflieg, and Rudolf Wirtz, Frankfurt am Main, Germany, assignors, by mesne assignments, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Brüning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed July 7, 1964, Ser. No. 380,930
Claims priority, application Germany, July 9, 1963, F 40,189
13 Claims. (Cl. 260—327)

1. A process for preparing a sultone which comprises heating at a temperature above 100° C. in absence of water a lower alkanoyloxy sulfonic acid to split off a lower alkylcarboxylic acid which is derived from the lower alkanoyloxy moiety.

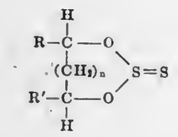
3,357,993

CYCLIC THIONOSULFITES AND THEIR PREPARATION

Quentin E. Thompson, Belleville, Ill., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Dec. 28, 1964, Ser. No. 421,672
8 Claims. (Cl. 260—327)

1. A compound represented by the structure



where R and R′ are each selected from the group consisting of hydrogen, alkyl radicals having from 1 to 16 carbon atoms, cycloalkyl radicals having from 5 to 6 carbon atoms, cycloalkylalkyl radicals having from 7 to 17 carbon atoms, alkenyl radicals having from 2 to 16 carbon atoms, providing that the total of the number of carbon atoms of R and R′ is not greater than 20, and *n* is an integer from 0 to 1.

3,357,994

PROCESS FOR CONTINUOUSLY DEHYDRATING AND/OR REMOVING WATER FROM ORGANIC COMPOUNDS

Bernhard Popp, Neuenhain, Taunus, and Ulfert Onken, Kelkheim, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

Filed Sept. 7, 1965, Ser. No. 495,003
Claims priority, application Germany, Mar. 1, 1962, F 36,155
5 Claims. (Cl. 260—327)

1. A process for continuously dehydrating an organic acid selected from the group consisting of maleic, phthalic, citraconic, succinic, glutaric and o-sulfobenzoic acids which comprises continuously introducing said acid into a distillation zone comprising a lower portion containing a liquid organic solvent for said acid and the dehydrated acid, said solvent having a boiling point which is at least about 20° C. lower than that of the dehydrated acid and being selected from the group consisting of saturated aliphatic acids of from 3 to 6 carbon atoms, dialkyl ethers of from 6 to 12 carbon atoms, acyclic ketones of up to 12 carbon atoms, and cyclic ketones of 5 and 6 carbon atoms, and an upper portion containing a liquid organic entrainer for water, said entrainer having a boiling point which is lower than the boiling point of the solvent and being selected from the group consisting of saturated aliphatic, cycloaliphatic and aromatic hydrocarbons of 5 to 10 carbon atoms and chlorinated hydrocarbons of one to two carbon atoms and at least two chlorine atoms; heating said acid, solvent and entrainer to a temperature in the range of 20 to 350° C. to transfer water from the acid to the entrainer and to remove vaporized water and entrainer from the top of the distillation zone; and continuously removing the dehydrated acid from the lower portion of the reaction zone.

5. A process for the manufacture of o-sulfobenzoic anhydride by dehydrating o-sulfobenzoic acid, which comprises continuously introducing o-sulfobenzoic acid into a reaction zone having a lower portion containing boiling isobutyric acid and an upper portion containing boiling benzene, whereby water is removed from the o-sulfobenzoic acid in contact with the boiling isobutyric acid, the resulting o-sulfobenzoic anhydride is retained by the isobutyric acid and the water forms an azeotrope with the benzene, distilling off the azeotrope and isolating o-sulfobenzoic anhydride from the lower portion of the reaction zone.

3,357,995

THIOETHER PRODUCTION

Harvey S. Klein, Berkeley, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 26, 1965, Ser. No. 510,071
7 Claims. (Cl. 260—327)

1. The process of producing a thioether product by intimately contacting

(a) an acyclic organic hydrocarbon olefin of from 2 to 8 carbon atoms and of one ethylenic linkage having at least one hydrogen substituent on at least one carbon atom which is a portion of the ethylenic linkage;

(b) sulfur dioxide, the molar ratio of sulfur dioxide to the olefin being from about 1:1 to about 1:30; and

(c) molecular hydrogen, the molar ratio of hydrogen to sulfur dioxide being from about 1:1 to about 30:1;

in the presence of a catalytic amount of a palladium halide catalyst, in liquid-phase solution in inert reaction solvent at a temperature of from about 70° C. to about 250° C. and a pressure of from about 100 p.s.i. to about 6000 p.s.i.

3,357,996

SULFOLANE COMPOUNDS

Raymond L. Cobb, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed June 18, 1964, Ser. No. 376,210
5 Claims. (Cl. 260—332.1)

1. 3-amino-4-sulfolanethiosulfuric acid.

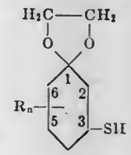
3,357,997

PREPARATION OF 4-OXO-2,4,5,6,7,7a-HEXAHYDROBENZOTHIOPHENES

Harold M. Foster, Middlesex, and Roger P. Napier, Edison, N.J., assignors to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed Dec. 20, 1965, Ser. No. 515,221
3 Claims. (Cl. 260—332.3)

1. A two step process for producing 4-oxo-2,4,5,6,7,7a-hexahydrobenzothiophenes that comprises first reacting a cyclohexanone compound having the formula:



wherein *n* is 0 to 3 and R is selected from the group consisting of alkyl (C_1–C_8) and alkenyl (C_2–C_8), with a haloacetaldehyde selected from the group consisting of chloroacetaldehyde and chloroacetaldehyde trimer, in the presence of an acid acceptor to form an intermediate product and then subjecting said intermediate product to hydrolysis and ring closure in the presence of a protic acid catalyst said R occupying any 4–6 position on the ring.

3,357,998

COMPLEX AMIDES OF DIHYDRODIBENZO[b,f][1,4]OXAZEPINE-10-CARBOXYLIC ACIDS

John W. Cusic and William E. Coyne, Skokie, Ill., assignors to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed Nov. 6, 1964, Ser. No. 409,610
2 Claims. (Cl. 260—333)

1. N-(2-diisopropylaminoethyl) - N - isopropyl-10,11-dihydrodibenz[b,f][1,4]oxazepine-10 - carboxamide oxalate.

3,357,999

ANHYDROTRIACETYLERYTHRONOLIDE B

Thomas J. Perun, Waukegan, Ill., assignor to Abbott Laboratories, North Chicago, Ill., a corporation of Illinois

No Drawing. Filed Dec. 23, 1965, Ser. No. 516,079
1 Claim. (Cl. 260—343)

6,7-anhydro-3,5,11-triacetylerythronolide B.

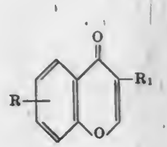
3,358,000

PROCEDURE FOR THE PREPARATION OF BENZO-γ-PYRONES

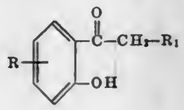
André Vincent, Somme, France, assignor to Societe Chimie et Synthese de Picardie, Somme, France, a corporation of France

No Drawing. Filed June 19, 1964, Ser. No. 376,564
Claims priority, application France, July 17, 1963, 941,786, Patent 1,370,795
10 Claims. (Cl. 260—345.2)

1. A process for preparing benzo-γ-pyrones of the following formula



wherein R is a member selected from the group consisting of H, Cl, lower alkyl; and wherein R_1 is a member selected from the group consisting of lower alkyl and R substituted phenyl, by reacting an O-hydroxy ketone of the following formula



with dimethyl formamide in the presence of phosphorous oxychloride and in the presence of dimethyl formamide in excess of stoichiometric requirements for the reaction.

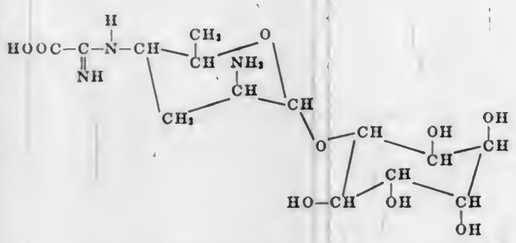
3,358,001

ANTIBIOTIC KASUGAMYCIN

Hamao Umezawa, 23 Kita 2-chome, Nerima-ku; Yoshiro Okami, 18–3 6-chome, Denenchofu, Ohta-ku; Tomio Takeuchi, 273 Imaizumicho, Ota-ku; and Masa Hamada, Higashi-Fushimi-Kodan-Jutaku, 3–4 947 Kami-Hoya, Hoya-cho, Kitatama-gun, all of Tokyo, Japan

Filed Aug. 31, 1966, Ser. No. 576,455
Claims priority, application Japan, Dec. 28, 1963, 38/70,718; Apr. 19, 1964, 39/19,767
11 Claims. (Cl. 260—345.7)

8. The compound kasugamycin of the formula



or acid addition salts thereof.

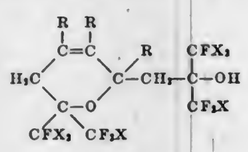
3,358,002

NOVEL PYRANS

Morton Herbert Litt, Morristown, and George Joseph Schmitt, Madison, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Mar. 18, 1965, Ser. No. 440,934
9 Claims. (Cl. 260—345.9)

1. A compound of the formula



wherein R at each occurrence is a member independently selected from the group consisting of hydrogen and hydrocarbon radicals selected from the group consisting of alkyl, aryl, aralkyl, and alkaryl radicals of 1 to 10 carbon atoms, and X is a member selected from the group consisting of chlorine and fluorine.

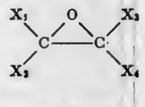
3,358,003

FLUOROCARBON EPOXIDES

Herbert Sousa Eleuterio, Wilmington, Del., and Robert Walter Meschke, Grifton, N.C., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed June 5, 1961, Ser. No. 114,597
23 Claims. (Cl. 260—348)

1. A fluorocarbon epoxide containing up to 20 carbon atoms and having the formula



where X_1, X_2 and X_3 are of the class consisting of fluorine and perfluoroalkyl, X_4 is a member of the class consisting of perfluoroalkyl and omega-hydroperfluoroalkyl, and where X_1 and X_4, when combined, are perfluoroalkylene, said fluorocarbon epoxide being characterized by a strong

absorption band at 6 to 7.5 microns in the infrared spectrum.

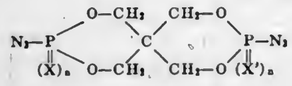
3,358,004

BIFUNCTIONAL PHOSPHORUS-CONTAINING AZIDES

Arthur D. Bliss, Guilford, and Rudi F. W. Rätz, Hamden, Conn., assignors to Olin Mathieson Chemical Corporation, New Haven, Conn., a corporation of Virginia

No Drawing. Filed Oct. 21, 1965, Ser. No. 500,263
2 Claims. (Cl. 260—349)

1. A bifunctional azide having the formula



where X is oxygen or sulfur, X′ is oxygen or sulfur, with the proviso that X and X′ are the same and *n* is an integer of 0–1.

3,358,005

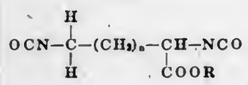
POLYURETHANES AND POLYUREAS FROM DIISOCYANATES

John D. Garber, Allendale, and David Wasserman, Springfield, N.J., and Robert Allen Gasser, McGaheysville, Va., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Nov. 24, 1964, Ser. No. 413,652
4 Claims. (Cl. 260—404.5)

1. The method for producing an organic product which at 25° C. will tolerate at least an equal volume of mineral spirits which comprises reacting

(A) a diisocyanate having the formula



wherein R is an alkyl radical of from 8 to 20 carbon atoms and *n* is either 2 or 3; or

(B) the reaction product of A with a polyol, said polyol being the reaction product of a polymeric, dibasic, unsaturated fatty acid with diethylene glycol, ethylene glycol, propylene glycol, or butylene glycol, said reaction being carried out at a temperature of from about 170°–195° C.; with

(C) a diamine within generic formula:

$$R_2—NH—G—NH_2$$

wherein R_2 is selected from the group consisting of alkyl and straight chain ethylenically unsaturated hydrocarbon radicals of 6–20 carbon atoms; G is $(CH_2)_m$; *m* is at least 2; and the sum of the carbon atoms in R_2 and G is 14–28; said mineral spirits having a boiling range of 161–197° C. and Kauri-Butanol value of 39.

3,358,006

ORGANOTIN DITHIOPHOSPHATES

Edward N. Walsh, Chicago Heights, Ill., and Adam F. Kopacki, Westwood, N.J., assignors to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 28, 1962, Ser. No. 220,036
3 Claims. (Cl. 260—429.7)

1. S,S-bis(diphenylphosphinodithio) dibutyl tin.

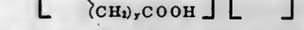
3,358,007

WATER SOLUBLE STANNOUS FLUORIDE CHELATES OF HYDROXYETHYL- AND CARBOXYLMETHYL SUBSTITUTED AMINES

Horst G. Langer, Cochituate, Mass., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Feb. 18, 1964, Ser. No. 345,568
6 Claims. (Cl. 260—429.7)

1. A stannous fluoride chelate complex compound corresponding to the following formula:



wherein *x* and *y* are integers independently having values in the range 1, 2, 3, 4, such that the terminal moiety is sterically favorable to the formation of stannous fluoride complexes in having six to ten atoms available for chelate formation, R being selected from the group consisting of H and polyamino polycarboxylic acid moieties.

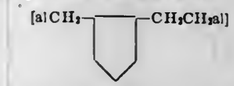
3,358,008

DI(ALUMINOALKYL)CYCLOPENTANE POLYMERS AND THEIR PREPARATION

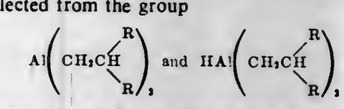
Erich Marcus, Charleston, and Donald L. MacPeek, South Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Dec. 28, 1962, Ser. No. 247,828
8 Claims. (Cl. 260—448)

1. The process for the production of a polymer composed of recurring units of the formula:



wherein al designates one-third of an atom of aluminum, which process comprises bringing 1,5-cyclooctadiene into reactive admixture with an isoalkylaluminum of the formula selected from the group



wherein each R, independently, designates an alkyl radical of from 1 to 4 carbon atoms, at a temperature of from about 80° C. to about 180° C., and for a period of time sufficient to produce said polymer.

8. The ethylenically grown polymer composed of recurring units of the formula:



wherein al designates one-third of an atom of aluminum, and *y* and *z* designate integers of from 0 to 8, at least one of which is a positive integer.

3,358,009

PROCESS FOR PREPARING MIXED CYCLIC ORGANOSILOXANES

George M. Omietanski, Tonawanda, and Thomas C. Williams, Lancaster, N.Y., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Apr. 29, 1963, Ser. No. 276,173
9 Claims. (Cl. 260—448.2)

1. A process for the production of cyclic organosiloxanes of specific desired composition having mixed organo-substituents which comprises reacting in the presence of an inert solvent an organosiloxane diol having the formula $HO(R_2SiO)_nH$ with an organosilane compound in an amount sufficient to react with all of the organosiloxane diol present, said organosilane compound having the

formula R^1SiCl_3 wherein R and R^1 are selected from the class consisting of monovalent hydrocarbyl radicals connected to silicon through a carbon-silicon bond and monovalent substituted hydrocarbyl radicals being selected from the class consisting of substituted alkyl groups, substituted alkenyl groups, substituted aryl groups, substituted alicyclic groups, substituted aralkyl groups, and substituted alkaryl groups and containing substituents free of active hydrogen, said monovalent substituted hydrocarbyl radicals connected to silicon through a carbon-silicon bond and having the substituents located at least two carbon atoms from the silicon atom and wherein R and R^1 are different radicals, *n* is an integer having a value from 2 to 4 inclusive, and recovering the desired cyclic organosilicon product.

3,358,010

BIURET POLYISOCYANATES

J. W. Britain, New Martinsville, W. Va., assignor to Mobay Chemical Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed Mar. 11, 1964, Ser. No. 351,241
12 Claims. (Cl. 260—453)

1. A method of preparing biuret polyisocyanates which comprises reacting at least 2.5 mols of a member selected from the group consisting of aliphatic diisocyanates and alicyclic diisocyanates with one mol of a monohydric tertiary alcohol at a temperature of from about 70° C. to about 205° C.

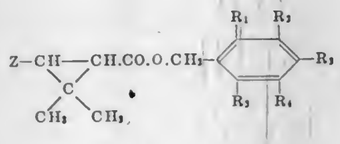
3,358,011

PYRETHRIC AND CHRYSANTHEMIC ACID ESTERS OF 4-(ALKENYL, CYCLOALKENYL OR ALKADIENYL) BENZYL ALCOHOL AND ALKYL SUBSTITUTED 4-(ALKENYL, CYCLOALKENYL OR ALKADIENYL) BENZYL ALCOHOL

Michael Elliott, Harpenden, England, assignor to National Research Development Corporation, London, England, a corporation of Great Britain

No Drawing. Filed Mar. 9, 1964, Ser. No. 350,576
Claims priority, application Great Britain, Mar. 18, 1963, 10,701/63, 10,702/63; Oct. 29, 1963, 42,715/63
6 Claims. (Cl. 260—468)

1. A compound of the formula



in which Z is isobutenyl or 2-carbomethoxy-prop-1-enyl, R_3 is halogen, lower alkenyl, lower alkadienyl or cyclopent-2-enyl, and R_1, R_2, R_4, and R_5, are each hydrogen or lower alkyl.

3,358,012

3-ISOPROPYL-4-METHYLMERCAPTOPHENYL N-METHYLCARBAMATE

Everett E. Gilbert, Morris Township, Morris County, and Julian A. Otto, Stockholm, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Feb. 16, 1962, Ser. No. 174,368
1 Claim. (Cl. 260—479)

3-isopropyl-4-methylmercaptophenyl N - methylcarbamate.

3,358,013

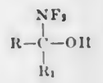
α - DIFLUORAMINO - α - ALKOXYMALONATES AND α - DIFLUORAMINOALKANOLS AND THEIR PREPARATION

Jeremiah P. Freeman and William H. Graham, Huntsville, Ala., assignors to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware

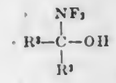
No Drawing. Filed Mar. 13, 1961, Ser. No. 95,434
11 Claims. (Cl. 260—482)

1. A process for the preparation of carbinols containing the difluoramino group which comprises reacting difluoramine, HNF_2, with carbonyl-containing compounds selected from the group consisting of (a) compounds of the formula $RCOR^1$ in which R is selected from the group consisting of H and lower alkyl containing 1 to 4 carbon atoms and R^1 is selected from the group consisting of H and lower alkyl containing 1 to 4 carbon atoms, and (b) compounds of the formula R^2COR^2 in which R^2 is selected from the group consisting of $COOCH_3$ and $COOC_2H_5$, and (c) compounds of the formula CH_3COR^3 in which R^3 is hydroxyalkyl containing 2 carbon atoms and recovering the difluoramino carbinols so formed.

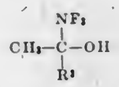
6. A carbinol selected from the group consisting of (a) compounds of the formula



in which R is selected from the group consisting of H and lower alkyl containing 1 to 4 carbon atoms and R^1 is selected from the group consisting of H and lower alkyl containing 1 to 4 carbon atoms, and (b) compounds of the formula



in which R^2 is selected from the group consisting of $COOCH_3$ and $COOC_2H_5$, and (c) compounds of the formula



in which R^3 is hydroxyalkyl containing 2 carbon atoms.

3,358,014

PURIFICATION OF FURFURYL ALCOHOL-DERIVED LEVULINIC ESTERS

Andrew P. Dunlop, Riverside, and George W. Huffman, Crystal Lake, Ill., assignors to The Quaker Oats Company, Chicago, Ill., a corporation of New Jersey

No Drawing. Filed Feb. 3, 1964, Ser. No. 342,253
3 Claims. (Cl. 260—483)

1. A process for producing color-stable levulinic esters from color-unstable furfuryl alcohol-derived levulinic esters which are produced by acid catalyzed reaction between furfuryl alcohol and a different alcohol which contains 1 to 10 carbons and is selected from the group consisting of unsubstituted primary or secondary carbon chain or oxygen-carbon chain aliphatic alcohols, carbon ring or oxygen-carbon ring cyclo-aliphatic alcohols comprising heating said color-unstable ester at a temperature above 75° C. for a period of time greater than one-half hour, in the presence of sulfuric acid in an amount greater than 0.2 percent based on the weight of the ester, and thereafter distilling color-stable ester from the resulting mixture.

3,358,015

PREPARATION OF UNSATURATED ACID ESTERS FROM UNSATURATED ALDEHYDES

Irwin Schlossman, New York, N.Y., and Charles N. Winnick, Bergen County, N.J., assignors to Halcon International, Inc., a corporation of Delaware

No Drawing. Filed Nov. 12, 1963, Ser. No. 323,099
5 Claims. (Cl. 260—486)

1. A process for the production of an organic ester which comprises: forming a reaction mixture which contains (1) an organic peroxide, (2) an alpha-beta-ethylenic aldehyde, (3) a non-tertiary alkanol having up to 12 carbon atoms per molecule and (4) a redox agent consisting essentially of at least one soluble ion selected from the group consisting of ferric and ferrous; said reaction mixture containing from 1 to 50% by weight of said aldehyde, a ratio of 0.1 to 2 moles per mole of hydroperoxide per mole of aldehyde, and 0.05 to 2 equivalents of said redox agent per equivalent of hydroperoxide; said reaction mixture being substantially free of copper ions; reacting said mixture at a temperature of —50 to 150° C. to form an alkanol ester corresponding to said aldehyde; and recovering said ester as product.

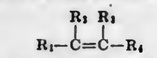
3,358,016

PREPARATION OF ALKENYL ESTERS FROM ALKENYL CHLORIDES AND METAL CARBOXYLATES IN THE PRESENCE OF PALLADOUS CHLORIDE

Charles F. Kohll and Robert van Helden, Amsterdam, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 18, 1964, Ser. No. 352,956
Claims priority, application Netherlands, Mar. 20, 1963, 290,408
6 Claims. (Cl. 260—491)

1. A process for preparing vinyl esters by reacting a C_2 to C_4 vinylic halide having the formula



wherein R_1, R_2, R_3 and R_4 are selected from the group consisting of halogen, hydrogen, methyl and ethyl provided that at least one of them is halogen, with a sodium, iron or copper salt of a saturated aliphatic C_2 to C_{18} monocarboxylate in a substantially anhydrous inert liquid medium selected from the group consisting of dimethylformamide and 1,2-dimethoxyethane in the presence of palladium chloride catalyst at a temperature from 0° to 150° C. and at a pH of at least 4 in the substantial absence of free saturated aliphatic monocarboxylic acid.

3,358,017

PROCESS FOR PRODUCING SUBSTANTIALLY ODORLESS ALKARYL SULFONATES AND THE COMPOSITION OBTAINED THEREBY

Wolfgang K. Seifert, Fairfax, Calif., assignor to Chevron Research Company, a corporation of Delaware

No Drawing. Filed Aug. 27, 1964, Ser. No. 392,598
9 Claims. (Cl. 260—505)

1. In a process for producing alkylaryl sulfonate by sulfonating an alkylaryl hydrocarbon having 9 to 18 carbon atoms in the alkyl groups with concentrated sulfuric acid to produce an alkylaryl sulfonic acid mixture and neutralizing said mixture, the improvement of producing a substantially odorless alkylaryl sulfonate detergent product which comprises neutralizing the alkylaryl sulfonic acid mixture to a pH of at least 7 and then incorporating into the neutralized mixture about 0.0001 to 0.1% by weight based on alkylaryl sulfonate of an alkali metal borohydride.

8. An odorless neutralized alkylaryl sulfonate detergent composition having 9 to 18 carbon atoms in the alkyl groups having incorporated therein about 0.0001 to 0.1% by weight based on the sulfonate detergent of alkali metal borohydride.

3,358,018

METHOD FOR THE EXTRACTION OF CARBOXYLIC ACIDS

Werner Muench, Barlassina, and Giovanna Ielo, Milan, Italy, assignors to Snia Viscosa Società Nazionale Industria Applicazioni Viscosa S.p.A., Milan, Italy, a company of Italy

No Drawing. Filed Apr. 20, 1964, Ser. No. 361,273
Claims priority, application Italy, Apr. 29, 1963, 8,914/63, Patent 694,779
4 Claims. (Cl. 260—514)

1. In a method for the quantitative recovery of carboxylic acids, free from lactam, from the raw product of a lactamisation reaction, said product being a solution which contains said acids, concentrated sulphuric acid, and caprolactam which is hydrolyzable when in the presence of a substantial amount of water, the improvement consisting in

adjusting, if necessary, the sulphuric acid concentration of said raw product to obtain a concentration from about 65% to about 85%,

extracting the carboxylic acids at between 35° C. and 100° C. from such raw product with an organic solvent inert and immiscible with sulphuric acid and not selective with reference to the carboxylic acids and caprolactam,

separating the organic acid phase and

recovering the carboxylic acid, essentially free of caprolactam, from the organic solvent.

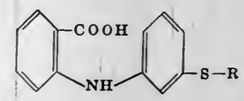
3,358,019

N-(m-BENZYLTHIO-PHENYL)-ANTHRANILIC ACID

Jany Renz and Jean-Pierre Bourquin, Basel, and Guido Gamboni and Gustav Schwarb, Allschwil, Switzerland, assignors to Sandoz Ltd., Basel, Switzerland

No Drawing. Filed Aug. 27, 1965, Ser. No. 483,349
Claims priority, application Switzerland, May 25, 1956, 33,612/56
10 Claims. (Cl. 260—516)

1. A compound of the formula:



wherein R signifies a straight or branched chain alkyl of 2 to 6 carbon atoms inclusive, or benzyl, and its physiologically acceptable salts.

3,358,020

CATALYTIC PROCESS FOR THE PRODUCTION OF UNSATURATED ALIPHATIC CARBOXYLIC ACIDS

Antonin Hendrickx, Anderlecht-Brussels, Belgium, assignor to UCB (Union Chimique-Chemische Bedrijven) S.A., Brussels, Belgium

No Drawing. Filed Jan. 3, 1964, Ser. No. 335,674
Claims priority, application Great Britain, Jan. 4, 1963, 568/63
8 Claims. (Cl. 260—530)

1. A process for the production of unsaturated aliphatic acid selected from the group consisting of acrylic acid and a mixture of acrylic acid with methacrylic acid, which comprises contacting in the vapor phase at a temperature between 300 and 500° C. a mixture of a corresponding unsaturated aldehyde selected from the group consisting of acrolein and methacrolein, oxygen and water vapor, with a catalyst consisting essentially of iron, molybdenum, vanadium and antimony in chemical combination with oxygen, the antimony to iron atomic ratio being between 1/1 and 10/1, the iron to vanadium atomic ratio

being between 1/0.1 and 1/3 and the iron to molybdenum atomic ratio being between 1/0.1 and 1/3.

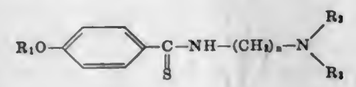
3,358,021
TRIPHENYLPHOSPHINIMINE DIHALOPHOSPHATES AND THEIR PRODUCTION
Rolf Appel, Bonn, Germany, assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia
No Drawing. Filed Dec. 13, 1963, Ser. No. 330,265
4 Claims. (Cl. 260—543)

1. Compounds of the formula $A_3P{:}N.POX_2$ in which A is phenyl and X is selected from the group consisting of chlorine and bromine.

2. Process for preparing a compound of the formula $A_3P{:}N.POX_2$ in which A is phenyl and X is selected from the group consisting of chlorine and bromine by reacting a trihalo-halide of the formula $[A_3P{:}N.PX_3]X$ with water at a temperature of 0° to 50° C. for 1 minute to 3 days.

3,358,022
THIOAMIDES
Pierre Reynaud, Moissy-Cramayel, France, assignor to Societe Anonyme dite: Laboratoire Roger Bellon, Neuilly-sur-Seine, Hauts-de-Seine, France, a French company
No Drawing. Filed Dec. 22, 1964, Ser. No. 420,428
Claims priority, application Great Britain, Dec. 24, 1963, 50,976/63
20 Claims. (Cl. 260—551)

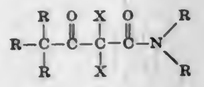
20. A compound selected from the group consisting of a thioamide of the formula



wherein
R_1 is lower alkyl,
R_2 and R_3 are identical lower alkyls, and
n is one of the integers 2 and 3, and
a pharmaceutically acceptable acid addition salt of said compound.

3,358,023
DEHALOGENATION PROCESS TO PRODUCE 2-MONO-HALO-ACETOACETAMIDES
James S. Birtwistle, White Plains, N.Y., and Elliot Bergman, Modesto, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Oct. 1, 1965, Ser. No. 492,295
9 Claims. (Cl. 260—561)

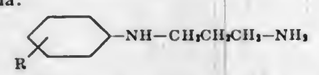
1. A process for converting a 2,2-dihaloalkanoylacetamide to the corresponding 2-haloalkanoylacetamide, which comprises reacting an amide having the structural formula



wherein each R is hydrogen or alkyl of 1 to 4 carbon atoms and each X is selected from the group consisting of chlorine and bromine with a halide salt of a metal selected from the group consisting of multi-valent transition metals, copper, mercury, and tin,
wherein the metal cation is not in its highest valence state, in a liquid solvent which is at least one member of the group consisting of water, alkanols of up to six carbon atoms and alkanemonocarboxylic acid of up to six carbon atoms.

3,358,024
N-ALKYLCYCLOHEXYL 1,3-PROPANEDIAMINES
Ernest L. Yeakey and George P. Speranza, Austin, Tex., assignors to Jefferson Chemical Company, Inc., Houston, Tex., a corporation of Delaware
No Drawing. Filed Nov. 9, 1964, Ser. No. 409,935
5 Claims. (Cl. 260—563)

1. An N-(alkylcyclohexyl)-1,3-propanediamine having the formula:



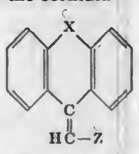
wherein R is an alkyl group containing from 3 to about 14 carbon atoms.

3,358,025
PROCESS OF RECOVERING 4,4'-METHYLENE-DI(ORTHO-ANILINES)
Ebenezer A. T. Foster, Cheshire, Alec Odinak, New Haven, and Adnan A. R. Sayigh, North Haven, Conn., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware
No Drawing. Filed Sept. 14, 1964, Ser. No. 396,357
3 Claims. (Cl. 260—570)

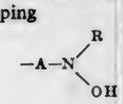
1. In a process for the preparation of 4,4'-methylenedi(o-chloroaniline) by condensation of formaldehyde with o-chloroaniline the improvement which consists of carrying out the condensation in aqueous sulfuric acid at 60° C. to 100° C. and separating 4,4'-methylenedi(o-chloroaniline) from the cooled reaction medium in the form of a precipitate of the 4,4'-methylenedi(o-chloroaniline) sulfate.

3,358,026
TRICYCLIC HYDROXYLAMINES
Herbert Schröter, Reinach, Basel-Land, and Daniel A. Prins, Oberwil, Basel-Land, Switzerland, assignors to Geigy Chemical Corporation, Greenburgh, N.Y., a corporation of Delaware
No Drawing. Filed May 3, 1965, Ser. No. 452,872
Claims priority, application Switzerland, May 6, 1964, 5,963/64
5 Claims. (Cl. 260—570.8)

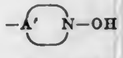
1. A compound of the formula



wherein X represents a member selected from the group consisting of $—CH_2—CH_2—$ and $—CH{=}CH—$,
Z represents a member selected from the group consisting of the grouping



and the grouping



in which groupings —A— represents alkylene of from 1 to 4 carbon atoms, and

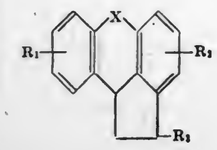


represents a member selected from the group consisting of C-pyrrolidinyl, C-pyrrolidinyl-methyl, C-piperidinyl, C-piperidinyl-methyl, C-hexahydroazepinyl and C-hexahydroazepinyl-methyl, and R represents alkyl of from 1 to 4 carbon atoms.

2. N - [3 - (10',11' - dihydro - 5'H - dibenzo[a,d]cyclohepten-5'-ylidene)-propyl]-N-methyl hydroxylamine.

3,358,027
DIBENZAZULENES
Cornelis van der Stelt, Haarlem, North Holland, Netherlands, assignor to N.V. Koninklijke Pharmaceutische Fabrieken v/h Brocades Stheeman en Pharmacia, Amsterdam, Netherlands, a corporation of Dutch law
No Drawing. Filed Aug. 13, 1964, Ser. No. 389,471
Claims priority, application Great Britain, Sept. 16, 1963, 36,436/63
8 Claims. (Cl. 260—576)

1. A compound selected from the group consisting of dibenzazulenes of the formula



and non-toxic acid-addition salts thereof, wherein X is selected from the group consisting of $—CH_2—CH_2—$ and $—CH{=}CH—$, R_1 and R_2 are each selected from the group consisting of hydrogen, halogen and lower alkyl, and R_3 is a basic nitrogen-containing radical of less than twelve carbon atoms.

3,358,028
CHLOROFLUOROBIS(DIFLUORAMINO) METHANE
Douglas H. Dybvig, Northfield, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
No Drawing. Filed Oct. 5, 1964, Ser. No. 404,200
1 Claim. (Cl. 260—583)

The compound chlorofluorobis(difluoramino)methane.

3,358,029
AMINE-BORON-PHOSPHORUS-CONTAINING ADDUCTS
Edwin C. Knowles, Poughkeepsie, George W. Eckert, Wappingers Falls, and Frederic C. McCoy, Beacon, N.Y., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware
No Drawing. Original application Nov. 21, 1963, Ser. No. 325,446, now Patent No. 3,325,261, dated June 13, 1967. Divided and this application Jan. 16, 1967, Ser. No. 623,484
5 Claims. (Cl. 260—583)

1. An amine-boron-phosphorus-containing adduct represented by the formula:

$$(RR'_2N)_y \cdot BPO_4$$

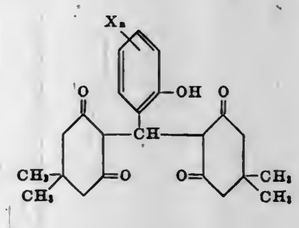
in which R is an aliphatic hydrocarbon radical having from 8 to 30 carbon atoms, R' is selected from the group consisting of hydrogen and an aliphatic hydrocarbon radical having from 1 to 30 carbon atoms, y is an integer from 1 to 4 and the total number of carbon atoms in said adduct is at least 24.

3,358,030
PROCESS FOR THE REARRANGEMENT OF EPOXIDES OF THE CYCLODODECANE SERIES
Günther Wilke and Peter Wilhelm Borner, Mulheim an der Ruhr, Germany, assignors to Studiengesellschaft Kohle m.b.H., a corporation of Germany
No Drawing. Filed Jan. 8, 1964, Ser. No. 336,343
Claims priority, application Germany, Mar. 31, 1958, St 13,598
9 Claims. (Cl. 260—586)

1. Process for the rearrangement of an epoxide to form a corresponding ketone which comprises contacting a member selected from the group consisting of 1,2-epoxy cyclododecane and 1,2-epoxy cyclododecadi-(5,9)-ene, in the presence of a catalytic amount of a member selected from the group consisting of magnesium bromide, magnesium perchlorate and magnesium iodide at a temperature of up to 200° C. and recovering the ketone thereby formed.

3,358,031
SUBSTITUTED BENZYLIDENE CYCLOHEXANEDIONES
Marvin L. Oftedahl, Crestwood, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed Feb. 9, 1966, Ser. No. 526,051
9 Claims. (Cl. 260—590)

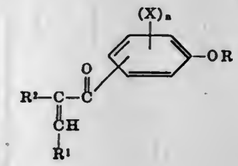
1. A compound of the formula



where X is selected from the group consisting of chlorine, bromine, CF_3, and NO_2, and n is an integer from 1 to 3.

3,358,032
NUCLEAR HYDROCARBYLOXY DERIVATIVES OF 2-ALKYLIDENEALKANOPHENONES
Everett M. Schultz, Ambler, and Edward J. Cragoe, Jr., Lansdale, Pa., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey
No Drawing. Filed Jan. 29, 1965, Ser. No. 429,153
17 Claims. (Cl. 260—592)

1. A compound of the formula:



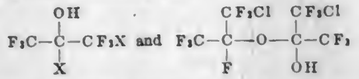
wherein R is a member selected from the group consisting of lower alkyl, a lower alkenyl radical of the formula: $—CH_2—CH{=}C(R^3)(R^4)$ and a lower alkynyl radical of the formula: $—CH_2—C{\equiv}CR^5$ wherein each of the foregoing R^3, R^4 and R^5 moieties represent similar or dissimilar radicals selected from the group consisting of hydrogen, lower alkyl, aryl, and aralkyl; R^1 is a member selected from the group consisting of hydrogen and lower alkyl; R^2 is a member selected from the group consisting of hydrogen, lower alkyl, trifluoromethyl-lower alkyl, mononuclear cycloalkyl containing 3–6 nuclear carbon atoms, aryl and aralkyl; X represents similar or dissimilar radicals selected from the group consisting of hydrogen, halogen, trifluoromethyl, lower alkyl and, when substituted on adjacent carbon atoms of the benzene nucleus, two X radicals are combined to form a hydrocarbylene chain selected from the group consisting of tetramethylene and 1,3-butadienylene; and n is an integer having a value of 1–4.

3,358,033
PROCESS FOR DEHYDROHALOGENATION OF FLUOROACETONE-HYDROGEN HALIDE COMPLEXES

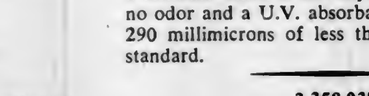
Louis G. Anello, Basking Ridge, and Anthony W. Yodis, Whippany, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Sept. 28, 1964, Ser. No. 399,907
4 Claims. (Cl. 260—593)

1. The process for decomposing compounds selected from the group consisting of



and



and mixtures thereof, wherein X is a member selected from the group consisting of chlorine and fluorine, which comprises contacting said compound with sulfur trioxide at temperatures between about 0° C. and about 500° C.

3,358,034
SELECTIVE HYDROBORATION PROCESS

Herbert C. Brown, 1840 Garden St.
West Lafayette, Ind. 47906

No Drawing. Filed Mar. 12, 1964, Ser. No. 351,556
15 Claims. (Cl. 260—606.5)

1. A process for selectively converting an alpha olefin content of a hydrocarbon mixture into a corresponding trialkylborane product, said hydrocarbon mixture including, in addition to said alpha olefin content, at least one member of the group consisting of an internal olefin content and a vinylidene olefin content, which process comprises heating a displaceable triorganoborane with said hydrocarbon mixture at a temperature in the range of from about 100° C. to about 250° C. and for a time sufficient to cause alpha olefin displacement of organo groups from said triorganoborane and to produce selectively the corresponding trialkylborane product.

3,358,035
1-CHLORO-2-(3-NITRO-4-CHLOROPHENYL-SULFONYL)ETHYLENE

Giuseppe Losco, Milan, Italy, assignor to Montecatini Edison S.p.A., Milan, Italy

No Drawing. Filed Feb. 28, 1963, Ser. No. 261,819
Claims priority, application Italy, Mar. 5, 1962, 4,249/62
1 Claim. (Cl. 260—607)

1-chloro - 2 - (3 - nitro - 4 - chlorophenyl - sulfonyl) ethylene.

3,358,036
PURIFICATION OF DIMETHYL SULFOXIDE

Allan Morenberg, Elizabeth, N.J., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Jan. 27, 1965, Ser. No. 428,542
11 Claims. (Cl. 260—607)

1. The method which comprises:

(a) treating dimethyl sulfoxide having a substantial amount of impurities, evidenced by a strong odor and by a U.V. absorbance, at a wave length of 290 millimicrons, of a much greater value than 0.10 using air as a standard, with an organic solvent selected from the group consisting of halogenated paraffin hydrocarbons, aromatic hydrocarbons, halogenated aromatic hydrocarbons, lower alkyl derivatives of aromatic hydrocarbons wherein the alkyl group contains between about 1 to about 4 carbon atoms, esters and ethers, thereby to form an organic solvent solution of said dimethyl sulfoxide;

(b) adding water to said organic solvent solution and intimately contacting said organic solvent solution with said water to form a uniform mixture, whereby dimethyl sulfoxide is extracted from said organic solvent solution into said water, forming thereby a water extract solution of dimethyl sulfoxide;

(c) allowing said mixture to settle into a distinct organic solvent phase and a distinct water extract phase containing dimethyl sulfoxide;

(d) separating said water extract phase from said organic solvent phase; and

(e) fractionally distilling said water extract phase under distillation conditions such that the liquid bottoms temperature does not exceed 108° C., thereby to produce, at an appropriate distillation temperature, a distillate which is dimethyl sulfoxide having almost no odor and a U.V. absorbance at a wave length of 290 millimicrons of less than 0.10, using air as a standard.

3,358,037
CONTINUOUS FREEZING PROCESS FOR PURIFYING DIMETHYL SULFOXIDE

John E. Allegretti, East Brunswick, and Michael Midler, Jr., Cranford, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

Filed June 28, 1965, Ser. No. 467,380
3 Claims. (Cl. 260—607)

1. The method of purifying liquid dimethyl sulfoxide which is relatively free of water but which has a substantial amount of impurities, as evidenced by a strong odor and a U.V. absorbence, at a wave length of 275 millimicrons, of a much greater value than 0.10 using water as a standard, comprising:

(a) passing said liquid dimethyl sulfoxide through a column containing activated carbon;

(b) chilling said liquid dimethyl sulfoxide, amid vigorous agitation, after it has passed through the activated carbon, sufficiently to freeze some of said dimethyl sulfoxide into a solid;

(c) separating the solid frozen dimethyl sulfoxide from the liquid unfrozen dimethyl sulfoxide;

(d) warming said frozen dimethyl sulfoxide and thereby obtaining as output, liquid dimethyl sulfoxide having almost no odor and a U.V. absorbence at a wave length of 275 millimicrons of less than 0.10 using water as a standard;

(e) recycling liquid unfrozen dimethyl sulfoxide from step (c), which is impurity-laden, to, and then through, the column of activated carbon used in step (a);

(f) successively repeating steps (b), (c), (d) and (e) as to the material recycled in step (e); and

(g) replacing the column of activated carbon, after it has become loaded with impurities from said dimethyl sulfoxide, with a column of fresh or regenerated activated carbon;

whereby the purification system operates to furnish material having substantially no odor and a U.V. absorbence at a wave length of 275 millimicrons of less than 0.10 using water as a standard, the impurities in the input dimethyl sulfoxide are accumulated in the activated carbon and removed from the system when the impurity-loaded activated carbon is removed from the system, and there is substantially no loss of dimethyl sulfoxide.

3,358,038
HALOMETHYL DIMETHYLBENZYL HYDROPEROXIDES

William G. Lloyd, Millburn, N.J., and Wendell L. Roelofs, Bloomington, Ind., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Original application Dec. 10, 1962, Ser. No. 243,656, now Patent No. 3,234,230, dated Feb. 8, 1966. Divided and this application Apr. 12, 1965, Ser. No. 459,493
2 Claims. (Cl. 260—610)

1. Ar-(halomethyl)-α,α-dimethylbenzyl hydroperoxide the halogen of which is chlorine, bromine, or iodine.

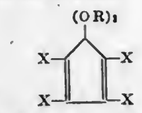
2. p - (Chloromethyl) - α,α - dimethylbenzyl hydroperoxide.

3,358,039
KETALS OF HEXACHLOROCYCLOPENTADIENE AND PROCESS FOR THEIR PREPARATION

Wen-Hsuan Chang, Gibsonia, Pa., assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania

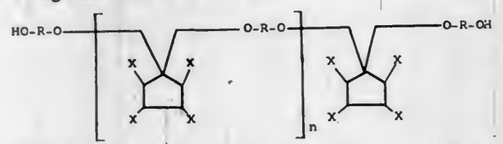
No Drawing. Filed Nov. 1, 1962, Ser. No. 234,847
13 Claims. (Cl. 260—611)

1. A compound of the formula:



where X is selected from the group consisting of chlorine and bromine and R is an organic radical containing 3 to 20 carbon atoms selected from the class consisting of hydroxyl-substituted members of the group consisting of alkyl, cycloalkyl, and alkoxyalkyl radicals, said hydroxyl substituents being the sole reactive functional substituent on said radicals, all hydroxyl groups in said radical being in at least the 3-position with respect to the ketal oxygen.

4. An open-chain polyketal consisting essentially of recurring units of the structure:



where *n* is 1 to 100, where X is selected from the group consisting of chlorine and bromine and R is an organic radical having 3 to 20 carbon atoms selected from the class consisting of alkylene, cycloalkylene and alkoxyalkylene groups and hydroxyl-substituted derivatives thereof, the ketal bonds of said organic radical being on at least the 3-position in said R group with respect to each other.

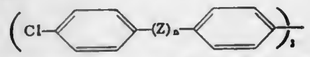
3,358,040
BIPHENYL DERIVATIVES

Matthew A. McMahon, Jr., Hopewell Junction, N.Y., assignor to Texaco Inc., New York, N.Y., a corporation of Delaware

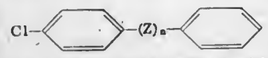
No Drawing. Filed June 15, 1964, Ser. No. 375,290
5 Claims. (Cl. 260—613)

1. 4,4'-bis(p-chlorophenoxy)biphenyl.

2. A method of preparing a biphenyl compound of the formula:



where Z is oxygen and *n* is a whole integer from 0 to 1 comprising contacting a diphenyl compound of the formula:



where Z and *n* are as heretofore defined with cupric chloride in the presence of aluminum chloride in a mole ratio of said diphenyl compound to said cupric chloride to said aluminum chloride of between about 1:1:1 and 1:1:4 at a temperature between about —20 and 100° C. in the presence of an inert liquid medium.

3,358,041
PREPARATION OF VINYL ETHERS AND CATALYST THEREFOR

Henry O. Mottern, Far Hills, and Morton W. Leeds, Murray Hill, N.J., assignors, by mesne assignments, to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York

No Drawing. Filed Oct. 22, 1965, Ser. No. 502,287
3 Claims. (Cl. 260—614)

1. The process for preparing vinyl ethers which comprises reacting together an acetylene hydrocarbon having the formula RC≡CH wherein R is H or an alkyl group and an alkanol containing up to 18 carbon atoms at a temperature between about 150° C. and 350° C. in the presence of a catalyst principally comprising a preformed calcium alcoholate of a lower alkanol thereby forming the vinyl ether of the first alkanol, and recovering said vinyl ether, the reaction being carried out in the vapor phase in a fluidized bed, and calcium carbide being added to the system in amounts to compensate for the catalyst decomposed during the course of the reaction.

3,358,042
PROCESS FOR RECOVERING POLYTETRAMETHYLENE ETHER GLYCOL

Andrew P. Dunlop, Riverside, and Edward Sherman, Chicago, Ill., assignors to The Quaker Oats Company, Chicago, Ill., a corporation of New Jersey

No Drawing. Filed Sept. 20, 1963, Ser. No. 310,449
7 Claims. (Cl. 260—615)

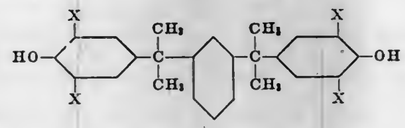
1. The process for recovering polytetramethylene ether glycol polymer from a catalytically active tetrahydrofuran-polymer-fluosulfonic acid mixture consisting essentially of the following steps: (1) substantially terminating the catalytic activity of said mixture by admixing water therewith; (2) removing tetrahydrofuran from the mixture resulting from step 1 by steam distilling or by heating the whole mass; (3) admixing a water-immiscible polymer solvent with the tetrahydrofuran-free mixture resulting from step 2, thereby forming a polymer solution, said solvent being selected from unreactive inert solvents which boil below 150° C. at atmospheric pressure, which are less than 10% soluble by weight in water based on the weight of water, and which dissolve one gram or more of 1000 M.W. polytetramethylene ether glycol polymer per 9 ml. of solvent; (4) admixing with said polymer solution a neutralizer selected from the group consisting of carbonates, bicarbonates, hydroxides and oxides of alkaline earth metals, ammonia, carbonates and bicarbonates of alkali metals, and mixtures thereof, said neutralizer being admixed in a quantity which is in stoichiometric excess of the acid remaining in the polymer; (5) removing uncombined water from the mixture resulting from step 4 by azeotropic distillation, or by contact with solid desiccants, sufficient water being added during the process prior to step 5 to provide uncombined water in the admixture resulting from step 4; (6) substantially removing suspended solids by a mechanical method from the mixture resulting from step 5; and finally, (7) distilling the solvent from the mixture resulting from step 6 under reduced pressure.

3,358,043
NEW HALOGENATED BISPHENOLS

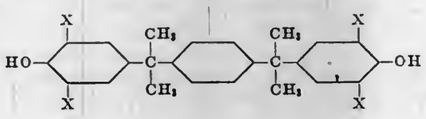
Richard B. Lund, Whippany, John Vitrone, Parsippany-Troy Hills Township, Morris County, and Logan C. Bostian, Morris Township, Morris County, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Oct. 4, 1962, Ser. No. 228,227
4 Claims. (Cl. 260—619)

1. A halogenated bisphenol selected from the group consisting of



and



wherein X is a halogen selected from the group consisting of chlorine and bromine.

3,358,044

METHOD FOR PREPARING PHENOL-TYPE COMPOUNDS EMPLOYING AN IMPROVED CATALYST

Joseph L. Russell, Ridgewood, N.J., and Alvin D. Silber, Riverdale, N.Y., assignors to Halcon International, Inc., a corporation of Delaware

No Drawing. Continuation of application Ser. No. 133,774, Aug. 25, 1961. This application Sept. 14, 1964, Ser. No. 396,350

1 Claim. (Cl. 260—621)

In a process for preparing a phenol from a crude oxygenated cyclohexane fraction containing at least one member of the group consisting of cyclohexanone and cyclohexanol and lower alkyl ring substituted derivatives thereof by vaporizing said fraction and diluting with hydrogen in an amount in the range of 0.02 to 0.30 gram of hydrogen per gram of total cyclohexanone and cyclohexanol therein and contacting the resulting mixture with a dehydrogenation catalyst at a temperature in the range of 250° to 425° C. at a liquid hourly space velocity in the range of 0.3 to 2.5 and recovering the phenol from the reaction product, the improvement which comprises using a platinum-on-active-carbon catalyst prepared by: refluxing active carbon with hydrochloric acid; water washing said refluxed active carbon free of acid; forming a solution by dissolving from 0.5 to 5 parts by weight of platinum as a platinum compound in water; admixing 100 parts of said water-washed active carbon with said solution; refluxing said admixture for about 16 hours, thereby absorbing said platinum on said active carbon to form a catalyst; separating said catalyst from the residual solution; and drying said catalyst.

3,358,045

SEPARATION OF THIOPHENOL IMPURITIES FROM CRESYLIC ACID

Enrique R. Witt, Corpus Christi, Tex., assignor to Celanese Corporation, a corporation of Delaware

No Drawing. Filed June 8, 1962, Ser. No. 200,946

4 Claims. (Cl. 260—627)

1. Process for the purification of an aqueous crude carbolate of a cresylic acid containing as an impurity, a dissolved sodium salt of a thiophenol which comprises incorporating into said crude carbolate dichloroethane; selectively reacting said dichloroethane with said thiophenol salt at about 50 to 110° C. to form a water-insoluble thioether which separates from said aqueous solution, the amount of said dichloroethane being sufficient to react with so much thiophenol as to significantly purify said carbolate solution; removing said thioether from the reaction mixture; and then mixing the remaining carbolate with acid to free the cresylic acid from the aqueous medium.

3,358,046

SELECTIVE CHLORINATION

Robert D. Offenhauer, Hopewell Township, Mercer County, and Paul G. Rodewald, Jr., Rocky Hill, N.J., assignors to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed Aug. 2, 1965, Ser. No. 476,720

16 Claims. (Cl. 260—650)

1. A process which comprises reacting gaseous chlorine, in the presence of a nuclear substitution chlorination catalyst with an alkylaromatic hydrocarbon of the group consisting of monoalkyl, para-dialkyl and symmetrical trialkyl benzenes containing at least 2 carbon atoms in each alkyl group and a total of at least 4 alkyl carbon atoms to form a nuclearly dichlorinated alkylaromatic hydrocarbon and dealkylating said dichlorinated alkylaromatic hydrocarbon to remove at least one alkyl group therefrom.

3,358,047

LINEAR ALKYLBENZENE COMPOSITIONS

Thomas Raymond Liston, Hamburg, N.Y., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Mar. 11, 1965, Ser. No. 439,057

5 Claims. (Cl. 260—668)

1. As a new composition of matter, a mixture of essentially normal phenylalkanes the n-alkyl substituents of which contain from 8 to 18 carbon atoms, and in which the proportion of the 2-phenyl isomer of each isomeric group present in significant amount is at least about 5% higher than the proportion of the 2-phenyl isomer of the next higher group, each with respect to its own isomeric group.

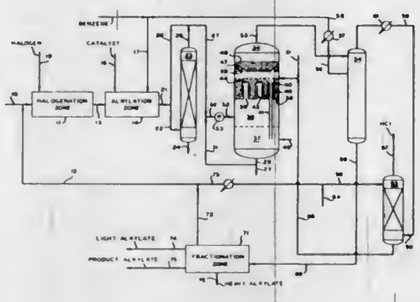
3,358,048

REMOVAL OF ALUMINUM CHLORIDE FROM HYDROCARBONS

Fred T. Sherk and Rolland E. Dixon, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

Filed June 26, 1964, Ser. No. 378,258

9 Claims. (Cl. 260—671)



9. In a process for the production of a detergent grade alkylate wherein n-paraffinic and isoparaffinic hydrocarbons wherein the number of carbon atoms per molecule is within the range of from 10 to 15 are chlorinated with chlorine in a chlorination zone under chlorination conditions to produce a mixture of chlorinated and nonchlorinated hydrocarbons, benzene is alkylated with said mixture of hydrocarbons in an alkylation zone in the presence of an aluminum chloride catalyst and a hydrogen chloride promoter under alkylation conditions to form an alkylate stream which contains a small but appreciable amount of said catalyst and said promoter, the improvement comprising: mixing said alkylate stream with an aqueous acid solution containing from 25 to 50 weight percent of hydrogen chloride and from 15 to 25 weight percent of a mineral acid selected from the group consisting of phosphoric acid, sulfuric acid, and mixtures thereof; passing the resulting mixture of acid solution and alkylate to a settling zone wherein phase separation into an aqueous phase and an alkylate phase occurs; passing said alkylate phase to a contacting zone; in said contacting zone, contacting said alkylate phase with a concentrated aqueous solution of hydrogen chloride containing from 25 to 45 weight percent of hydrogen chloride; and recovering a treated alkylate which is essentially free of aluminum chloride.

3,358,049

TREATMENT OF AROMATIC EXTRACTS

Norbert Schneider, Hamburg-Wilhelmsburg, Germany, assignor to The British Petroleum Company Limited, London, England, a British joint-stock corporation

No Drawing. Filed July 9, 1963, Ser. No. 293,905

Claims priority, application Germany, July 11, 1962, O 8,854

8 Claims. (Cl. 260—674)

1. In a method for selective solvent extraction of mineral lubricating oils to obtain a raffinate component and an extract component, said extract component consisting predominantly of aromatics and containing in addition more than 10% but less than 50% of paraffinic, naphthenic and hydro-aromatic hydrocarbons, as well as other alicyclic, aromatic and heterocyclic compounds, the improvement of separating the extract fraction into a fraction consisting of aromatics and at least one other fraction containing naphthenes which comprises adding a solvent selective for aromatics to the said extract component to form a mixture consisting of the solvent and the extract component, said solvent having a solidification point below the separation end temperature of the process at which, when cooled, the major portion of the naphthenic components will crystallize out, cooling the mixture consisting of the extract component and solvent slowly to the separation end temperature to crystallize out by low temperature fractional crystallization at least the major portion of naphthenes, slowly warming the cooled mixture with its content of precipitated material, until all precipitated material melts and two liquid layers are formed, and separating the liquid layers and recovering a fraction consisting essentially of aromatics and at least one other fraction containing naphthenes.

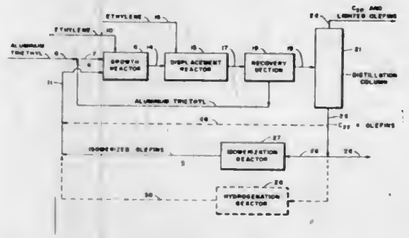
3,358,050

PRODUCTION OF ALPHA-OLEFINS

Jerry A. Acciarri and William B. Carter, Ponca City, Okla., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware

Filed Oct. 15, 1962, Ser. No. 230,526

14 Claims. (Cl. 260—683.15)



1. A process which comprises
(a) reacting a low molecular weight aluminum trialkyl with ethylene in the presence of a hydrocarbon diluent hereinafter defined to produce a growth product,
(b) reacting said growth product with a low molecular weight alkylene to produce a displacement product containing low molecular weight aluminum trialkyl and straight-chain alpha-olefins corresponding in carbon chain length with the alkyls of said growth product,
(c) separating the low molecular weight aluminum trialkyl from said displacement product,
(d) separating from the remainder of said displacement product a fraction comprising linear alpha-olefins of at least 20 carbon atoms, and
(e) returning at least a portion of said fraction of step (d) Step (d) to Step (a) as said diluent.

3,358,051

PROCESS OF CURING A BUTADIENE POLYMER

William D. Timmons, Jr., Charlotte, N.C., and James J. Robertson, Akron, Ohio, assignors to The Firestone Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Filed Nov. 23, 1964, Ser. No. 413,322

1 Claim. (Cl. 260—845)

The method of vulcanizing a polymer of the class consisting of homopolymers of butadiene and copolymers thereof which contain up to, but no more than, an equal amount of a comonomer, which comprises heating the polymer to vulcanizing temperature with 2 to 20 parts by weight per 100 parts by weight of the polymer of a material of 0.2 to 6 percent titratable chlorine content resulting from treating with weak alkali the reaction product of one mole of p-t-amyl phenol with at least two moles of formaldehyde in the presence of hydrogen chloride, using zinc oxide and magnesium oxide as curing agents, the magnesium oxide being present in an amount equal to 25 to 50 percent of the total of said oxides present.

3,358,052

POLYURETHANE COMPOSITION CONTAINING 0.2 TO 5% POLYOLEFIN OR POLYSTYRENE

William Archer, Jr., Eighty-Four, and Samuel Steingiser, Bridgeville, Pa., assignors to Mobay Chemical Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed May 4, 1964, Ser. No. 364,817

21 Claims. (Cl. 260—859)

1. As a new composition of matter a polyurethane polymer having a Shore hardness of between about 75–A and about 60–D in which is substantially uniformly dispersed about 0.2% to about 5% by weight based on the total weight of polyurethane elastomer of a chemically inert lubricating agent selected from the group consisting of polyolefins derived from olefins having 2 to 4 carbon atoms, polystyrene and mixtures thereof, said lubricating agent having a melt index of at least about 115.

3,358,053

CRYSTALLINE PROPYLENE POLYMER, CONTAINING 4–10% ETHYLENE, BLENDED WITH LINEAR POLYETHYLENE

Donald E. Hostetler, 35 Mountain Ave., Pompton Plains, N.J. 07444

No Drawing. Filed Nov. 9, 1964, Ser. No. 409,998

4 Claims. (Cl. 260—876)

1. A substantially crystalline composition consisting essentially of a homogeneous blend of a substantially crystalline ethylene/propylene copolymer with linear polyethylene; the polyethylene employed in an amount of 1 to 50 weight percent of the combined weight of copolymer and polyethylene; the copolymer containing from about 4 to 10 weight percent of ethylene and having an intrinsic viscosity of between about 1.0 to about 8.0 and a notched impact brittleness of about +6° C. and below; the linear polyethylene having a density of 0.93 to 0.96 and a melt index of substantially 0; said composition having a crystalline melting point of at least 150° C. and a tensile impact in ft. lbs./in.² above about 100.

3,358,054

GRAFT COPOLYMERS OF VINYL CHLORIDE ONTO ETHYLENE-VINYL ESTER COPOLYMERS

Dietrich Hardt, Bonn, and Herbert Bartl, Cologne-Stammheim, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed Aug. 30, 1963, Ser. No. 305,854

Claims priority, application Germany, Sept. 4, 1962, F 37,742

7 Claims. (Cl. 260—878)

1. A graft copolymer comprising vinyl chloride grafted onto a copolymer of ethylene and a vinyl ester, said eth-

ylene/vinyl ester copolymer containing from 20 to 80% by weight of a vinyl ester selected from the group consisting of vinyl alkanoate containing 2–6 carbon atoms in said alkanoate moiety and vinyl benzoate and the ratio by weight of vinyl chloride to said ethylene/vinyl ester copolymer in said graft copolymer being 0.5 to 99 parts by weight of vinyl chloride for each part by weight of said ethylene/vinyl ester copolymer.

3,358,055
ALPHA-OLEFIN POLYMERIZATION PROCESS

Michael Erchak, Jr., Ridgewood, and Joseph M. Kelley, Westfield, N.J., assignors to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware

No Drawing. Filed Feb. 20, 1964, Ser. No. 346,077
5 Claims. (Cl. 260—878)

1. In a continuous process for polymerizing an alpha-olefin monomer which comprises contacting said monomer with a catalyst produced by mixing together a metallic alkali metal, a titanium trichloride cocrystallized with aluminum chloride and tetrakis (dialkyl amino) silane, the alkali metal being present in an amount sufficient to effect the extent of reduction requisite to impart full catalytic activity to the catalyst, the improvement which comprises carrying out the polymerization reaction with the alpha-olefin monomer in the liquid phase by maintaining a pressure of at least 150 p.s.i.g. and a polymerization temperature of from 50° to 192° F., in the presence of hydrogen in amounts of from .0001 to .05 mole of hydrogen per mole of monomer, said polymerization being carried out in the absence of any diluent.

3,358,056
POLYMERIZATION PROCESS

Samuel Renaudo, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed June 1, 1964, Ser. No. 371,787
9 Claims. (Cl. 260—878)

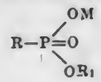
1. A two-step polymerization process comprising a step in which propylene as the sole monomer is polymerized in the presence of liquid propylene in the absence of additional liquid diluent at a temperature within the range of 80 to 150° F. and a step in which ethylene is polymerized in the presence of liquid propylene in the absence of additional liquid diluent at a temperature within the range of −50 to 75° F., the step which is carried out second being performed in the presence of the polymer produced in the first, using a catalyst formed by mixing materials comprising (*a*) a compound having the formula R_nMX_m, wherein R is selected from the group consisting of alkyl, cycloalkyl and aryl radicals, X is selected from the group consisting of hydrogen and a halogen, M is selected from the group consisting of aluminum, gallium, indium and thallium, *n* is from 1 to 3, inclusive, *m* is from 0 to 2, inclusive, and the sum of *m* and *n* is equal to the valence of the metal M, and (*b*) a halide of a metal selected from the group consisting of metals of Groups IV–A, IV–B, V–B, VI–B, and VIII.

3,358,057
MONOESTERS OF PHOSPHONIC ACIDS AND ALKALI METAL OR ALKALINE EARTH METAL SALTS THEREOF

Emile Cherbuliez and Joseph Rabinowitz, Geneva, Switzerland, assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Filed Nov. 24, 1965, Ser. No. 509,649
4 Claims. (Cl. 260—958)

1. A compound represented by the formula

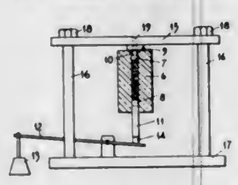


wherein R is selected from the group consisting of phenyl, halogeno-phenyl and nitro-phenyl, R_1 is cycloalkyl, and M is selected from the group consisting of alkali metals and alkaline earth metals.

3,358,058
METHOD OF MANUFACTURE OF SHAPED ARTICLES FROM DISPERSIONS OF CELLULOSIC AND LIKE MATERIALS

Howard Harold Walter Losty, Watford, England, assignor to The General Electric Company, Limited, London, England, a British company

Filed Apr. 13, 1967, Ser. No. 630,671
Claims priority, application Great Britain, Dec. 15, 1961, 45,021/61
14 Claims. (Cl. 264—29)



1. A process for the production of a shaped article from a dispersion in a liquid medium of a material which is a member of the group consisting of cellulosic and hemicellulosic materials, said dispersed material being in a comminuted state such that it consists of individual fibrils of diameter not greater than one micron and of length not greater than thirty microns, which process includes the steps of:

(A) extracting liquid from the dipersion in at least one stage which comprises

(I) placing a quantity of the said dispersion in a die (*a*) of which at least a part of the wall is formed of liquid-permeable graphite having pores on the internal surface communicating with pores on the external surface through channels within the graphite, said pores and channels being of diameter not greater than ten microns and smaller than the lengths of the fibrils, and

(II) applying a pressure difference between the exterior of the die and the mass of dispersion within the die (*a*) such that the dispersion is under higher pressure than the exterior of the die, (*i*) so that liquid is extracted from the dispersion through the said liquid-permeable graphite wall of the die, (*ii*) the extracted liquid being removed rapidly from the vicinity of the die, and (*iii*) the residual material retained within the die is formed into a shape the exterior of which is determined by the shape of the interior of the die,

(B) Drying the said residual material to give a shaped body of regenerated material of the group consisting of cellulosic and hemicellulosic materials.

12. The process for the production of a shaped article of low permeability carbon which comprises:

(A) firstly, preparing a dispersion in a liquid of a material which is a member of the group consisting of cellulosic and hemicellulosic materials, by beating a mixture of the said material and liquid medium in such a manner that entrainment of an appreciable quantity of air in the dispersion takes place,

(I) said dispersion containing less than 5% by volume of said dispersed material, and

(II) said dispersed material being in a comminuted state such that it consists of individual fibrils of diameter not greater than one micron and of length not greater than thirty microns;

(B) secondly, extracting the liquid from the said dispersion in a plurality of stages, the liquid extraction process comprising the steps of

(I) placing the said dispersion in a die of which at least a part of the wall is formed of liquid-permeable graphite having pores on the internal surface communicating with pores on the external surface through channels within the graphite, said pores and channels being of a diameter not greater than ten microns and smaller than the lengths of the fibrils,

(II) enclosing the said die containing the dispersion in a vacuum-tight vessel and evacuating the vessel, a pressure difference between the exterior of the die and the mass of dispersion within the die being produced by virtue of the pressure exerted on the dispersion by the air entrained therein, (*a*) so that liquid and the said entrained air are extracted from the dispersion through the said graphite wall of the die and (*b*) the residual material retained within the die is formed into a shape the exterior of which is determined by the shape of the interior of the die, (*c*) said residual material within the die being in plastic, partially regenerated form containing from 10% to 40% by volume, of solid material, and

(III) pressing the said plastic material within the die by means of a plunger inserted through the top of the said vessel, so that further liquid is extracted from the plastic material through the said graphite wall of the die,

(IV) the liquid extracted through the said graphite wall of the die in both said evacuation and pressing steps being removed rapidly from the vicinity of the die;

(C) thirdly, drying the shaped body produced by said liquid extraction process;

(D) fourthly, subjecting said dried shaped body to a carbonisation heat treatment which comprises the steps of

(I) heating the dried body slowly to 450° C. (*a*) in an atmosphere of nitrogen (*b*) at a pressure of up to 200 atmospheres,

(II) then heating the body to 750° C in vacuum, and

(III) finally baking the body at a temperature in the range of 1500° C. to 2600° C. in an inert atmosphere.

3,358,059
METHOD OF FILLING ENCLOSURES WITH LOW DENSITY PARTICULATED MATERIAL

Robert P. Snyder, Saginaw, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Apr. 20, 1964, Ser. No. 361,020
3 Claims. (Cl. 264—51)

1. The method of depositing low density particulated material between walls which form a substantially air-tight enclosure, except for vent and fill holes hereinafter provided, for said material comprising:

providing a vent hole and a fill hole in said walls;

inserting an elongated slotted vent tube through said vent hole, said vent tube extending substantially the entire length of said enclosure and having slots throughout its length;

inserting a fill nozzle in said fill hole;

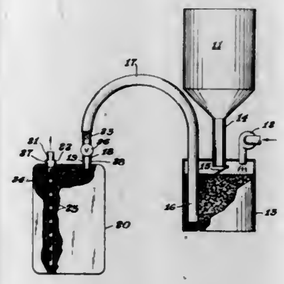
discharging an air stream containing said low density particulated material from said fill nozzle into said enclosure and venting the air stream without the low density particulate material from said vent tube as said material deposits in said enclosure, whereby the slotted vent tube effectively functions as a filter mat promoting the dispersion of insulation throughout the enclosure, until no more material can enter said enclosure; then

withdrawing said vent tube and removing said fill nozzle and closing said fill and vent holes.

3. The method of filling a cavity in a mold with a low density partially expanded thermoplastic resin comprising:

providing a vent hole and a fill hole in said mold;

inserting an elongated vent tube in said vent hole, said tube extending substantially the entire length of said cavity and having slots throughout its length;



inserting a fill nozzle in said fill hole;

discharging an air stream containing said low density resin from said nozzle into said cavity and venting the air stream without the low density resin from said vent tube as said low density resin deposits in said cavity, by the filter action of said vent tube, until no more resin can enter said cavity;

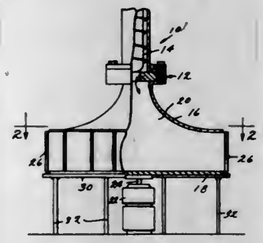
withdrawing said vent tube while continuing to discharge said air stream into said cavity until said vent tube has been displaced by said low density resin; then

withdrawing said fill nozzle and closing said vent and fill holes.

3,358,060
APPARATUS AND METHOD FOR EXTRUDING THICK FOAM PLASTIC

Ernest O. Ohsol, Wilmington, Del., assignor to Haveg Industries, Inc., Wilmington, Del., a corporation of Delaware

Filed June 25, 1965, Ser. No. 467,004
10 Claims. (Cl. 264—51)

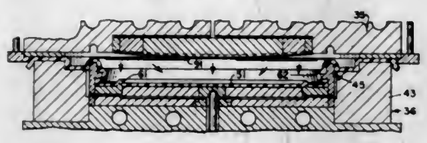


1. A method for producing a thick strip of foamed plastic material comprising: extruding foamable plastic material radially in all directions from an axis thereby causing said material to expand and form a cake of continually increasing dimension normal to said axis; and continuously cutting a strip of foamed plastic from the periphery of said cake by imparting relative movement between said cake and a cutting member.

3,358,061
METHOD AND APPARATUS FOR HEAT SHAPING OF PLASTIC

Lester Gidge, 61 Linwood St., and Valmor R. Poulin, Jr., 70 Forest Park Drive, both of Nashua, N.H. 03060

Filed Sept. 7, 1965, Ser. No. 485,177
13 Claims. (Cl. 264—89)



9. A method of venting articles of sheet plastic material being shaped in heat softened condition between forming means and a die having a substantially flat planar face portion, said method comprising the steps of

forming the said planar face portion of said die in at least two parts of aluminum, and juxtaposing said parts to form a mechanically tight, close fitting zero clearance joint therebetween,

forming a hard anodic oxide coating on the said planar aluminum faces of said members to form microscopic air channels thereon too imperceptible to form visible marks in the finish of said article,

forming a hard anodic oxide coating on the mating aluminum surfaces of the abutting side walls of said members forming said joint in the face of said die, to form said microscopic air channels therealong, and

shaping the plastic sheet by differential fluid pressure while channelling any air entrapped between said sheet material and the said planar face portion of said die along the channels in said faces and thence along the channels in said joint to thereby dissipate said air.

10. In apparatus for shaping articles from plastic material, said apparatus including a forming recess with a forming face and fluid pressure means acting on said plastic material to press the same against said face, the combination of

gas passage means in said face, said means comprising at least two individual members of imperforate metal, said members each having a face forming part of the face of said recess and each having a side wall contact fitting the other with zero clearance to define a joint extending from the face of said recess away from said plastic material, and

a hard crystalline surface containing a multiplicity of microscopic protuberances separated by microscopic recesses in the form of pock marks and cracks, imperceptible to the eye, but extending over at least one of the side walls of said joint,

said microscopic recesses in said side wall of said joint, jointly forming an air passage in the face of said recesses while said joint creates no visible mark in said plastic material.

3,358,062
MOLDING METHOD FOR MAKING SEALED ARTICLES

Jerome H. Lemelson, 85 Rector St., Metuchen, N.J. 08840

Filed June 16, 1965, Ser. No. 464,400
10 Claims. (Cl. 264—96)

9. A method of pressurizing a hollow body comprising:

forming a hollow body with a hollow tubular conduit formation extending inwardly from a wall thereof as an integral extension of said wall,

providing the material of said tubular formation in a flexible semi-molten condition,

disposing an injector nozzle in said tubular conduit,

injecting a fluid through said nozzle into the interior of said body to pressurize said body,

withdrawing said nozzle from said tubular formation in a manner permitting the fluid pressure within said body to collapse said tubular formation and causing



the walls of said tubular formation to become welded together by abutment of the semi-molten walls thereof when they solidify to seal off said formation and enclose said fluid under pressure within said body.

3,358,063
PROCESS FOR UPGRADING ORIENTED VINYLIDENE CHLORIDE POLYMER FILMS

Glenn C. Wiggins, Russell L. Butler, and William R. R. Park, Midland, and Harold J. Townsend, Saginaw, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Mar. 25, 1965, Ser. No. 442,826
7 Claims. (Cl. 264—130)

1. A method for the production of readily heat-sealable, transparent, non-blocking composite film-like structures which comprises (1) depositing a coating of an aqueous dispersion of an essentially amorphous polymer containing at least about 80 weight percent of vinylidene chloride in the polymer molecule and having a softening point of less than about 120° C., on the surface of an oriented crystalline vinylidene chloride polymer film having a residuum of an essentially water soluble lubricating liquid selected from the group consisting of ethylene glycol and propylene glycol thereon, then (2) drying said coating by heating means to form a continuous, adherent coating on said oriented crystalline vinylidene chloride polymer film.

3,358,064
ENCAPSULATING MOLDING COMPOSITION AND METHOD FOR MOLDING THE SAME

William R. Belko, Jr., Huntington, Conn., assignor to Vitramon Incorporated, Monroe, Conn., a corporation of Delaware

No Drawing. Filed Mar. 24, 1964, Ser. No. 354,437
8 Claims. (Cl. 264—236)

1. A novel heat-curable resinous powder composition for the forming of bodies having high moisture resistance comprising a heat-curable resinous powder having uniformly mixed therewith a minor amount equal to at least about 0.25 percent by weight based upon the weight of the resinous powder of a liquid heat-curable silicone polymer which is substantially incompatible with the resinous powder and which is capable of remaining substantially uncured under the temperature and time conditions used to substantially completely cure the resinous powder such that the silicone polymer will seal the cured resinous composition.

6. The method of molding bodies having high moisture resistance which comprises the steps of filling a mold with a resinous molding composition comprising a heat-curable epoxy resin having uniformly mixed therewith a minor amount equal to at least about 0.25 percent by weight based upon the weight of the epoxy resin of a liquid heat-curable silicone polymer which is substantially incompatible with the epoxy resin and which is capable of remaining substantially uncured under the temperature and time conditions used to substantially completely cure the epoxy resin; applying heat and pressure to the mold for a relatively short period of time to substantially completely cure the epoxy resin while the liquid silicone polymer remains substantially uncured; and removing the molded body from the mold to an oven and heating to a temperature and for a period of time sufficient to substantially completely cure the silicone polymer.

3,358,065
METHOD OF RETAINING A BEARING

Sherwood G. Enders, Bowleys Quarters, Md., assignor to The Black and Decker Manufacturing Company, Towson, Md., a corporation of Maryland

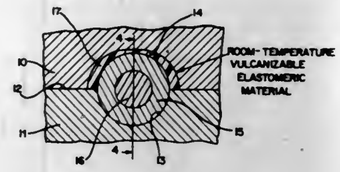
Filed Oct. 21, 1965, Ser. No. 499,481
4 Claims. (Cl. 264—262)

1. The method of retaining a bearing between separate housing members, at least one of which is provided with a bearing seat, comprising:

(a) providing an elastomeric material in a substantially plastic state in the space between the bearing and its seat; and

(b) securing the housing members together with the bearing and the elastomeric material therebetween;

(c) whereby the elastomeric material may be deformed at least partially in conforming to the space between



the bearing and its seat as the housing members are secured together; and

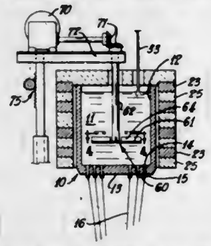
(d) curing the elastomeric material to a substantially solid state to provide a resilient bearing support.

ELECTRICAL

3,358,066
APPARATUS FOR MELTING AND FEEDING HEAT-SOFTENABLE MATERIALS

Ralph L. Tiede, Newark, Ohio, and Hellmut I. Glaser and John H. Willis, Anderson, S.C., assignors to Owens-Corning Fiberglas Corporation, a corporation of Delaware

Filed Apr. 22, 1964, Ser. No. 361,657
8 Claims. (Cl. 13—6)



1. Apparatus of the character disclosed, in combination, a metal-walled melting chamber adapted to reduce pieces of heat-softenable mineral material to a molten state, a circular metal-walled feeder chamber, orifice means formed in said melting chamber adapted to flow molten material into said feeder, means for heating the contents of said feeder, and circular disc means concentrically located within said feeder for stirring said molten material in said feeder to maintain a uniform temperature and viscosity of said molten material, said stirring means including a power shaft, said power shaft being directed upwardly through said orifice in said melting chamber, said molten material in said melting chamber being directed downwardly through said orifice along said power shaft to reduce the turbulence of flow.

3,358,067
ELECTRIC MELT VESSEL

Paul W. Dillon and Charles G. Robinson, Sterling, Ill., assignors to Northwestern Steel & Wire Company, Sterling, Ill., a corporation of Illinois

Filed Nov. 23, 1964, Ser. No. 413,264
6 Claims. (Cl. 13—23)

1. In an electric arc melting vessel,

a melting part in the general form of an inverted truncated cone,

an outlet spout leading radially from the bottom of said melting part,

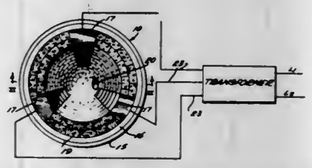
a shaft portion extending above said melting part and forming a generally cylindrical upward continuation thereof,

a steel shell for said melting and shaft parts,

a refractory lining for said shell,

insulation disposed between said lining and shell,

carbon compound blocks spaced 120° apart, extending upwardly along said melting part from positions adjacent the bottom thereof and generally conforming to the truncated cone-like contour of said melting part, and subjected to the weight of the charge in the vessel, and

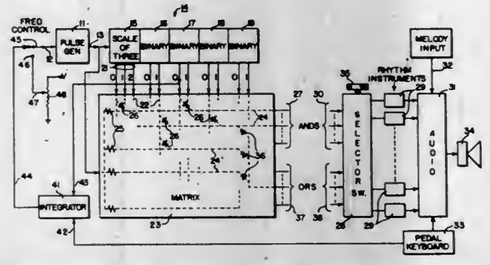


a transformer having a wide voltage range supplying power to said blocks in accordance with the resistance of the material being melted and pressing against said blocks to maintain a maximum melting efficiency of the vessel.

3,358,068
AUTOMATIC RHYTHM DEVICE

Richard H. Campbell, Jr., Gilford, N.H., assignor to The Seeburg Corporation, Chicago, Ill., a corporation of Delaware

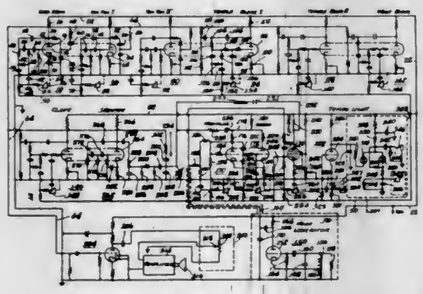
Filed June 26, 1964, Ser. No. 378,365
11 Claims. (Cl. 84—1.01)



1. An electronic musical instrument for generating continuous repetitive rhythm patterns comprising a repetitive pulse generator having a frequency corresponding to a multiple of the basic rhythm frequency for said instrument, a multistage frequency divider coupled to said generator for couting down submultiples of the frequency of

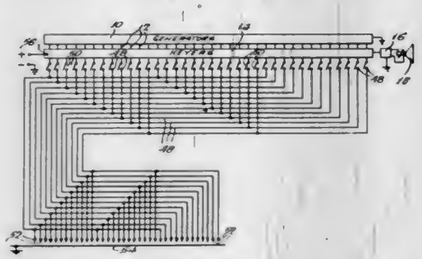
said generator, a matrix connected to the stages of said frequency divider and to said pulse generator for producing a plurality of outputs each consisting of a different predetermined combination of pulses from said generator, and means for selectively coupling different ones of said outputs to energize rhythm circuits with the combinations of pulses on the selected outputs.

3,358,069
RHYTHM DEVICE
Joseph H. Hearne, Corinth, Miss., assignor to The Wurlitzer Company, Chicago, Ill., a corporation of Ohio
Continuation of application Ser. No. 96,135, Mar. 16, 1961. This application Sept. 19, 1966, Ser. No. 580,504
18 Claims. (Cl. 84—1.03)



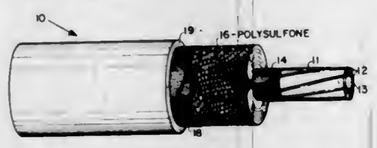
14. Apparatus for producing percussive musical effects comprising a damped oscillator normally biased to non-oscillating condition, means for keying said oscillator to bias it for decaying oscillation, a source of a wide range of audio-frequency electrical energy, an amplifier connected to said source, means normally biasing said amplifier beyond cut off, means for keying said amplifier to conduct said wide range of audio-frequency electrical energy, a common amplifier, means connecting said common amplifier to said damped oscillator and to said first mentioned amplifier, electro-acoustic translating means connected to said common amplifier, and electronic repeater means connected to at least one of said keying means for cyclically operating said keying means.

3,358,070
ELECTRONIC ORGAN ARPEGGIO EFFECT DEVICE
Alan C. Young, Park Ridge, Ill., assignor to Hammond Corporation, a corporation of Delaware
Filed Dec. 3, 1964, Ser. No. 415,682
12 Claims. (Cl. 84—1.17)

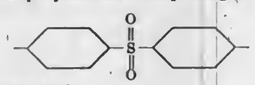


1. In an electrical musical instrument, an output system, a plurality of signal sources for supplying tone signals of the musical scale over a range of more than one octave, and means adapted when actuated for selectively connecting the sources to the output system, said connecting means comprising: a first keyboard of more than one octave having a key therein for each of said sources, a main keyboard of more than one octave having playing keys of substantially standard size, and circuit means including contacts actuated by keys of the first said keyboard and contacts actuated by said standard size keys and connected for actuating a signal source connecting means when the corresponding key of the first said keyboard for the source is actuated and contemporaneously the corresponding unison key or an octavely related key in the main keyboard is actuated, with said first and said main keyboards being positioned so that both may be easily played contemporaneously by an average player.

3,358,071
HIGH VOLTAGE CABLES INSULATED WITH POLYSULFONE TAPES
Edward D. Eich, Tarrytown, and Ralph G. D'Ascoli, Yonkers, N.Y., assignors to Anaconda Wire and Cable Company, a corporation of Delaware
Filed May 29, 1967, Ser. No. 657,462
4 Claims. (Cl. 174—25)

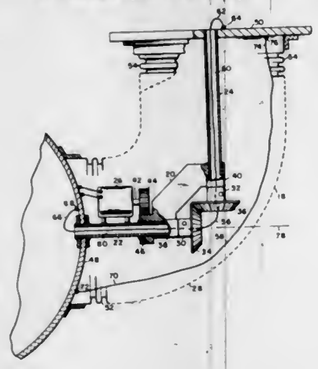


1. A high-voltage electric cable comprising:
(A) a conductor,
(B) a plurality of layers of polysulfone tape surrounding said conductor,
(a) said polysulfone comprising a recurrent



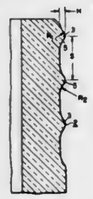
linkage, and
(b) said layers having a combined wall thickness of at least about ½ inch,
(C) a tubular sheath surrounding said layers, and
(D) a dielectric fluid within said sheath.

3,358,072
COUPLING
Edwin H. Wrench, 411 Archer St., La Jolla, Calif. 92037
Filed Aug. 3, 1964, Ser. No. 386,899
6 Claims. (Cl. 174—86)



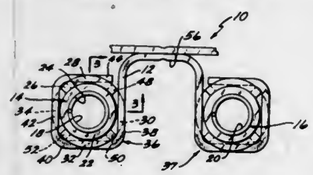
1. In combination:
(A) a conductor;
(B) a coupling including two bodies carrying the conductor;
(C) means for supporting one of the bodies rotatably with respect to the other body;
(D) gearing supported by the means (C) and connecting the bodies including:
(1) a gear fixed on one of the bodies;
(2) a gear fixed on the other body, the axes of the gears being at angles with respect to one another, said gears having one to one ratio;
(E) and means for preventing rotation of the supporting means about the axis of the gear on the rotatable body when rotation is imparted to the rotatable body relative to the other body.

3,358,073
PORCELAIN CASING BEAD CONSTRUCTION
James R. Gamble, Unity Township, Greensburg, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 3, 1966, Ser. No. 531,598
6 Claims. (Cl. 174—137)



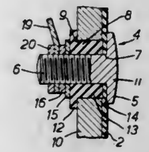
1. An insulating cylindrical porcelain casing having an externally-provided circumferentially-extending bead configuration adaptable to fixedly secure an encompassing mounting flange ring, or the like, by a cemented construction, said bead configuration providing a bead spacing between 0.38 inch and 1.00 inch and a bead height between 0.06 inch and 0.12 inch.

3,358,074
INSULATOR-FRAME ARRANGEMENT FOR AN ELECTRIC HEATER
John M. Himes, Hartford, Wis., assignor to E. R. Wagner Manufacturing Company, Milwaukee, Wis., a corporation of Wisconsin
Filed June 2, 1965, Ser. No. 460,764
11 Claims. (Cl. 174—138)



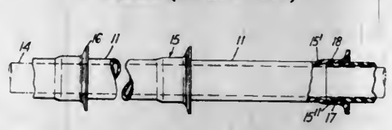
4. An arrangement for supporting a coil of an electric heater and comprising, in combination,
a plurality of electrical insulators each comprising a hollow generally cylindrical body having an internal electric coil receiving opening and external radially projecting surfaces, said radially projecting surfaces including first and second circumferentially extending portions arranged on and axially spaced with respect to said body, said first and second portions being of limited circumferential extension on said body,
and frame means including generally polygonal-shaped, insulator engaging portions including a plurality of leg portions, said insulator engaging portions arranged with said leg portions having limited peripheral engagement with said insulators and disposed axially between said first and second circumferentially extending portions with said first portion in engagement with said polygonal-shaped portions on one axial side thereof and said second portion in engagement with said polygonal-shaped portions on the axially opposite side thereof to prevent relative axial movement between said insulators and said frame portions.

3,358,075
SEALED ELECTRODE ASSEMBLY
Donald Robert Hunt, Stroud, England, assignor to George Kent (Stroud) Limited, Stroud, England
Filed Sept. 23, 1965, Ser. No. 489,606
Claims priority, application Great Britain, Sept. 24, 1964, 39,045/64
3 Claims. (Cl. 174—153)



1. An insulated tube and electrode assembly comprising a tube wall having a radial bore, an inner lining of an electrical insulating cold-flowing thermoplastic material on said wall, the lining having a radial bore of less diameter than and aligned with the bore in the wall, a rigid insulating bush with an inner cylindrical portion adjoining an external flange portion, the inner portion fitting within the radial bore wall and being of a length greater than the wall thickness so that an inner end section of the bush projects at the inner side of the wall to seat into the lining and the flange portion engaging the outer surface of the tube to define the inner projection of the bush, an electrode having a shank and an inner end head for electrical contact with liquid flowing through the tube, the head having a pointed ridge disposed adjacent the periphery of the head and biting into the lining, with the shank passing through the bush and having a screw-threaded section projecting externally thereof, and a clamping nut on the threaded shank section which is tightened to clamp and grip the lining between the rigid bush and the electrode head to provide a double seal resulting from the deformation of the lining on one side by the inner end of the rigid bush and on the other side by the electrode ridge, said electrode ridge preventing the cold flow of the gripped lining portion from between the rigid bush and the electrode head.

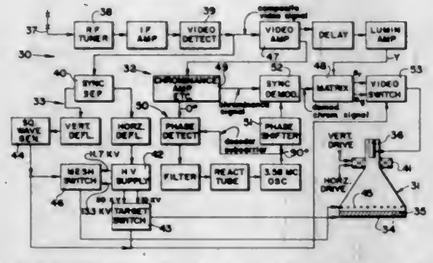
3,358,076
PROTECTED ROD INSULATOR
Edgardo Rebosio, Milan, Italy, assignor to British Insulated Callender's Cables Limited, London, England, a British company
Filed Dec. 27, 1965, Ser. No. 516,340
Claims priority, application Italy, Dec. 24, 1964, 54,801
2 Claims. (Cl. 174—179)



1. An electric insulator comprising a rod of resin bonded glass fibre and, over at least a major part of the length of said rod, a protective covering built up of a plurality of axially aligned short sleeves of relatively non-tracking elastomeric polymeric material, each of which sleeves is flared at one end, said flare being internally screw threaded over a part of its length, and is externally screw threaded at its other end, the flared end of each

of the sleeves overlying and being in screw threaded engagement with the externally screw threaded end of an adjacent sleeve and the internally screw threaded flare end of each sleeve having a taper of such an angle that the externally screw threaded end of the adjacent sleeve engaged thereby is caused to grip, and make a seal fit with, the rod.

3,358,077
COLOR DECODER USING SINGLE SYNCHRONOUS DEMODULATOR
Nathan Gold, Sharon, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed Oct. 15, 1964, Ser. No. 404,047
2 Claims. (Cl. 178—5.4)



1. A television receiver for reproducing a scene being televised in color using the red-white system of color analysis from a color television signal transmitted by modulating on the main picture carrier of a television channel a composite video signal that includes a luminance signal matrixed from the red, green and blue content of a scanned element and representative of its brightness, a coded chrominance signal in the form of a subcarrier of predetermined frequency whose amplitude and phase are functionally related to the saturation and dominant wavelength respectively of the scanned element, and a sync signal to which the phase of said chrominance signal is referred; said receiver comprising:

(a) a decoder including means for synchronously demodulating said coded chrominance signal at a predetermined phase relative to said sync signal to obtain a single demodulated chrominance signal; and means for matrixing only said demodulated signal with said luminance signal to obtain two simultaneous video signals, the first of which is functionally related to substantially only the red content of said scanned element and the second of which is functionally related to substantially only the green content of said scanned element;

(b) a kinescope having a viewing screen with at least two different types of cathodoluminescent elements whose selective excitation causes said screen to selectively emit reddish and substantially achromatic light; and

(c) means for causing said elements to be excited in accordance with said first and second video signals such that said first signal determines the amount of reddish light on said screen and said second signal determines the amount of achromatic light.

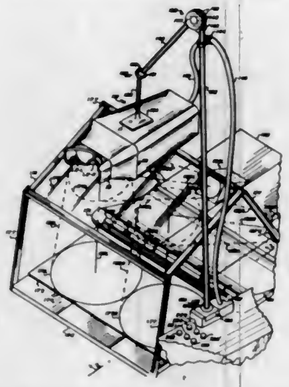
3,358,078
APPARATUS FOR MAKING WIDE-ANGLE STEREOSCOPIC CARTOONS
Harvey L. Ratliff, Jr., Amarillo, Tex., assignor of one hundred percent to Jetru Inc., Amarillo, Tex.
Filed June 27, 1963, Ser. No. 291,198
7 Claims. (Cl. 178—6.5)

1. In apparatus for hand rendering, in compressed and therefore distorted form, wide angle stereoscopic pictures upon flat surfaces with the angle of view exceeding 120° in the horizontal plane and 100° in the vertical plane:

at least one right eye view and at least one left eye view picture surface within corresponding cells for retaining hand rendered images thereupon, said images being hand rendered in compressed and therefore distorted form;

first means of supporting the picture surfaces;

wide angle stereoscopic viewing apparatus which expands the angular disposition of rays of light which are representative of the distorted images on said picture surfaces from a compressed angular disposition to an expanded wide angle disposition substantially



free of distortion whereby the rays which are representative of the peripheral areas of said picture surfaces enter the eyes to create the sensation of a view greater than said 120° in said horizontal plane and and said 100° in said vertical plane;

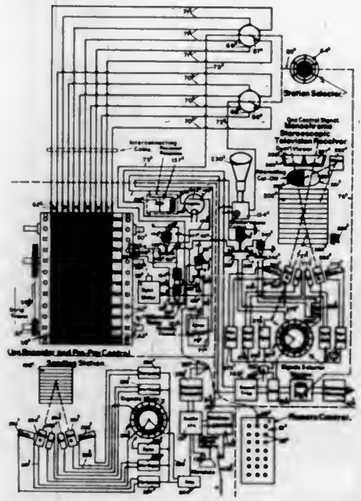
second means of supporting said wide angle stereoscopic viewing apparatus in position to be looked into by the eyes of an observer;

thus enabling said observer to hand render flat wide angle stereoscopic pictures within said picture surfaces in compressed form and therefore, necessarily very distorted to the naked eye.

3,358,079
STEREOSCOPIC TELEVISION INCLUDING MEANS TO SELECT EITHER THREE DIMENSIONAL OR TWO DIMENSIONAL RECEPTION
Thomas A. Banning, Jr., 5500–5520 South Shore Drive, Apt. 1408, Chicago, Ill. 60637
Filed Aug. 2, 1963, Ser. No. 299,560
9 Claims. (Cl. 178—6.5)

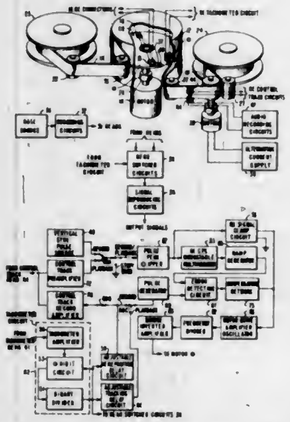
1. In a television system, the combination of a sending station including means to produce and emit first defined sets of video signals which when received and translated in a receiver produce a raster corresponding to viewing an object from a first defined vantage point, and including means to produce and emit second defined sets of video signals which when received and translated in said receiver produce a raster corresponding to viewing said object from a second defined vantage point, said video signals producing and emitting means including means to emit the first defined sets of video signals and the second defined sets of video signals in successive alternation; together with a receiver including means to receive both sets of video signals in the alternation of their production and to translate said two sets of video signals with production of rasters in such alternation and with production of a three dimensional picture, or to translate video signals corresponding to viewing said object from a single vantage point and with production of a two dimensional picture, selectively; and receiver operator controlled means in connection with said receiving and translating means, constituted either to cause translation of

both of the sets of video signals alternatively, corresponding to viewing said object from two vantage points alternatively and with production of the three dimensional pic-



ture, or to cause translation of the video signals corresponding to viewing such object from a single vantage point, with production of the two dimensional picture, selectively.

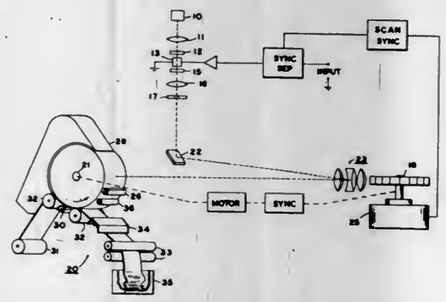
3,358,080
CONTROL SYSTEM FOR WIDEBAND RECORDING AND REPRODUCING SYSTEMS
Donald B. MacLeod, Redwood City, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California
Filed Apr. 20, 1964, Ser. No. 360,850
31 Claims. (Cl. 178—6.6)



1. A servo system for controlling the operation of a moving member in different modes, including the combination of servo means having a selected servo bandwidth for driving the moving member in synchronism with a time stable reference during operation in a first mode, means providing a timing signal representative of actual speed variations in the moving member during operation in the first mode, and means coupled to receive the timing signal, for modifying the operation of the servo means to provide a normally substantially narrower servo bandwidth during operation in a second mode.

6. In a magnetic tape recording and reproducing system for television program material, which system includes a pair of scanning heads on a cyclically operating head drum that alternately scan the tape helically to record or reproduce successive television fields, the combination comprising: control track recording and reproducing means disposed in operative relation to a longitudinal track on the tape; head tachometer signal generator means coupled to the scanning heads and providing at least a pair of successive control signals to denote selected starting points in the head drum cycles; means coupled to the signal generator means for providing tachometer control signals which denote head drum starting points by selected phase components of the tachometer control signal; adjustable delay means coupled to receive the tachometer control signals; means coupling the tachometer control signals to the control track recording and reproducing means during operation in the record mode; means providing time stable reference pulses; servo comparator means including a pair of input terminals and providing a servo error signal as output; means coupling the stable reference pulses and the tachometer control signals to the servo comparator means during operation in the record mode; means coupling the tachometer control signals and reproduced control signals and reproduced control signals from the control track recording and reproducing means during operation in the reproduce mode; compensation network means receiving the servo error signal and providing a variable signal dependent upon the level of the servo error signal; means coupled to said servo comparator means and responsive to one of the sequences of signals provided thereto for clamping the servo error signal at a selected nominal level in the absence of signals in the sequences applied thereto; means coupled to the compensation network means for providing a square wave motor drive signal; an induction motor coupled to receive the motor drive signal and to rotate in response thereto; and mechanical compliance means coupling the motor to the head drum.

3,358,081
FACSIMILE PRINTER WITH FERROELECTRIC MODULATOR
James E. Young, Pittsford, and David C. Harper, Rochester, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Oct. 20, 1964, Ser. No. 405,126
7 Claims. (Cl. 178—6.6)



3. Apparatus for recording information from an electrical signal comprising:

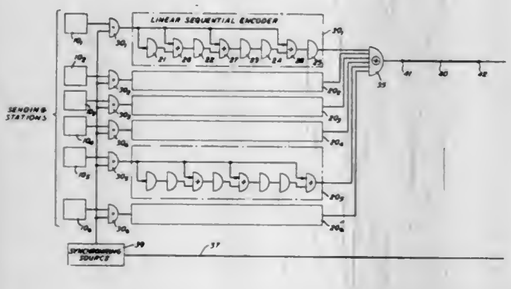
(a) a photosensitive surface adapted for motion in a specific direction;

(b) means for producing a plane polarized collimated light beam;

(c) a transparent electro-optic polarization plane rotating crystal positioned in the path of said light beam;

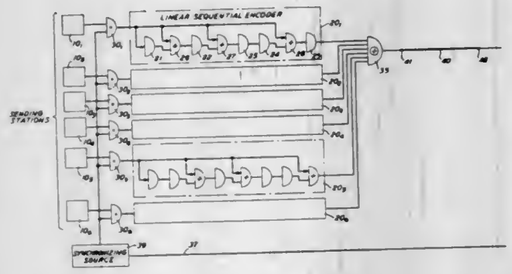
(d) means for applying an electric field across said crystal in accordance with said electrical signal;
(e) a polarization analyzer element positioned in the path of said light beam and adjacent to the side of said crystal from which said light beam emerges;
(f) means for directing said light beam upon emergence from said polarization analyzing element into successive linear traces upon said photosensitive surface, the direction of said traces being at right angles to said specific direction.

3,358,082
TIME DIVISION MULTIPLEX DIGITAL TRANSMISSION ARRANGEMENT
Harry A. Helm, Morristown, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed July 28, 1964, Ser. No. 385,564
13 Claims. (Cl. 178—50)

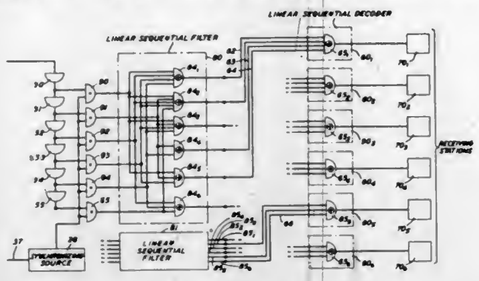


10. In combination, a plurality of linear sequential encoders each comprising the selective series connection of a plurality of delaying elements and a plurality of logic gates for applying signals directly to selected ones of said delaying elements, and a first modulo 2 adding gate having a plurality of input terminals thereon each connected to a different one of said encoders.

3,358,083
TIME-DIVISION MULTIPLEX DIGITAL TRANSMISSION ARRANGEMENT EMPLOYING A LINEAR DIGITAL FILTER
Harry A. Helm, Morristown, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed July 28, 1964, Ser. No. 385,565
14 Claims. (Cl. 178—50)

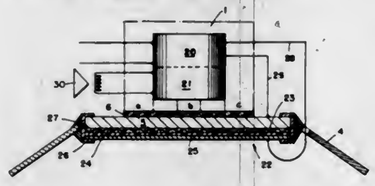


13. In combination, a circuit terminal, encoding means connected to said terminal for selectively supplying thereto one of a plurality of digital words corresponding to the columns of a matrix [P], registering means connected to said terminal for registering said selectively supplied word, and linear sequential filtering means connected to



said registering means for selectively passing said selectively supplied digital word only if it is one of a preselected number of said plurality of digital words.

3,358,084
ELECTROMAGNETIC SOUND REPRODUCER
William J. Ashworth, Rte. 2, New Albany, Miss. 38652
Filed Feb. 17, 1964, Ser. No. 345,451
17 Claims. (Cl. 179—1)

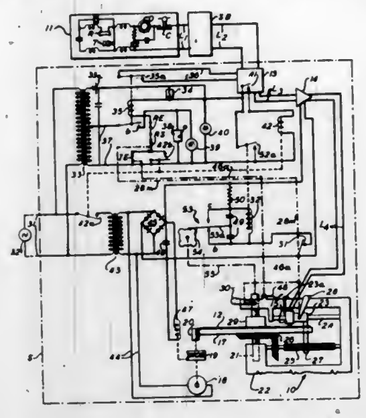


1. An electro. agnetic sound reproducer comprising a diaphragm of resilient flexible material for imparting sound impulses into the ambient air, a plate of magnetic material secured to said diaphragm, an electromagnet having an iron frame with a primary winding thereon, said electromagnet spaced a predetermined distance from said plate for magnetic attraction between said plate and said electromagnet, means of supporting said diaphragm and means for holding said electromagnet in a spaced relation with said plate, wherein the said electromagnet provides coupling means for operatively connecting to at least one auxiliary sound reproducer, wherein said electromagnetic sound reproducer imparts a predominantly lower frequency sound into the ambient air than said auxiliary sound reproducer which imparts a predominantly higher frequency sound into the ambient air than said electromagnetic sound reproducer, wherein at least one of said auxiliary sound reproducers is of the predominantly capacitive type with means for operatively connecting said electromagnetic sound reproducer to an energy source.

3,358,085
DRIVE-FAILURE CONTROL APPARATUS FOR DICTATING MACHINES
Donald B. Gibson, Passaic, N.J., assignor to McGraw-Edison Company, Elgin, Ill., a corporation of Delaware
Filed Mar. 2, 1964, Ser. No. 348,449
8 Claims. (Cl. 179—6)

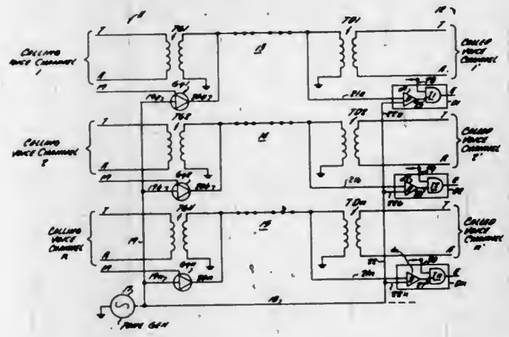
1. In an electrical apparatus to be connected to a source of power: the combination of a fuse for disabling the apparatus upon blowout of the fuse, a reciprocable single-pole double-throw switch, means operable by said power source for reciprocating said switch between its contacts, a voltage cut-down resistor, a pair of condensers serially connected via said resistor across said power source, means connecting the contacts of said switch

across said condensers and the pole of the switch to the junction between said condensers for shorting said condensers alternately as said switch is reciprocated to cause the build-up of voltage across the condensers to vary inversely with the speed of reciprocation of said switch,



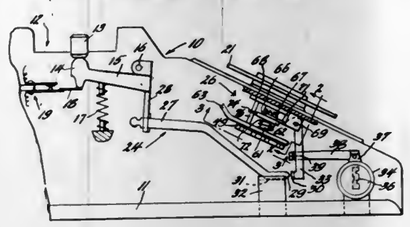
and a relay controlled according to the voltage across said condensers for short-circuiting said power source via said fuse to blowout the fuse and disable said apparatus when the relay is operated by failure of said reciprocating means to alternate said switch at a predetermined speed.

3,358,086
SUPERVISORY SIGNAL DETECTOR
John Bereznak, Oaklawn, Ill., assignor to International Telephone and Telegraph Corporation
Filed June 25, 1964, Ser. No. 377,896
16 Claims. (Cl. 179—16)



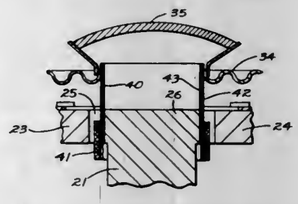
1. A supervisory signalling circuit for transmitting supervisory signals over completed paths connecting calling voice channels to selected called voice channels comprising tone generator means simultaneously connected to said calling and called voice channels for generating a certain tone, tone gate means operated responsive to said supervisory signals for connecting said tone generator means to a selected one of said completed paths through one of said calling voice channels, and detector means individually connected to said called voice channels and to said tone generator, said detector means operated responsive to simultaneously receiving said certain tone from said tone generator and said selected called voice channel for producing desired supervisory signals at said selected called voice channel.

3,358,087
TELEPHONE INSTRUMENT DIALING CONTROL DEVICE
Robert H. Von Stein, Winston-Salem, N.C., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed May 21, 1964, Ser. No. 369,080
9 Claims. (Cl. 179—90)



1. In a telephone instrument, the combination of
signal generating means for producing signals representing digits of a telephone number to be called, and
means for permitting signals to be produced by the signal generating means up to a predetermined number of times only and means responsive to the production of said signals up to a predetermined number of times for preventing the production of such signals after the production of the predetermined number thereof.

3,358,088
ELECTROMECHANICAL TRANSDUCER
Robert A. Gault, Paducah, Ky., assignor to CTS Corporation, Elkhart, Ind., a corporation of Indiana
Filed June 5, 1964, Ser. No. 373,024
7 Claims. (Cl. 179—115.5)

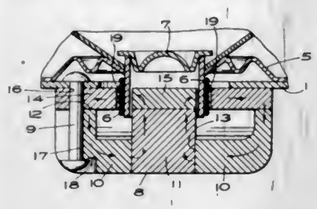


5. In an electromechanical transducer having a stationary magnetic structure, a voice coil operably associated with the stationary magnetic structure, said voice coil comprising a winding for energization during operation, and a diaphragm secured to the voice coil the improvement in said transducer comprising, a bobbin for supporting the winding, said bobbin consisting of a first lamination of thermally conductive material and a lamination of electrically nonconductive material fixedly bonded to said first lamination, said winding wound on said bobbin in close proximity to said first lamination whereby during operation the heat generated by the winding is rapidly dissipated by the first lamination.

3,358,089
MAGNET ASSEMBLY
Rollin J. Parker, Greenville, Mich., assignor to General Electric Company, a corporation of New York
Filed June 10, 1964, Ser. No. 374,050
6 Claims. (Cl. 179—117)

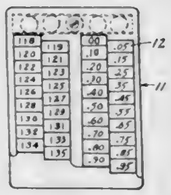
1. A permanent magnet assembly adapted for use in a permanent magnet loudspeaker comprising a cup-shaped directional grain permanent magnet having a rim at a first end thereof and a hole at the opposite base end thereof and a pole piece cast integrally within the hole in the base

of the cup-shaped magnet, the magnet being oriented crystallographically and magnetically in a direction along the contour of the cup-shaped magnet from the hole in the



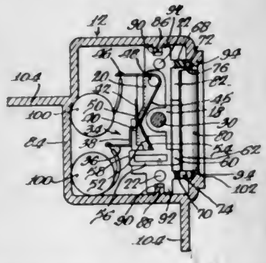
base to the rim thereof, said direction of orientation adapted to coincide with the path of the magnetic circuit in said loudspeaker.

3,358,090
PUSHBUTTON CONTROL WITH RETAINING AND DISABLING MEANS
Samuel H. Smith, 31429 Nantucket Row, Bay Village, Ohio 44140
Filed Mar. 11, 1963, Ser. No. 264,252
21 Claims. (Cl. 200—5)



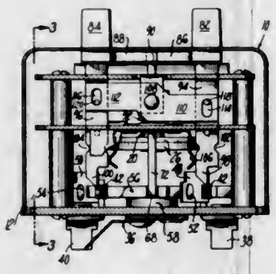
1. A control unit for selecting one of a plurality of positions on communication equipment, said control unit comprising:
(a) a plurality of operator units each selecting a different one of said positions when pressed;
(b) retaining means connected to each of said operator units to retain each operator unit in a selected position when individually pressed; and,
(c) disabling means connected to said retaining means to prevent all but one of said operator units being retained in the selected position when several units are collectively pressed.

3,358,091
MULTIPLE SWITCH
Charles A. Dyle, Chicago, Ill., assignor to Hammond Corporation, a corporation of Delaware
Filed June 20, 1966, Ser. No. 558,733
8 Claims. (Cl. 200—5)



1. A multiple switch organization comprised of a multiplicity of identical side-by-side stacked switch wafers, each of said wafers comprising a thin housing of insulating material having a flat back surface and a front reentrant surface providing a cavity therein, so that the back of one of said housings closes the cavity in the adjacent housing in the stack, a stationary contact strip and a flexible contact strip having a movable portion both housed within said cavity, said strips having terminal portions fixed in said housing and passing through the wall thereof, an actuator mounted to move transversely through said housing and bring said movable contact portion against said stationary contact strip when one end of said actuator is subjected to pressure, said flexible strip acting to restore said actuator after the pressure is removed, each of said housings being formed externally to provide a pair of slots in alignment with each other and with the actuator said one end, a finger engaging element having portions guided in said slots and overlying said actuator one end, a channel member enclosing the major portion of said stack of switch wafers and having elements overlying said slots to prevent loss of said finger engaging elements, and said channel member exposing at least a portion of all of said finger engaging elements.

3,358,092
PRESETTABLE TIMER
Jesse K. Clark, Newington, and James A. Draghi, Manchester, Conn., assignors to M. H. Rhodes, Inc., Hartford, Conn., a corporation of Delaware
Filed Feb. 1, 1966, Ser. No. 524,291
9 Claims. (Cl. 200—38)

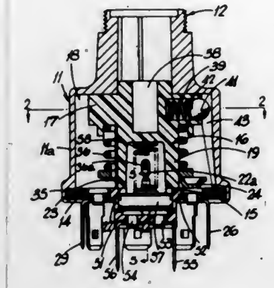


1. A presettable timer including a switch assembly having a control member movable to initiate and terminate timed operation; a latch preventing movement of the control member and being releasable to permit movement of the member with simultaneous initiation of a timed operation and at least a pair of operating levers, means mounted on each lever so as to independently release the latch, said levers being associated with different operations to be timed whereby the action of one of said levers against the latch releases the control member and simultaneously initiates the operation associated with the actuation of that lever.

3,358,093
IGNITION SWITCHES
Edward Cryer, Burnley, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England, a British company
Filed Feb. 2, 1967, Ser. No. 613,656
Claims priority, application Great Britain, Feb. 17, 1966, Ser. No. 7,075/66
1 Claim. (Cl. 200—44)

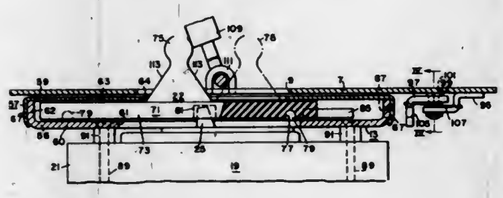
An ignition switch comprising in combination a first hollow casing, a rotor, means mounting the rotor for angular movement within said first casing, a contact board closing one end of said first casing, said contact board having a central hole formed therein, movable contacts carried by the rotor, co-operating detent means on said

first casing and said rotor serving to define operative positions of the switch, said movable contacts engaging respective fixed contacts carried by said contact board in said operative positions, a second casing non-rotatably engaged in said hole in the contact board, a pair of fixed contacts carried by said second casing, a conductive roller



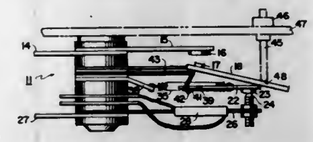
carried by said rotor and located within said second casing, a cam form on the inner surface of said second casing, and means urging said roller into engagement with said cam form, said roller riding on said cam form as the rotor is moved angularly, and the shape of said cam form being such that said roller bridges the pair of fixed contacts carried by said second casing in one of the operative positions of the switch.

3,358,094
ELECTRIC CONTROL DEVICE WITH IMPROVED OPERATING MEANS FOR CIRCUIT INTERRUPTING STRUCTURE
Robert P. Metz, Monroeville, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Sept. 29, 1965, Ser. No. 491,266
7 Claims. (Cl. 200—50)



1. A circuit interrupting structure adapted for use in an enclosure having an openable cover structure with an opening therein and a latch part thereon, said circuit interrupting structure comprising a circuit interrupter and a handle-operating mechanism mounted on said circuit interrupter, said circuit interrupter comprising a pair of contacts and an operating lever movable between operating positions to open and close said contacts, said handle-operating mechanism comprising a support, an operating member mounted on said support for rectilinear movement, said operating member being operatively connected to said operating lever, said operating member being rectilinearly movable between two operating positions to operate said operating lever to open and close said contacts, and an interlock part on said operating member for cooperating with said latch part to latch said cover structure closed when said circuit interrupting structure is in the contact-closed position.

3,358,095
RESET MECHANISM FOR A STACK SWITCH WHICH AVOIDS CLOSED CIRCUIT CONDITION WHEN A TRIPPING CONDITION PREVAILS
Edward S. Arlin, Norwalk Township, Ohio, assignor to Norwalk Thermostat Company, Norwalk, Ohio, a corporation of Ohio
Filed Apr. 4, 1966, Ser. No. 539,795
3 Claims. (Cl. 200—67)

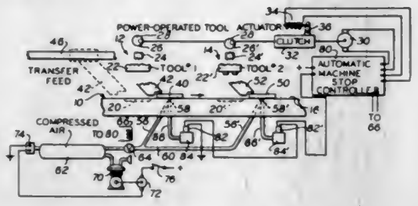


1. A resettable electric switch comprising a support column; a first contact blade insulatingly mounted on said column to extend radially therefrom; a first contact on said blade and spaced from said column; a first terminal engaging said first blade; a second resilient contact blade insulatingly mounted on said column radially aligned with said first blade relative to said column, adjacent said first blade, and mechanically biased toward said first blade; a second contact on said second blade oriented to abut said first contact; an extension on said second blade extending from said column beyond said second contact; a third blade insulatingly mounted on said column to extend radially therefrom; an electrical connecting means between said second and third blades in the vicinity of said column; a fourth blade insulatingly mounted on said column to extend radially therefrom and radially aligned with said third blade relative to said column; a fourth contact mounted on said fourth blade and spaced from said column; a snap-action assembly mounted on said third blade in electrical communication therewith said snap-action assembly having an actuated portion remote from the point at which it is mounted on said third blade; a third contact mounted on said actuated portion of said snap-action assembly to engage said fourth contact while in a first stabile position of said snap-action assembly; said snap-action assembly having a second stabile position with said actuated portion abutting said extension on said second blade; a second terminal engaging said fourth blade; means for displacing the portion of said fourth blade mounting said fourth contact whereby said snap-action assembly is transferred from said first to said second stabile position; and shiftable means having a terminal portion abutting said extension on said second blade for displacing said second blade from said first blade and toward said third blade and transferring said snap-action assembly from said second stabile position to said first stabile position, whereby operation of said shifting means opens the circuit between said first and second terminals at said first and second contacts for all positions of said shifting means which are effective for shifting said snap-action assembly.

3,358,096
POWER-OPERATED TOOL ACTUATOR
George Wintriss, Carversville, Pa., assignor to Industrionics Controls, Inc., New York, N.Y., a corporation of New York
Filed Sept. 1, 1965, Ser. No. 484,202
11 Claims. (Cl. 200—81.6)

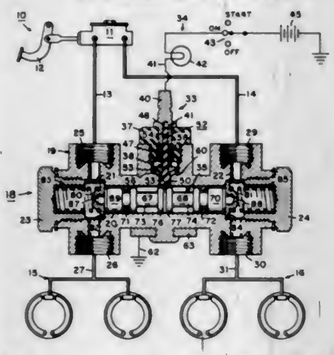
1. In an automatic machine having a station from which a work piece is delivered at a predetermined time in a normal cycle of the machine, a transfer table along which the work piece travels from the work station, an airflow orifice adjacent to the path of the work piece and in position to have its air stream altered as said work piece travels past the airflow orifice, a piping system

through which air flows to the orifice, an enclosed electric switch having a pressure-responsive actuator in direct communication with the interior of the piping system and subject to pressure fluctuations in the piping system upstream from the orifice resulting from alterations in



the air stream discharging from the piping system through said orifice for moving the switch between open and closed position, and control apparatus for stopping the machine, said switch being in a circuit of said control apparatus.

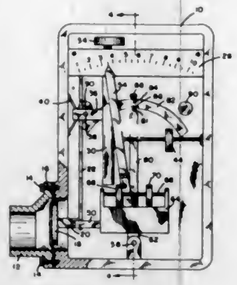
3,358,097
FLUID PRESSURE INDICATING MEANS
Raymond J. Kersting, Dellwood, Mo., assignor, by mesne assignments, to Wagner Electric Corporation, a corporation of Delaware
Filed July 21, 1966, Ser. No. 566,924
13 Claims. (Cl. 200—82)



1. A fluid pressure responsive control device comprising a housing, switching means movable in said housing, other means reciprocally movable in said housing and controlling said switching means, a pair of opposed fluid pressure responsive portions on said other means and defining with said housing a pair of opposed fluid pressure chambers, a pair of ports in said housing connected with said chambers and spaced from said portions, a pair of resilient means in said chambers for engagement with said portions to oppose movement of said other means, said other means being movable against one of said resilient means toward a position actuating said switching means in response to a sustained predetermined fluid pressure differential between applied fluid pressure at said ports acting on said opposed portions, and a pair of orifice means between said ports and opposed portions to dampen surges in the applied fluid pressure and obviate the switching means actuating movement of said other means in response thereto.

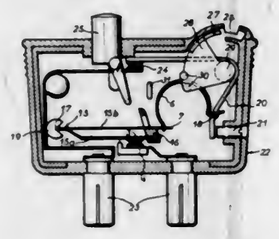
3,358,098
HYDROSTATIC GAGE AND LEVEL CONTROL
Ralph W. Hill, Tulsa, Okla., assignor to Major Engineering Company, Tulsa, Okla., a corporation of Oklahoma
Filed Jan. 4, 1965, Ser. No. 423,002
4 Claims. (Cl. 200—83)

4. Apparatus for adjusting the deflection per unit load comprising:
a housing;
a spring beam member one end of which pivots about a shaft fixed to said housing, the other end being against a load;
a fulcrum support frame pivotally supported to said housing;



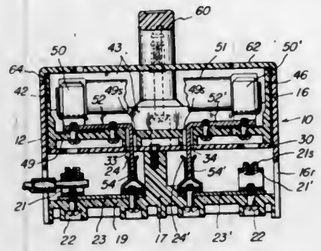
a fulcrum edge slideably received by said support frame and abuttable on that side of said beam member opposite the direction of said load; and
means connected with said support frame to adjust said fulcrum shaft with respect to said beam member and thereby vary the deflection per unit load.

3,358,099
BIMETALLIC-STRIP AND ROCKABLE-SPRING ACTUATED SNAP-ACTING SWITCH DEVICE
Michel de Bellomayre, 69 Ave. R. Poincare, Paris, France
Filed Dec. 23, 1965, Ser. No. 516,004
Claims priority, application France, Dec. 30, 1964, 468
5 Claims. (Cl. 200—113)



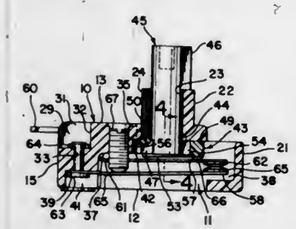
1. An electric snap-acting switch device of the abutting contact type comprising a fixed contact stud and a movable contact stud, the latter stud being movable in a plane through the former stud and substantially normal to contact engaging faces thereof, a switch actuating system for controlling said movable contact stud comprising a bimetallic strip having a hairpin shape with two prongs extending from a mutual junction portion to two end portions spaced from each other in said plane and movable therein toward and away from each other angularly about said junction portion upon temperature variations affecting said bimetallic strip, one of said prongs being adjacent said fixed contact stud and carrying said movable contact stud while the other prong is remote from said fixed contact stud, means for pivotally supporting said bimetallic strip at said junction portion thereof about an axis substantially perpendicular to said plane, an arcuate-shape leaf spring having a first end in hinged engagement with the end portion of said remote prong and a second end opposite said first end, and further means for pivotally supporting said leaf spring at said second end thereof about an axis substantially perpendicular to said plane, whereby said bimetallic strip is bodily movable in said plane and said prongs thereof are further individually movable in said plane with respect to each other.

3,358,100
FUSED PULLER SWITCH WITH FUSES WHICH CAN BE REMOVED ONLY WHEN THE FUSED SECTION IS FIRST REMOVED
Harold E. Schleicher, West Hartford, Conn., assignor to The Arrow-Hart & Hegeman Electric Company, Hartford, Conn., a corporation of Connecticut
Filed Mar. 3, 1966, Ser. No. 531,452
5 Claims. (Cl. 200—114)



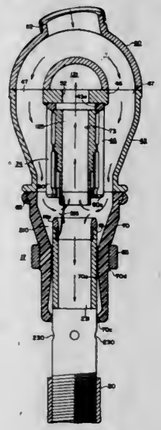
3. A fused puller switch comprising a base section and a fuse section, said base section comprising a hollow insulation receptacle, a plurality of pairs of line and load contacts, means partitioning said base receptacle into a plurality of separate, isolated compartments with one of said contacts mounted in each, said fuse section comprising a hollow insulation receptacle having a bottom and side walls, means to mount a plurality of fuses within said fuse receptacle on the bottom wall thereof, a plurality of blade contacts mounted in said fuse section and extending through its bottom wall in position to engage said line and load contacts, respectively, when said base and fuse sections are joined, a cover mounted on said fuse section which with the side and bottom walls thereof provides an enclosure for the fuses and their mounting means at all times, a handle on said cover situated in the middle of the cover, and removable means securing said cover on said fuse section and said handle on said cover, said removable means being removable only when the fuse section is separated from the base section.

3,358,101
CREEP TYPE THERMOSTATIC CONTROL HAVING FINE TEMPERATURE ADJUSTMENT
Howard W. Bletz, Mansfield, Ohio, assignor to Therm-O-Disc, Incorporated, Mansfield, Ohio, a corporation of Ohio
Filed Oct. 11, 1965, Ser. No. 494,466
5 Claims. (Cl. 200—139)



1. A thermostatic control device comprising a body formed with a switch cavity, switch means in said cavity including a spring contact support with a first contact carried thereby and mobile contact means on one side of said spring contact support, said mobile contact means providing a mobile contact movable toward and away from said first contact in response to changes in temperature, a cam member mounted in said body for rotation about an axis, said cam member being positioned on the other side of said spring contact support and being formed with a cam surface engageable with said spring contact support operable in response to rotation of said cam member to deflect said spring contact support and change the position of said first contact, said cam member and body being formed with interengaging generally cylindrical surfaces coaxial with said axis radially locating said cam member with respect to said axis while permitting relative rotation therebetween, said cam member and body also being formed with interengaging planar surfaces substantially perpendicular to said axis on the side of said cam remote from said cam surface, said spring contact support being deflected from its unstressed position by said cam member and producing a force on said cam member tending to maintain engagement between said planar surfaces, and a manually operable stem extending along said axis through said body from the exterior thereof, said stem and cam member being formed with opposed radially extending surfaces which inter-engage to prevent substantial relative rotation therebetween whereby rotation of said stem causes rotation of said cam member, said cam member and stem being free of connections causing disengagement between said planar surfaces in response to movement in said stem.

3,358,102
HIGH-POWER COMPRESSED-GAS CIRCUIT INTERRUPTER WITH DOUBLE-FLOW CONTACT STRUCTURE DISPOSED WITHIN GAS-DIRECTING CASING
Charles F. Cromer, Penn Township, Allegheny County, and Richard E. Kane, Monroeville, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 24, 1964, Ser. No. 391,584
12 Claims. (Cl. 200—148)



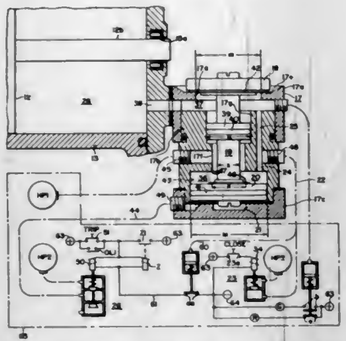
1. In a fluid-blast circuit interrupter, in combination, casing means defining an inlet chamber and an adjoining gas-flow directing orifice portion having an exhaust opening, a relatively stationary contact structure having a nozzle exhaust means, associated therewith disposed within said casing means, a movable tubular venting contact cooperable with said relatively stationary contact structure and movable completely out of said exhaust opening to an isolating portion, the relatively movable contact structure constituting a sleeve valve means for inhibiting exhaust flow through the nozzle exhaust means and the movable tubular venting contact until contact part, and fluid-pressure supply means for feeding pressurized fluid into said inlet chamber for subsequent ejection in substantially opposite directions through the nozzle exhaust means and the movable tubular venting contact to effect extinction of the established arc.

3,358,103

ANTI-PUMP CONTROL SCHEME FOR FLUID-ACTUATED CIRCUIT INTERRUPTERS

William A. Fish, Jr., Wilkins Township, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Oct. 5, 1964, Ser. No. 401,298
7 Claims. (Cl. 200—148)



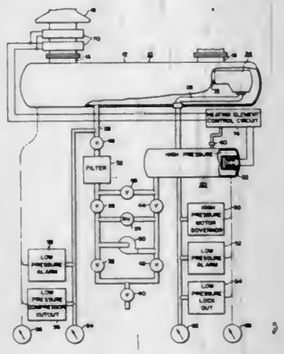
1. A circuit interrupter having separable contacts and a fluid motor for actuating said contacts, said fluid motor having a movable pressure-responsive member connected to the contacts, control valve means for pressurizing or exhausting one side of said pressure-responsive member, electrically-actuated trip valve means for effecting an exhausted status of said control valve means and having an actuating coil associated therewith, a non-pumping relay (Z) having seal-in contacts (Z1) in series circuit with said actuating coil and also having an actuating coil, a closing valve for effecting a pressurized status of said control valve, a non-pumping contact (*aa*) in electrical series with said actuating coil of the non-pumping relay (Z) and being pressure-responsive to the outlet fluid connection of the closing valve, whereby non-pumping operation of the circuit interrupter is achieved.

3,358,104

HEATING MEANS FOR COMPRESSED-GAS CIRCUIT INTERRUPTERS

Charles F. Cromer, Penn Township, Trafford, and Albert P. Strom, Pittsburgh, Pa., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed Oct. 29, 1964, Ser. No. 407,293
9 Claims. (Cl. 200—148)



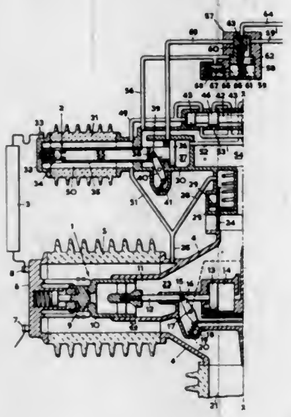
1. In a compressed-gas circuit interrupter of the type having a metallic tank, a pair of terminal bushings extending into said tank and connected to separable contact structures within the tank, and a high-pressure reservoir for storing high-pressure fluid to be fed into said tank; the combination of means for maintaining the temperature of gas stored in said high-pressure reservoir above a predetermined minimum temperature, comprising transformer winding means inductively coupled to at least one of said terminal bushings, whereby alternating current flowing through said terminal bushing will induce a current in said winding means, electrically-energized heating means for the gas stored in said high-pressure reservoir, circuit means connecting the winding means to the heating means whereby current induced in said winding means is adapted to energize said heating means, and a temperature-sensitive switch device responsive to the temperature of the gas within said high-pressure reservoir connected in shunt with said winding means, whereby the winding means will be shorted to prevent energization of the heating means when the temperature of the gas within the high-pressure reservoir exceeds a predetermined maximum temperature.

3,358,105

GAS BLAST CIRCUIT BREAKER AND OPERATING MEANS THEREFOR

John Barker, John Robert Birt, Ernest Housby, and Derek Michael Gorman, Stafford, England, assignors to The English Electric Company Limited, London, England, a British company

Filed Nov. 5, 1964, Ser. No. 409,073
Claims priority, application Great Britain, Nov. 16, 1963, 45,347/63
10 Claims. (Cl. 200—148)



1. A circuit breaker comprising a housing having therein an inlet chamber for receiving fluid under pressure, and an outlet chamber, a wall of said outlet chamber having therein an outlet port,

an exhaust valve movable to open and close said outlet port, and a fluid-operated exhaust-valve actuator,

a first pair of switch contacts, one of said contacts being hollow and mounted for movement in said housing in a position between said inlet and outlet chambers,

a first fluid-actuated device having a first cylinder, and a first piston movable in said cylinder and connected to said one contact, said first cylinder having therein a first port in fluid flow communication with said outlet chamber, and a second port, said first piston lying between said first and second ports,

a control valve,

a first duct connected between said control valve and said inlet chamber,

a second duct connected between said control valve and said second port,

a second pair of switch contacts, one of said contacts being hollow and mounted for movement in said housing in a position between said inlet and outlet chambers,

a second fluid-actuated device having a second cylinder, and a second piston movable in said cylinder and connected to said one contact of the second pair of switch contacts,

said second cylinder having therein a third port and a fourth port, said second piston lying between said third and fourth ports,

a fluid-operated time-delay device comprising a cylinder having an inlet port, an outlet port and a control port, and a piston movable in said cylinder to open and close a fluid path between the inlet and outlet ports in dependence upon fluid-pressure difference between the inlet port and the control port, the piston having a normal position in which it closes said fluid path,

a third duct connected between the inlet port of said cylinder of the time-delay device and said control valve,

a fourth duct connected between the control port of said cylinder of the time-delay device and said outlet chamber,

a fifth duct connected between the outlet port of said cylinder of the time delay device and said third port,

a third fluid-actuated device comprising a third cylinder having in side walls thereof a fifth port in fluid flow communication with said inlet chamber; a sixth port in fluid flow communication with said outlet chamber, and seventh and eighth ports in fluid flow communication with said fourth port,

a spool valve movable in said third cylinder between a first position in which it defines a flow path between said fifth and seventh ports are a second position in which it defines a flow path between said sixth and eighth ports, and

ducting connecting said control valve to said exhaust-valve actuator, said control valve being operable to supply fluid to said exhaust-valve actuator to open said outlet port thereby to create a pressure difference across said first piston to open said first pair of switch contacts, and create a pressure difference across said second piston, to open said second pair of switch contacts after a time delay determined by said time-delay device.

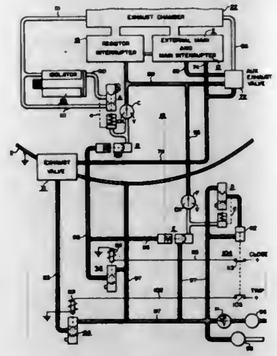
3,358,106

PNEUMATIC CONTROL FOR COMPRESSED-GAS CIRCUIT BREAKER HAVING PRESSURIZED TANK WITH INSULATNG CONTROL TUBES PRESSURIZED IN BOTH THE OPEN AND CLOSED-CIRCUIT POSITIONS

William A. Fish, Jr., Wilkins Township, Pa., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed Dec. 7, 1964, Ser. No. 416,235
15 Claims. (Cl. 200—148)

1. A compressed-gas pressurized-tank type circuit interrupter including a pair of separable arcing contacts (**27, 28**) and a pair of serially-related disconnecting switch contacts (**16, 16**) an isolator piston (**56**) for moving one of said disconnecting switch contacts, a three-way normally-closed first control valve (A) having a gas-operated pilot section for pressurizing or exhausting the closing side of said isolator pison, a two-way normally-open second control valve (B) for controlling the pressurizing of the gas-operated pilot section of the said first control valve, said two valves being within the pressurized tank adjacent the disconnecting switch contacts, an operating piston (**46**) movable within a cylinder for opening one of said arcing contacts, a main exhaust third valve (**71**) disposed adjacent the tank wall for exhausting the opening side of said operating piston (**46**), a check-valve-controlled gas-controlling tube (**89**) leading from the closing side of said operating piston (**46**) to a point intermediate the outlet of said second control valve and the inlet to the gas-operated pilot section of said first control valve, means biasing said one arcing contact to the closed position, means including



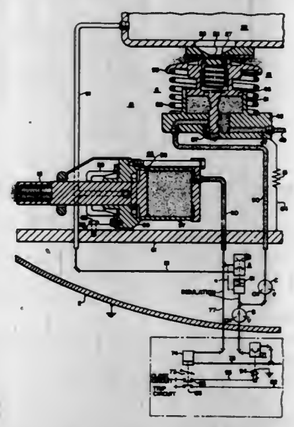
a three-way "close" valve (**94**) for opening said second control valve to thereby pressurize the pilot section of the first control valve and thus pressurize the closing side of the isolator piston, and a three-way electrically operated "trip" valve (**84**) for operating said main exhaust third valve.

3,358,107

SIMPLIFIED PNEUMATIC CONTROL FOR COMPRESSED-GAS CIRCUIT BREAKER HAVING PRESSURIZED TANK WITH INSULATING CONTROL TUBES PRESSURIZED IN THE CLOSED-CIRCUIT POSITION

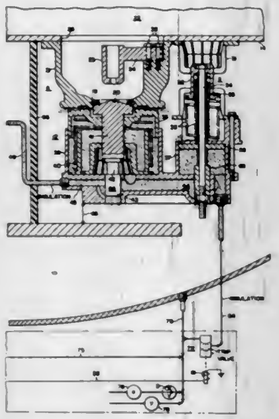
William A. Fish, Jr., Wilkins Township, Pittsburgh, and James M. Telford, Penn Hills, Pittsburgh, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Dec. 7, 1964, Ser. No. 416,455
4 Claims. (Cl. 200—148)



1. A compressed-gas circuit breaker including means defining a pressurized tank, an interrupting unit including a pair of separable arcing contacts (**27, 28**) and a pair of serially-related disconnecting switch contacts (**16, 16**) all disposed within said pressurized tank, an isolator piston (**56**) for moving one of said disconnecting switch contacts to the open and closed-circuit positions, a three-way normally-closed first control valve (A) having a gas-operated pilot section (**91**) for pressurizing or exhausting

the closing side of said isolator piston (56) and disposed within the pressurized tank adjacent the disconnecting switch contacts, an operating piston (46) movable within a cylinder for opening one of said arcing contacts, a main exhaust second valve (72) for pressurizing or exhausting the closing side of said operating piston (46), a check-valve-controlled pneumatic line (90) pneumatically



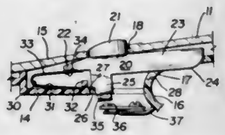
interconnecting the closing side of said operating piston (46) with the pilot section (91) of said first control valve (A), and a check-valve-controlled pneumatic line (71*a*) pneumatically interconnecting the pilot section (91) with a two-way normally-closed third "close" valve (71) to pressurize the pilot section (91) and thereby open the first control valve (A) to close the isolator piston (56).

3,358,108

POWER OPERATED KNIFE SAFETY SWITCH

John M. Hansen, Racine, Wis., assignor to Scovill Manufacturing Company, Waterbury, Conn., a corporation of Connecticut

Filed Feb. 10, 1966, Ser. No. 526,541
6 Claims. (Cl. 200—157)



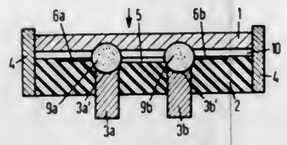
1. In a power operated tool provided with a housing having two spaced apart openings therein, a safety switch in the housing comprising
   (a) a manually operable switch actuating member including a trigger accessible through one of said openings in the housing and a button accessible through the other opening,
   (b) a contact member on the actuating member,
   (c) a fixed support in the housing,
   (d) a bearing surface extending transversely of the actuating member for bearing on the fixed support and preventing depression of the button, and
   (e) yielding means bearing on the fixed support and urging the actuating member into support-engaging position,
   (f) said actuating member being pivotally movable about said bearing surface as a non-fixed fulcrum when the trigger is depressed relatively to the housing, whereby the actuating member is moved out of support-engaging position and depression of the button is permitted while said trigger is depressed.

3,358,109

LIQUID CONTACT OPERATING THROUGH A MECHANICAL DISPLACEMENT OF MERCURY

Anton Schmid, Munich, Germany, assignor to Siemens Aktiengesellschaft, Berlin and Munich, Germany, a corporation of Germany

Filed Dec. 19, 1966, Ser. No. 602,740
Claims priority, application Germany, Dec. 23, 1965, S 55,298
2 Claims. (Cl. 200—152)



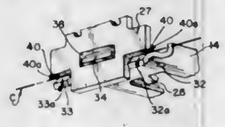
1. A liquid contact operable by mechanical displacement of mercury, comprising a body of insulating material having a plurality of recesses therein, a drop of mercury in each of said recesses, said body being constructed to form capillary connecting means between such mercury drops, a connecting terminal engageable with one mercury drop, and a second connecting terminal engageable with another mercury drop, and actuating means engageable with at least one mercury drop, operative to effect a deformation thereof whereby mercury is displaced into said capillary connecting means to establish an electrical connection between said connecting terminals, said body being provided with overflow channels operatively communicating with mercury forming said drops, which channels have a cross section which is less than that of the capillary connecting means, for the compensation of an over actuation of the actuating member.

3,358,110

ELECTRICAL CONTROL HINGE

Laurence M. Perkins, Elm Grove, Wis., assignor to Allen-Bradley Company, Milwaukee, Wis., a corporation of Wisconsin

Filed Sept. 26, 1966, Ser. No. 582,017
15 Claims. (Cl. 200—166)



1. A hinge in an electrical control comprising:
   (a) members of said electrical control abutting in hinged pivotal relation at distinct portions of line contact along a common linear line drawn therebetween,
   (b) said distinct portions of line contact spaced laterally along said drawn common line,
   (c) said common line formed at each distinct portion of line contact by:
      (1) the line edge of one said member and
      (2) the surface of an abutting said member,
   (d) at least one said surface forming an angle with a companion said surface with said common line acting as the apex for said angle.

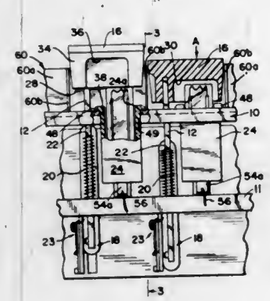
3,358,111

ILLUMINATED PUSH BUTTON ASSEMBLY

Tadeusz Dzierzbicki, Cary, and John H. Williams, Barrington, Ill., assignors to Oak Electro/Netics Corporation, a corporation of Delaware

Filed Apr. 15, 1966, Ser. No. 542,831
11 Claims. (Cl. 200—167)

1. In an illuminated push button switch: a supporting cured to one end thereof, said push button having a light transmitting body a substantial portion of which projects to one side of said push rod and is movable with said push rod toward and away from said supporting panel; and a lamp receiving socket having means mounting it in said supporting panel adjacent said one side of the push rod and having a lamp receiving end facing said push button whereby said lamp receiving socket is behind said light transmitting body, said means mounting said lamp



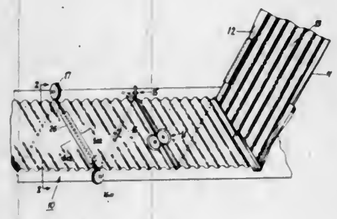
receiving socket in said supporting panel including walls defining an aperture through said supporting panel to receive and loosely embrace said lamp receiving socket, and wherein said lamp receiving socket is provided with resilient wall means laterally deflectable against at least one of the walls of said aperture whereby a lamp in said lamp receiving socket wedges said resilient wall means against the walls of said aperture.

3,358,112

WELDED HELICAL LOCK SEAM PIPE AND METHOD AND APPARATUS FOR MANUFACTURING THE SAME

John H. Timmers, Middletown, Ohio, assignor to Armco Steel Corporation, Middletown, Ohio, a corporation of Ohio

Filed July 24, 1963, Ser. No. 297,411
7 Claims. (Cl. 219—9.5)



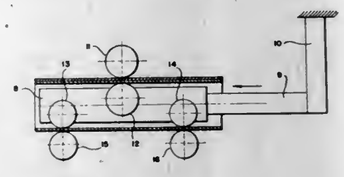
1. In a machine for forming helical lock seam pipe from strip material, wherein means are provided to form along the two edges of said strip material cooperating seam forming elements, and to form said strip material into a helix and to guide said cooperating seam forming elements into interengagement, and to compress the interengaged elements to form a three-layer seam, to progressively incline the seam and to press the seam solidly home against the formed pipe thereby producing an interlocked four-layer seam; means disposed after said seam forming and inclining means and ahead of the final pressing means to heat the formed seam throughout its entire depth rapidly to welding temperature, whereby said final pressing means serves to forge weld the three interfaces of said seam forming elements.

3,358,113

PROCESS FOR THE CONTINUOUS PRODUCTION OF THIN-WALLED STEEL PIPES AND APPARATUS FOR PUTTING THIS PROCESS INTO EFFECT

Tadeusz Pelczyński, Warsaw, Poland, assignor to Ministerstwo Obrony Narodowej-Wojskowa Akademia Techniczna, Warsaw, Poland

Filed May 11, 1964, Ser. No. 366,266
Claims priority, application Poland, May 11, 1963, 101,735
6 Claims. (Cl. 219—66)



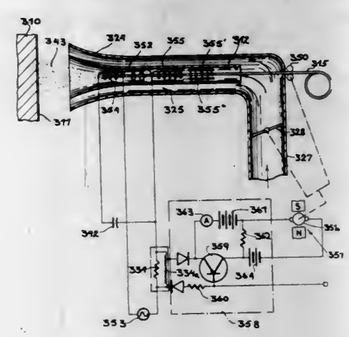
1. A method for the continuous production of thin-walled steel pipe of indeterminate length comprising forming a pipe by translating a strip of material while bending it into a generally cylindrical shape with longitudinal edges in overlapped relation, and passing both substantially radial forces and electric current through said overlapped material, through a current conducting and force transmitting structure in said pipe and through a portion of said pipe circumferentially remote from said seam into a force sustaining and current transmitting structure on the outside of said pipe at said remote pipe portion.

3,358,114

METHOD OF AND APPARATUS FOR THE ELECTRIC SPRAY-COATING OF SUBSTRATES

Kiyoshi Inoue, 182 3-chome, Tamagawayoga-machi, Setagaya-ku, Tokyo-to, Japan

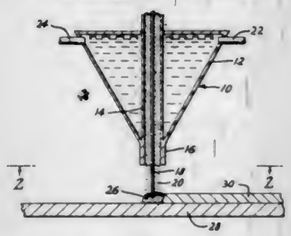
Filed July 8, 1963, Ser. No. 293,380
Claims priority, application Japan, Aug. 7, 1962, 37/34,186
8 Claims. (Cl. 219—76)



1. A method of spray depositing particles of a first substance upon a substrate, comprising the steps of forming said particles of said first substance by heating a body thereof; entraining said particles of said first substance in a stream of gaseous particles of a second substance by passing said gas stream around the heated body; directing said gas stream against said substrate to form a coating of said first substance thereupon; ionizing at least some of the particles of at least one of said substances by effecting an electrical space discharge in said stream to impart electrical charge thereto; subjecting said gas stream to a magnetic field, thereby controlling the configuration of said stream; electromagnetically

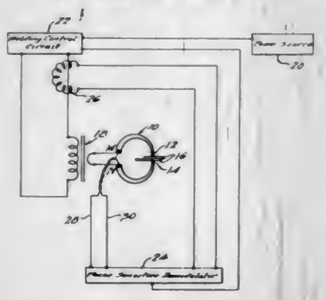
deriving a control signal from a parameter of the electrically charged stream downstream of said space discharge and regulating at least one of the following variables with said control signal: (a) the rate of flow of said gas stream, (b) the rate of ionization of said particles, (c) the rate of heating of said body, and (d) the intensity of said magnetic field.

3,358,115
OPEN ARC OR GAS SHIELDED GRANULAR WELDING
Roman F. Arnoldy, P.O. Box 19527, Houston, Tex. 77024
Filed Nov. 28, 1966, Ser. No. 597,251
9 Claims. (Cl. 219—76)



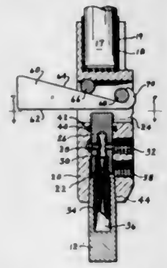
1. A method of welding or cladding a surface comprising,
forming an arc between a consumable electrode and the surface thereby forming a puddle,
cooling the puddle by depositing granular weld material directly into the puddle and substantially independent of the electrode in a ratio of about 1.3 to about 3.5 parts of the granular weld material to each part of the electrode and maintaining the temperature of the puddle in the range of about 100° F. to about 500° F. above the melting point of the highest melting point of the granular weld material and the electrode.

3,358,116
METHOD AND APPARATUS FOR WELDING CONTROL CIRCUIT
Gardiner A. Noble, Farmington, Mich., assignor to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware
Filed Sept. 30, 1963, Ser. No. 312,760
9 Claims. (Cl. 219—110)



1. In an electrical resistance welder having an alternating power source, a welding transformer connectible to said source and having a welding tool with work engaging electrodes in its secondary circuit, a control system for regulating power flow from said source responsive to wattage dissipated in the welding tool, comprising a first sensing device operatively connected to a winding of said welding transformer for providing a voltage signal representative of current flow therethrough, a second voltage signal sensing device connected across said tool at points spaced and remote from said electrodes, a mixer operatively connected to the output of the aforesaid devices and operable to combine said voltage signals, said mixer being of the phase sensitive demodulator type and comprising an input transformer and an output transformer having their secondary and primary windings respectively connected and each having a center tap, said first sensing device connected across said center taps, said second sensing device operatively connected to the primary winding of said input transformer, and said output transformer operable to provide through its secondary winding a voltage output directly proportional to the wattage dissipated in the welding tool.

3,358,117
ELECTRODE HOLDER
Alfred B. White, 162 S. Post Road, Buchanan, Mich. 49107
Filed Dec. 9, 1964, Ser. No. 417,023
7 Claims. (Cl. 219—120)

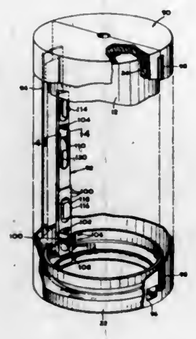


1. A holder for a welding electrode tip having a hollow interior and a tapered end, comprising a body having a vertically positioned bore therein with a tapered outlet for receiving the tapered end of the tip, coolant inlet and outlet passages in said body, a horizontal slot extending through said body and intersecting said bore, a reciprocable plunger in said bore extending into said slot at one end and into said tapered outlet at the other end and having passages communicating with said inlet and outlet coolant passages, a stem on the other end of said plunger extending into the hollow interior of the tip, two spaced pins in said body extending through said slot, one of said pins being spaced further from the end of said plunger than the other, an actuator in said slot extending at both ends therefrom and having one surface at right angles to the axis of said plunger and the surface on the opposite side at an angle corresponding to the difference in distance of said pins from the plunger end, a hook-like portion on the end of said actuator where said surfaces are closest to one another for contact with the adjacent pin to prevent said actuator from being displaced from said slot, said actuator being pivotally movable on said spaced pins and longitudinally movable in said slot, and a set screw disposed in said body and extending into said slot into engagement with said actuator for yieldably retaining said actuator in various positions.

3,358,118
ELECTRIC WATER HEATER
Thomas L. Mather, 1518 Lochlin Trail, Port Credit, Ontario, Canada, and Robert M. Walker, 187 Arnold Ave., Thornhill, Ontario, Canada
Filed Sept. 11, 1964, Ser. No. 395,686
6 Claims. (Cl. 219—311)

1. A water heater comprising, in combination, an inner cylindrical pressure tank having water inlet and outlet means, a generally cylindrical two-piece outer shell fully

enclosing said pressure tank and adapted for ready dismantlement as to permit replacement of said pressure tank; a base supporting said tank and said shell, said heater including electric heating means, thermostat means for controlling the operation of said heating means, and insulation, said insulation being attached to the inside surface of said outer shell, and means for holding said



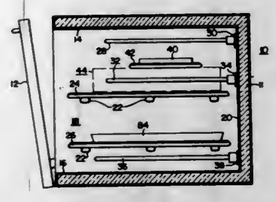
heating means and thermostat means within said shell and in removable juxtaposition with the outer surface of the sides of said pressure tank, said holding means consisting of a standard carried by and projecting upwardly from said base within said shell and between said shell and said pressure tank, said standard being adjustable in height as to permit height adjustment of said heating means.

3,358,119
OVEN SPATTER SHIELD
Charles F. Sisco, Mansfield, Ohio, assignor to The Tappan Company, Mansfield, Ohio, a corporation of Ohio
Filed July 9, 1965, Ser. No. 470,818
2 Claims. (Cl. 219—391)



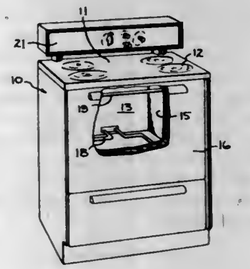
1. In combination with an oven having an elongated sheathed electric resistance heating element in spaced horizontal disposition below the interior top of the oven, said element having first and second sections which are substantially in right angle relation, a readily removable spatter shield for the top of the oven interposed between said heating element and the top, said shield comprising a generally-rectangular sheet made of heat resistant material and having an area at least as large as that of the heating element, and a plurality of support members attached to and projecting from the underside of said sheet for engagement with, and spaced support of the sheet on, the heating element, the element-engaging part of each support member being shaped to partially embrace the element, with the sheet through said members resting on the element and disengaged for removal by lifting therefrom, at least one of said members being thus engaged with each of said first and second sections for guiding of the sheet in placement thereof on the element and restricting shield from sliding thereon.

3,358,120
OVEN
Raymond D. Schibley, Ashland, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Sept. 28, 1965, Ser. No. 490,942
5 Claims. (Cl. 219—395)



1. In an oven:
a first broiling element in the top portion of said oven for broiling the top surface of an article;
a second broiling element spaced below said upper broiling element at a distance sufficiently close to said upper broiling element to exert a substantially greater broiling than baking effect upon the lower surface of said article, said second broiling element further being spaced substantially above the bottom of said oven; and
oven heat and spatter shielding means, independent and separable from said second broiling element, including shell means extending along at least the two sides of said second broiling element and providing upright walls extending between said second broiling element and the facing, side walls of said oven, said shielding means including an open rear face for slidably receiving therethrough said second broiling element.

3,358,121
INTEGRATED OVEN CONTROLS
Teamus Bowling, Fern Creek, Ky., assignor to General Electric Company, a corporation of New York
Filed July 21, 1965, Ser. No. 473,627
7 Claims. (Cl. 219—412)

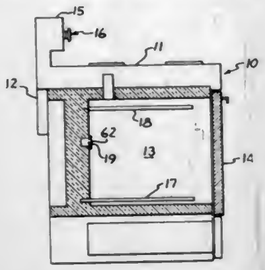


1. A control device for controlling a heating circuit from a source of electric power, the combination comprising a combined selector switch and thermostat operable between on "Off" position and a plurality of heating positions for controlling the heating circuit, a timer having timer switch means with at least a "Set" position, a timed "Start" position, a timed "Stop" position and a "Normal Heating" position for connecting said thermostat to a source of electric power, and automatic latching means between the selector switch and the said timer switch means for temporarily holding the switch means in both its "Start" and "Stop" positions and being releasable for setting the switch means into the "Normal Heating" position when the selector switch is set in its "Off" position.

3,358,122
ELECTRICAL THERMOSTATIC CONTROL SYSTEM FOR ELECTRIC OVENS

Sumner H. Torrey, Kankakee, Ill., assignor to Geo. D. Roper Corporation, Kankakee, Ill., a corporation of Massachusetts

Filed July 1, 1965, Ser. No. 468,825
7 Claims. (Cl. 219—413)



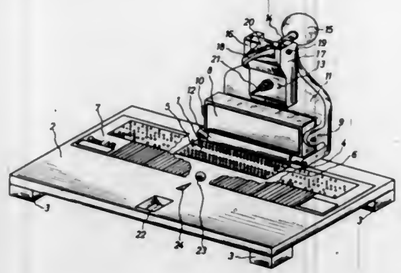
1. In an electric oven including an oven cavity, electric heating elements including a bake element and a broil element in heat transmitting relation to the oven cavity and adapted for connection to a source of voltage, first thermostatic control means including a selector for controlling the energization of the heating elements according to the temperature of the oven cavity and a preselected temperature setting, and a timer for controlling the energization of the heating elements according to preselected time settings, the combination of selector means for arranging the heating elements in various circuits of different wattages, and second thermostatic control means operatively associated with the heating elements and the timer, said selector means having a first setting for connecting the bake element in a high wattage circuit and the broil element in a low wattage circuit whereby both of said elements are energized for rapid preheating of the oven cavity, said low wattage circuit including said second thermostatic control means for deenergizing said broil element in response to a predetermined oven temperature whereby subsequent heating of the oven cavity is effected by the bake element alone, said selector means having a second setting for connecting the bake element in a high wattage circuit including said timer for heating the oven for a preselected period and then deenergizing the high wattage circuit, said second setting also connecting the bake element and the broil element in series in a low wattage circuit including said timer and said second thermostatic control means, said timer serving to condition the low wattage circuit for energization simultaneously with the deenergization of the high wattage circuit, and said second thermostatic control means serving to energize the conditioned low wattage circuit in response to a predetermined oven temperature.

3,358,123
DEVICE FOR TRANSFORMING THE HOLE COMBINATIONS OF A PERFORATED MASTER TAPE INTO CORRESPONDING COMBINATIONS OF CONTACT POTENTIALS IN DEVICES USED FOR CIPHER EXTENSION

Rudolf Hell, Kiel, and Roman Koll, Kiel-Wellingdorf, Germany, assignors to Dr.-Ing Rudolf Hell Kommanditgesellschaft, Kiel-Dietrichsdorf, Germany, a company of Germany

Filed Jan. 11, 1962, Ser. No. 166,461
Claims priority, application Germany, Mar. 30, 1961, H 37,683
6 Claims. (Cl. 235—61.11)

1. A device for use in cipher extension, in which the hole combinations of a perforated master tape, carried by a cooperable cipher card are transformed into corresponding combinations of contact potential, comprising a base member carrying a contact field having a plurality of contacts insulated with respect to one another, a card-engaging member movable relative to said base member and cooperable therewith for maintaining such a cipher card disposed therebetween in any one of a plurality of defined positions eligible of registry with respect to the contacts of said field, whereby different combinations of contacts may be actuated in different positions of displacement of such a card, as determined by the

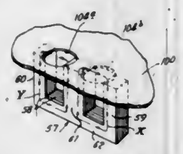


hole combinations of such card disposed within said contact field, means for releasably retaining said card-engaging member in card-retaining position, and marking means carried by at least one of said members for forcibly producing on said card a mark identifying the engaged operative position of such card and thus the hole combinations therein with respect to said contact field, said marking means being arranged for acuation by relative movement of said members to card-retaining position.

3,358,124
DATA CARD TRANSLATING DEVICE

Raymond T. Smith, Dallas, and Curtis L. Parish, Grand Prairie, Tex., assignors to Datamatics International, Inc., Arlington, Tex., a corporation of Texas

Filed July 26, 1963, Ser. No. 297,821
11 Claims. (Cl. 235—61.11)

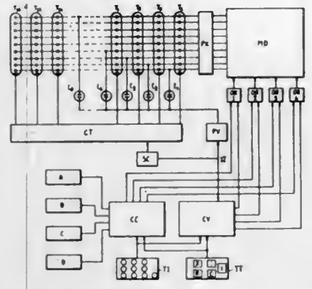


1. A control system including: a data storage device comprising a planar member, said planar member having discontinuities in the magnetic reluctance thereof at predetermined locations thereof; and a data translating device for detecting said discontinuities at said predetermined locations and producing electric signals which vary in accordance with the locations of said discontinuities, said data translating device including a plurality of inductive means, each of said inductive means defining a pair of magnetic flux paths and having flux inducing means for inducing a flux in said paths and flux pickup means responsive to the flux in said paths for producing said electric signals, said flux inducing means and flux pickup means being disposed on one side only of said planar member, the output of each of said pickup means varying in accordance with the variations of the reluctances of said pair of flux paths, said data storage device providing portions of said flux paths and varying said reluctances of said flux paths in accordance with the location of said discontinuities.

3,358,125
CIRCUIT FOR DISPLAYING THE DECIMAL LOCATION IN ELECTRONIC TYPE ARITHMETICAL COMPUTING DEVICES, PARTICULARLY IN CONNECTION WITH DIGITAL DATA READOUT DEVICES ON DECIMAL INDICATORS

Massimo Rinaldi, Rome, Italy, assignor to Industria Macchine Elettroniche—I.M.E. S.p.A., Rome, Italy

Filed Oct. 14, 1964, Ser. No. 403,853
Claims priority, application Italy, Mar. 13, 1964, 5,446/64
10 Claims. (Cl. 235—92)

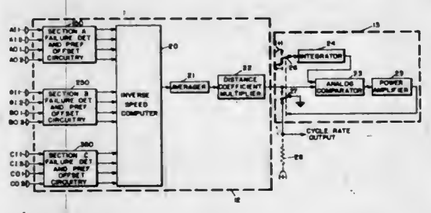


1. A circuit for indicating the decimal location in arithmetical computing electronic type devices, particularly in connection with readout devices for digital data on decimal indicators, characterized in comprising a set of indicator tubes for the decimal locations; a first counter and a second counter of the decimal locations, operatively coupled to said tubes; means for entering the factors, operatively coupled to the inputs of said counters in order to count the number of entered decimals; said first cited counter being a unidirectional counter and second cited counter being a reversible counter; and means to change the direction of counting of said second counter in order to increase or decrease its content through the number of decimal locations of a second factor according to the latter being the second factor of a multiplication operation or of a division operation.

3,358,126
TRAFFIC SIGNAL CONTROLLER CYCLE COMPUTER

John H. Auer, Jr., Rochester, N.Y., assignor to General Signal Corporation, Rochester, N.Y., a corporation of New York

Filed Sept. 3, 1963, Ser. No. 306,036
21 Claims. (Cl. 235—150.24)

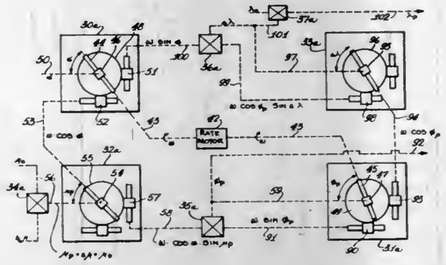


1. A traffic signal cycle computer comprising means responsive to average vehicular speed along a highway for providing a voltage inversely proportional thereto, means multiplying said voltage by a coefficient proportional to distance between traffic signals operating in phase with each other to provide a voltage analog of optimum cycle duration, and additional means dividing the voltage analog of optimum cycle duration into a predetermined number of pulses per cycle.

3,358,127
MULTIPLIER-DIVIDER USING RESOLVERS

John A. Dolan, Ville St., Laurent, Quebec, Canada, assignor to Computing Devices of Canada Limited, Ottawa, Ontario, Canada

Filed Nov. 14, 1963, Ser. No. 323,774
7 Claims. (Cl. 235—150.271)



1. Computer apparatus for solving an equation of the form $f(C)=f(A)\cdot f(B)$ for C where $f(C)$, $f(A)$ and $f(B)$ are functions of C, A, and B respectively comprising

first, second and third function generators each having at least a driving input, a positional input and a rate output, rate motor means connected to the driving input of said first and second function generators to drive said first and second function generators at the same speed,

means applying positional signals representing A and B to the positional inputs of said first and third function generators respectively,

said first function generator forming a rate output signal $f(A)$ at its output,

means connecting the output of said first function generator to the driving input of said third function generator to drive said third function generator at a rate $f(A)$,

said third function generator forming a rate output signal $f(A)\cdot f(B)$ at its output,

means applying a positional signal C to the position input of said second function generator,

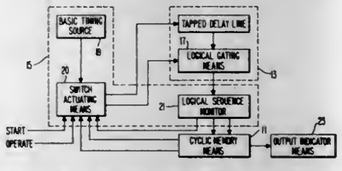
said second function generator forming a rate output signal $f(C)$ at its output,

differential means connected to the outputs of said third and second function generators respectively receiving therefrom a signal $f(A)\cdot f(B)$ and a signal $f(C)$, and forming a positional signal C as an output and as a feedback signal for the positional input of said second function generator.

3,358,128
DELAY LINE ARITHMETIC CIRCUIT

Glenn A. Oliver, Berwyn, Pa., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Filed Aug. 31, 1964, Ser. No. 393,109
15 Claims. (Cl. 235—167)



1. Apparatus for performing arithmetic operations comprising delay means consisting solely of a single continuous delay line, said

single delay line having an input terminal and a plurality of output taps equally spaced along its length, the first output tap being directly coupled to the input terminal,

a like plurality of conditionable gates respectively coupled to each of said output taps,

means for conditioning a selected one of said gates proportionately representing the first digit in an arithmetic operation, and

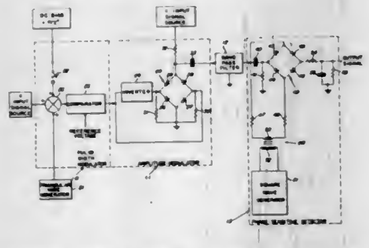
means for applying to said input terminal a signal predelayed in proportion to said output taps to represent a second digit in said arithmetic operation whereby a pulse emanates from said conditioned gate with a delay proportional to the outcome of the arithmetic operation.

3,358,129

ELECTRONIC TRIGONOMETRIC MULTIPLIER

Frederick M. Schultz, Winchester, Mass., assignor to Raytheon Company, Lexington, Mass., a corporation or Delaware

Filed May 28, 1964, Ser. No. 370,956
10 Claims. (Cl. 235—194)



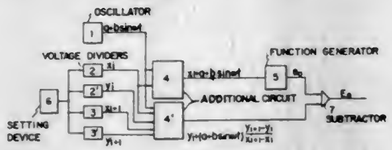
1. A system comprising in combination, means for providing a pulse width modulated intermediate signal whose width is related to a first signal, means for pulse amplitude modulating said intermediate signal in accordance with a second signal, means tuned to a fundamental frequency harmonic for band-pass filtering said pulse width and amplitude modulated intermediate signal to provide an output signal representative of the product of said second signal and a trigonometric function of said first signal and means for detecting the peak amplitude of said output signal to generate the product of said second signal and a trigonometric function of said first signal.

3,358,130

FUNCTION GENERATOR

Takeo Miura, Kitatama-gun, Tokyo-to, Norio Yokozawa, Setagaya-ku, Tokyo-to, and Junzo Iwata, Kodaira-shi, Japan, assignors to Kabushiki Kaisha Hitachi Seisakusho, Tokyo-to, Japan, a joint-stock company of Japan

Filed Feb. 5, 1964, Ser. No. 342,709
Claims priority, application Japan, Feb. 9, 1963, 38/6,698
2 Claims. (Cl. 235—197)



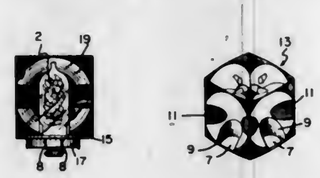
1. A function generator comprising: a linear segment approximation function generator; voltage dividers to produce electrical signals which are proportional to the X- and Y-coordinates of the break points of the function form formed by a plurality of linear segments; a setting device to set the dividing ratios of said voltage dividers in accordance with the function form; a signal generator to generate a signal resulting from superimposition of an oscillation waveform on a constant direct current; an additional circuit to add the output of said signal generator to said electrical signal to be proportional to the X-coordinate and to apply an additional output resulting from this addition to said function generator; an operational circuit to calculate an additional signal resulting from addition of said Y-coordinate, and the product of the output of said signal generator and the slope of said linear segment; a subtractor to obtain the difference signal between the output of said function generator and the output of said operational circuit; and an adjusting means to adjust the break points and slopes of the linear segments in said function generator in order to cause said difference signal to become zero.

3,358,131

PHOTOGRAPHIC FLASHLAMP UNIT

Sedgwick R. Bennett, Williamsport, and Donald W. Hartman, Warrensville, Pa., assignors to Sylvania Electric Products Inc., a corporation of Delaware

Filed July 8, 1965, Ser. No. 470,524
5 Claims. (Cl. 240—1.3)



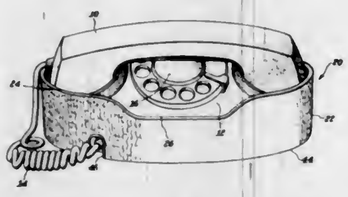
5. A photographic flashlamp unit comprising: a base member; a plurality of substantially tubular flashlamps mounted on said base member with the longitudinal axis of each lamp being substantially perpendicular thereto and each lamp having a constriction defining a shoulder terminating in an exhaust tip at the upper end thereof; and a substantially parabolic reflector within which each of said lamps is disposed, the longitudinal axis of each of said lamps being substantially normal to the axis of its reflector, each of said reflectors having a pair of dimples formed therein above its axis and within which said exhaust tip and said shoulder respectively are disposed, a recessed skirt formed therein below its axis and in the bottom thereof partially encompassing the lower end of said lamp, and a pair of flats formed therein along the sides thereof in substantially the same horizontal plane as the axis thereof and with the adjacent flats of adjacent reflectors abutting one another.

3,358,132

ILLUMINATED CRADLE HOLDER FOR TELEPHONES

Steve Kosinski, 3036 Bouck Ave., Bronx, N.Y. 10469

Filed Jan. 17, 1966, Ser. No. 521,151
5 Claims. (Cl. 240—2.17)



1. An illuminable cradle holder for a telephone having a cradle and a handset receivable by said cradle, said holder comprising a hollow oval body having a side wall and open top and bottom ends, said wall surrounding said cradle and being composed of a light transmitting

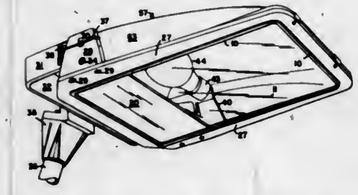
plastic, an extension of said plastic extending over a portion of the top of the cradle and secured to a portion of the periphery of the top end of the wall, a lamp socket secured to the inner surface of the wall and disposed adjacent said cradle, and a lamp bulb removably inserted in said socket.

3,358,133

GENERAL PURPOSE FLOODLIGHT

Byron R. Thoman, Liverpool, and Robert A. Hoxie, Phoenix, N.Y., assignors to Crouse-Hinds Company, Syracuse, N.Y., a corporation of New York

Filed July 2, 1965, Ser. No. 469,170
9 Claims. (Cl. 240—3)



1. A floodlight comprising a flat rigid frame of rectangular formation and having a closed area at one end, the remainder of said frame being formed with a rectangular opening, a lens mounted in said opening, a supporting bracket secured to said frame at the closed area thereof, a receptacle bracket mounted on the frame intermediate the ends thereof, a lamp receptacle carried by said receptacle bracket for the reception of a lamp, a primary reflector formed of sheet material and having a rectangular perimetric planar margin, said reflector being formed at one end with an end wall extending upwardly from said margin and a top wall inclining upwardly from the opposite end of the reflector to an area above said lamp and merging with the upper edge of said end wall, said reflector also having substantially triangular-shaped side walls extending from said margin and merging with said end and top walls, all whereby said reflector is of general scoop-like formation, said perimetric margin being dimensioned comparable to said frame for engagement with the perimetric area thereof, said reflector in conjunction with said frame and lens forming an enclosed casing, an auxiliary reflector mounted on the frame in said casing intermediate said lamp and the end wall of said primary reflector and serving to divide said casing into a lamp compartment and a ballast compartment, a lamp ballast mounted in said ballast compartment, the end of said primary reflector opposite the end wall thereof being pivotally connected to the end of said frame opposite to said closed portion for movement from a closed position engaging said frame to open position to provide access to both of said compartments, and means cooperable with said frame and primary reflector to maintain the same in open position.

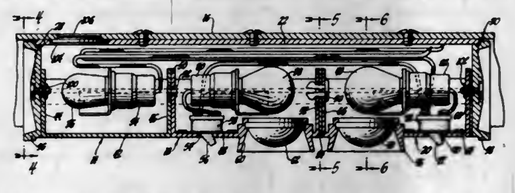
3,358,134

READING LAMP ASSEMBLY

Harold P. Gonyea, Birmingham, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Sept. 17, 1965, Ser. No. 488,157
7 Claims. (Cl. 240—7.35)

1. A reading and illumination lamp assembly for the interior of a vehicle, comprising an elongated cylindrical lamp housing, first, second, and third light sources fixedly secured to and positioned within said housing at axially spaced points, first and second lens support members located adjacent the first and second light sources respectively and mounted on the housing for rotation about the longitudinal axis of said housing, a light concentrating lens mounted in each of said support members with its optical axis substantially normal to said longitudinal axis, and a light diffusing lens fixed to said housing adjacent



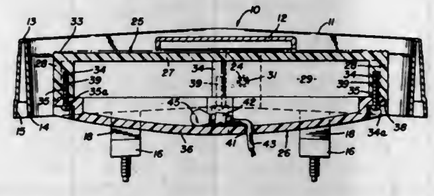
said third light source for projecting light rays in a direction substantially opposite to those provided by the light concentrating lens.

3,358,135

ILLUMINABLE SILHOUETTE DISPLAY UNIT

Leo J. Weismantel, 922 Garfield Ave., Lancaster, Ohio 43130

Filed Jan. 14, 1966, Ser. No. 520,566
4 Claims. (Cl. 240—8.11)



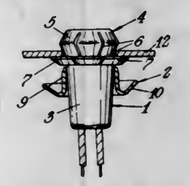
1. In combination with an ornament comprising a border frame of substantial depth having a forward edge and a rear edge with a figurine mounted therein forwardly of said rear edge to provide a space between it and the rear edge, a light-housing unit mounted within the frame in said space behind the figurine, said unit comprising a forward translucent lens and a rear light reflector, and illuminating means between the reflector and the lens, said lens having a light-transmitting and diffusing face and a rearwardly extending peripheral flange which telescopes within the frame and which has a rear edge engaged by the reflector, means for removably attaching the reflector to the lens in engagement with said rear edge of the lens flange, and means for removably securing the light-housing unit in said space within said border frame comprising releasable connecting means extending between said unit and said frame.

3,358,136

DUSTPROOF LAMP HOLDER

Eric Arthur Greasley, Stapleford, England, assignor to Pressac Limited, Nottingham, England, a British company

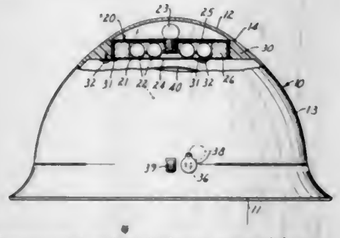
Filed Oct. 8, 1965, Ser. No. 494,042
Claims priority, application Great Britain, Mar. 4, 1965, Ser. No. 9,218/65
4 Claims. (Cl. 240—8.16)



1. A lamp holder comprising a body part made of synthetic plastics material, an integral lamp-receiving head at one end of said body part, said head being constituted by a hollow tubular portion turned outwardly back upon

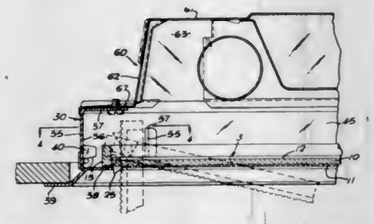
itself, an outwardly directed circumferential collar formed integrally with said turned back portion, and slots formed in said turned back portion and the collar to form a number of closely disposed springy claw-like fingers directed axially of the holder.

3,358,137
ILLUMINATED SAFETY HELMET
Malcolm D. Sinclair and Andrew S. Fraser, both % Sinclair-Fraser Corp., 900 New York Bldg., St. Paul, Minn. 55101
Filed Nov. 22, 1965, Ser. No. 509,124
5 Claims. (Cl. 240—60)



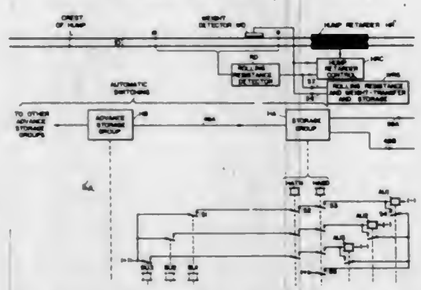
1. An illuminated safety helmet comprising:
(a) a helmet constructed of a rigid material so that the outer surface thereof forms a smooth, substantially continuous contour from one edge to the other;
(b) a portion of said helmet being light conducting, said portion being adjacent the upper extremity and extending approximately 360° about the periphery of said helmet;
(c) harness means within said helmet for receiving the upper portion of a head therein and positioning the head within said helmet to substantially prevent the head from contacting the helmet; and
(d) a light source including a rechargeable battery mounted within the helmet for transmitting light through said light conducting portion of said helmet to an area encircling said helmet, said rechargeable battery having outlet means attached thereto for operatively attaching a recharging source of energy thereto without removing the battery from the helmet, said light source being positioned so that there will be no contact with a head positioned in said harness means.

3,358,138
LAY-IN CLOSURE FOR LIGHTING FIXTURE
Walter J. Trantina, St. Louis County, Mo., assignor to Emerson Electric Co., St. Louis, Mo., a corporation of Missouri
Filed Dec. 13, 1965, Ser. No. 513,303
5 Claims. (Cl. 240—147)



1. In a lighting fixture with a lay-in type closure having a fixed frame with side walls having parallel side flanges and end walls having parallel end flanges perpendicular to said side flanges, a diffuser having sides and ends, said diffuser being a width to overlie and rest upon said side flanges and a length to end short of said end flanges when in its light-diffusing condition, said diffuser having a hinge lug projecting from each end over the said end flanges, said hinge lugs being spaced from but near one side of said diffuser, and a lamp housing above said flanges and diffuser, the improvement comprising a tab member projecting inboardly from each of said end walls above the end wall flange and spaced from said side wall a distance greater than the distance of the hinge lugs from the side of the diffuser nearest them, and a housing wall overhanging the end flange adjacent the said tab and spaced from the top of said tab at a point between the tab and the side wall closer to said tab than the height of the adjacent side of the diffuser a distance greater than the effective thickness of the hinge lug but less than the distance of the hinge lug from the side of the diffuser nearest it.

3,358,139
CAR RETARDER CONTROL SYSTEM
Willis R. Smith, Rochester, N.Y., assignor to General Signal Corporation
Filed Sept. 6, 1960, Ser. No. 54,075
4 Claims. (Cl. 246—182)

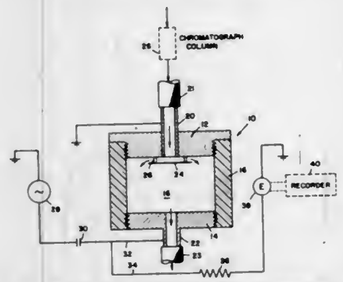


1. In a control system for a car retarder in a railway classification yard including a plurality of storage tracks to which railway car cuts are selectively routed, the combination of, registration means for providing a registration of available storage space on each of said storage tracks, car retarder control means for operating said car retarder to apply a predetermined amount of braking action to a particular car cut passing therethrough in accordance with the available storage space on the storage track to which said particular car cut is being routed as registered by said registration means, correction means effective when manually operated to one of a plurality of conditions each associated with a predetermined value of available storage space for changing the existing registration of said registering means into agreement with that value associated with the operated condition of said correction means, and means responsive to the existing storage space registration of said registering means and the predetermined value of storage space associated with each manually operated condition of said correction means for permitting a change in the existing available storage space registration of said registering means only provided that the predetermined value of storage space associated with the operated position of said correction means is less than the existing storage space registration of said registering means.

3. In a car retarder control system for a railway classification yard wherein railway car cuts are selectively routed to designated ones of a plurality of storage tracks, the combination of, a first plurality of registering devices rendered effective for each car cut being routed to provide a registration in conventional binary code form indicative of the number of available car storage spaces on the designated storage track to which said car cut is destined, a second plurality of registering devices, converter means responsive to the registration of said first plurality of registering devices for actuating said second

plurality of registering devices to provide a registration in reflected binary code form indicative of said number of available car storage spaces on said designated storage track, whereby only one of said second registering devices is actuated for each integral change in the number of available storage spaces on said designated storage track, a car retarder for retarding the car cut being routed to said designated storage track, and car retarder control means responsive to the reflected binary code form registration of said second plurality of registering devices for operating said car retarder to apply retardation to said car cut in accordance with the available storage space on said designated storage track.

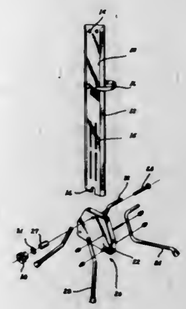
3,358,140
METHOD AND APPARATUS FOR ANALYZING AN IMPURITY GAS OF LOWER IONIZATION POTENTIAL THAN ITS CARRIER GAS
Robert K. Curran, Allentown, and Arthur I. Coleman, Philadelphia, Pa., assignors to Air Products and Chemicals, Inc., a corporation of Delaware
Filed Dec. 26, 1963, Ser. No. 333,511
5 Claims. (Cl. 250—43.5)



1. The method of analyzing the impurity content of a gaseous mixture including a carrier gas and an impurity gas wherein the ionization potential of the impurity gas is lower than that of the carrier gas comprising the steps of:
(1) partially ionizing said mixture to form free electrons, carrier ions, and impurity ions,
(2) forming a nonuniform charge density distribution of said electrons and ions across a space between first and second electrodes connected in circuit,
(3) applying an alternating voltage signal to said electrodes such that said carrier ions undergo charge-transferring inelastic collisions while said impurity ions undergo noncharge-transferring elastic collisions,
(4) setting the voltage and frequency of said signal and the spacing of said electrodes to predetermined values, said predetermined values being such that, with a pure carrier gas in said space, a current of a first magnitude is detected in said electrode circuit, and
(5) detecting the change in said detected current which results from and is proportional to the number of said impurity ions undergoing noncharge-transferring elastic collisions in said mixture.

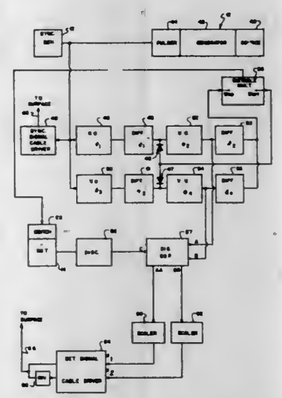
3,358,141
IMMOBILIZER FOR X-RAY ANALYSIS HAVING PRESSURE FUNCTIONING FASTENING MEANS
Erwin L. H. Hoffmann and Frederick W. Birch, Phoenix, Ariz., assignors to Bix Board Company, Scottsdale, Ariz., a partnership
Filed Apr. 2, 1965, Ser. No. 444,981
4 Claims. (Cl. 250—50)

1. An immobilizer comprising in combination an elongated radiotransparent board member defining a plurality of substantially vertical slots and having front and back sides, the back side of said board member having beveled elongated edges, a stand member comprising a base plate and a plurality of leg members secured to said base plate, means for securing said board member to said base plate whereby said board member may be supported by said base plate in a substantially vertical position, and a plurality of thin radiotransparent strap members having inside and outside surfaces, said board member and



strap members having mating pressure-functioning means secured thereto, said strap members having said fastening means secured near each end and forming part of the inside surfaces thereof and said board member having said fastening means secured to the beveled portion of the back side, whereby said strap members restrain and immobilize a subject positioned against the front side of said vertically supported board member.

3,358,142
DETECTOR GATING SYSTEM EMPLOYED IN A PULSED NEUTRON LOGGING SYSTEM
Eric C. Hopkinson and Alexander B. C. Marshall, Houston, Tex., assignors to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
Filed Apr. 20, 1964, Ser. No. 361,159
10 Claims. (Cl. 250—71.5)



7. In a radioactivity well logging system including a subsurface instrument, surface measuring and recording equipment, and a logging cable having first and second conductors interconnecting said instrument and said surface equipment,
said subsurface instrument further including a neutron source, first and second normally unresponsive detectors, and pulsing means for intermittently actuating said source to produce a sequence of bursts of neutrons,

the improvement in combination therewith comprising means for rendering said first detector responsive to incident radiations during first and second preselected portions of the time intervals defined by said bursts of neutrons and for rendering said second detector responsive to incident radiations during third and fourth preselected portions of said time intervals, said means including

first gating means responsive to said pulsing means for rendering said first detector responsive during said first preselected portions of said time intervals,

second gating means responsive to said first gating means for rendering said first detector responsive during said second preselected portions of said time intervals,

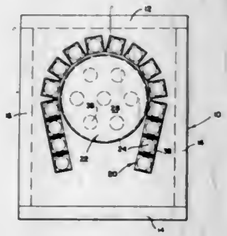
third gating means responsive to said pulsing means for rendering said second detector responsive during said third preselected portions of said time intervals,

fourth gating means responsive to said third gating means for rendering said second detector responsive during said fourth preselected portions of said time intervals,

first signal separating means connected to said first detector and responsive to said first and second gating means for separating and distinguishing the signals produced by said first detector during ones of said first and second preselected portions of said time intervals from the signals produced by said first detector during the others of said first and second preselected portions of said time intervals and for connecting said signals from said first detector to said first conductors, and

second signal separating means connected to said second detector and responsive to said third and fourth gating means for separating and distinguishing signals produced by said second detector during ones of said third and fourth preselected portions of said time intervals from the signals produced by said second detector during the others of said third and fourth preselected portions of said time intervals and for connecting said signals from said second detector to said second conductor.

3,358,143
ADJUSTABLE MOUNTING FOR PLASTIC PHOSPHOR SCINTILLATION DETECTORS
Charles R. Keck, Morris Road, Okmulgee, Okla. 74447, and Paul W. Jordan, Montana State University, Bozeman, Mont. 59715
Filed Oct. 13, 1966, Ser. No. 586,509
2 Claims. (Cl. 250—71.5)



1. A scintillation detector comprising:

(A) a plurality of polished plastic phosphor rectangular logs individually, removably supported in a horseshoe configuration, so as to inwardly define a detection zone; each log having: truncated conical sections of plastic phosphor containing no fluor and mounted at each end of said log;

(B) a flat plastic phosphor detector mounted upon a wheeled carriage, said carriage being normally disposed with respect to said horseshoe configuration and at one end of said detection zone with photomultiplier tubes connected thereto in electrical additive relationship, said wheeled carriage being removable from said detection zone;

(C) photomultiplier tubes mated to said truncated conical sections, said photomultiplier tubes being connected in electrical additive relationship, whereby a source of radioactive energy striking each said plastic phosphor log, produces a burst of light which travels along said log in both directions and is converted by said photomultiplier tubes to electrical energy;

(D) an inert housing including inner resilient supports for each said plastic log and said photomultiplier tubes detachably mounted in a shielded detection zone; and

(E) spring pressurizing means interconnecting said plastic phosphor logs and said photomultiplier tubes, so as to lock said photomultiplier tubes and said plastic phosphor logs to each other within said housing, said spring pressurizing means being positioned at an adjusting end of each said plastic phosphor log and including:

(i) a stationary base plate encircling said photomultiplier tube and supported in said housing;

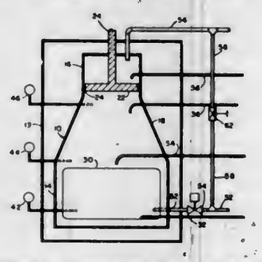
(ii) a movable shield abutting an adjusting end of said truncated conical sections adjacent each log;

(iii) a movable spring pressure plate supported in said housing intermediate said stationary base plate and said movable shield;

(iv) spring pressurizing means supported intermediate said movable shield and said spring pressure plate; and

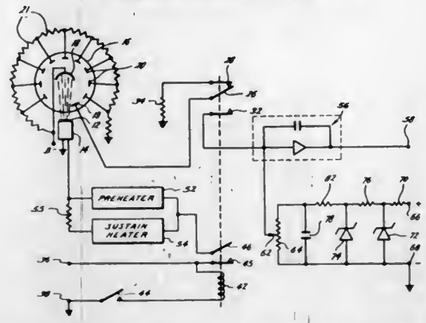
(v) spring plate adjusting means extending through said stationary base plate and against said movable spring pressure plate, so as to move said spring plate and pressurize said spring means.

3,358,144
VARIABLE RADIATION LENGTH BUBBLE CHAMBER
Maurice Goldhaber, Bayport, N.Y., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Dec. 21, 1965, Ser. No. 515,487
5 Claims. (Cl. 250—83)



4. In a method of operating a hydrogen bubble chamber consisting of means forming a sealed chamber and means for selectively varying the volume of the space within said chamber, the improvement comprising the steps of supplying preselected amounts of liquid hydrogen to said chamber, maintaining said hydrogen in a liquid condition, adding a preselected amount of liquefied neon to establish a desired radiation length for said bubble chamber, and cyclically compressing and expanding said contents to render the hydrogen-neon mixture sensitive to ionizing radiation.

3,358,145
RADIATION DETECTOR READOUT SYSTEM
Kenneth D. Cashion, Friendswood, and Benny R. Baker, Houston, Tex., assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Dec. 29, 1964, Ser. No. 422,100
1 Claim. (Cl. 250—207)



A radiation detector readout system for converting radiation into light and measuring this light, said system comprising:

a photomultiplier tube having a light sensitive cathode, an anode, and intermediate electrodes arranged therebetween;

an integrating circuit having an input terminal and an output terminal;

switching means connecting the anode of said photomultiplier tube to a load when no light signal is present at said light sensitive cathode, and connecting the anode to said input terminal when a light signal is present at said cathode;

means connected to said integrating circuit input terminal for supplying a current equal in magnitude and opposite in polarity to the "dark" current signal of said photomultiplier tube whereby the signal at said integrating circuit output terminal is independent of said "dark" current signal,

said last mentioned means comprising a highly stable variable current source containing:

(a) a first resistor and a zener diode connected in series across a source of D.C. potential having a sufficient magnitude and polarity so as to allow said zener diode to operate in its voltage regulator state;

(b) a series circuit connected across said zener diode comprising a second resistor and the parallel combination of a capacitor and a third resistor; and

(c) a movable contact connected at one end to said third resistor and connected at its other end to said input terminal.

3,358,146
INTEGRALLY CONSTRUCTED SOLID STATE LIGHT EMISSIVE-LIGHT RESPONSIVE NEGATIVE RESISTANCE DEVICE
Samuel W. Ing, Jr., Manlius, and Harold A. Jensen, Liverpool, N.Y., assignors to General Electric Company, a corporation of New York
Filed Apr. 29, 1964, Ser. No. 363,553
10 Claims. (Cl. 250—213)

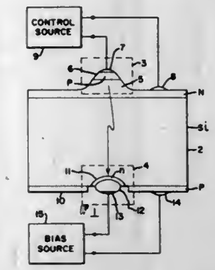
1. A solid state device comprising:

(a) a semi-insulating body,

(b) a light emitting element formed integral with a portion of said semi-insulating body,

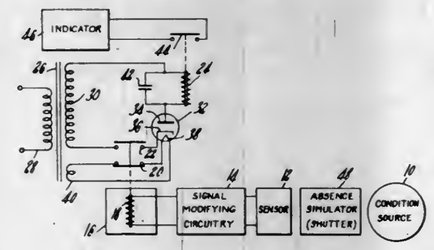
(c) a photosensitive negative resistance p-si-n diode formed integral with a second portion of said semi-insulating body so that the si region of said diode is common to said semi-insulating body,

(d) said element and said diode being in a radiantly coupled relationship and constructed and arranged so that a continuous solid medium extends between



the light emitting element and the photosensitive diode, whereby light emitted from said element is efficiently coupled to said diode for controlling its impedance state.

3,358,147
CONTROL APPARATUS WITH TIME DELAY USING RECTIFIER
Philip Giuffrida, North Andover, Mass., assignor to Electronics Corporation of America, Cambridge, Mass., a corporation of Massachusetts
Filed Apr. 20, 1964, Ser. No. 360,871
11 Claims. (Cl. 250—217)



1. A condition sensing system comprising a condition sensor,

signal modifying circuitry connected to said sensor,

an output device responsive to signal from said signal modifying circuitry when said sensor senses a condition,

a load device,

thermoinic rectifying means connected in series with said load device,

said thermionic rectifying means including a heater, and

means responsive to said output device to energize said heater and to connect said thermionic rectifying means and said load device in energized circuit relationship alternately as a function of the output signal from said condition sensor.

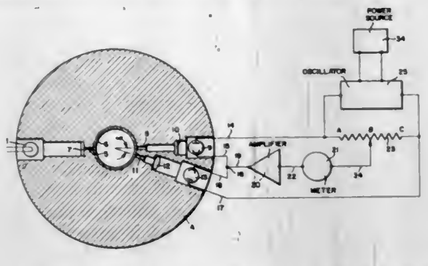
3,358,148
HAZE MEASURING APPARATUS WITH SOLID BLOCK WITH CAVITY
George E. Conklin, North Plainfield, and John J. Heigl, Short Hills, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware
Filed Jan. 29, 1963, Ser. No. 254,687
8 Claims. (Cl. 250—218)

1. An apparatus for measuring haze in a material which comprises in combination:

(a) A block having a center cavity and a plurality of passageways communicating with both exterior of the block and with said center cavity,

(b) A source of radiant energy being positioned with respect to said block so as to transmit said radiant energy through the first of said passageways,

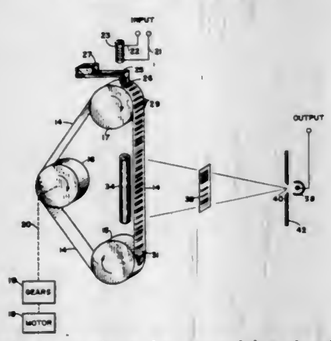
(c) A first means responsive to said radiant energy, said first means being located with respect to a second of said passageways, so as to directly receive said radiant energy, said second passageway being diametrically opposed to said first passageway,



(d) A second means responsive to said radiant energy, said second means being located with respect to a third of said passageways, said third passageway being displaced from the axis passing through the first and second passageways at a predetermined angle,

(e) Means responsive to said first and second means to measure the relative amount of radiant energy received by said first and second means.

3,358,149
OPTICAL CORRELATOR WITH ENDLESS GREASE BELT RECORDER
Fritz K. Preikschat, Bellevue, Wash., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Aug. 17, 1964, Ser. No. 389,996
7 Claims. (Cl. 250—219)



1. An optical correlator for recognizing signal patterns comprising:

a transparent endless belt;

means to move said belt at a predetermined rate;

a layer of non-drying grease on the belt, said grease having an optical transmittance dependent upon the thickness of said grease;

mechanical means to vary the thickness of said grease in accordance with an input signal;

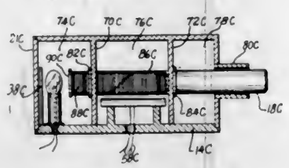
reference means, said reference means having alternate transparent and opaque areas representative of a predetermined signal pattern;

light intensity measuring means;

illuminating means operative to transmit light through said belt, said grease, and said reference means into said measuring means, said measuring means detecting changes of intensity in accordance with the degree of similarity between said input signal and said predetermined signal pattern,

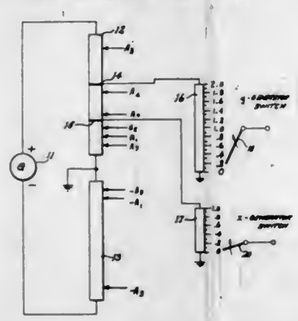
and smoothing means to smooth the grease for immediate reuse.

3,358,150
PHOTOELECTRIC POTENTIOMETER WITH TRANSLUCENT SHAFT LIGHT VALVE
Steven E. Summer, 80—58 250th St., Bellerose, N.Y. 11426
Filed Nov. 27, 1964, Ser. No. 414,304
1 Claim. (Cl. 250—227)



A sine-cosine potentiometer comprising a housing having a base portion, a translucent rotatable shaft having its inner end disposed within said housing, and its outer end projecting outwardly therefrom, a photo-electric device and a light source secured to said base portion, said shaft having a hollow chamber filled with a light pervious colloidal material, the outer end of said chamber being coextensive with the inner end of said shaft, said shaft having a pattern impressed on a portion of the outer surface thereof, said photo-electric device being positioned adjacent said patterned portion of said shaft, a shield having a slit therein being connected to the front of said photo-electric device, said light source being positioned adjacent the inner end of said shaft, means for rotating said shaft, thereby causing the light received by said photo-electric device to be varied in a sinusoidal manner in accordance with said pattern, whereby the resultant output of said photo-electric device is a sine-cosine signal.

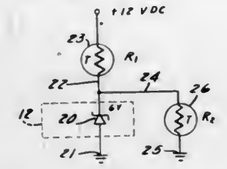
3,358,151
VOLTAGE SUPPLY SOURCE PROVIDING STABLE VOLTAGES AT RESISTOR TAPS REPRESENTING COEFFICIENTS OF TERMS IN A POLYNOMIAL EQUATION
Kurt H. Haase, Watertown, Mass., assignor to the United States of America as represented by the Secretary of the Air Force
Filed Jan. 26, 1965, Ser. No. 428,271
3 Claims. (Cl. 307—15)



1. An apparatus for obtaining stable voltage values for use in an analog computer for finding roots of a polynomial that requires values of the coefficients to be expressed in two forms, the original form and a second form as a function of two variables, the apparatus comprising: a central voltage source; a first resistor and a second resistor in series with the central voltage source, each resistor having a plurality of taps for obtaining a particular value of voltage with each tap representing

a coefficient of the polynomial expressed in the original form, the first resistor having two fixed taps; and means for obtaining a plurality of voltage values connected to the two fixed taps.

3,358,152
TEMPERATURE COMPENSATED TRANSISTOR AND MEANS FOR CONTROLLING
Nicholas G. Alexakis, 320 S. Cummings St., Los Angeles, Calif. 90033
Filed July 22, 1963, Ser. No. 296,586
8 Claims. (Cl. 307—88.5)



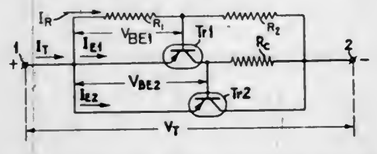
1. Means for stabilizing the operating temperature of a semi-conductor chip comprising in combination:

(a) electrically energizable heat generating means mounted in intimate heat conductive relation with the chip for heating the chip;

(b) circuit means adapted to connect an electrical source to said heat generating means; and

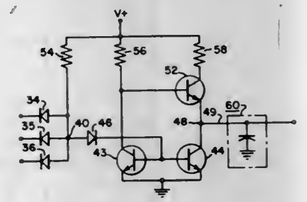
(c) control means including temperature sensitive means connected to said circuit means and adapted to respond to changes in ambient temperature for continuously controlling the provision of energizing current flow through said heat generating means inversely with respect to ambient temperature changes, said temperature sensitive means including an interconnected positive temperature coefficient resistor means and negative temperature coefficient resistor means, said resistor means being so proportioned as to vary energizing current flow through said heat generating means so that the heat generated will have an essentially linear characteristic with respect to the applied energizing current.

3,358,153
NEGATIVE-RESISTANCE CIRCUIT ARRANGEMENT
Oey Sik Poo, Hamburg-Wandsbek, Germany, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed June 17, 1964, Ser. No. 375,906
Claims priority, application Germany, June 21, 1963, P 32,046
7 Claims. (Cl. 307—88.5)



1. A two terminal circuit that exhibits a negative current-voltage characteristic region between first and second positive current-voltage characteristic regions, comprising first and second terminals forming an input and output respectively, first, second and third branches connected in parallel between said first and second terminals, said first branch comprising a first transistor having its emitter connected to said first terminal, and means connecting the collector of said first transistor to said second terminal, said second branch comprising a second transistor having its emitter connected to said first terminal, and resistor means connected between the collector of said second transistor and said second terminal, said first and second transistors being of the same conductivity type, said third branch comprising a resistive voltage divider having a tap, means connecting the base of said first transistor to the collector of said second transistor, means connecting the base of said second transistor to said tap whereby said divider provides the sole direct current bias for said second transistor, a source of voltage, and means applying said voltage between said first and second terminals, whereby the voltage between said first and second terminals is variable, the resistances of said voltage divider being proportioned to hold said second transistor in a cut off state in a first range of voltage between said first and second terminals whereby only said first transistor is conductive, and to bias said second transistor to a conductive state for voltages in a second range between said terminals above said first range, whereby the collector current flow of said second transistor through said resistor means decreases the base current of said second transistor, and in a portion of said second range increasing voltages between said terminals produce a decrease in the collector current of said first transistor that is greater than the increase in collector current of said second transistor.

3,358,154
HIGH SPEED, LOW DISSIPATION LOGIC GATES
Roland Y. Hung, Laurel, Md., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 29, 1964, Ser. No. 407,341
4 Claims. (Cl. 307—88.5)



2. A logic circuit comprising:

an input circuit for receiving bivalued input signals for developing bivalued signals at a circuit point;

a first and second transistor each having a base, collector and emitter electrode and having their base electrodes commonly connnected together and their emitter electrodes connected to a point of reference potential;

means connecting said circuit point with said commonly connected base electrodes;

an output junction connected to the collector electrode of said second transistor;

a third transistor having a base, collector and emitter electrode and having its base electrode connected to the collector electrode of said first transistor and emitter electrode connected to said output junction;

a first resistor connected to said common point for supplying base current to said first and second transistors;

a second resistor connected to the collector of said first, and base electrode of said third transistor;

a third resistor connected to the collector electrode of said third transistor;

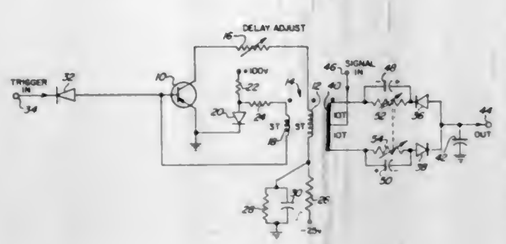
output lead means connected to said output junction; and

means for connecting said resistors to a source of operating potential.

3,358,155
GATING CIRCUIT HAVING GATING OSCILLATOR WITH INTERNAL TIME DELAY

Philip S. Crosby, Portland, Oreg., assignor to Tektronix, Inc., Beaverton, Oreg., a corporation of Oregon

Filed Oct. 30, 1964, Ser. No. 407,676
8 Claims. (Cl. 307—88.5)

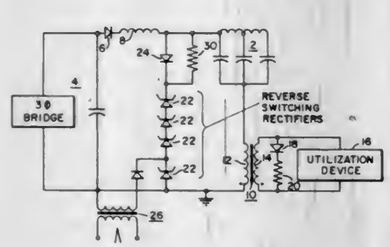


1. A gating circuit comprising:
a monostable blocking oscillator;
sampling gate means connected to said oscillator, for transmitting a portion of an A.C. input signal applied to the input terminal of said gate means through the gate means to its output terminal when said gate means is rendered conducting by an output gating pulse produced by said oscillator;
bias means for rendering said gate means normally nonconducting; and
delay means within said oscillator for causing said oscillator to produce the output gating pulse only after the oscillator is triggered, driven into a saturated conducting state and returned to a nonconducting state so that there is a time delay between the application of a trigger pulse to said oscillator and the production of the output gating pulse which renders said gate means conducting.

3,358,156
PLURALITY OF REVERSE SWITCHING RECTIFIERS AND A REVERSE ENERGY DISSIPATION CIRCUIT COMBINATION IN A LINE PULSING MODULATOR

Peter Mlynar, Monroeville, and David A. Battistella, Swissvale, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Mar. 12, 1965, Ser. No. 439,162
3 Claims. (Cl. 307—88.5)

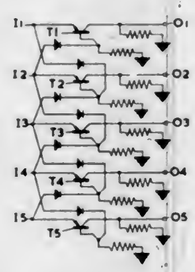


1. In a line pulsing modulator, the combination comprising; a pulse forming network and a load connected in a first circuit combination; means for charging said pulse forming network to a voltage of predetermined magnitude; a plurality of semiconductor switching devices each being conductive in one direction and each having a predetermined switching voltage level which when exceeded will render each said device conductive in the other direction; a unilateral conduction means and an impedance means connected in parallel circuit combination; said parallel circuit combination and said plurality of semiconductor switching devices connected in series circuit combination across said first circuit combination; said semiconductor switching devices poled to block a discharge of said pulse forming network when the sum of their switching voltage levels exceeds said voltage of predetermined magnitude; means for exceeding the switching voltage level of at least one of said semiconductor switching devices to reduce the sum of the switching voltage levels of the remaining semiconductor switching devices to be less than said voltage of predetermined magnitude whereby all said semiconductor switching devices are rendered conductive in said other direction; said unilateral conducting means poled to block current in one direction and to allow current therethrough in said other direction; said impedance means dissipating energy flowing through said semiconductor switching devices in said one direction due to any mismatch of the load with said pulse forming network.

3,358,157
SELECTIVE GATE CIRCUITS

John Noel Shearme, Chesham Bois, England, assignor to Minister of Aviation in Her Britannic Majesty's Government of the United Kingdom of Great Britain and Northern Ireland, London, England

Filed Apr. 29, 1965, Ser. No. 451,715
Claims priority, application Great Britain, Apr. 30, 1964, 17,985/64
6 Claims. (Cl. 307—88.5)

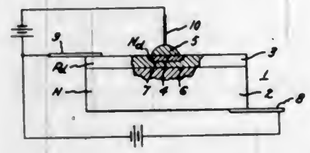


1. A selective array of gate circuits comprising a set of analogue signal input lines, at least three in number and arranged in a given order, an equal number of transistors each having its emitter connected to a separate one of said analogue signal input lines, an equal number of collector-circuit resistors each connected from the collector of a separate one of said transistors to a power supply connection, an equal number of base-circuit resistors each connected from the base of a separate one of said transistors to a power supply connection, an equal number of analogue signal output lines each connected to the collector of a separate one of said transistors, and a plurality of unilaterally conductive devices each connected from the base of one of said transistors to a one of said analogue signal input lines which is adjacent in said given order to that one of said analogue signal input lines which is connected to the emitter of the same one of said transistors, said unilaterally conductive devices being connected in such polarity that their forward currents will flow through the said base-circuit resistors in the same direction as the base currents of said transistors, and those of the said analogue signal input lines other than the first and the last in the said given order being each connected to at least two of said unilaterally conductive devices.

3,358,158
SEMICONDUCTOR DEVICES

Jerome J. Tiemann, Burnt Hills, N.Y., assignor to General Electric Company, a corporation of New York

Filed Apr. 13, 1965, Ser. No. 447,847
4 Claims. (Cl. 307—88.5)

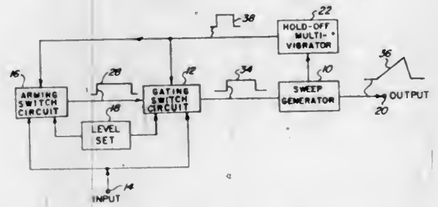


1. A semiconductor device comprising: a semiconductive body consisting essentially of a first cryogenically conductive region of one conductivity-type, a second degenerate region in contact with said first region and having a conductivity-type opposite thereto, and a third degenerate region in contact with said second region having conductivity-type the same as that of said first region, said second region completely separating said first and third regions; means for externally biasing said second region; and first and second separate and substantially plane parallel P-N junctions separating said first and second and said second and third regions respectively, said second P-N junction exhibiting tunneling so that substantial charge transport between said third and first regions is produced by tunneling of majority carriers through said second P-N junction and said second region.

3,358,159
CIRCUIT FOR GATING SWEEP GENERATOR DIRECTLY FROM INPUT SIGNAL

George E. Smith, St. Louis, Mo., assignor to Tektronix, Inc., Beaverton, Oreg., a corporation of Oregon

Filed May 3, 1965, Ser. No. 452,715
8 Claims. (Cl. 307—88.5)

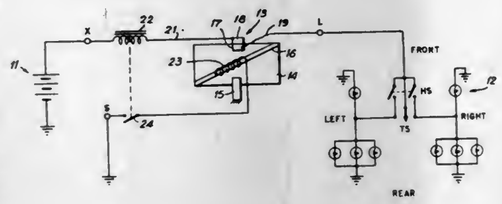


1. A circuit for gating a signal generator comprising:
a signal generator which produces an output signal when a gating signal is applied to said signal generator;
a gating switch circuit having at least one stable state and connected to apply said gating signal to said signal generator when said gating circuit is triggered;
an arming switch circuit having two stable states and connected to apply an arming signal to said gating circuit when said arming circuit is triggered to enable said gating circuit to be triggered;
means for applying a trigger signal to both said arming circuit and said gating oscillator in order to trigger said arming circuit from a quiescent stable state to a triggered stable state on an earlier portion of the trigger signal and to trigger said gating circuit on a later portion of the same trigger signal after said arming signal has been produced; and
means for reverting said arming circuit to its quiescent stable state in response to the termination of said output signal.

3,358,160
FLASHERS

Arthur F. Bleiweiss, New York, and George Colombo, East Rockaway, N.Y., and John B. Dickson, Clewiston, Fla., assignors to Lehigh Valley Industries, Inc., a corporation of Delaware

Filed Mar. 24, 1966, Ser. No. 537,208
7 Claims. (Cl. 307—132)

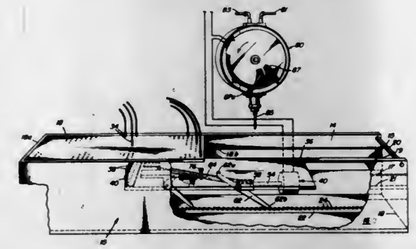


1. A thermomotive flasher comprising a snap action member, a heat responsive element carried by said snap action member for controlling the snapping thereof in response to heating and cooling of said heat responsive element, said snap action member and heat responsive element defining an assembly, a fixed contact, a contact mounted on said assembly and being movable thereby upon snapping of said snap action member, said movable contact being engageable with and disengageable from said fixed contact, a high current load circuit independent of said assembly, said load circuit including an input terminal connected to one of said contacts and a load terminal connected to the other of said contacts, for connecting a source of potential to a load when said contacts are in engagement, and a low current heating circuit including said snap action member and said heat responsive element for controlling the heating of said heat responsive element, said low current heating circuit being cyclically controlled in response to engagement and disengagement of said fixed and movable contacts for effecting heating and cooling of said heat responsive element, whereby only the currents in the heating circuit pass through said assembly during the heating cycle and the currents in the load circuit by-pass said assembly during the load cycle.

3,358,161
BATCH TEMPERATURE-FUNCTION PROGRAM CONTROLLER

Jefferson L. Claiborne, Chattanooga, Tenn., assignor to Dixie Yarns, Inc., a corporation of Tennessee

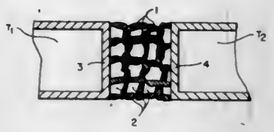
Filed June 8, 1964, Ser. No. 373,457
4 Claims. (Cl. 307—140)



1. Apparatus for controlling a plurality of circuits comprising a cam having a contoured periphery, means to move said cam through a path, two followers for said cam each following said periphery 180° apart, a temperature control device, a control mechanism, means responsive to displacement of one of said followers to actuate

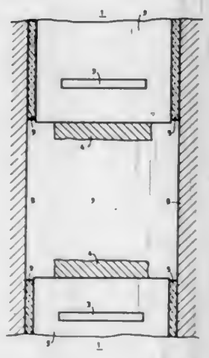
said control mechanism, and means responsive to displacement of the other of said followers to control said temperature control device.

3,358,162
THERMOELECTRIC GENERATORS UTILIZING POROUS ELECTRON EMITTING MATERIALS
Guss L. Krake and Aldert van der Ziel, Minneapolis, Minn., assignors to the United States of America as represented by the Secretary of the Army
Filed Mar. 30, 1964, Ser. No. 355,984
8 Claims. (Cl. 310—4)



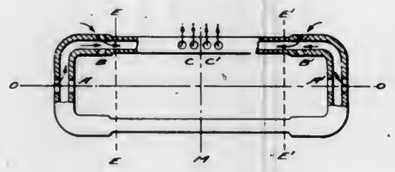
1. A device for the direct conversion of heat to electricity comprising: a first electrode maintained at an elevated temperature; a layer of porous electron emitting material electrically connected to said first electrode, said porous emitting material having a porosity greater than 50%; and a second electrode electrically connected to said emitting material in such a manner that said material is sandwiched between said first and second electrode, said second electrode being maintained at a temperature lower than said elevated temperature.

3,358,163
ELECTRODES FOR MAGNETOHYDRODYNAMIC GENERATORS
Bernhard Hofmann, Erlangen-Bruck, and Hans Keil, Erlangen, Germany, assignors to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, a corporation of Germany
Filed July 21, 1964, Ser. No. 384,173
Claims priority, application Germany, Aug. 2, 1963, S 86,505
3 Claims. (Cl. 310—11)



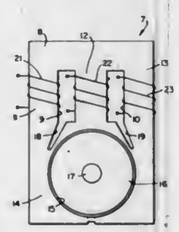
1. In a magnetohydrodynamic generator, a pair of electrodes each having a face spaced from and opposite to the other, said faces defining a plasma flow passage therebetween, each of said faces having a central region and adjacent marginal regions, said central region being raised relative to the respective marginal regions so that the width of the passage between both said central regions is less than between the respective marginal regions of said faces, said raised central regions having a combined height relative to their respective marginal regions which is substantially ten percent of the width of the passage between the respective marginal regions of said faces.

3,358,164
TURBO-GENERATOR WITH DIRECT COOLING OF THE ROTOR WINDING
Friedrich Müllner, Mannheim-Freudenheim, Germany, assignor to Aktiengesellschaft Brown, Boveri & Cie, Baden, Switzerland, a joint-stock company
Filed Sept. 7, 1965, Ser. No. 485,500
Claims priority, application Switzerland, Oct. 8, 1964, 12,824/64
4 Claims. (Cl. 310—61)



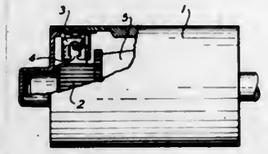
1. In a turbo-generator construction which includes a winding on the rotor member thereof constituted by hollow conductor turns having end portions at each end of the rotor and straight conductor portions in the slots of the rotor between said end portions, and wherein a gaseous coolant is passed through said hollow conductor turns, the improvement wherein two gas inlets are provided on each side of a conductor turn in the direction of the gas flow, and a gas outlet is provided at the middle of the straight portion of said conductor turn, the first of said gas inlets at each side being located in the middle of the end portion of the conductor turn and the second gas inlet at each side being located shortly before the point where the end portion enters the rotor.

3,358,165
THREE-PHASE ELECTRIC MOTORS
Stefan Grosu, Bucharest, Rumania, assignor to Ministerul Industriei Constructiilor de Masini, Bucharest, Rumania
Filed Dec. 30, 1964, Ser. No. 422,249
4 Claims. (Cl. 310—185)



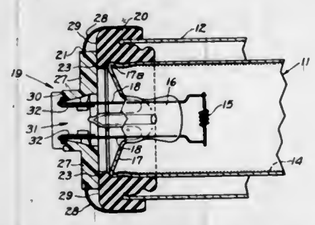
1. A three-phase electric motor, which comprises:
an elongated, laminated magnetic core having first and second portions disposed in longitudinally adjacent relation, the first portion including a pair of transversely spaced, elongated slots bounded by three parallel legs, the second portion including a circular aperture extending through all the laminations in the core in a direction normal thereto, said elongated slots being at least partially coextensive with the outer periphery of said circular aperture, the center of the aperture being substantially aligned with the intermediate one of the legs;
a plurality of coils individually wound on the three legs for connection to an external three-phase power source; and
a rotor received in the circular aperture.

3,358,166
DYNAMOELECTRIC MACHINE BRUSH
Valery A. Nolan, Richardson, Tex., assignor to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York
Filed July 9, 1965, Ser. No. 470,767
6 Claims. (Cl. 310—228)



1. The combination with an enclosed dynamoelectric machine having rotating commutating means and silicone-insulated windings which give off enclosure-contaminating silicone vapors, of an electrographitic brush adapted for bearing on said commutating means and for conducting electric current in cooperation with said windings, said brush having a copper-graphite insert therein at the face of said brush bearing on said commutating means.

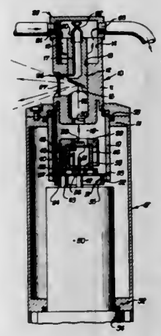
3,358,167
JACKETED DISCHARGE LAMP
Bruce E. Shanks, Wickliffe, Ohio, assignor to General Electric Company, a corporation of New York
Filed Oct. 18, 1965, Ser. No. 497,405
7 Claims. (Cl. 313—25)



1. A discharge lamp comprising an elongated tubular vitreous envelope having an inlead extending from an end, an elongated radiation-transmitting sleeve surrounding said envelope, a thermally insulating spacer at said end of said envelope, said spacer having a central bore accommodating the envelope end and an annular groove accommodating an end of said sleeve to support the sleeve spaced from the envelope, and a base comprising an electrically insulating body supporting an electrical contact and an annular metal shell attached thereto, said metal shell gripping said spacer to fasten said base to said spacer with said body spaced from the end of said glass envelope, said inlead being connected to said electrical contact.

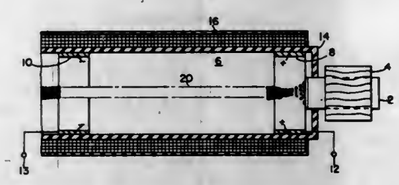
3,358,168
X-RAY TUBE WITH COOLING JACKET FOR TARGET
Mortimer E. Weiss, Santa Monica, Calif., assignor to Morris Associates, Hawthorne, Calif, a partnership
Filed Jan. 6, 1965, Ser. No. 423,685
8 Claims. (Cl. 313—36)

1. In an X-ray tube, the combination comprising,
an upright high voltage insulative ceramic tubular envelope,
a base closing the ceramic envelope at the lower end thereof and carried by the envelope,
a cathode carried by said base interiorly of and spaced from the envelope for directing a beam of electrons to travel generally upwardly from within said envelope,
means closing the ceramic envelope at the upper end thereof and including an upright tubular body having a side window spaced above the level of said ceramic tube, the body having a bore and counterbore in vertical alignment with said cathode, the counterbore being located above the level of said window,



said means including an insert received downwardly into the body bore to project in said counterbore, the insert forming an outgassing passage communicating through the body lower portion with the interior of the ceramic envelope,
a target on said insert within the body to receive impingement of said beam entering said body and to direct an X-ray beam through said window,
said means also including a seal at the upper terminal of said outgassing passage,
and a closure carried by the upper terminal of said body to confine coolant circulating in said counterbore and about said seal in cooling relation with the insert and said body.

3,358,169
METASTABLE ION PINCH LIGHT SOURCE
Max Garbuny, Penn Hills, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Jan. 25, 1963, Ser. No. 253,806
4 Claims. (Cl. 313—63)



1. A high intensity electromagnetic radiation source comprising, an ion supply source for providing a flow of ions, means for exciting said ions to metastable energy states to provide a flow of metastable ions, means for producing an electric field to accelerate said flow of metastable ions, and magnetic means to apply a magnetic field

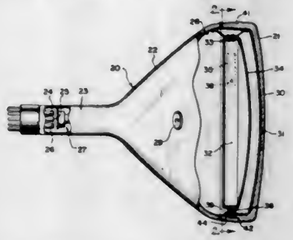
to said flow of metastable ions to constrict the flow and cause the ions to release energy in the form of electromagnetic radiation.

3,358,170

COLOR TELEVISION PICTURE TUBE AND MATING SUPPORT MEMBERS FOR MOUNTING THE COLOR SELECTION MASK WITHIN THE TUBE

Joseph P. Fiore, Chicago, Ill., assignor to The Rauland Corporation, a corporation of Illinois

Filed Jan. 11, 1962, Ser. No. 165,476
6 Claims. (Cl. 313—64)



1. In a color television picture tube:
a glass faceplate comprising a spherically curved generally rectangular screen portion and a rim portion extending outwardly therefrom;
a mosaic phosphor screen on the internal surface of said screen portion of said faceplate;
a color-selection device having a rigid generally rectangular frame having a configuration similar to that of said rim portion and having outside dimensions less than the corresponding inside dimensions of said rim portion by a predetermined substantially uniform distance;
and means for mounting said color-selection device to said faceplate in predetermined space relation to said mosaic screen, said means comprising
(a) three cantilever springs on said generally rectangular frame, one at the center of one of the longer legs and the other two at opposed locations on the shorter legs substantially three-fourths of the distance from said one longer leg, said springs being outwardly biased in a common circumferential direction,
(b) three tapered studs, each of a length less than said predetermined distance, respectively fixed to said springs and outwardly biased thereby, and
(c) three sockets on said rim portion of said envelope for receiving said studs,
the bias of said springs being sufficient to maintain all of said studs in mating engagement with their respective sockets even upon temporary lateral displacement of said frame by a maximum distance in any direction.

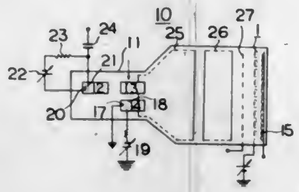
3,358,171

BISTABLE WRITING TYPE STORAGE TUBE WHEREIN METAL SECTIONS ARE DISPOSED IN THE RESPECTIVE WIRES OF THE TARGET MESH

Yoshiaki Nakayama and Tatsuya Yamada, Tokyo, and Torakichi Kobayashi, Kawasaki-shi, Japan, assignors to Tokyo Shibaura Electric Co., Ltd., Kawasaki-shi, Japan, a corporation of Japan

Filed Dec. 27, 1963, Ser. No. 333,886
Claims priority, application Japan, Dec. 28, 1962, 37/58.080
5 Claims. (Cl. 313—68)

1. In a bistable writing type storage tube including an evacuated envelope, a fluorescent screen disposed in said envelope to display a pattern, at least two electron guns and a storage target disposed between said fluorescent screen and said electron guns, one of said electron guns emitting an electron beam adapted to write a potential pattern on said target corresponding to an input signal and the other of said electron guns emitting a flood electron beam adapted to maintain said target at two stable and definite potentials and to excite said fluorescent screen to display thereon a pattern corresponding to said potential pattern on said target, said target having a multi-apertured metal electrode in the form of a mesh grid means, and a mesh of dielectric material forming a unitary structure with the metal electrode, the improvement therein wherein said mesh of dielectric material includes a substance having large secondary electron emission ratio on one side of said dielectric mesh and said metal electrode is formed on said substance.

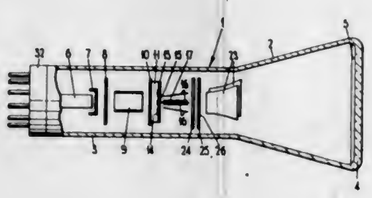


3,358,172

CATHODE RAY TUBE WITH MEANS FOR SPLITTING THE ELECTRON BEAM INTO INDIVIDUALLY DEFLECTED AND FOCUSED BEAMS

David William Lewis, West High Wycombe, England, assignor to The M-O Valve Company Limited, London, England, a British company

Filed July 26, 1966, Ser. No. 567,932
Claims priority, application Great Britain, July 28, 1965, 32,261/65
6 Claims. (Cl. 313—80)



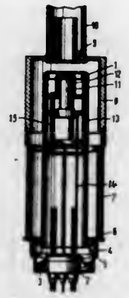
1. A cathode ray tube tube comprising: an electron gun for producing a primary beam of electrons; beam-splitting means for splitting said primary electron beam into a plurality of subsidiary electron beams; a target at which said subsidiary beams are directed; a plurality of pairs of deflector plates respectively associated with said subsidiary electron beams whereby each electron beam may be individually scanned across said target; a plurality of further electrodes, each said further electrode being disposed between the target and the pair of deflector plates associated with a different one of said subsidiary beams, and electrically separated from the other electrodes so that individually variable potentials can be applied to said further electrodes to enable the configuration of the electric field between each further electrode and said beam-splitting means along the path of each said subsidiary electron beam to be individually varied, thereby to allow the focus of said subsidiary beams to be individually controlled.

3,358,173

BEAM GENERATING SYSTEM FOR ELECTRON TUBES WITH A HIGH BREAKDOWN STRENGTH

Paul Meyerer, Ottobrunn, and Artur Kraus and Arno Hinckeldey, Munich, Germany, assignors to Siemens Aktiengesellschaft, a corporation of Germany

Filed Apr. 12, 1965, Ser. No. 447,574
Claims priority, application Germany, Apr. 15, 1964, S 50,961
11 Claims. (Cl. 313—82)



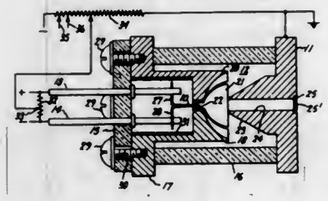
1. A beam generating system for the generation of a magnetically focussed electron beam of great current density in high-power tubes, especially traveling wave tubes, said system comprising a cup-shaped member, a cathode, a focussing electrode and a first anode disposed in said cup-shaped member, said first anode constructed in the form of a shielding cylinder and serving as a supporting tube for the cathode and the focussing electrodes.

3,358,174

ELECTRON GUN HAVING A SEGMENTED CONTROL ELECTRODE

William E. Glenn, Jr., Scotia, N.Y., assignor to General Electric Company, a corporation of New York

Filed Dec. 18, 1964, Ser. No. 419,429
4 Claims. (Cl. 313—83)



1. An electron gun for producing a focused beam of electrons comprising a filamentary cathode, an anode having a beam defining aperture therein, and a grid electrode structure interposed between said anode and cathode and including a plurality of mutually insulated segments defining an opening therethrough for the passage of electrons, the end of said cathode being received within said opening.

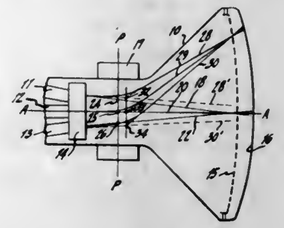
3,358,175

CATHODE RAY TUBE WITH MOSAIC TYPE PHOSPHOR SCREEN

Albert M. Morrell, East Petersburg, and Richard H. Godfrey, Lancaster, Pa., assignors to Radio Corporation of America, a corporation of Delaware

Original application July 6, 1962, Ser. No. 208,044, now Patent No. 3,282,691, dated Nov. 1, 1966. Divided and this application May 16, 1966, Ser. No. 567,024
11 Claims. (Cl. 313—92)

1. A cathode ray tube comprising:
(a) a shadow mask having a systematic array of apertures therein,
(b) a mosaic type phosphor screen disposed adjacent to said mask and comprising a corresponding systematic array of phosphor dot trios, and
(c) a delta array of three electron guns disposed to project their electron beams onto said mask and screen,



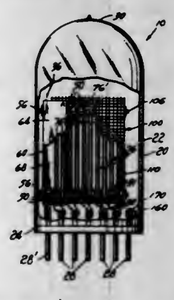
(d) said dot trios being substantially equilateral at the center of said screen, relatively horizontally compressed out of equilateralism at screen positions horizontally displaced from said center, and relatively vertically compressed out of equilateralism at screen positions vertically displaced from said center.

3,358,176

MULTIPLE CATHODE INDICATOR TUBE HAVING NO OBSTRUCTION IN THE FORM OF SUPPORT DISKS

Fred O. Rosenberg, Jr., Colonia, and John N. Hoomans, Martinsville, N.J., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Filed July 19, 1965, Ser. No. 472,887
13 Claims. (Cl. 313—109.5)



1. A cathode glow indicator tube including an envelope which is elongated in the vertical direction and has a stem, a dome, and a viewing window extending along the length of the envelope,
the envelope being filled with a gas capable of supporting cathode glow and having tube pins sealed in said stem,
said tube pins extending into said envelope,
a curved rear anode plate and a curved front anode screen in electrical contact with each other and forming together a single, open-ended generally tubular anode,
a stack of cathode electrodes positioned within said tubular anode and facing said viewing window through said anode screen, said cathode electrodes having mounting tabs and being formed as characters to be viewed through said viewing window,
a pair of insulated upper and lower support posts secured between said rear anode plate and said front anode screen to form a rigid unitary anode assembly, said posts being spaced apart parallel to each other with said cathode electrodes mounted thereon by means of said mounting tabs,

said rear anode plate being secured to a plurality of said tube pins to provide the primary support for said anode and said stack of cathode electrodes, and

a connecting lead from each cathode to a tube pin,

the space in said envelope extending between said stem through said stack of electrodes to the dome of said envelope being open and unobstructed whereby gas ions have a free and unobstructed flow path along the entire length of the envelope.

3,358,177

ELECTRON DISCHARGE DEVICE AND METHOD

William L. Carl and James C. Hickle, Owensboro, Ky., assignors to General Electric Company, a corporation of New York

Filed Oct. 12, 1964, Ser. No. 402,991

16 Claims. (Cl. 313—292)



1. An electron discharge device comprising an insulative spacer disc of natural mica, said mica having a plurality of irregular laminations defining interlaminate spaces, and relatively high conductive means substantially filling said interlaminate spaces for minimizing radiation from said spacer disc.

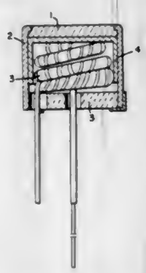
3,358,178

METAL-POROUS BODY HAVING PORES FILLED WITH BARIUM SCANDATE

Avraam Iljich Figner, ulitsa Dmitrova 51/53, Apt. 7, Anna Iosifovna Soloveichik, 3rd Kozhukhovskaja ulitsa 19, Apt. 4, and Irina Vasiljevna Judinskaja, Izmailovskoje Chaussee 57, Apt. 114, all of Moscow, U.S.S.R.

Filed Oct. 26, 1964, Ser. No. 406,374

3 Claims. (Cl. 313—346)



1. A metal-porous cathode with a device for indirect heating and with a refractory metal-porous body whose pores are filled with the emission-active substance, barium scandate, $3BaO.2Sc_2O_3$.

3,358,179

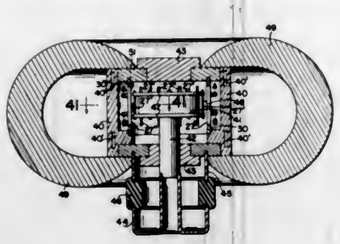
DISCHARGE DEVICE SLOW WAVE CIRCUIT WHEREIN THE BEAM ALTERNATELY INTERACTS WITH THE SERIES AND SHUNT VOLTAGE FIELDS OF THE SLOW WAVE STRUCTURE

George K. Farney, New Providence, N.J., assignor to S-F-D Laboratories, Inc., Union, N.J., a corporation of New Jersey

Continuation of application Ser. No. 350,504, Mar. 9, 1964. This application May 8, 1967, Ser. No. 637,007

18 Claims. (Cl. 315—3.5)

1. A high frequency tube apparatus including: means forming a slow wave circuit characteristic of a two conductor transmission line, means forming a stream of charged particles adjacent said slow wave circuit for electronic interaction therewith, iterative means in said slow wave circuit for developing a succession of voltages in series with said conductors of said slow wave circuit, iterative means in said slow wave circuit for developing a succession of voltages in shunt with said conductors of said slow wave circuit, and means for causing the particles



of said stream to alternately interact with electric fields in the direction of the stream developed by said series and shunt voltages according to the sequence, shunt-series-shunt-series . . . etc., to produce a cumulative net electronic interaction between a wave traveling on said slow wave circuit and said stream of charged particles whereby enhanced electronic interaction is obtained.

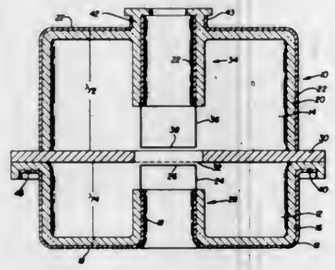
3,358,180

ELECTROMAGNETIC WAVE CONFINING STRUCTURES HAVING ELECTRICALLY CONDUCTIVE COATED DIELECTRIC WALLS AND ELECTRON TUBE INCORPORATING THEM

James A. Jolly, San Carlos, Calif., assignor, by mesne assignments, to Varian Associates, a corporation of California

Filed May 6, 1964, Ser. No. 365,257

11 Claims. (Cl. 315—5.33)



1. An electron tube having an envelope enclosing electrodes including a cathode, said envelope comprising a dielectric wall having an electrically conductive coating substantially covering the exterior surface thereof, said electrically conductive coating on said dielectric wall defining at least one resonant cavity for interacting with the electron beam in the electron tube, and by-pass capacitor means provided in said dielectric wall for permitting R.F. energy to be electromagnetically coupled across a portion of said dielectric wall.

10. An electromagnetic wave confining structure comprising a hollow, evacuated, ceramic body having a plasma sprayed, highly conductive metallic coating on the exterior surface thereof, said highly conductive metallic coating providing a very low R.F. loss interface, the electromagnetic wave energy permeating said dielectric body and being confined by the highly conductive metallic coating.

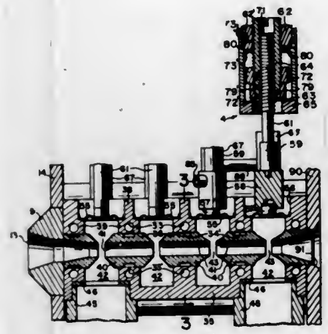
3,358,181

MICROWAVE TUBE APPARATUS HAVING A SOLID BLOCK BODY WITH DRIFT TUBE COOLING MEANS

Louis T. Zitelli, Palo Alto, and Irving Maltzer, San Carlos, Calif., assignors to Varian Associates, Palo Alto, Calif., a corporation of California

Original application Oct. 30, 1961, Ser. No. 148,520, now Patent No. 3,281,616, dated Oct. 25, 1966. Divided and this application July 5, 1966, Ser. No. 574,856

2 Claims. (Cl. 315—5.39)



1. In a microwave tube apparatus, means for forming and projecting a beam of electrons over an elongated beam path, means at the terminal end of the beam path for collecting the beam and dissipating the energy thereof, means forming an interaction circuit disposed along said beam path intermediate said beam forming and beam collecting means for interaction with the beam to produce an output microwave signal, said interaction circuit including, a solid block of electrically and thermally conductive material having a plurality of cavities formed therein in axially spaced relation to define a succession of cavity resonators separated by axially spaced portions of said block, a longitudinally directed bore passing axially of said block through said axially spaced portions of said block and intersecting with successive ones of said cavities, a plurality of tubular metallic segments disposed within said bore and axially aligned therewith in axially spaced relation to define a plurality of drift tube members projecting re-entrantly into adjacent cavities from said axially spaced portions of said block structure, the improvement wherein, a plurality of said drift tube segments each include a circumferentially directed channel at their outer circumference for defining a succession of fluid coolant passages around said drift tubes within said block structure, and a plurality of transversely directed bores passing into said block and intersecting with said longitudinal bore to define coolant passageways in fluid communication with said coolant passages around said drift tube segments for cooling said drift tube segments.

3,358,182

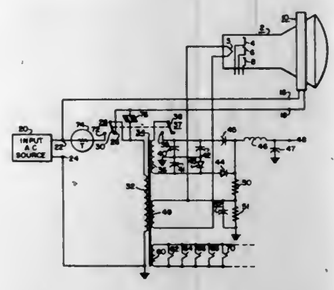
AUTOMATIC DEGAUSSING CIRCUIT WITH STAND-BY TUBE-FILAMENT-HEATER CIRCUIT FOR COLOR TELEVISION RECEIVERS

Charles E. Bohnstedt, Franklin Township, Somerset, N.J., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Feb. 24, 1966, Ser. No. 529,760

10 Claims. (Cl. 315—8)

1. In a television receiver having means for placing it in an operative or in an inoperative condition with a previously connected source of alternating potential and including a color picture tube having a heater element, the combination of: a field generating and standby circuit comprising, a coil disposed in operative relationship to said picture tube; switching means for connecting said coil in series with said source to reduce the heating current to said heater element for standby operation when said receiver is in its inoperative condition and for permitting full heating current to be applied to said heater element when said receiver is in its operative condition; and means operative with said coil for generating a field operative on said picture tube when said receiver is placed in said operative condition.



3,358,183

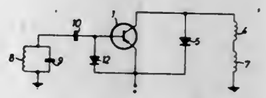
AUTO-OSCILLATING HORIZONTAL DEFLECTION CIRCUITRY PARTICULARLY FOR TELEVISION SETS

Gerhard-Günter Gassmann, Berkheim, Wurttemberg, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed Mar. 30, 1964, Ser. No. 355,761

Claims priority, application Germany, Apr. 9, 1963, St 20,488; June 14, 1963, St 20,731; Oct. 9, 1963, St 21,167

1 Claim. (Cl. 315—27)



A self-oscillating horizontal deflection circuit comprising:

a transistor having its emitter connected to a source of potential;

a switching diode connected between the collector of said transistor and said source of potential;

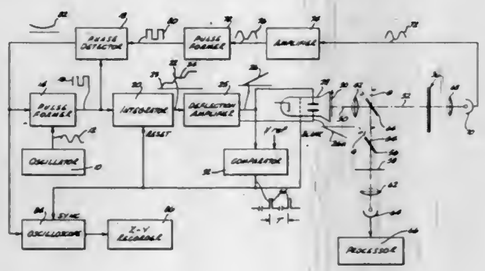
a feedback winding and a deflection coil serially connected between the collector of said transistor and ground;

an oscillating circuit comprising an oscillating circuit capacitance connected in parallel with an inductance, one common terminal of said circuit is grounded, and said inductor is magnetically coupled to said feedback winding;

a coupling capacitor serially connected between the base of said transistor and the other common terminal of said oscillating circuit, the ratio of the capacity of the oscillating circuit capacitor to the capacity of the coupling capacitor is less than five, and the reactance of said coupling capacitor is sufficiently large so that the input resistance of said transistor is essentially smaller during the conductive period of said transistor and essentially larger during the cut-off period of said element; and

a control diode inserted between the base and emitter of said transistor to control the base thereof, said control diode is conductive during the blocking period of said transistor.

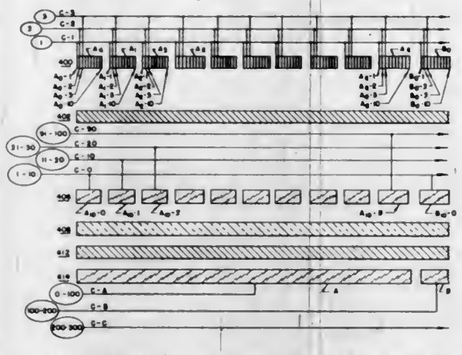
3,358,184
SWEEP LINEARIZATION SYSTEM FOR CATHODE RAY TUBE-OPTICAL DATA SCANNER
George G. Vitt, Jr., Los Angeles, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed Oct. 16, 1964, Ser. No. 404,353
6 Claims. (Cl. 315—27)



1. A scanning system comprising: means for generating a series of first pulses at a predetermined repetition frequency, means for integrating said first pulses to produce a signal which varies substantially linearly at a rate determined by the duration of said first pulses, a cathode ray tube having a display surface and electron beam deflection means for causing an electron beam to scan a portion of said surface so that a light-emitting spot moves across said surface, means for applying said linearly varying signal to said electron beam deflection means, means for directing light emitted by said spot onto a predetermined plane so that as said electron beam scans said display surface an image of said spot moves along said plane, means for generating a series of second pulses having a repetition frequency indicative of the velocity at which said image moves along said plane, means for comparing the phase of said first and second pulses and for producing a control signal indicative of the phase difference therebetween, and means for varying the duration of said first pulses in accordance with said control signal to vary the rate of change of said linearly varying signal such that the velocity at which said image moves along said plane is maintained constant.

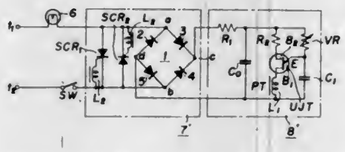
3,358,185
GATED ELECTROLUMINESCENT DISPLAY DEVICE HAVING A PLURALITY OF ELECTROLUMINESCENT CELLS WITH ONE CELL INCLUDNG A PHOTOCONDUCTOR ELEMENT
Kenneth P. Lally, Smithtown, N.Y., assignor, by mesne assignments, to Hartman-Huyck Systems Co., Inc., Columbus, Ohio, a corporation of Ohio
Filed Aug. 20, 1965, Ser. No. 481,360
20 Claims. (Cl. 315—167)

1. An electrical device comprising, in the order named,
a first light transmissive electrode,
a first mass of electroluminescent material,
a first mass of photoconductive material,
a first electrode member comprising more than one electrically discrete light transmissive electrodes,
a second mass of electroluminescent material, and
a second electrode member comprising more than one group of more than one electrically discrete electrodes each,
said first electrode, said first and second masses of electroluminescent material, said first and second electrode members, and said first mass of photoconductive material each having at least portions thereof which are substantially coextensive with at least portions of all of the others,



said coextensive portions of said first and second electrode members including at least a portion of all of said electrodes therein.

3,358,186
DIMMER FOR ELECTRIC LAMPS
Osamu Nomura, Kohoku-ku, Yokohama-shi, Japan, assignor to Tokyo Shibaura Electric Co., Ltd., Kawasaki-shi, Japan, a corporation of Japan
Filed Dec. 27, 1963, Ser. No. 333,934
Claims priority, application Japan, Dec. 30, 1962 37/81,114
2 Claims. (Cl. 315—194)

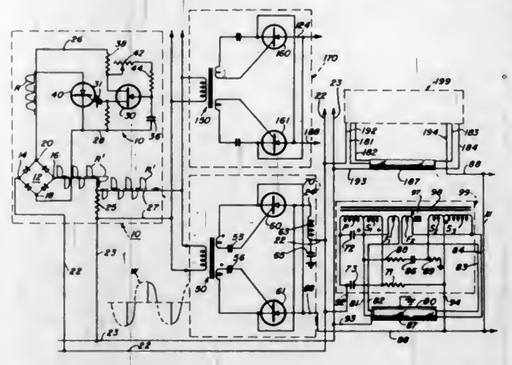


1. A dimmer for an electric lamp comprising a source of alternating current, a rectifier circuit, a lamp load connected between said source of alternating current and said rectifier circuit, a pair of opposite poled silicon controlled rectifier elements connected across the input terminals of said rectifier elements, a gate signal generating circuit including a unijunction transistor connected across the output terminals of said rectifier circuit for controlling the conduction of said silicon controlled rectifier elements and a filter circuit including a resistor and a condenser, said filter being connected between the output terminals of said rectifier circuit and said unijunction transistor.

3,358,187
MASTER DIMMING SYSTEM FOR BALLASTS
Harold N. Malmin and Albert E. Feinberg, Chicago, Ill., assignors to Advance Transformer Co., Chicago, Ill., a corporation of Illinois
Filed Aug. 6, 1964, Ser. No. 387,917
18 Claims. (Cl. 315—200)

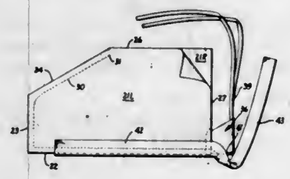
1. Apparatus for controlling current flow through a plurality of fluorescent lamps which comprises, a rectifying bridge having first and second pairs of diagonally opposite terminals, an output load resistor connected to one terminal of said first pair, said first terminal pair being adapted for connection across a source of alternating current by way of said output load resistor, a control

circuit connected across the terminals of said second pair, whereby conduction through said load resistor is enabled only upon conduction through said control circuit, a transformer having a primary and a first and second secondary winding, said primary winding being connected across



said load resistor, a first controlled rectifier connected across said first secondary winding, a second controlled rectifier connected across said second secondary winding, means coupled from said controlled rectifiers for igniting and energizing a plurality of fluorescent lamps.

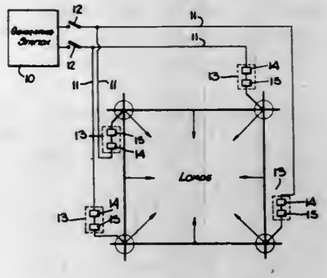
3,358,188
REAR OPENING SANITARY AND PROTECTIVE COVERING FOR SHOES
Harold Zimmon, Redwood City, Calif. (% Zimmon & Company, Inc., 215 O'Neill Ave., Belmont, Calif. 94002)
Filed Oct. 16, 1964, Ser. No. 404,310
5 Claims. (Cl. 317—2)



1. A sanitary and protective disposable covering for a street shoe formed of foldable material comprising a right half and a left half, each shape in the outline of a shoe viewed from the side, said halves seamed together along the bottom and front and open at the top and back for insertion of said shoe, a tab projecting rearwardly beyond the rear edges of said halves from the bottom rear corners of said halves, the rear edges of said halves foldable around the back of said shoe to conform the length of said covering to said shoe, said tab being foldable up over said rear edges of said halves along the back of said shoe to hold said rear edges of said halves in place under said tab, and means attached to the remote end of said tab for securing said tab in place with said covering smoothly conforming to the shape of said shoe.

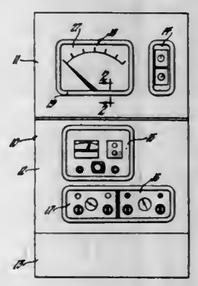
3,358,189
NETWORK PROTECTOR
Philip A. Philippidis, Astoria, N.Y., assignor to Consolidated Edison Company of New York, Inc., New York, N.Y., a corporation of New York
Filed Aug. 25, 1965, Ser. No. 482,380
14 Claims. (Cl. 317—26)

1. A network protector for insertion in an alternating current power distribution system to interconnect a feeder with a network for permitting power to flow from the feeder to the network and for preventing power from flowing from the network to the feeder, said protector comprising a pair of semiconductor switches having unidirectional current flow properties, each of said switches having associated therewith a trigger for rendering said switches conductive when triggered thereby, and said switches being connected in parallel and in opposition between said feeder and said network whereby when the potential on the feeder side is higher than the potential



on the network side said triggers respectively will be energized on alternate half cycles when said switches are at a polarity which will permit conduction, whereby power will flow from said feeder to said network and whereby when the potential on the network side is higher than on said feeder side, the triggers respectively will be energized on alternate half cycles when said switches are at a polarity which will not permit conduction, whereby power will then not flow from said network to said feeder.

3,358,190
CONTROL PANEL
Harold Richard Mathison, Suffern, N.Y., assignor to Geigy Chemical Corporation, Ardsley, N.Y., a corporation of Delaware
Filed Nov. 22, 1966, Ser. No. 596,309
1 Claim. (Cl. 317—99)



In a mounting means for a subpanel assembly of a control panel display, the combination comprising: a panel board provided with one or more openings therein to accommodate preselected indicator subpanels, complemental subpanel assemblies each containing a prearranged indicator display, frame means complemental to said opening in said panel and said subpanel for supporting said subpanel within said panel opening, said frame means including a framing strip portion overlying the edge of said opening in said panel and simultaneously overlying the peripheral extremity of said subpanel disposed within said opening, said frame means including a substantially continuous shank portion perpendicular to said framing strip portion extending between the periphery of said subpanel

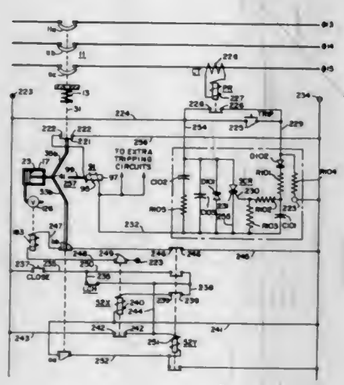
and the edge of the opening in said panel, said shank portion including an opening therethrough angularly directed upwardly from said panel toward said subpanel, hook means including an extension portion, a hooked portion and a nut portion connected to said shank portion of said frame by interconnection of said hooked portion of said hook means with said inclined opening in said shank, and screw means receivable within said nut portion engageable with said panel for actuating said hook means to apply pulling pressure of said shank and pushing pressure on said extension whereby to press said subpanel into engagement with said frame and to simultaneously pull said frame into engagement with said panel.

3,358,191

FAST CIRCUIT BREAKER TRIPPING MECHANISM HAVING A TRIPPING COIL ENERGIZED BY THE CONTROL ELEMENT CURRENT AND THE ANODE-CATHODE CURRENT OF A CONTROLLED RECTIFIER

Zeno Neri, Wilkins Township, Pittsburgh, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed May 18, 1965, Ser. No. 463,437
6 Claims. (Cl. 317—33)



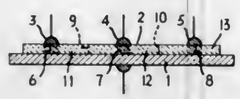
1. A tripping circuit for use with a circuit breaker operating mechanism having a tripping coil, comprising in combnation, a source of direct current potential having first and second terminals, a controlled rectifier having an anode, cathode and a control element, circuit means connecting the tripping coil and the anode-cathode path of the controlled rectifier in series across said first and second terminals with the anode connected to said second terminal whereby when the controlled rectifier is gated on by the flow of a gating current in the control element the anode-cathode current flows through the tripping coil, a relay having a winding and a pair of normally open contacts, the relay being adapted to close the contacts thereof upon a predetermined signal in the winding, one contact of said pair of contacts being connected to the second terminal of the source of direct current potential, circuit means operatively connecting the other contact of said pair of contacts to the control element of the controlled rectifier, the closing of the contacts of the relay completing a circuit between the first and second terminals of the source of direct current potential by way of the tripping coil and the cathode-control element path through the controlled rectifier whereby the gating current of the controlled rectifier in addition to the anode-cathode current of the controlled rectifier flows through the tripping coil of the circuit breaker thereby shortening the time required for flux to build up in said tripping coil to a value sufficient to trip the circuit breaker.

3,358,192

UNITARY MULTIPLE SOLID STATE SWITCH ASSEMBLY

Arne Jensen, Havnberg, Als, Denmark, assignor to Danfoss A/S, Nordborg, Denmark, a company of Denmark

Filed May 4, 1965, Ser. No. 453,157
Claims priority, application Germany, May 5, 1964, D 44,333
2 Claims. (Cl. 317—101)



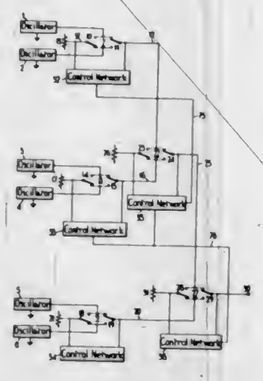
1. A switching matrix comprising, a unitary body of polycrystalline semiconductive material, a first set of elongated spaced, parallel conductors in ohmic contact on one common side of said unitary body of polycrystalline material, a second set of elongated, spaced parallel conductors in ohmic contact on an opposite common side of said unitary body of polycrystalline material said first and second sets of conductors forming an angle with respect to one another, said semiconductive material having the characteristic of being rendered conductive in the regions intermediate respective joined cross conductors upon application of a potential to one of the conductors of a given pair of conductors, whereby upon application of potential to conductors of one of said sets of current path is established in the semiconductive body in the region where the conductor under potential cross conductors of the other set and the remainder of said body will remain in a high resistance.

3,358,193

ELECTRIC SIGNAL SELECTION SYSTEMS

Arthur Edgar Crump, Haywards Heath, England, assignor to The General Electric Company Limited, London, England

Filed Nov. 12, 1964, Ser. No. 410,364
Claims priority, application Great Britain, Nov. 13, 1963, 44,821/63
7 Claims. (Cl. 317—137)



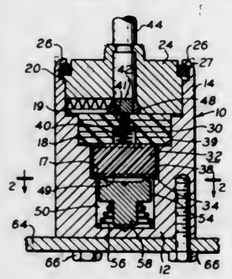
1. An electric signal supply system comprising at least three signals sources, to which signal sources a predetermined order of priority is ascribed, first and second two-condition switches each of which has first and second input paths, first and second output paths and means which in one condition of the switch serves to connect the first input path to the first output path and the second input path to the second output path and which in the other condition of the switch serves to connect the first input path to the second output path and the second input path to the first output path, means to connect two of the signal sources to the first and second input paths respectively of the first switch, means to connect the first output path of the first switch to the first input path of the second switch, means to connect a further one of the signal sources to the second input path of the second switch, an output point, means to connect the first output path of the second switch to said output point, and means responsive to the amplitudes of the signals appearing on the output paths of each of the switches to control the conditions of the respective switches, said last-mentioned means being so arranged that, during operation, of the signal sources that source which has the highest priority ascribed to it, of those which are supplying an output signal of an amplitude greater than a predetermined value, is connected to the output point by way of the first output path of the second switch.

3,358,194

MALFUNCTION DETECTOR FOR AUTOMATIC MACHINES

George Wintriss, Carversville, Pa., assignor to Industrionics Controls, Inc., New York, N.Y., a corporation of New York

Filed Mar 31, 1965, Ser. No. 444,360
13 Claims. (Cl. 317—142)



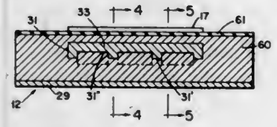
1. An impact-sensitive detector including a housing enclosing a chamber having sides, a movable contact element in the chamber, a relatively fixed contact in the chamber, the movable contact element having a face that confronts the fixed contact, said face having a sharp edge that contacts with the fixed contact to close an electric circuit, terminals on the housing and constituting part of the electric circuit, the movable contact being biased against the fixed contact, and said bias being of a value so as to permit disengagement from the fixed contact on a predetermined force exerted against the housing to open said circuit.

3,358,195

REMOTE CUTOFF FIELD EFFECT TRANSISTOR

George C. Onodera, Phoenix, Ariz., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois

Filed July 24, 1964, Ser. No. 384,903
8 Claims. (Cl. 317—234)



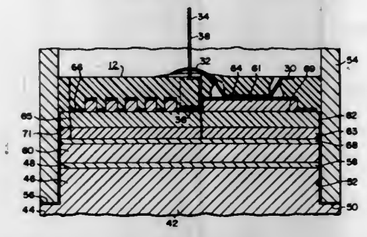
1. A field effect transistor with a source region and a drain region, a channel connecting said source to said drain for conducting current from said source to said drain, said channel having at a cross section at least two regions of different thickness, said cross section being substantially constant between said source and drain regions and lying across the direction of flow of said current.

3,358,196

PRESSURE MULTIPLE ELECTRICAL CONTACT ASSEMBLY FOR ELECTRICAL DEVICES

John J. Steinmetz, Jr., Monroeville, and Pasquale A. Trongo, Greensburg, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed June 8, 1966, Ser. No. 556,206
9 Claims. (Cl. 317—234)



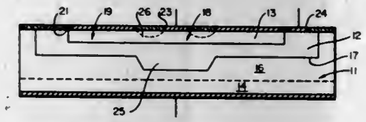
1. A pressure multiple electrical contact assembly comprising (1) a partially deformable cushioning member having two major opposed surfaces, the member having a plurality of apertures, each aperture extending completely between the opposed surfaces, (2) at least two electrical contacts, each electrical contact being threaded through a separate portion of the plurality of apertures, (3) at least one contact having an integral expansion portion contained therein, (4) an electrical lead affixed to the expansion element of each electrical contact having an integral expansion element, and (5) an electrical lead affixed to each of the other electrical contacts.

3,358,197

SEMICONDUCTOR DEVICE

Robert M. Scarlett, Palo Alto, Calif., assignor, by mesne assignments, to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Maryland

Filed May 22, 1963, Ser. No. 282,398
17 Claims. (Cl. 317—235)



1. A semiconductor device, comprising:
a body of semiconductor material having first and second regions of given and opposite respective conductivity types with a P-N junction therebetween,
said first region having a central portion and a peripheral portion;
means for confining any current flowing across said junction through said first region substantially to said peripheral portion;
resistive means contiguous with said body and contacting said peripheral portion; and
an electrode contacting said resistive means,
said resistive means introducing resistance in series with substantially all parts of said peripheral portion, the value of said resistance being sufficient to equalize the density of said current throughout said peripheral portion.

3,358,198
FIELD-EFFECT TRANSISTOR WITH IMPROVED TRANSMISSION ADMITTANCE

Adrianus Johannes Wilhelmus Marie Van Overbeek, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Aug. 28, 1964, Ser. No. 392,699
Claims priority, application Netherlands, Aug. 30, 1963, 297,331
9 Claims. (Cl. 317—235)

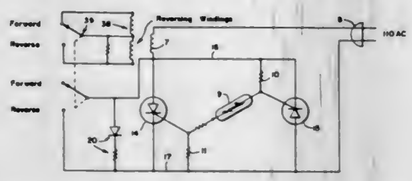


1. A field-effect transistor comprising a wafer-like body of semiconductive material, elongated source and drain electrodes contacting closely spaced portions of the semiconductive body and extending generally in the same direction to define in the semiconductor body and extending between the nearest edges of the electrodes a current region in which majority carrier current flows from the source to the drain electrodes, said current region having a short length in the current flow direction and a wider transverse dimension, a gate electrode connected to said body at a surface thereof and having at least a portion overlying said current region and forming a barrier layer with said body and capable when a voltage is applied thereto of modifying the current flow between the source and drain electrodes through the current region to produce a characteristic curve of the drain current as a function of the gate voltage whose slope is defined as the transmission admittance of the transistor, the gate electrode extending substantially parallel to the semiconductive body over most of the transverse dimension of the current region to define a certain transmission admittance, and means for modifying the structural relation between said gate electrode and semiconductive body over only a small part of the transverse dimension of the current region to define a different transmission admittance whereby the overall transmission admittance of the transistor is rendered more uniform over a larger range of gate voltages.

3,358,199
TAPE HANDLING SYSTEMS UTILIZING A MAGNETICALLY OPERATED SWITCH

John Paul Jones, Jr., Wynnewood, Pa., assignor to Navigation Computer Corporation, Norristown, Pa., a corporation of Pennsylvania

Filed Aug. 11, 1964, Ser. No. 388,894
7 Claims. (Cl. 318—6)

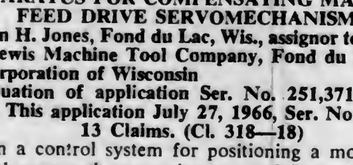


1. A tape feeding system for digital recorder tape comprising in combination, a drive motor having a winding and a shaft, a tape reel mounted on said shaft for rotation thereby, a bearing sleeve mounted to pivot about said shaft, a magnet carried by said sleeve for movement therewith, a magnetically operated switch positioned adjacent the path of said magnet, a pair of triggerable solid state rectifiers coupled to supply current to said motor winding of two polarities and having trigger electrodes coupled together by said switch, power means connected to said winding and said rectifiers to pass current therethrough when said switch is closed, whereby the motor said switch, and means responsive to feeding of the tape runs to feed a loop of said tape when the magnet closes loop to pivot said magnet away from said switch to thereby open said switch until the length of the tape loop is again decreased by pulling tape from said loop.

3,358,200
ELECTRO-MECHANICAL INTEGRATOR

George V. Clifford, Ottawa, Ontario, Canada, assignor to Computing Devices of Canada Limited, Ottawa, Ontario, Canada

Filed Apr. 1, 1964, Ser. No. 356,572
7 Claims. (Cl. 318—8)



1. A device for providing an output which is proportional to the time integral of an input signal, comprising

detecting means having a first and a second input and an output,

said first and second input for receiving respectively an input signal independent of the output from said detecting means and having a characteristic variable according to a quantity to be integrated, and a reference signal having the same characteristic as said input signal varying periodically with time,

said detecting means detecting equality of values of said characteristic of said signals at said first and second inputs and providing at said output a first output signal establishing a first time instant at which equality occurs,

periodic characteristic reference generating means for generating a stable reference signal having said characteristic varying linearly between predetermined limits with a sawtooth waveform and a constant period,

means connecting said reference generating means to said second input for applying thereto said reference signal,

time indicating means connected with said reference generating means for providing a second output signal establishing a second time instant at which said characteristic generated by said reference generating means passes a predetermined constant value,

an output shaft, and

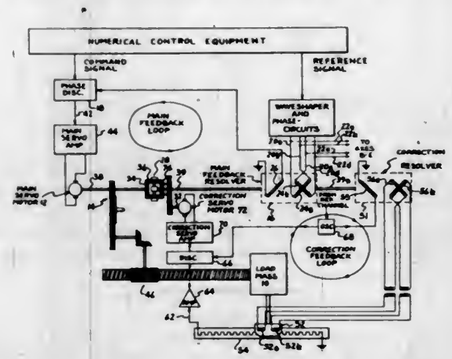
constant speed driving means responsive to said first and second output signals for driving said output shaft at a constant speed for a time interval defined by said first and second time instants, providing on said output shaft an accumulated rotation proportional to the time integral of said characteristic of said input signal.

3,358,201
APPARATUS FOR COMPENSATING MACHINE FEED DRIVE SERVOMECHANISMS

Gordon H. Jones, Fond du Lac, Wis., assignor to Giddings & Lewis Machine Tool Company, Fond du Lac, Wis., a corporation of Wisconsin

Continuation of application Ser. No. 251,371, Jan. 14, 1963. This application July 27, 1966, Ser. No. 568,171
13 Claims. (Cl. 318—18)

1. In a control system for positioning a movable element along a path responsive to a continuously supplied command signal, a servomotor for continuously moving said element along said path in accord with said command signal, feed drive means coupling said servomotor to said element, a main feedback loop including a feedback transducer operated responsive to motion of a drive element at the input to said feed drive dynamically spaced from said movable element and closely coupled to said servomotor so as to exclude said drive means from said main feedback loop providing a feedback signal, means in said main feedback loop for combining said command and feedback signals and for providing an output signal to said servomotor for driving said servomotor in a direction tending to eliminate said feedback signal and at a

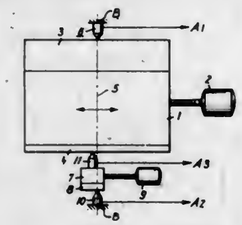


rate proportional to the magnitude of said output signal, means compensating said feedback transducer for position differences between said movable element and said drive element at the input to said feed drive means due to mechanical characteristics of said feed drive means including a second transducer operated responsive to said movable element, means for exciting said secondary transducer with said feedback signal from said feedback transducer to produce a continuous error signal from said second transducer representing the motion differences between said elements, and means connecting said second transducer to said feedback transducer so as to modify said feedback signal to account for said error signal.

3,358,202
VERNIER EQUIPPED DIGITAL POSITIONING APPARATUS

Wolfgang Pabst and Peter Boese, Neu-Isenburg, Germany, assignors to Licentia Patent-Verwaltungs-G.m.b.H., Frankfurt am Main, Germany

Filed July 6, 1964, Ser. No. 380,406
Claims priority, application Germany, July 6, 1963, L 45,278
8 Claims. (Cl. 318—18)



1. The combination which comprises:

(a) a base;

(b) a main component mounted on said base for movement in a given direction;

(c) a multiple-track binary coded coarse scale carried by said main component for movement therewith and extending in said direction, the length of said coarse scale being equal to the distance throughout which the position of said main component is to be measured;

(d) first scanning means arranged on said base for reading said coarse scale;

(e) an index scale having evenly spaced markers, said index scale being carried by said main component for movement therewith and extending in said direction, the length of said coarse scale also being equal to the distance throughout which the position of said main component is to be measured;

(f) a vernier device mounted on said base for movement in said direction;

(g) moving means connected to said vernier device for moving the same in said direction;

(h) second scanning means carried by said vernier device for reading said index scale, said second scanning means being capable of picking up a marker of said index scale;

(i) means for locking said second scanning means to a marker on an index scale picked up by said second scanning means thereby effectively to couple said vernier device to said main component;

(j) a multiple-track binary coded fine scale having tracks finer than the finest track of said coarse scale, said fine scale being carried by said vernier device for movement therewith and extending in said direction, the length of said fine scale being a fraction of said distance;

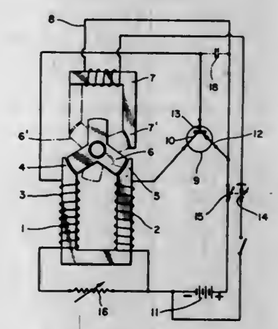
(k) third scanning means arranged on said base for reading said fine scale; and

(l) output means connecting said first and third scanning means, whereby when said vernier device and said main component are locked together, said coarse and fine scales are effectively combined to form together a unitary multiple-track scale which is read out by said output means and whose finest tracks extend throughout but a fraction of the distance throughout which the position of said main component is to be measured.

3,358,203
NON-COMMUTATOR MOTOR, PARTICULARLY VARIABLE D.C. OR A.C. MOTORS

Rudolf Wachtel, Regensburg, Germany, assignor of twenty percent to Erik Arnhem, Beverly Hills, Calif.

Filed Feb. 11, 1965, Ser. No. 431,824
Claims priority, application Germany, June 25, 1964, W 37,048
4 Claims. (Cl. 318—138)

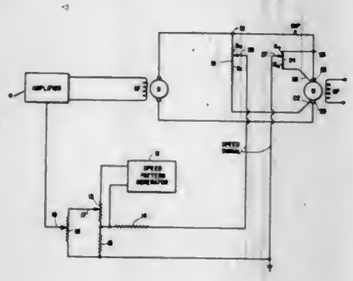


1. A non-commutator motor, operatable selectively on D.C. and A.C., comprising a rotor of soft iron having the shape of three equidistant radial spokes;

a pair of pole pieces of soft iron, having two legs and presenting pole faces spaced 120° apart adjacent said rotor spokes;

a working winding and a pick-up winding on said legs;
a source of current;
a current control means;
electric connection means completing a circuit through said working winding, said current control means and said source;
connection means connecting said pick-up winding to said current source and said current control means; and
an auxiliary magnetized pole piece at an angle of about 60° from said working leg and working pole face and of about 180° from said pick-up pole piece.

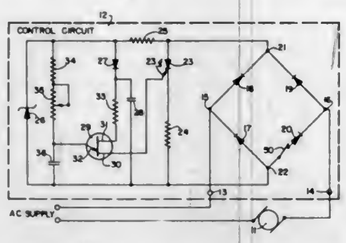
3,358,204
COMPENSATED COUNTER E.M.F. SPEED CONTROL
Robert O. Bradley, Toledo, Ohio, assignor to Toledo Scale Corporation, Toledo, Ohio, a corporation of Ohio
Filed May 19, 1964, Ser. No. 368,623
6 Claims. (Cl. 318—331)



1. A combination for producing an electrical signal which is a function of the speed of a direct current motor comprising, an armature for said motor having a resistance; a source of electrical energy for said armature; a first resistance in series between said motor armature and said source of electrical energy; second and third resistances connected in series across said first resistance and said motor armature; a main brush to said motor connected between said first resistance and said armature; fourth and fifth resistances connected in series between said first resistance and said armature resistance across said main brush, said second resistance being related to said third resistance and said fourth resistance being related to said fifth resistance in the same proportion as said first resistance is related to said resistance of said motor armature; and a tap from between each of said second and third resistances and said fourth and fifth resistances to provide said electrical signal representative of motor speed.

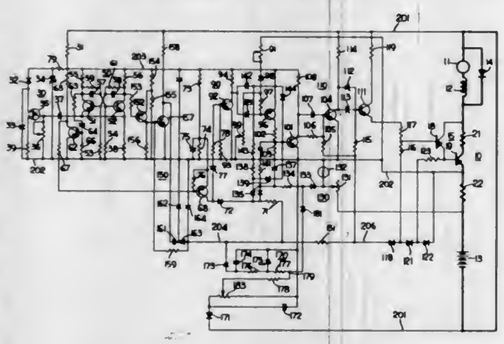
3,358,205
CONTROL CIRCUIT
Reuben Wechsler, Phoenix, Ariz., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Sept. 22, 1964, Ser. No. 398,343
5 Claims. (Cl. 318—332)

1. A motor speed control circuit for connecting an electric motor to an alternating current energy circuit, including in combination, bridge rectifier means, a semiconductor controlled rectifier connected to said rectifier means and forming a series circuit therewith for connecting the motor to the energizing circuit, and control means connected to said semiconductor controlled rectifier for applying pulses thereto for turning said semiconductor controlled rectifier on, said rectifier means forming a full wave rectifier for applying a rectified voltage to said semiconductor controlled rectifier for turning the same off when the rectified voltage thereacross drops to a given level, said control means including a portion connected in series with said semiconductor controlled rectifier and sensing the magnitude of current conducted therethrough so that said control means controls the pulse cycle time thereof in inverse proportion to



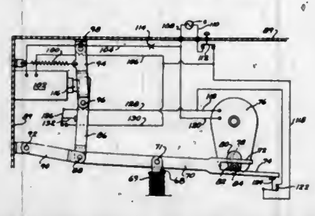
the current sensed by said portion thereof, said control means turning said semiconductor controlled rectifier on after a turn off period which decreases in response to increased current sensed thereby, whereby the average voltage to the motor is increased in response to increased load current.

3,358,206
PULSE WIDTH MODULATION CONTROL SYSTEMS FOR CONTROLLING DIRECT CURRENT MOTORS
Tom N. Thiele, Chicago Heights, Ill., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed June 1, 1965, Ser. No. 460,598
13 Claims. (Cl. 318—341)



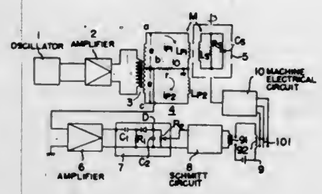
1. A direct current electrical power system having a direct current source, a direct current motor connected to be energized by the source, a semiconductor connected as a power switch between the source and the motor for connecting the source to the motor at predetermined cyclic intervals of controlled duration, and a pulse width modulation control system for controlling the semiconductor power switch comprising:
timing means for producing a cyclic timing signal of a predetermined constant period:
control means responsive to the timing signal to turn on the power switch for a selectable portion of each cyclic period;
voltage multiplying means connected to the source and responsive to the timing signal current source for producing a reference voltage greater than the voltage of the source; and
means for applying the reference voltage to reverse bias the semiconductor power switch transistor during the portion of the cyclic period that the power switch is turned off.

3,358,207
CONTROL MECHANISM TO POSITION A MEMBER
Paul J. Natho, Houston, Tex., assignor to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Filed Oct. 30, 1964, Ser. No. 407,651
11 Claims. (Cl. 318—466)



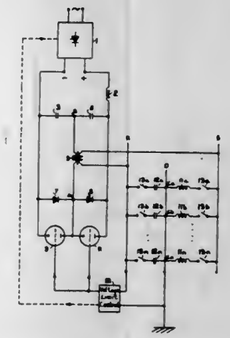
1. A control mechanism for controlling energization and deenergization of a remotely located power operated device, said control mechanism including an operating stem, a stem actuating arm connected to said operating stem, linkage means for said control mechanism having a pivot, said stem actuating arm one end thereof being pivotally connected to said pivot, drive means engaging said stem actuating arm at the other extremity thereof and being selectively operative to impart oscillation to said stem actuating arm about said pivot and thereby to impart movement to said operating stem, said linkage means being movable between first and second positions to cause movement of said pivot and through said pivotal connection with said stem actuating arm to impart rotational movement to said stem actuating arm about said drive means and to thereby impart movement to said operating stem, a small rotary electric motor adapted to control movement of said drive means, an electrical circuit connecting said motor with a source of electrical potential, said circuit including a first switch for controlling energization of the circuit, a second switch in said circuit being normally biased to its closed position and adapted to be contacted and moved to its open position by said actuating arm in one position thereof to deenergize said motor circuit thereby stopping said stem actuating arm at said one position, said linkage means being movable responsive either to opening of said first switch or failure of said electrical potential to effect movement of said pivot and said stem actuating arm to said one position.

3,358,208
SYSTEM FOR CONTROL OF TEMPERATURE OF ROTORS OF ELECTRICAL ROTARY MACHINES
Katsumi Takami, Koganei-shi, Japan, assignor to Kabushiki Kaisha Hitachi Seisakusho, Tokyo-to, Japan, a joint-stock company
Filed Mar. 26, 1965, Ser. No. 443,143
Claims priority, application Japan, May 31, 1964, 39/17,604
3 Claims. (Cl. 318—473)



1. A system for control of temperature in an electrical rotary machine such as an electric motor or generator having a rotating structure and a stationary structure, said system comprising an oscillator for generating a signal of a specific frequency, a tank circuit mounted on said rotating structure and comprising a coil and a capacitor which have both very low temperature coefficient, a resistance element connected to the tank circuit and embedded in a part of the rotating structure the temperature of which part is to be measured, said resistance element having a characteristic whereby its resistance value changes abruptly at a specific temperature, an exciting coil fixed to said stationary structure in a manner to be coupled electromagnetically with said coil of the tank coil mounted on the rotating structure, means to apply said signal generated by the oscillator to the exciting coil, means to detect absorption of the tank circuit accompanying variation in said temperature of the rotating structure thereby to produce a detected absorption signal, and means to control an electrical output quantity of the electrical rotary machine in accordance with said detected absorption signal.

3,358,209
SELF-CONTROLLED TRANSVERTERS WITH SEVERAL PARALLEL-CONNECTED LOADS AND CONDENSERS IN SERIES THEREWITH
Karl-Werner Kanngiesser, Viernheim, Hesse, Germany, assignor to Aktiengesellschaft Brown, Boveri & Cie, Baden, Switzerland, a joint-stock company
Filed Sept. 27, 1965, Ser. No. 490,445
Claims priority, application Germany, Nov. 11, 1964, B 79,269
6 Claims. (Cl. 321—2)

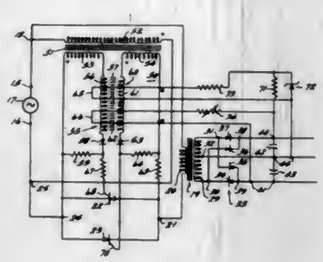


1. In a self-controlled transverter arrangement, the combination comprising a controllable rectifier supplying direct current to an intermediate circuit which includes controllable valve means and non-controllable valve means connected anti-parallel therewith, and an alternating current load connected to said controllable valves, said alternating current load being comprised of a plurality of series oscillatory circuits connected in parallel, each said oscillatory circuit being comprised of condenser and inductor components and having an attenuation below the aperiodic attenuation and a duration of oscillation a little below the period duration of the load alternating currents predetermined by the control of said controllable valves, and cross-connection means interconnecting the junction points intermediate the condenser and inductor components of said plurality of series oscillatory circuits thereby to establish parallel connections respectively for said condenser and inductor components.

3,358,210
VOLTAGE REGULATOR
Floyd Grossoehme, Cincinnati, Ohio, assignor to General Electric Company, a corporation of New York
Filed June 25, 1964, Ser. No. 377,879
2 Claims. (Cl. 321—18)

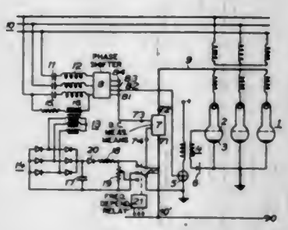
1. In a rectifier having an alternating current input and a direct current output,

means for regulating the potential of the direct current output comprising,
silicon-controlled rectifier means connected in series with the alternating current input,
magnetic amplifier means having two control windings,



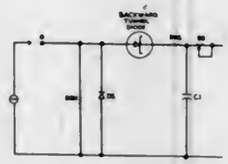
a fixed reference voltage connected across one control winding, thereby providing a constant reference current therethrough, the other winding being connected across the direct current output providing a variable current flow fluctuating as the direct output potential fluctuates, and
means connecting the output of said magnetic amplifier to said silicon-controlled rectifier means and controlling the firing thereof to vary the alternating current input to the rectifier inversely to changes in the direct current output potential.

3,358,211
CONVERTER CONTROL WITH COMPENSATION OF DISTURBANCES IN THE COMMUTATION VOLTAGES
Sven Åke Ekström, Solna, Sweden, assignor to Allmänna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a corporation of Sweden
Filed Nov. 30, 1964, Ser. No. 414,707
Claims priority, application Sweden, Dec. 9, 1963, 13,615/63
8 Claims. (Cl. 321—35)



1. A static inverter connecting a direct current network to a multiphase alternating current network and comprising a rectifier connection between said two networks; control means delivering control pulses to the rectifiers of said rectifier connection with a certain delay angle; said control means comprising for each rectifier an input circuit; means to feed to the input circuits a direct current magnitude and means to feed and alternating current magnitude; said feeding means being connected in series to said input circuits; said control means including means to deliver a control pulse to said rectifier when the sums of said two series connected magnitudes attains a pre-determined value said means to feed a direct current magnitude including a direct current measuring means for measuring the load current of said inverter; said direct current measuring means being common to all the rectifiers; said means to feed an alternating current magnitude including means for deriving alternating voltages proportional to the commutation voltages for the different rectifiers and a phase shifter between said alternating voltage deriving means and said control circuit; characterized by additional means for delivering a direct current magnitude which is added to said first direct current magnitude; said additional means comprising a rectifier connection connected to said alternating current network and including a band block filter; said band block filter being tuned to the rated frequency of said alternating current network.

3,358,212
WIDE-BAND LINEAR AC-DC CONVERTER
Stanley Gewirtz, 435 W. 119th St., New York, N.Y. 10027
Filed May 16, 1966, Ser. No. 557,332
3 Claims. (Cl. 321—45)

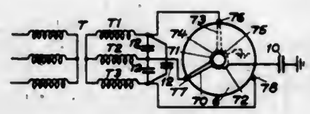


2. A linearized wide band AC-DC converter circuit comprising in combination: two signal input terminals, two signal output terminals, a first resistor, said resistor having a high impedance and being connected across the input terminals, a rectifying diode connected across the input terminals, in parallel with the first resistor, a backward tunnel diode and a second resistor connected in series circuit, one end of the series circuit being connected to one of the input terminals, a variable resistor being connected between one of the output terminals and the other end of said series circuit, the other input terminal and other output terminal being connected together on a common line, and an integration capacitor connected at one end to the common line and at its other end to the connection between the variable resistor and said other end of the series circuit, the diodes being of different types, having low junction capacitances and such coodinates that the coordinate of one diode cancels the coodinate of the other diode, whereby an AC signal applied at the input terminals results in a DC signal at the output terminals, the magnitude of the DC output signal being linearly related to the amplitude of the AC input signal at all frequencies of AC input signal and at all amplitudes of input signal.

3,358,213
DEVICE FOR TRANSFORMING A FIRST ALTERNATING VOLTAGE OF A CERTAIN FREQUENCY TO A SECOND VOLTAGE OF ANOTHER FREQUENCY
Jarle Sletback and Lars Göran Virsberg, Vasteras, and Nils Hyltén-Cavallius, Ludvika, Sweden, assignors to Allmänna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a corporation of Sweden
Filed May 19, 1964, Ser. No. 368,629
Claims priority, application Sweden, June 10, 1963, 6,372/63; Mar. 7, 1964, 2,893/64
4 Claims. (Cl. 321—50)

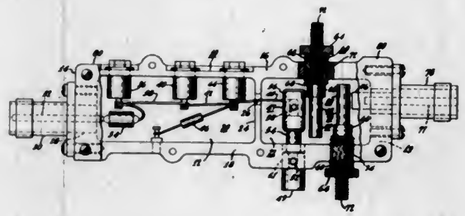
3. Device for transforming a first alternating voltage of a certain frequency to a second alternating voltage of another frequency, the frequency of said second voltage being lower than that of said first voltage, said source

comprising a three phase alternating voltage transformer having primary windings connected to a three-phase network for said first alternating voltage and three-phase secondary windings, a capacitor load, a rotatable connecting means, said connecting means comprising three conductors symmertically arranged around the rotation axis of said means, each of said conductors having a con-



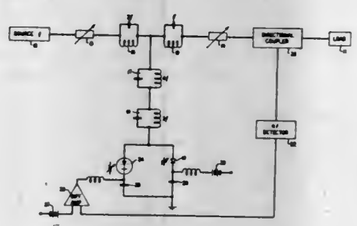
tact segment at each of its ends, said connecting means further including six fixed contacts arranged symmetrically around the periphery of said rotatable means and engageable with said contact segments, the secondary windings of said transformer being connected each to a different one of said fixed contacts, said capacitor load comprising three capacitors, the others of said fixed contacts being connected each to a different one of said three capacitors.

3,358,214
FREQUENCY MULTIPLIERS UTILIZING SELF-RESONANT DIODE MOUNTS
Alfred Schwarzmann, Pennsauken, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Feb. 25, 1965, Ser. No. 435,235
7 Claims. (Cl. 321—69)



5. A frequency multiplier for providing an output wave of a frequency which is a multiple of the frequency of any one of a band of input waves while retaining an original adjustment of said frequency multiplier comprising
a first and a second chamber having a wall in common, said wall having an opening therein,
wave input means extending through a wall of said first chamber,
two capacitors, in series connected between said wave input means and a wall of said first chamber,
at least one additional capacitor and a resistor each having a terminal connected to a wall of said first chamber,
the other terminal of said additional capacitor and of said resistor being connected to the junction of said two capacitors,
said capacitors and the connections therebetween comprising a band pass filter,
a self-resonant mount in said second chamber,
said self-resonant mount comprising two conductive socket members and a diode whose terminals are respectively received in the sockets of said socket members,
one of said socket members being conductively connected to a wall of said second chamber,
a connection from the junction of said two capacitors and the other one of said socket members,
said self-resonant mount being resonant at a frequency which is a first integral multiple of an intermediate frequency in said pass band of said band pass filter,
a stub conductively connected to a wall of said second chamber and extending thereinto in the vicinity of said mount and providing capacity with said mount to render said mount also resonant at a second lesser integral multiple of said intermediate frequency,
a second stub conductively connected to a wall of said second chamber and extending thereinto, said stubs rendering said chamber a band pass filter at frequencies surrounding the resonant frequency of said resonant mount, and
wave output means extending through a wall of said second chamber and responsive to waves of said last-mentioned frequencies present in said second chamber.

3,358,215
VARACTOR HARMONIC GENERATOR INCLUDING A PIN DIODE SHUNT
Clarence B. Swan, Warren Township, Somerset County, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Sept. 28, 1965, Ser. No. 490,873
8 Claims. (Cl. 321—69)

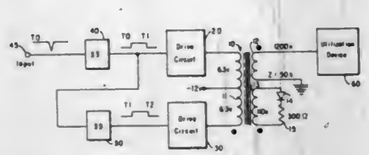


4. Frequency changing apparatus comprising:
a base of insulative material having upper, lower and side surfaces;
a first coating of conductive material covering a major portion of the upper, lower, and side surfaces of the base;
a thin film of insulative material covering the major portion of the upper surface of the first conductive coating;
second and third coatings of conductive material covering part of the film of insulative material;
a varactor in contact with the second coating;
a PIN diode in contact with the third coating;
metans contacting the second coating for direct-current biasing the varactor;
means contacting the third coating for direct-current biasing the PIN diode;
a common contact interconnecting the varactor and the PIN diode for transmitting radio frequency current thereto;
the contact being much smaller than a quarter wavelength at the frequency of said current;
an output conductor connected to the bottom surface of the first coating;
the second and third coatings overlapping substantial portions of the first coating and being insulated therefrom by the film to form therewith radio frequency bypass capacitors, whereby parallel radio frequency paths are established from the common contact, through the varactor and the PIN diode, the bypass capacitors, the first coating, to the output conductor;
and means for varying the bias of the PIN diode thereby to control the R-F current through the varactor.

3,358,216
SIMPLE HIGH-VOLTAGE PULSE GENERATING SYSTEM

Donald J. Kostuch, Rochester, Minn., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Sept. 1, 1965, Ser. No. 484,166
10 Claims. (Cl. 323—18)



1. Apparatus for generating high voltage pulses comprising:

a transformer having a core wound with a primary winding and first and second secondary windings, said first and second secondary windings being wound 180° in phase opposition;

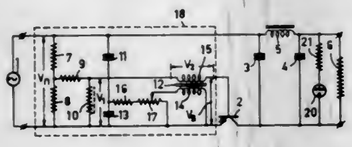
a clamp circuit connected in series with said second secondary winding to facilitate presetting the core flux, said clamp circuit including an impedance for dissipating energy; and

means connected to said primary winding for driving current therethrough first in one direction to preset said core flux whereby current flows through said second secondary winding under control of said clamp circuit and the energy is dissipated by said impedance, and then in an opposite direction to cause a core flux change to produce a high voltage pulse across said first secondary winding, said clamp circuit then being operative to prevent flow of current through said second secondary winding.

3,358,217
VOLTAGE REGULATING CIRCUIT UTILIZING PHOTOELECTRIC CONTROL

Gerardus Jacobus Deelman, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed June 29, 1964, Ser. No. 378,785
Claims priority, application Netherlands, July 1, 1963, 294,802; Apr. 10, 1964, 64—3,855
14 Claims. (Cl. 323—21)

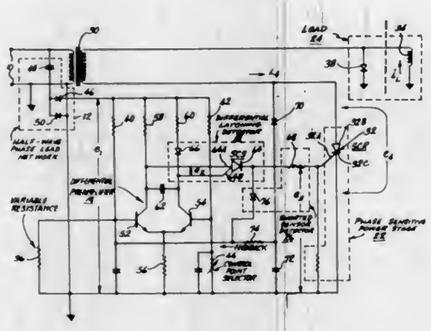


1. A voltage regulating circuit for stabilizing the energy supplied to a load comprising, a source of alternating voltage, controlled rectifier means having first and second electrodes defining a current path therein and a control electrode for controlling the current flow in said path, means connecting said first and second electrodes in series with said load across said AC voltage source, a source of light coupled to said load so as to vary its light output in response to a variation in voltage appearing at the load, and a phase shift network having its input connected to said AC voltage source and its output connected to the control electrode of said rectifier means for supplying an AC control voltage thereto, said phase shift network including only impedance elements that have a current-voltage characteristic that is a continuous function and a photosensitive resistor optically coupled to said light source, said photosensitive resistor being responsive to a variation in said light output to vary the phase of said control voltage in a sense to alter the firing angle of said controlled rectifier means so as to counteract the cause of the variation in the light output of said light source.

3,358,218
SIGNAL CONTROLLED ON-OFF MAXIMUM POWER TRANSFER SYSTEM

Lawrence W. Halpin, Seattle, Wash., assignor to United Control Corporation, Redmond, Wash., a corporation of Washington

Filed Feb. 11, 1964, Ser. No. 344,031
6 Claims. (Cl. 323—22)



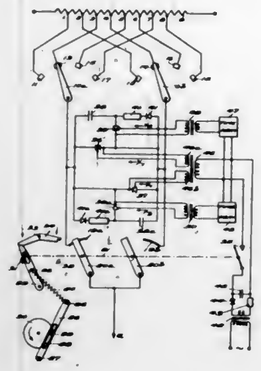
1. Signal-actuated control means, comprising a load, a switching device having an electrically triggerable control input, an alternating voltage source, circuit means interconnecting said device, load and voltage source to energize the load by conduction of the switching device, an alternating voltage circuit including detector means having a signal input and an output connected to said control input for applying trigger impulses thereto cyclically in response to an input signal of predetermined value, means connected for deriving voltage from across the switching device with the latter non-conductive and for applying such voltage as bias to the detector means in a sense delaying conduction of the detection means during change of input signal toward said predetermined value and thereby introducing hysteresis in the control means, and means in said alternating voltage circuit phasing the maximums of said trigger impulses substantially at the initiations of said voltage source cycles, whereby to maximize energy applied to the load by said switching device.

3,358,219
STEP SWITCHING ARRANGEMENT FOR TRANSFORMER WINDING

Karl Bühler, Nussbaumen, AG, Switzerland, assignor to Aktiengesellschaft Brown, Boveri & Cie, Baden, Switzerland, a joint-stock company

Filed Aug. 3, 1965, Ser. No. 476,840
Claims priority, application Switzerland, Aug. 12, 1964, 10,518/64
7 Claims. (Cl. 323—43.5)

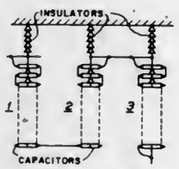
1. In a step switching device for changing the taps on a winding of electrical transformers and the like wherein the step switching is made to take place under load, the combination comprising a mechanical switching device connected to and for changing the taps on said winding, a mechanical load reversing switch connected in circuit with said tap changing switching device, at least one controllable electric main valve connected in parallel with said load reversing switch for absorption of the step short-circuit current initiated by the load reversal during switching, a series arrangement of a condenser and controllable electric auxiliary valve connected in parallel with said main valve, and control means for generating ignition pulses for said main and auxiliary valves to render them selectively and temporarily conductive in accordance with the operation of said load reversing switch such as to limit said step short circuit current to a fraction of its actually possible maximum value and extinguish the same, said control means producing a first ignition pulse to render said main valve conductive to carry said step short-circuit current, and said control means after a time delay further producing a second ignition pulse to render said auxiliary valve conductive thereby to discharge the current stored in said condenser in a direction counter to the direction of current flow through said main valve and effect a blocking of said main valve.



3,358,220
SUSPENDED CAPACITOR BANKS TO MINIMIZE LEAKAGE CURRENT PATHS

Nils Fahlen, Vasteras, and Vjekoslav Madzarevic, Ludvika, Sweden, assignors to Allmänna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a corporation of Sweden

Filed Apr. 26, 1965, Ser. No. 450,775
Claims priority, application Sweden, Apr. 27, 1964, 5,172/64
3 Claims. (Cl. 323—74)

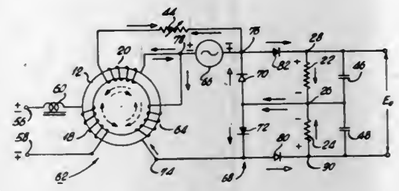


3. A capacitor bank for high voltage direct current comprising a plurality of groups of capacitors; each group comprising a plurality of series connected capacitors and a plurality of housings; means mechanically connecting the housings of each group to form a chain suspended at one end; the capacitors of each group being mechanically connected in series in the same sequence as the mechanical arrangement of the housings; control resistors included in said housings; the direct current voltage being connected to the upper end of one of said groups; the lower end of each group being spaced from ground; said groups being series connected at their end points.

3,358,221
SINGLE-CORE BALANCEABLE MAGNETIC AMPLIFIER

Horace E. Darling, North Attleboro, Mass., assignor to The Foxboro Company, Foxboro, Mass., a corporation of Massachusetts

Filed June 26, 1964, Ser. No. 378,329
19 Claims. (Cl. 323—89)

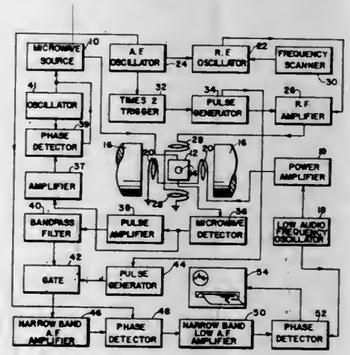


6. Apparatus for amplifying an electrical input signal, said apparatus comprising, in combination; a saturable magnetic core; a load winding wound upon said core; a pair of series-connected resistors, the end terminals of said series-connected resistor pair constituting output terminals for said amplifier; an alternating current source; first and second diodes with their anodes connected together, the common point between said anodes being connected to the common point between said resistors; third and fourth diodes, each having its anode connected to the cathode of one of said first and second diodes and its cathode connected to one of said end terminals of said series-connected resistor pair, said alternating current source being connected between the cathode of one of said first and second diodes and one end terminal of said load winding, the other end terminal of said load winding being connected to the cathode of the other of said first and second diodes; and a control winding wound upon said core and adapted to receive an input signal and develop in said core flux in an amount dependent upon the magnitude of said input signal.

3,358,222
GYROMAGNETIC RESONANCE APPARATUS UTILIZING PULSED RF EXCITATION

James S. Hyde, Menlo Park, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California

Filed June 5, 1964, Ser. No. 372,973
11 Claims. (Cl. 324—.5)



1. A gyromagnetic resonance apparatus for analyzing a sample, wherein the sample is disposed within a polarizing field comprising: means for inducing electron para-

magnetic resonance transitions, coupled to said sample; means for producing a first train of pulses, at a predetermined rate, of radio frequency energy, said pulses being coupled to said sample for inducing nuclear magnetic resonance transitions; means for producing a second train of pulses at said predetermined rate, of radio frequency energy, said radio frequency being different from that of the first train, said pulses being coupled to said sample, the pulses of said second train occurring substantially midway between the pulses of said first train, the pulses of both trains being of substantially identical amplitude; means for sweeping the radio frequency of said first train and the radio frequency of said second train; means for detecting electron-nuclear double resonance transitions including means for sensing the double resonance signal at the predetermined pulsing rate; and means for utilizing the electron-nuclear double resonance signal.

3,358,223

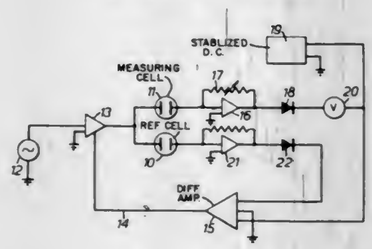
CONCENTRATION METER

David Wildon Birnstingl, Amberley, England, assignor to Mawdsley's Limited, Dursley, England

Filed Aug. 26, 1963, Ser. No. 304,552

Claims priority, application Great Britain, Aug. 27, 1962, 32,753/62

6 Claims. (Cl. 324—30)



1. A concentration meter for measuring the concentration of solids suspended in a mother liquor, comprising a reference cell through which a reference sample of said mother liquor can be passed, two spaced electrodes in said reference cell, a measuring cell through which said mother liquor with suspended solids can be passed, two further spaced electrodes in said measuring cell, an electrical circuit in which said measuring and reference cells are connected, said circuit having an A.C. power source connected to a first electrode of each of the reference and measuring cells, first amplifying means connected to a second electrode of said reference cell, further amplifying means connected to a second electrode of said measuring cell, a D.C. differential amplifier an output terminal of which is connected by means of a feedback loop to the A.C. source, rectifying means interposed between said first amplifying means and one input terminal of the differential amplifier, with said reference cell, said first amplifying means and said rectifying means in series, a stabilized D.C. voltage source connected both to another input terminal of the differential amplifier and to voltage indicating means, and further rectifying means interposed between said further amplifying means and said voltage indicating means, with said measuring cell, said voltage amplifying means and said further rectifying means in series, in use the differential amplifier producing a D.C. feedback signal which controls the A.C. source so as substantially to equalize D.C. signals respectively fed to said one and said another input terminals of the differential amplifier so that a substantially constant current is passed through the reference cell, whereby the voltage indicating means provide a reading which is directly indicative of the concentration of solids in said measuring cell.

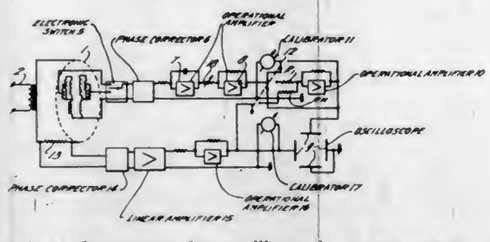
3,358,224

FERROMETER FOR OSCILLOSCOPIC MEASUREMENT OF MAGNETIC CHARACTERISTICS OF SAMPLES OF MAGNETICALLY HARD MATERIALS

Vitaly Moritsovich Mogilevsky, Mikhail Mikhailovich Savkin, and Pavel Petrovich Taljko-Grintsevich, Novosibirsk, U.S.S.R., assignors to Institute Gornogo Dela Sibirskoje otdelenie AN U.S.S.R., Novosibirsk, U.S.S.R.

Filed Feb. 1, 1965, Ser. No. 429,439

6 Claims. (Cl. 324—34)



1. A ferrometer for oscilloscopic measurements of magnetic characteristics of samples of magnetically hard materials comprising: a current transformer having a primary winding energized with alternating current, and a secondary winding in which is connected a solenoid in the form of a rotation ellipsoid and constituted by a material possessing relatively high electric conductivity and inducing intensive uniform alternating magnetic field; measuring coils disposed in said alternating field, the test sample being adapted for being inserted into one of said coils, and the standard sample into the other one for inducing in each coil, signals proportional to the derivative of the induction with respect to time in the corresponding sample; compensation coils in said alternating solenoid field and having opposite series connection with each of said measuring coils and responsive to the intensity of said field; a magnetization channel at the output of said measuring and compensation coils, said channel comprising a series connection of means for alternate removal of the first signal from said measuring and compensation coils cooperating with the standard sample, and the second signal of the measuring and compensation coils cooperating with the test sample; a phase corrector for adjusting the phase shift of said first and second signals; an integrating amplifier receiving said first and second signals after phase correction thereof; means for dividing said first and second integrated signals, proportional to the magnetization flux in the samples, by a constant magnitude proportional to the area of the sample cross-sections; an oscilloscope having vertical plates supplied with said divided signals indicative of the magnetization acquired by the test sample; an indicator of the amplitude of said signals indicative of the magnetization in the test sample and connected in parallel to the vertical plates of said oscilloscope; a non-reactive measuring resistor connected in series with said solenoid for obtaining a third signal proportional to the intensity of the magnetic field within the solenoid; a field intensity channel connected to said measuring resistor and comprising a series connection of a phase corrector for adjusting the phase shift of said third signal; a linear amplifier of the signal across the phase corrector output; means for regulating the value of said third signal to a common measuring system with said first and second signals, the latter said means being connected to the horizontal plates of said oscilloscope; an indicator of the amplitude of said third signal connected in parallel to the horizontal plates of the oscilloscope; means for algebraically adding said first or second signal to the third signal for obtaining a resultant signal indicative of the induction present in the respective sample, the output of said means being connected to the vertical plates of said oscilloscope; and a switch for selectively connecting said sample magnetization and field intensity channels to the inputs of said adding means or directly to the oscilloscope plates.

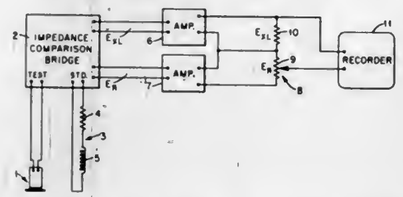
3,358,225

LIFT-OFF COMPENSATION FOR EDDY CURRENT TESTERS

Richard S. Peugeot, Oak Ridge, Tenn., assignor to the United States of America as represented by the United States Atomic Energy Commission

Filed Mar. 27, 1964, Ser. No. 355,516

3 Claims. (Cl. 324—40)



1. An eddy current tester for conductive samples comprising an impedance bridge, a source of constant voltage and frequency coupled to said bridge, an eddy current probe forming a leg of said bridge for positioning in close proximity to a conductive sample to produce eddy currents therein, a standard impedance forming another leg of said bridge, said bridge comparing said standard impedance with the impedance of said probe to provide separated outputs of the reactive and resistive components of unbalance of said impedance bridge, a combining network, circuit means for separately coupling said bridge outputs to said combining network, a read-out device, and means for feeding one component output and a selected, predetermined portion of the other component output from said combining network to said read-out device to compensate for the effect of any slight variations in probe-to-sample spacing during inspection of the conductive sample.

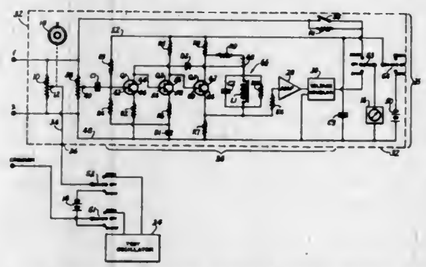
3,358,226

CABLE FAULT LOCATOR EMPLOYING SHIELDED TUNED AMPLIFIER CIRCUITRY

Henry H. Clinton, Clinton, Conn., assignor to The Whitney Blake Company, New Haven, Conn.

Filed June 14, 1963, Ser. No. 288,038

7 Claims. (Cl. 324—52)



1. A multiconductor cable fault-locating apparatus comprising, in combination:

(A) first, second, and third terminals for connection in circuit with a faulted cable,

(B) a variable voltage divider having end terminals and a movable tap therebetween, said end terminals being connected to said first and second terminals,

(C) an AC test signal source having a pair of output terminals, one of said source output terminals connected to said third terminal and the other to said tap,

(D) a sensing unit including

(1) a first electronic amplifier having an input terminal and an output terminal,

(2) feedback means having first and second terminals,

(a) said feedback means being connected in circuit with said amplifier output terminal, and

(b) responding to the amplifier output signal to develop at said first and second terminals, respectively, voltages of equal magnitude and opposite polarity,

(3) a circuit element having a frequency independent impedance,

(4) a circuit device having a frequency dependent impedance,

(a) said element and said device being connected in series between said first and second terminals of said feedback means,

(b) the common connection between said element and said device connected in circuit with said amplifier input terminal to provide a degenerative feedback signal effective to substantially decrease the gain of said first amplifier at frequencies other than the frequency of said test signal, and

(5) a second electronic amplifier having an input terminal and an output terminal,

(a) said second amplifier output terminal being connected in circuit with said first amplifier input terminal and said frequency dependent circuit device,

(b) said frequency dependent circuit device providing a decreasing load impedance for said second amplifier at frequencies other than said test signal frequency.

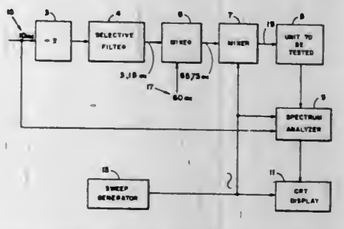
3,358,227

ANALYZER SYSTEM USING PHASE DISTORTION MEASUREMENTS

John W. Taylor, Baltimore, Md., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army

Filed May 26, 1964, Ser. No. 370,389

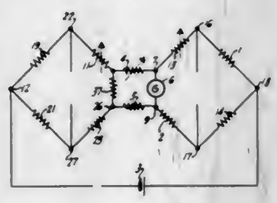
1 Claim. (Cl. 324—57)



A phase distortion analyzer comprising a first constant frequency signal means connected to an input of a divider; said divider having an output connected to an input of a selective filter which selects two components of its input and provides an output which has two frequencies; a second constant frequency signal means; a first mixer connected to said second signal means and the output of said filter for mixing said two frequencies with a second constant frequency of said second signal means; said mixer having an output which is connected to an input of a second mixer; a sweep generator connected to a second input of said second mixer; said second mixer mixing a swept frequency output of said sweep generator with the output of said first mixer whereby the two frequencies are swept linearly; the second mixer having an output which is connected to a linear electrical circuit element; a spec-

trum analyzer having an input connected to an output of said circuit element for measuring the relative phase of the two frequencies; said spectrum analyzer also having inputs connected to said first constant frequency signal means and said sweep generator; and a display means connected to an output of the spectrum analyzer.

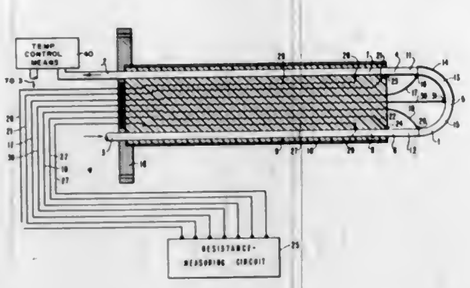
3,358,228
RESISTANCE MEASURING CIRCUIT HAVING SPURIOUS RESISTANCE COMPENSATING MEANS
Jonas Frank Bucher, 9336 Pershing Ave., Orangevale, Calif. 95662
Filed Feb. 6, 1961, Ser. No. 87,464
1 Claim. (Cl. 324—62)



An electrical resistance testing device comprising an unknown resistor, a calibrated variable resistor, a first electrical conductor and a second electrical conductor for connecting said unknown resistor and said calibrated variable resistor in parallel, a primary terminal, a secondary terminal, a battery connected across said primary and secondary terminals, a first known resistor at one end connected to said primary terminal, a first variable resistor at one end connected to said first electrical conductor, first means for connecting together the other ends of said first known resistor and said first variable resistor, a second known resistor at one end connected to said primary terminal, a first leg including a third known resistor as well as means having one spurious resistance in series therewith, said first leg at one end being connected to said first electrical conductor, second means for connecting together the other ends of said second known resistor and said first leg, a fourth known resistor at one end connected to said secondary terminal, a second variable resistor at one end connected to said second electrical conductor, third means for connecting together the other ends of said fourth known resistor and said second variable resistor, a fifth known resistor at one end connected to said secondary terminal, a second leg including a sixth known resistor as well as means having another spurious resistance in series therewith, said second leg at one end being connected to said second electrical conductor, fourth means for connecting together the other ends of said fifth known resistor and said second leg, a galvanometer, and means for connecting said galvanometer in said first electrical conductor, means for selectively connecting said galvanometer alternatively in said first electrical conductor or between said first and second connecting means or between said third and fourth connecting means.

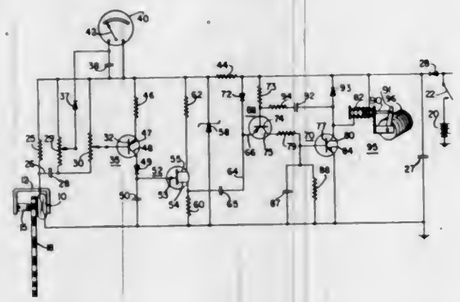
3,358,229
ELECTRICAL CORROSION PROBE HAVING A PLURALITY OF TEST SPECIMEN SEGMENTS
John W. Collins, Beaumont, Tex., assignor to Mobil Oil Corporation, a corporation of New York
Filed June 29, 1964, Ser. No. 378,805
4 Claims. (Cl. 324—65)

1. Apparatus, for measuring the corrosion of a plurality of electrically conductive test specimens which are disposed in a fluid environment, comprising a corrosion resistant probe shell, a susbtantially U-shaped probe having its legs extending into said probe shell, said probe being of tubular structure and comprising a plurality of test specimen segments, each of said test specimen segments being of dissimilar electrically conductive material, electrical conductors extending through said probe shell



from at least two points spaced apart along the length of each segment, a resistance measuring circuit adapted for connection to said electrical conductors, and temperature control means operatively connected to the legs of said probe for maintaining said segments at substantially the same temperature.

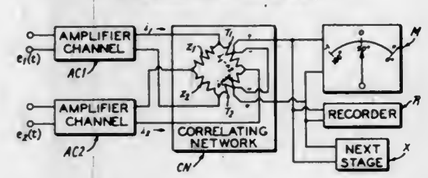
3,358,230
ELECTRONIC DEVICE
Daryl D. Wiley, Elmhurst, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Mar. 5, 1965, Ser. No. 437,378
4 Claims. (Cl. 324—70)



3. An electric speedometer and odometer for a vehicle, including in combination, pulsing means responsive to the movement of the vehicle for providing electrical pulses, each of said pulses representing an increment of distance traveled by the vehicle, a differentiating circuit having an input coupled to said pulsing means and an output, said differentiating circuit being responsive to said pulses to provide positive and negative-going output signals, an integrating circuit and stairstep voltage generator means coupled to the output of said differentiating circuit, meter means coupled to said integrating circuit, said integrating circuit being responsive to output signals of one polarity from said differentiating circuit to integrate said signals with respect to time to apply a signal to said meter means for operating the same to indicate the rate of travel of the vehicle, semiconductor trigger means connected to said stairstep voltage generator means, and electromechanical counter means coupled to said semiconductor trigger means, said stairstep voltage generator means be-

ing incrementally charged to a potential level by periodic signals of the other polarity being applied thereto from said differentiating circuit to operate the semiconductor trigger means after said potential level is attained to actuate said electromechanical counted means to register the distance traveled by the automobile.

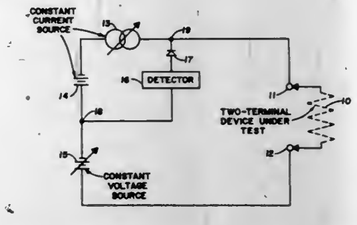
3,358,231
ANALOGUE SIGNAL CORRELATOR
Frederick Baganoff, St. Ann, Mo., assignor to McDonnell Aircraft Corporation, St. Louis, Mo., a corporation of Maryland
Filed Sept. 19, 1963, Ser. No. 310,102
4 Claims. (Cl. 324—83)



1. Apparatus for correlating any two first and second dynamic electrical input quantities which may differ in amplitude, frequency, phase and wave shape, comprising first and second sources of input signals to be correlated, first amplifier means including associated automatic gain control means having an input connected to the first input signal source and output connection means, second amplifier means including associated automatic gain control means having an input connected to the second input signal source and output connection means, a bridge circuit including first and second input connection means connected respectively to the output connection means of said first and second amplifier means, said bridge circuit including impedance means connected between said first and second input connection means, means in said bridge circuit including said impedance means for combining the two input quantities to produce first and second bridge signals respectively representing functions of the sum and difference of the input quantities, temperature sensitive means responsive respectively to the first and second bridge signals, said temperature sensitive means producing D.C. signals respectively representing the mean square values of the corresponding bridge signals, output circuit means connected to said temperature sensitive means including means for combining the D.C. signals produced by said temperature sensitive means and meter means including means responsive to said combined D.C. signals for indicating the magnitude and phase relationships of the input quantities and means for selectively connecting said automatic gain control circuit associated with the first amplifier circuit to control the gain of both of said first and second amplifier circuits, and means responsive to the ratio of the magnitudes of the bridge signals when the first and second amplifier circuits are controlled by the said automatic gain control circuit of said first amplifier circuit to indicate data from which transfer function can be determined.

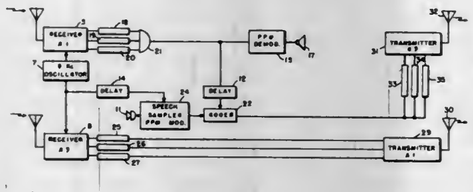
3,358,232
CURRENT AND VOLTAGE REGULATED TESTING APPARATUS FOR MEASURING THE IMPEDANCE CHARACTERISTICS OF COMPONENTS
Howard C. Dillon, Dallas, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Oct. 5, 1962, Ser. No. 228,650
2 Claims. (Cl. 324—158)

1. In apparatus for testing semiconductor devices:
(a) a pair of terminals for connection to two terminals of a semiconductor device which is to be tested,
(b) a regulated voltage source adjustable in magnitude,
(c) an adjustable constant current source,
(d) means connecting the voltage source and the current source in series between the pair of test terminals with the two sources being poled in the same direction,



(e) detector means having a low input impedance detecting current flow in its input above a small threshold level and indicating the presence thereof.
(f) a diode having a low forward voltage drop,
(g) and means connecting the detector means and the diode in series across the current source with the diode permitting current flow through the detector means from the current source but preventing current flow through the detector means from the voltage source.

3,358,233
PULSE TYPE RADIOTELEPHONE SYSTEM WITH CONFERENCE CAPABILITY
Adolf Reindl, Long Branch, N.J., assignor to the United States of America as represented by the Secretary of the Army
Filed Oct. 22, 1964, Ser. No. 405,877
7 Claims. (Cl. 325—55)

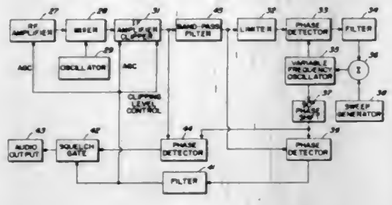


4. A radiotelephone conference network in which communication is carried on by means of pulse modulated carrier waves, comprising, a conference leader's station and a plurality of conferees' stations, means to transmit the conversation of each conferee to the leader's station on a first address and means at said leader's station to retransmit all of the conferees' conversations on a second address after a fixed time delay together with the leader's conversation, and means at each station to insure that the conversation of each conferee arrives at the leader's station during a small, fixed time interval.

3,358,234
SSB SYSTEM WHICH OVERCOMES PROBLEMS OF SQUELCH, IMPULSE INTERFERENCE AND AGC AS COMMONLY ENCOUNTERED
Harris A. Stover, Cedar Rapids, Iowa, assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa
Filed Apr. 2, 1965, Ser. No. 445,148
2 Claims. (Cl. 325—330)

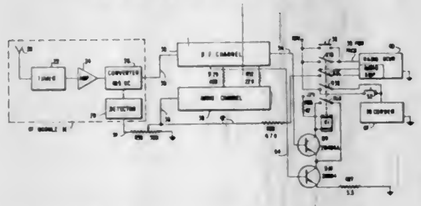
1. A single sideband receiver for receiving a suppressed carrier and a sideband comprising, an R.F. amplifier, a mixer, a bandpass filter receiving the output of said I.F.

amplifier and an I.F. amplifier connected in series, an oscillator feeding said mixer, a phase lock loop for locking onto said carrier, a gate circuit, a first detector for receiving the output of said loop and said bandpass filter to



control the gain of said R.F. amplifier, the output of said I.F. amplifier and the squelch of said gate, a second detector receiving the output of said I.F. amplifier and the output of said loop to control the output of said gate.

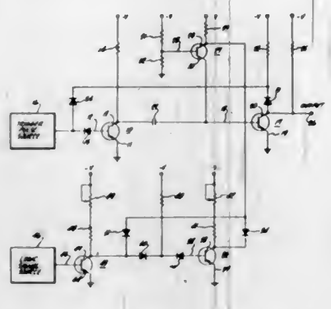
3,358,235
CODED SIGNAL ALERTING DEVICE
Truman W. Powell, 1146 St. Augustine Place NE., Atlanta, Ga. 30306
Filed Dec. 18, 1964, Ser. No. 419,326
10 Claims. (Cl. 325—466)



1. An alerting device comprising receiving means including a detector for reception of an interrupted code signal having unmodulated and modulated portions, a radio frequency channel including a monostable relaxation oscillator connected to receive unmodulated signal portions from said receiving means, an audio frequency channel connected to receive modulated signal portions from said detector of the receiving means, an audio amplifier, a switching means, and means operably connecting said switching means to said radio frequency and audio channels and said audio amplifier so as to energize the audio amplifier and connect the audio amplifier to said detector of the receiving means upon coincidence of the output from said audio channel with a trigger to said relaxation oscillator which drives said oscillator to its quasi stable state.

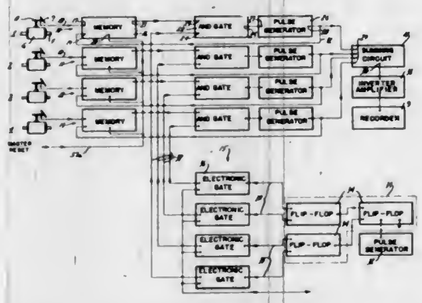
3,358,236
PROGRAMMED TIMING CIRCUITS
Frank W. Weber, Duarte, Calif., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Apr. 12, 1965, Ser. No. 447,170
16 Claims. (Cl. 328—58)

1. An electrical circuit comprising:
a normally open input switch having a first input terminal, the input switch being closed in response to an input signal applied to the first input terminal,
a normally closed output switch coupled to the input switch,
means coupled to the output switch for opening the output switch in response to the closing of the input switch,
timing circuit means coupled to both the input switch and the output switch and having a first and a second control circuit element and a second input terminal,
means coupled to the output switch for maintaining the output switch in its open condition for a period of time governed by the timing circuit means,
means coupled to the timing circuit means for isolating the first control circuit element from the remainder of the timing circuit means in response to a first signal applied to the second input terminal, and



means coupled to the timing circuit means for isolating the second control circuit element from the remainder of the timing circuit means in response to a second signal applied to the second input terminal.

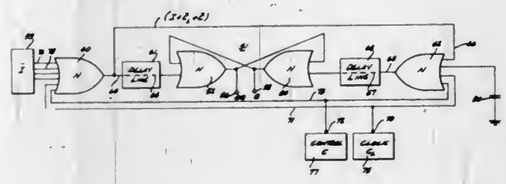
3,358,237
DATA PULSE COMBINING SYSTEM EMPLOYING SCANNER TO SEQUENTIALLY GATE PLURAL MEMORY CIRCUITS EACH HAVING AUTOMATIC RESET MEANS
Tim H. Houle, Wauwatosa, Wis., assignor to A. O. Smith Corporation, Milwaukee, Wis., a corporation of New York
Filed Feb. 1, 1966, Ser. No. 523,981
10 Claims. (Cl. 328—104)



1. An electronic pulse combining apparatus for combining a plurality of parallel electrical pulse trains from different sources into a single series of time spaced pulses, comprising
a plurality of channels one for each pulse train and each of which comprises an electronic storage means having a set element and a reset element and an output element, said set element being connected to a related pulse source and changing the signal at the output element in response to an input pulse,
a scanning unit having a plurality of output means one for each channel and means establishing similar interrogation signals at said output means, said interrogation signals being sequentially and cylically established at the output means,
a summing apparatus having a plurality of input elements one for each channel, and

transfer means in each channel having an input means connected to the storage means and the scanning unit and an output means connected to the summing apparatus and to the storage means and responsive to a signal from the scanning unit in the presence of a signal from the storage means for transmitting a signal from the transfer means to the summing apparatus and simultaneously transmitting a signal to the reset element of the storage means to reset the storage means.

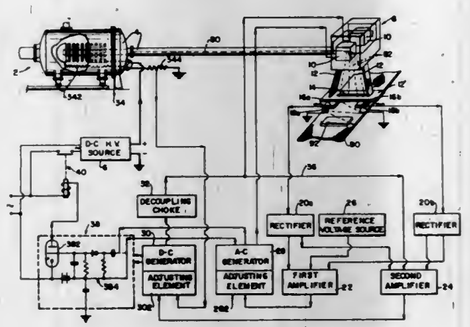
3,358,238
CONTROL INFORMATION FLIP-FLOP CIRCUITS
Homer O. Shapiro and Jack J. Pariser, Orange, and Edward J. Darcy, Huntington Beach, Calif., assignors to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed Mar. 30, 1965, Ser. No. 443,808
9 Claims. (Cl. 328—196)



1. A flip-flop responsive to information signals, clock signals and control signals comprising
a first gate responsive to the combination of an absence of information signals, a clock signal and a control signal and responsive to an information signal to develop an inverted signal,
a second gate responsive to the combination of said clock signals said control signals and said inverted signal,
means coupling said first gate to said second gate to apply said inverted signal thereto,
a third gate coupled to said first gate,
a fourth gate coupled to said second gate,
and means intercoupling said third and fourth gates for maintaining a set or a reset state, whereby said flip-flop is set only on coincidence of information signals at said first gate and clock and control signals at said second gate, is reset on coincidence of clock and control signals and the absence of information signals at said first gate and is inhibited from being set or reset in the absence of clock or control signals at said first and second gates.

3,358,239
EQUIPMENT FOR CONTROLLING AND MONITORING THE ELECTRON BEAM OF A HORIZONTAL-TYPE PARTICLE ACCELERATOR
Siegfried Franke, Siegfried Grosse, and Bernd-Dietrich Torge, Dresden, Germany, assignors to VEB Transformatoren- und Rontgenwerk Dresden, Dresden, Germany
Filed July 27, 1965, Ser. No. 475,176
10 Claims. (Cl. 328—233)

1. An equipment for controlling and monitoring the electron beam of a horizontal-type particle accelerator serving for the irradiation of materials, and having
a D-C high-voltage source,
a beam generator fed by said D-C source and operatively connected with
a horizontal-type accelerator tube emitting a substantially horizontal electron beam,
beam guide means,
electromagnet means at the exit end of said beam guide means and having at least two windings,
one of said windings being excited by a direct current for deflecting said electron beam from the substantially horizontal into a substantially vertical direction,
the other one of said windings being excited by an alternating current for fanning out the deflected electron beam, comprising, in combination,
a probe assembly arranged in front of said exit end of the beam guide means, between said exit end and said materials,
means for laterally adjusting said probe assembly according to prevailing operating conditions,

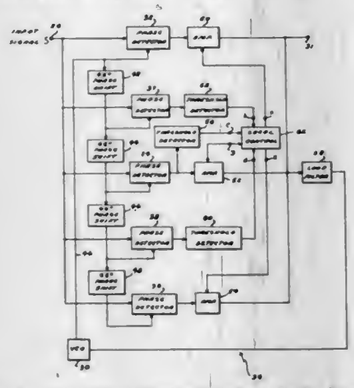


first generator means for supplying said direct current for said one winding,
second generator means for supplying said alternating current for said other winding,
first adjusting means for said first generator means,
second adjusting means for said second generator means,
means for controlling said first adjusting means by an electric parameter proportional to the acceleration voltage of said particle accelerator,
means for regulating said first adjusting means in dependence on the value of an output voltage derived from said probe assembly, and
means for regulating said second adjusting means in dependence on said value of the output voltage.

3,358,240
EXTENDED PHASE DETECTOR FOR PHASE-LOCKED LOOP RECEIVERS
George A. McKay, Glen Burnie, Md., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Air Force
Filed Mar. 11, 1965, Ser. No. 439,107
4 Claims. (Cl. 329—122)

1. A phase-look loop circuit comprising: a plurality of phase detectors arranged for parallel-ended inputs, means for providing a phase-modulated amplitude-limited input signal including input line means branches of which extend to respective ones of said phase detectors and simultaneously directing varying voltage thereto, amplifying means coupled to the output of alternate ones of said phase detectors and being biased quiescently to supply voltage-displaced parallel load lines which together define a composite transfer characteristic the linear portion of which is the aggregate of the linear parts of the individual transfer curves of said ampifying means, loop filter means for tracking the output signals of said amplifying means, variable voltage controlled oscillating means connected so as to be controlled by said loop filter means, a plurali-

ty of serially-arranged 45° phase-shift means numbering one less than the number of said phase detectors, circuit means for feeding the output of said voltage controlled oscillating means to the first of said phase-shift means in the series arrangement, a direct connection between the output of said voltage controlled oscillating means and the first of said phase detectors in the group ahead of said amplifying means thereby completing one phase-lock loop, circuit means for connecting the output of each of said phase-shift means to the remaining ones of said phase detectors whereby to impose cumulative phase shifts of 45° on the signal from said voltage controlled oscillating



means and complete additional phase-lock loops, logic control means controlled by preselected ones of said phase detectors to energize the one of said amplifying means which currently is operating over the linear part of its transfer curve and simultaneously preventing the remaining ones of said amplifying means from operating, whereby the relative phase error between said input signal and the quadrature signal of said voltage controlled oscillating means may vary continuously substantially free of discontinuity in the time function of said composite transfer characteristic, and output means coupled to said amplifying means and adapted to derive therefrom information of the incoming signal.

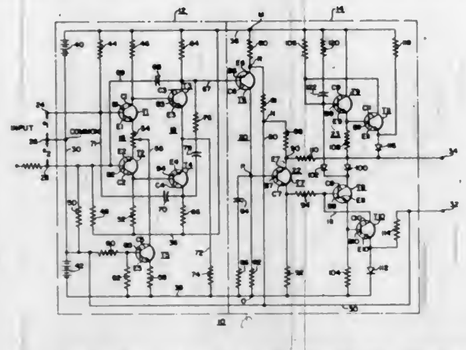
3,358,241

AMPLIFIER WITH SINGLE TIME DELAY TRANSFER CHARACTERISTIC AND CURRENT LIMIT PROTECTION

Robert E. Hull, Amherst, Buffalo, N.Y., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed Sept. 25, 1964, Ser. No. 399,230
17 Claims. (Cl. 330—15)

1. In an electric signal amplifier having respective input and output circuits, first, second and third electric valves each having respective control and first and second power electrodes, and an internal power path extending from one to the other of its power electrodes, each valve having respective input and output circuits, respective first, second, third and fourth junctions, a first circuit leg connected between said first and second junctions and including first D.C. power supply means poled to provide a particular polarity at said first junction relative to the second junction, a second circuit leg connected between said second and third junctions and including second power supply means poled to provide the opposite polarity to said third junction relative to the second junction, a third circuit leg connected between said third and fourth junctions and including impedance means, a fourth circuit leg connected between said first and fourth junctions and including the power path output of the first valve, whereby said four circuit legs constitute the legs of a bridge wherein the output across said second and fourth junctions is controlled in response to input signals applied to the control electrode of the first valve, means including a circuit connecting said fourth junction to the control electrode of the second valve for controlling the second valve in response to said output across said second and fourth junctions, means including a circuit connecting one of said power electrodes of the second valve to the control electrode of the third valve for driving the third valve in response to the second valve, said amplifier having an



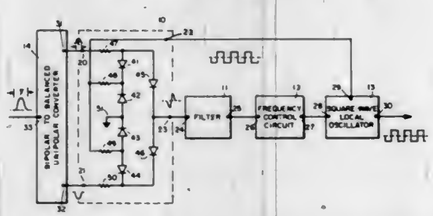
output circuit driven by said third valve and including said second junction and an output terminal connected to one of said power electrodes of the third valve, a negative feedback circuit for supplying negative feedback from the amplifier output to the second valve, said negative feedback circuit including a tapped voltage divider connected across said output terminal and said second junction and a connection from one of said power electrodes of the second valve to a tap on said voltage divider.

3,358,242

AUTOMATIC PHASE CONTROL NETWORK

Kurt Hillman, Flushing, N.Y., assignor to General Telephone & Electronics Laboratories Incorporated, a corporation of Delaware

Filed Apr. 29, 1966, Ser. No. 546,401
12 Claims. (Cl. 331—26)



1. A phase bridge of the type wherein a bipoplar local oscillator signal having a rapid transition between polarity states is phase compared with an input signal, said input signal including first and second waveforms of constant opposite polarity, said phase bridge comprising:

(a) first asymmetrically conductive means having first and second electrodes;

(b) second asymmetrically conductive means having first and second electrodes, said second electrode being coupled to the second electrode of said first means;

(c) third asymmetrically conductive means having first and second electrodes, said second electrode being coupled to the first electrode of said second means;

(d) fourth asymmetrically conductive means having first and second electrodes, said first electrode being coupled to the first electrode of said third means;

(e) fifth asymmetrically conductive means having first and second electrodes, said first electrode being coupled to the first electrode of said first means;

(f) sixth asymmetrically conductive means having first and second electrodes, said first electrode being coupled to the second electrode of said fifth means, said second electrode being coupled to the second electrode of said fourth means;

(g) means for concurrently applying said local oscillator signal across said second and third conductive means, said second and third means being alternately rendered conductive by said local oscillator signal;

(h) means for applying said first waveform across the series combination of said first and second conductive means;

(i) means for applying said second waveform across the series combination of said third and fourth conductive means; and

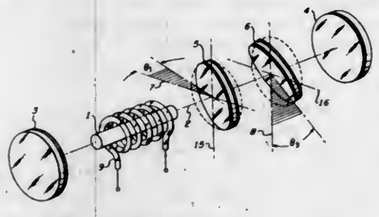
(j) a first output terminal coupled to the junction of the second and first electrodes of said fifth and sixth means respectively, the signal appearing at said output terminal including portions of said first and second waveforms, said portions being equal when a transition of said bipoplar local oscillator signal is in phase alignment with the peak of said input signal and unequal when said local oscillator signal transition is not in phase alignment with said input signal peak.

3,358,243

LASER HAVING INTERFEROMETER CONTROLLED OSCILLATORY MODES

Stuart A. Collins, Jr., New Hyde Park, and George R. White, Glen Cove, N.Y., assignors to Sperry Rand Corporation, Great Neck, N.Y., a corporation of Delaware

Filed Mar. 25, 1963, Ser. No. 267,591
6 Claims. (Cl. 331—94.5)



1. A laser comprising

a resonant cavity comprising first and second reflective surfaces separated from each other along an axis,

an etalon comprising third and fourth reflective surfaces positioned along said axis between said first and second reflective surfaces,

said etalon being tilted relative to said axis for controlling the frequency and beam angle of the laser output,

laser material within said cavity directly between said first and third reflective surfaces for producing a beam of coherent light along said axis, and

pumping means for exciting said laser material.

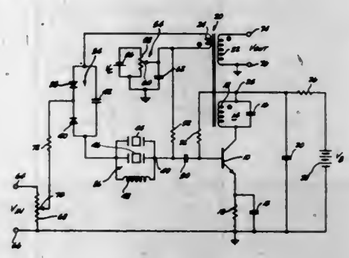
3,358,244

HIGHLY LINEAR VOLTAGE CONTROLLED CRYSTAL OSCILLATOR

Er-Chun Ho, Newport Beach, and John J. Fackeldey, Huntington Beach, Calif., assignors to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed May 3, 1965, Ser. No. 452,777
3 Claims. (Cl. 331—116)

1. An oscillator circuit comprising: a transistor having an emitter electrode, a collector electrode, and a base electrode; a transformer having a primary winding and a secondary winding; said primary winding having one terminal connected to said collector electrode; a capacitor connected across said primary winding; a feedback path coupled between one terminal of said secondary winding and said base electrode; said feedback path including an electrically variable capacitance arrangement and a frequency stabilizing network coupled in series; said electrically variable capacitance arrangement including first and second varactor diodes connected in series in opposite



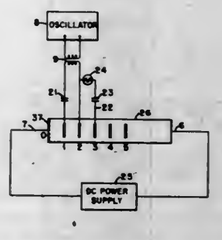
polarity and a capacitance connected in parallel with the series diodes; said frequency stabilizing network including a plurality of quartz crystals and an inductance connected in parallel; means coupled to said base and emitter electrodes and to the respective other terminals of said primary and said secondary windings for biasing said transistor to an operating condition enabling varying current to flow therethrough at a selected frequency determined by said frequency stabilizing network and said electrically variable capacitance arrangement; and means for applying a control voltage to said electrically variable capacitance arrangement to vary said selected frequency.

3,358,245

PHASE MODULATED SOLID STATE DEVICE

Jay Cee Pigg, Oak Ridge, Tenn., assignor to the United States of America as represented by the United States Atomic Energy Commission

Filed Sept. 25, 1964, Ser. No. 399,413
8 Claims. (Cl. 332—31)

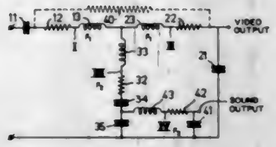


1. A semiconductor electronic device comprising a semiconductor crystal, a source for continually injecting excess carrier concentration into the crystal adjacent one extremity, means for applying an electric field gradient across the crystal for drifting the carriers longitudinally thereof, means for inducing an alternating electric field in the crystal adjacent the excess carrier injecting extremity thereof to produce a longitudinal variation in said electric field gradient, thereby, phase modulating the drifting carriers in the crystal, and means for deriving an output signal from the crystal responsive to the modulated drifting carriers.

3,358,246
BANDPASS FILTER FOR PASSING A WIDE RANGE OF FREQUENCIES AND SUPPRESSING A NARROW RANGE OF FREQUENCIES

Albert Bensasson, Bougival, France, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Dec. 13, 1963, Ser. No. 330,362
Claims priority, application France, Jan. 2, 1963, 920,307
7 Claims. (Cl. 333—6)

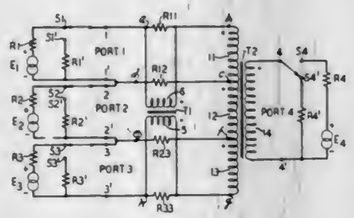


1. A bandpass filter for passing a comparatively wide range of frequencies and also for strongly and selectively suppressing a comparatively narrow range of frequencies located within the said wide range or in the vicinity thereof, said filter comprising first and second longitudinal branches connected in series and each comprising a series-resonant circuit tuned to provide a low longitudinal impedance for said filter in said wide range, a transverse branch coupled to the common point of the longitudinal branches and comprising a series-resonant circuit tuned to a frequency located in said comparatively narrow range of frequencies and input and output circuits connected to points on said first and second branches other than said common point; wherein the improvement comprises a fourth branch connected in parallel with only a portion of the transverse branch, said fourth branch comprising a series-resonant circuit tuned to said frequency located in the comparatively narrow range of frequencies whereby the range of suppression of said narrow range is increased.

3,358,247
COUPLING CIRCUIT ARRANGEMENT FOR THE SELECTIVE DISTRIBUTION OF POWER

Dennis H. Klockow, Andover, Mass., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Apr. 8, 1965, Ser. No. 446,531
9 Claims. (Cl. 333—8)

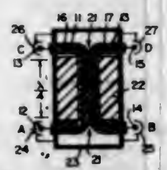


3. In a coupling circuit having each of four or more ports terminated in a characteristic impedance, means for providing power transmission between one of said ports and the remainder of said ports while simultaneously prohibiting transmission inter se in said remainder ports comprising a transformer having a secondary winding connected to said one port and having a primary winding divided into three or more segments by a plurality of tap points, means for connecting each of said segments to a corresponding remainder port including a plurality of impedances connected so that each impedance couples one of said tap points to a terminal on one of said remainder ports, and means for maintaining the same voltage across each of two of said each impedances, said two impedances including a first and a second impedance, said first impedance coupling a terminal of one remainder port to a corresponding tap point and said second impedance coupling a terminal of a different one of said remainder ports to a corresponding tap point, said voltage maintaining means and said transformer winding ratios and said impedances being selected to provide equal effective impedance values connected to and between each of said tap points.

3,358,248
MICROWAVE COUPLED LINE DEVICE HAVING INSULATED COUPLED INNER CONDUCTORS WITHIN A COMMON OUTER CONDUCTOR

Theodore S. Saad, Westwood, Mass., assignor to Sage Laboratories, Inc., East Natick, Mass., a corporation of Massachusetts

Filed July 22, 1964, Ser. No. 384,455
3 Claims. (Cl. 333—10)



1. High frequency apparatus operative over a frequency range embracing a predetermined center frequency comprising,

first and second insulated inner conductors, each having insulation bonded thereto and separated by the thickness of said insulation therebetween for a distance corresponding substantially to a quarter wavelength at said center frequency and separated by a greater distance elsewhere,

the thicknes of said separating insulation being less than the thickness of each conductor,

means including an outer conductor defining a cavity surrounding and insulatedly separated from said inner conductors and maintained in fixed relationship, with the radial distance between said outer conductor and said inner conductors being greater than the combined thickness of said inner conductors with said separating insulation and being many times greater than the distance between said inner conductors, established by said separating insulation,

means defining four terminal pairs outside said cavity, each terminal pair having a signal terminal coupled to a respective end of said conductors and a reference terminal intercoupled with the other reference terminals by said outer conductor.

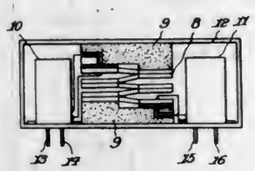
3,358,249
FOLDED H-SHAPED RESONATOR ELECTROMECHANICAL FILTER

Masamitsu Kawakami, Tokyo-to, Japan, assignor to Toko Kabushiki Kaisha, Tokyo-to, Japan, a joint-stock company of Japan

Filed Oct. 23, 1964, Ser. No. 407,274
Claims priority, application Japan, Aug. 22, 1961, 36/30,558; Aug. 27, 1961, 36/43,662; Feb. 27, 1962, 37/6,907
4 Claims. (Cl. 333—71)

1. A band-pass electromechanical filter comprising, in assembled combination, a resonator system consisting of a plurality of double tuned resonators of similar kind,

each of which is formed from a single piece made of one kind of metal plate in the configuration of the letter H having two resonator plates coupled by a transverse coupler which is bent askew in a joggled manner so as to dispose the said two resonator plates in different but mutually parallel planes, the said H-shaped resonators being cascade-connected in a tiered zigzag arrangement wherein adjacent H-shaped resonators are joined by the laminar

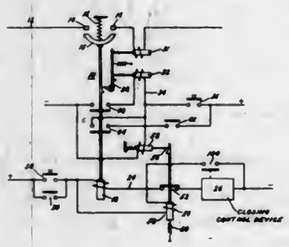


bonding of their respective said resonator plates which are mutually nearmost and mutually confronting, a piece made of one kind of electrostrictive material bonded to one surface of each of the free resonator plates at the two ends of the said resonator system, and electrodes connected to opposite points on the two surfaces of each said piece, the said resonator system being electrostatically driven with one end thereof as the input end and the other end as the output end.

3,358,250
LOCKOUT ARRANGEMENT FOR AN ELECTRIC CIRCUIT BREAKER

Daniel C. Hoffmann, Lansdowne, Pa., assignor to General Electric Company, a corporation of New York

Filed Nov. 3, 1966, Ser. No. 591,735
5 Claims. (Cl. 335—28)



1. An electric circuit breaker for controlling current through a power circuit, comprising:

(a) first trip means sensitive to current in said power circuit for producing circuit breaker-opening in response to a predetermined circuit condition in said power circuit,

(b) additional trip means for producing opening of said circuit breaker in response to conditions other than said predetermined circuit condition in said power circuit,

(c) closing means for producing a first closing operation of said circuit breaker,

(d) lockout means operable when effective to prevent said closing means from producing a second closing operation,

(e) means responsive to said first closing operation for rendering said lockout means effective, whereby additional closing operations are prevented so long as said lockout means remains effective,

(f) lockout-disabling means responsive to operation of said additional trip means for rendering said lockout means ineffective to prevent closing following an opening operation initiated by said additional trip means,

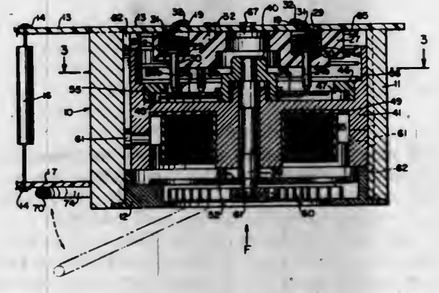
(g) said lockout-disabling means being nonresponsive to operation of said first trip means,

(h) and means for maintaining said lockout means effective despite an opening operation produced by said first trip means.

3,358,251
ROTARY STEPPER SWITCH

Walter M. Ostrander, New Milford, and Sinclair N. Sutherland, New Haven, Conn., assignors to Consolidated Electronics Industries Corp., Waterbury, Conn., a corporation of Delaware

Filed Feb. 17, 1966, Ser. No. 528,300
10 Claims. (Cl. 335—122)



9. In a rotary stepper switch of the type including a rotor shaft mounted in a housing for step-by-step rotation under the influence of a rotary drive means and a reversibly axially displaceable escapement means, the improvement comprising

(a) a rotary contact element carried by said rotor shaft;

(b) a plurality of spring biased contact elements acting on said rotary contact element and being collectively operative to urge said rotary element and said shaft in a first axial direction; and

(c) selectively energizable means for moving said rotary contact element and said shaft axially in opposition to the collective action of said spring biased contact elements.

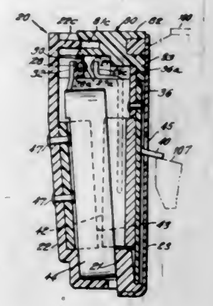
3,358,252
MECHANICALLY HELD CONTACTOR WITH MANUAL RELEASE

John A. Herrmann, Grosse Pointe Farms, and Andrew J. Kralik, Detroit, Mich., assignors to I-T-E Circuit Breaker Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Jan. 3, 1966, Ser. No. 518,366
10 Claims. (Cl. 335—170)

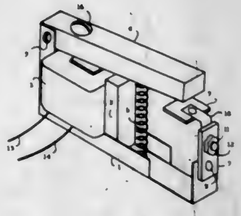
1. A mechanical latch unit for a contactor, said unit comprising a housing, an electro-magnet having a movable armature, first means including said armature and a latching part extending through a wall of said housing external thereof for maintaining contactor contacts in engagement, biasing means urging said first means to a first position wherein said latching part is in latching position for maintaining contactor contacts in engagement, said electro-magnet upon energization thereof operating said first means to a second position wherein said latching part is in unlatching position for permitting contactor contacts to be opened, a switch means within said housing in engagement with said first means for operation thereby as said first means moves between said first and said second positions, said switch means having a first section which

is open when said first means is in said first position and closed when said first means is in said second position, said switch means having a second section which is closed when said first means is in said first position and open when said first means is in said second position, said electro-magnet including an operating coil, and second means within said housing connecting said coil in circuit with one of said switch means sections such that energizing current for said coil passes through said switch means,



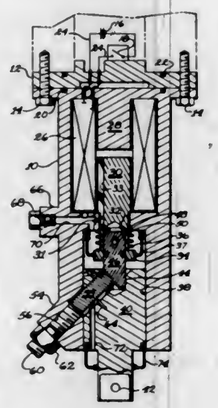
third means mounted to said housing for manually operating said latching part to said unlatching position, said third means including a first and a second portion, said first portion accessible for manual operation externally of said housing from normal position to a releasing position, said second portion engaging said first means at a point remote from said latching part to operate the first means to said second position upon operation of said first portion to said releasing position.

3,358,253
SELF-ADJUSTING RELAY
William J. Ashworth, Rte. 2, New Albany, Miss. 38652
Filed Mar. 31, 1966, Ser. No. 539,021
3 Claims. (Cl. 335—197)



1. A self adjusting relay operatable over a wide range of electrical currents, comprising a movable contact-carrying member, electromagnetic means for urging said contact-carrying member into closed circuit position with a second movable contact, a first resilient means urging said contact-carrying member toward its open circuit position, said first resilient means being the sole means for opening said contact-carrying member when said contact-carrying member is urged into the closed circuit position by a predetermined range of electrical currents, and a second resilient means providing a consecutive additional means for urging the said contact-carrying member toward its open circuit position when the said contact-carrying member is urged into engagement with said second movable contact by a range of electrical currents above said predetermined range of electrical currents, said second resilient means operating additionally and consecutively with the said first resilient means to urge the said contact-carrying member toward its open circuit position when the said first resilient means is unable to perform said function alone.

3,358,254
ELECTRICALLY ACTUATED RELEASE MECHANISM
James W. Rupp, Woodland Hills, Calif., assignor to The Bendix Corporation, a corporation of Delaware
Filed Feb. 11, 1966, Ser. No. 526,807
6 Claims. (Cl. 335—253)

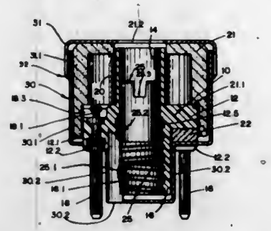


1. A release device comprising a housing having a large channel and a small channel intersecting therewith;
a plug slidable in said large channel including a first passageway axially aligned therein and a second passageway extending from the surface of said plug to said first passageway at an angle with the axis of said plug;
a solenoid device in said housing including an armature movable relative to said housing, said armature including a passageway axially aligned with said first passageway;
a latch member having a tapered contact surface in said armature passageway extending into said first passageway; and
a release pin extending from said small channel through said second passageway having a tapered surface in wedging contact with said tapered contact surface of said latch member such that when said solenoid device is energized said latch member is moved away from said release pin, permitting said release pin to move inwardly and permitting said plug to separate from said housing.

3,358,255
ADJUSTABLE INDUCTOR
Joseph C. Digilio, Burlington, Mass., assignor to Cambridge Thermionic Corporation, Cambridge, Mass., a corporation of Massachusetts
Filed June 8, 1965, Ser. No. 462,317
8 Claims. (Cl. 336—83)

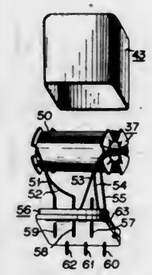
1. An inductor device comprising:
an elongate support formed as a unitary insulating body having a hole through its entire length with a coil form portion at one end, with an internally threaded adjustment sleeve portion at the other end, and with flange means intermediate the coil form portion and the adjustment sleeve portion;

tuning core means within said insulating body having at one end a tuning portion slidable within said coil form portion and at the other end a threaded core adjustment portion engaging the thread of said adjustment sleeve portion for withdrawal of the tuning portion from the coil form portion;



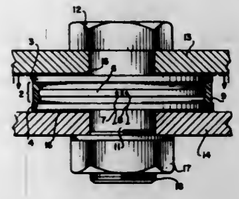
cup core means surrounding said coil form portion and said flange means; and
terminal means extending from said flange along and surrounding said adjustment sleeve portion.

3,358,256
MINIATURE LOW FREQUENCY TRANSFORMER
Kiyotaka Naito, Fukushima-ken, Hirohiko Matsunaga, Musashino-shi, Masao Izawa, Nerima-ku, Tokyo, and Hitosi Kaneko, Hino-shi, Toyko, Japan, assignors to Sansui Electric Co. Ltd., Tokyo, Japan, a corporation of Japan
Filed Oct. 22, 1965, Ser. No. 501,911
Claims priority, application Japan, Apr. 8, 1965, 40/20,725
4 Claims. (Cl. 336—83)



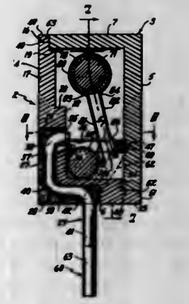
1. A miniature low frequency transformer comprising an inner cylindrical core fabricated of magnetic material, said cylindrical core having annular flanges which extend radially from each end of said cylinder, at least one winding with end leads, wound on said cylinder between said flanges, a terminal plate disposed in the vicinity of the cylinder provided with terminals for connecting each lead of said winding, and, a box-like outer core integrally fabricated of a single piece of solid thin sheet material having high magnetic permeability and having an open face on which said terminal plate is secured, said box-like outer core having one selected pair of opposite sides of substantially the same inner dimension as the axial length of said cylindrical core, snugly fitting against the outer sides of said flanges, and, extending at least therebetween and being arranged so that the outer side of each flange and the inner surface of each opposite side are closely in contact with each other in order to form a magnetic path together with said inner core.

3,358,257
FORCE AND MOMENT TRANSDUCER
Giles W. Painter, Granada Hills, and Ward B. Brewer, Sepulveda, Calif., assignors to Lockheed Aircraft Corporation, Burbank, Calif.
Filed Dec. 27, 1965, Ser. No. 516,649
11 Claims. (Cl. 338—5)



3. A force measuring transducer comprising:
a right-cylindrical body having parallel end faces, a central aperture therethrough, and an integral flange portion extending from said end faces around the entire periphery thereof;
a ribbon of piezoresistive semiconductive material disposed in a single turn about a central portion of said body in a single plane and having a gap between the ends thereof sufficient to provide an electrical discontinuity between said ends;
a thin layer of adhesive for securing said ribbon to said body and for providing electrical insulation therebetween;
first and second lead means attached to corresponding ones of said ends and adapted to extend from said transducer for connection to a utilization circuit;
a potting material covering said ribbon and substantially filling the area between said flange portions; and
a layer of solid lubricant covering each of said faces and substantially co-extensive therewith.

3,358,258
POTENTIOMETERS
William D. Kirkendall, Dalton, Pa., assignor to Weston Instruments, Inc., Newark, N.J., a corporation of Delaware
Filed Sept. 26, 1966, Ser. No. 581,942
11 Claims. (Cl. 338—183)



1. In a potentiometer, the combination of an elongated hollow casing having two spaced opposite sides and a third side extending between said two sides; an elongated resistance element mounted within said casing and extending parallel to one of said two sides, said one side

having an aperture directed toward the location of one end portion of said resistance element, and a first exterior groove communicating with said aperture and extending to the junction of the outer surfaces of said one side and said third side, said third side having a second exterior groove communicating with said first groove and extending from said junction to a point within the confines of said third side; lead means including a first conductor having a first end portion projecting through said aperture and connected electrically and mechanically to said one end portion of said resistance element, a portion extending through said first groove to said junction, a portion extending from said junction through said second groove, and a second end portion projecting away from said third side; said lead means also comprising a second conductor electrically connected to the other end portion of said resistance element; a lead screw carried by and extending longitudinally within said casing; and movable contact means slidably engaging said resistance element and operatively coupled to said lead screw, rotation of said lead screw driving said contact means along said resistance element.

3,358,259
POTENTIOMETERS

William D. Kirkendall, Dalton, Pa., assignor to Weston Instruments, Inc., Newark, N.J., a corporation of Delaware

Filed Sept. 26, 1966, Ser. No. 581,943
9 Claims. (Cl. 338—183)

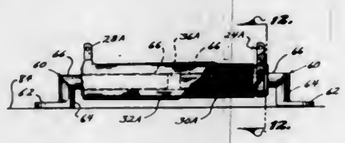


1. In a potentiometer, the combination of an elongated casing having transversely spaced side walls; an elongated resistance element and a return conductor disposed in said casing and extending longitudinally thereof, said resistance element and said return conductor being spaced apart in the direction of the spacing between said side walls; elongated lead screw means extending longitudinally within said casing parallel to said resistance element and said return conductor, said lead screw means being spaced transversely from the locations of said resistance element and said return conductor; and a movable contact unit comprising an integral unit of spring sheet metal including a tubular body portion extending cylindrically and having edge portions which are adjacent to each other when said body portion is in its relaxed, undistorted condition, and two contact arms each extending outwardly from a different one of said edge portions and each having a contact at its free end, the potentiometer further comprising a tubular body of electrical insulating material surrounding said lead screw means and having a maximum outer diameter significantly larger than the inner diameter of said tubular body portion of said contact unit when said body portion is in said relaxed, undistorted condition, said body portion embracing said tubular body of electrical insulating material and being resiliently deformed by reason of said difference in diameters, whereby asid edge portions are spaced apart and said contact arms tend to diverge outwardly, said contact arms extending into the space between said resistance element and said return conductor, with said contact of one arm slidably engaging said resistance element and said contact of the other arm slidably engaging said return conductor, the space between said resistance element and said return conductor being significantly smaller than the space which would exist between said contacts if said arms were allowed to diverge at the angle established by said difference in diameters, whereby said arms are resiliently deformed toward each other and said contacts are correspondingly urged respectively against said resistance element and said return conductor, said movable contact unit including means resiliently urged inwardly into operative engagement with the threads of said lead screw means by said tubular body portion to effect longitudinal movement of said movable contact unit when said lead screw means is turned.

3,358,260
RESISTOR ELEMENT

Roland A. Schaecher, Columbus, Nebr., assignor to Dale Electronics, Inc., Columbus, Nebr., a corporation of Nebraska

Continuation of application Ser. No. 307,267, Sept. 6, 1963, now Patent No. 3,287,685, Nov. 22, 1966. This application May 18, 1966, Ser. No. 551,093
6 Claims. (Cl. 338—318)



5. In combination,
an elongated electrical resistance means including an elongated core with a resistance element thereon,
said elongated core being of electrically insulative material,
a bore portion in the ends of said core,
spaced apart mounting brackets adapted to be secured to a chassis means,
and portions on said brackets rotatably and detachably extending into the bore portions of said core to support said resistance means,
the material of said core and said mounting brackets being the same.

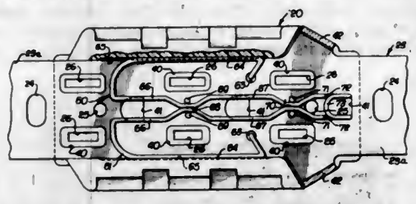
3,358,261
ELECTRICAL RECEPTACLE DEVICE

Jack H. Gaines, Long Beach, Francis K. Bourhenne, Lawndale, and Russell C. Edmisson, Bellflower, Calif., assignors to Sierra Electric Corporation, Gardena, Calif., a corporation of California

Filed July 6, 1965, Ser. No. 469,638
7 Claims. (Cl. 339—14)

1. An electrical receptacle comprising insulative body and cover sections, a conductive mounting strap held between the sections, said cover section and strap having a succession of alined pairs of opposed positive and neutral cap blade passing apertures and having also a corresponding number of grounding pin apertures in spaced alined relation between the blade aperture alinements, parallel series of contacts in the body section adapted to receive said blades, and a grounding wire conductor contacting said strap and having spaced portions corresponding in

number and alined with said grounding pin apertures to receive cap grounding pins between them, said conductor

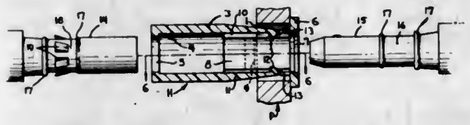


having oppositely deflected extents bearing against opposite side surfaces of the body.

3,358,262
CO-AX PATCH PANEL AND INSULATIVE HOUSING MEMBERS THEREFOR

William Ludlow Schumacher, Camp Hill, Pa., assignor to AMP Incorporated, Harrisburg, Pa.

Filed Oct. 14, 1965, Ser. No. 495,880
8 Claims. (Cl. 339—91)

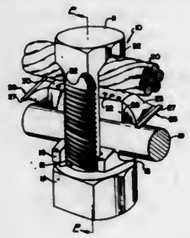


2. A housing member insertable within an opening of a panel member for carrying an electrical connector member matable with another connector member, said housing member comprising a tubular element of stiffly-flexible material, a flange member at one end of said tubular element and projection means on said tubular element and spaced from said flange member to engage respective sides of said panel member to secure said tubular element in said opening, shoulder means of said tubular element adjacent the other end to provide a surface against which retaining means on the electrical connector engages to maintain the connector within the tubular element, and stiffly-flexible arm, means extending from opening means in said tubular element and lying laterally adjacent said projection means for latching engagement with a section of the matable electrical connector when the same is mated with the housed electrical connector.

3,358,263
ANTI-CORROSIVE SPACER

Gordon Reeves, Mermald St., Sechelt, British Columbia, Canada

Filed Mar. 23, 1966, Ser. No. 536,820
5 Claims. (Cl. 339—115)

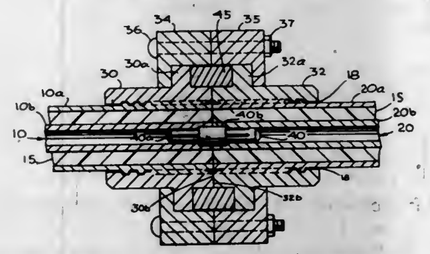


1. A spacer for a cable clamp connector, the latter having spaced cable receiving reinforcing walls comprising, an elongated tube formed of a malleable electro-conductive metal insertable bewteen a pair of parallel electro-conductive cables to be connected and being adapted to deform in cross section when the cables are moved towards each other, the walls of the connector confining the tube to induce lateral deformative movement thereof around the cable.

3,358,264
COAXIAL CABLE CONNECTOR

Albert G. Brejcha, Jr., Pasadena, Calif., assignor, by mesne assignments, to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed June 14, 1966, Ser. No. 557,584
12 Claims. (Cl. 339—177)



2. A coupling assembly for uniting two sections of a coaxial transmission line having adjacent ends to be connected, said transmission line having an outer tubular conductor and an inner tubular conductor concentric with said outer conductor, the assembly comprising:
a pair of cylindrical shells each threadably coupled to another section about the outer conductor thereof by threads on the interior surface of an opening defined by said shell along its longitudinal axis;
a substantially solid cylindrical electrically conducting member having longitudinal slots along at least a portion of its length for frictionally engaging at least the inner conductor of one of said sections about the inner surface thereof, the diameter of said solid member being not greater than the inner diameter of said inner conductor; and
outer means for mechanically coupling said shells to one another to provide electrical contact between the outer conductors of said section, with the solid member frictionally coupled to said inner conductors providing electrical contact therebetween.

3,358,265
POWER CONTROL RECEPTACLE HAVING LATERALLY EXTENDING CONTACT PINS FOR ENGAGING CONTACT ASSEMBLIES OF A JUMPER HEAD

Preston O. Robards, Roselle, Ill., assignor to Equipment Research Corporation, Chicago, Ill., a corporation of Illinois

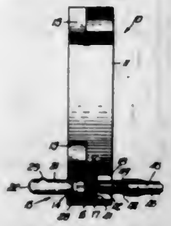
Filed Apr. 8, 1966, Ser. No. 541,234
1 Claim. (Cl. 339—195)

A power control receptacle for use with a jumper head having a plurality of contact assemblies each including a contact sleeve, said receptacle comprising:
an insulating support having a plurality of contact pin assembly receiving openings with a slot in the bottom of each opening, and
a contact pin assembly extending from each of said openings for telescopic engagement with a contact sleeve of a corresponding contact assembly of said jumper head ,each contact pin assembly including:
a metallic contact barrel having its outer end rounded for insertion in the respective contact sleeve, and a radial slot near said one end,
a hairpin spring in said contact barrel with its bight near the inner end of said barrel, its arms reacting against the inner opposite sides of said barrel, and one of said arms having an outwardly curved portion

projecting through said radial slot to engage the inner surface of said contact sleeve and bias said barrel into contact engagement therewith,

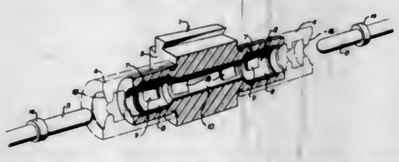
a tab holder closing the inner end of said barrel and having a transverse slot therein,

a tab extending through said slot in the respective opening in said support and having one end in said transverse slot in said tab holder and the other end flat to receive slidably a conductor terminal, and



a friction washer reacting between the adjacent portion of said insulating support and that portion of said tab projecting from said slot in said respective opening to hold said contact pin assembly in place in said insulating support.

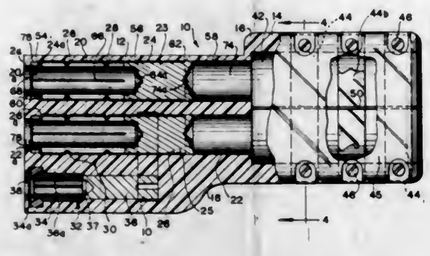
3,358,266
POSITIVE RETENTION DISCONNECTABLE WIRE SPLICE
Albert T. Chandler, Inglewood, and Lennart B. Johnson, Sherman Oaks, Calif., assignors to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Maryland
Filed Mar. 17, 1965, Ser. No. 440,460
1 Claim. (Cl. 339—205)



In a device for electrically interconnecting two conductive pins, each said pin having an annular rib thereabout spaced from the end thereof, the combination comprising: a conductive tube having a unitary central portion and two end portions fixed thereto, each said end portion having a pair of opposed leaf spring tangs extending radially inward and toward the center of the tube, said central portion having an inside diameter smaller than the outside diameter of said ribs, said tangs of each end portion being spaced from said central portion to permit a corresponding rib to be locked therebetween, said central portion having two pairs of opposed leaf spring tangs extending radially inward and toward the center of said tube on each side thereof, said central portion tangs extending inwardly a radial distance to bear against the ends of corresponding pins when inserted in said tube; and a sleeve of insulation fixed around said tube, said sleeve having an enlarged central portion, said enlarged central portion having male and female connecting parts therearound to mate with a like device.

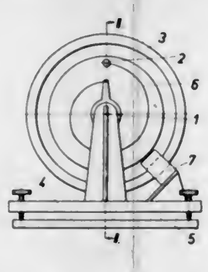
3,358,267
AIRCRAFT EXTERNAL POWER CONNECTOR
John B. Henderson, Cohasset, Mass., assignor to Chase Corporation, Randolph, Mass.
Filed Aug. 27, 1965, Ser. No. 483,034
6 Claims. (Cl. 339—217)

1. An aircraft external power connector comprising an insulating housing, means defining a passage extending through said housing, a tubular conductive liner extending along substantially the entirety of said passage, a female conductive element snugly but removably received in said liner, said female element having separate bores extending from its opposite ends, one of said bores being



positioned in said housing and arranged and adapted to receive a mating male plug element, the other of said bores being arranged and adapted to receive a cable conductor and coacting means on said liner and said conductive element for preventing axial movement of said element within said housing.

3,358,268
MEANS FOR MEASURING SEISMIC VIBRATION OF LOW NATURAL FREQUENCY
Ferenc Tóth, Budapest, Hungary, assignor to Metrimpex Magyar Muszeripari Kulkereskedelmi Vallalat, Budapest, Hungary
Filed Sept. 6, 1966, Ser. No. 577,541
5 Claims. (Cl. 340—17)



1. A seismic vibration measurer of low natural frequency comprising, in combination, a housing to be supported by a body the frequency of which is to be measured, flywheel means mounted on said housing and statically and dynamically balanced for rotation about a fixed axis, a mass eccentric to said axis and that is dynamically unbalanced about said axis, means interconnecting said flywheel means and said mass for conjoint movement, spring means interconnecting said housing and said mass, and damping means on said housing for damping oscillating motions of said mass and flywheel means.

3,358,269
SQUARE SWITCH DISTRIBUTION NETWORK EMPLOYING A MINIMAL NUMBER OF CROSSPOINTS
Vaclav E. Benes, Chester, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Apr. 10, 1964, Ser. No. 358,712
9 Claims. (Cl. 340—166)

1. A symmetrical distribution network employing square switches comprising N input and N output ter-

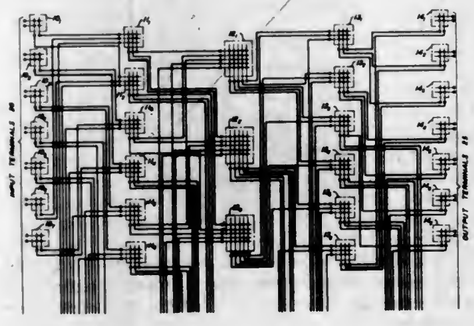
minals, where N is any positive integer such that $2^{e_2} \cdot 3^{e_3} \cdot \ldots \cdot k^{e_k}$ is the prime decomposition of N into a product of prime factors raised to integer exponents, S switching stages serially connected between said input and output terminals, where S equals

$$2\left(\sum_{j=2}^{k} \alpha_i\right)-1$$

if the largest prime factor of N equals three and N is odd or if the largest prime factor of N is greater than three, and equals

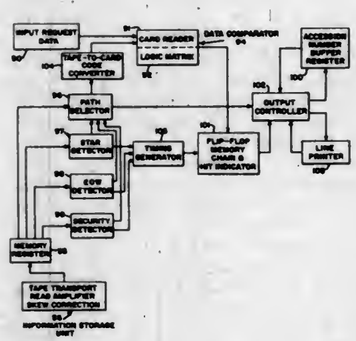
$$2\left(\sum_{j=2}^{k} \alpha_i\right)-3$$

if the largest prime factor of N equals three and N is even or if the largest prime factor of N equals two, each



of said switching stages including a plurality of square switches of equal size.

3,358,270
INFORMATION STORAGE AND RETRIEVAL SYSTEM
Beverly L. Crew, Rockville, Md., and Morris N. Gunzburg, Washington, D.C., assignors to General Electric Company, a corporation of New York
Filed Nov. 5, 1962, Ser. No. 235,303
6 Claims. (Cl. 340—172.5)



1. An information search and retrieval system for processing (1) request data and (2) information data including data characters and identification characters, comprising;

(a) means for providing and reading said identification characters and at least a portion of said data characters from the information data,

(b) means for providing and reading the request data,

(c) processing means for comparing the request data and the data characters,

(d) first means connecting the first reading means to said processing means,

(e) second means connecting the second reading means to said processing means,

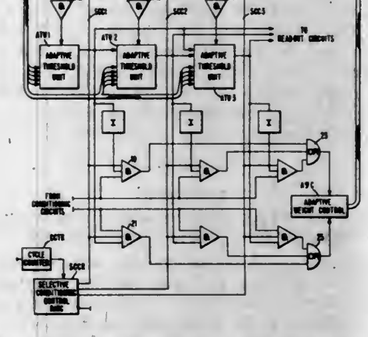
(f) storage means connected to said first means for storing said identification characters,

(g) said first means including switching means for translating said identification characters to said storage means and said data characters to said processing means,

(h) memory means connected to said processing means for storing an indication of a comparison match of said request data and said data character, and

(i) output means connected to said memory means and said storage means for retrieving the stored identification characters from said storage means upon a comparison match of the request data and the data characters.

3,358,271
ADAPTIVE LOGIC SYSTEM FOR ARBITRARY FUNCTIONS
Mitchell P. Marcus, Binghamton, N.Y., George E. Rossmann, Newark, N.J., and Cyril J. Tunis, Endwell, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Dec. 24, 1964, Ser. No. 421,063
8 Claims. (Cl. 340—172.5)



1. An adaptive logic system comprising, in combination:

a plurality of adaptive threshold units, each having a plurality of inputs and an output, said units being connected in cascade, with the output of any unit connected to an input of the next succeeding unit, including weighting means and threshold means in each unit effective for predetermined settings of said weighting means and for predetermined combinations of input signals to supply an output signal;

adaptive weight control means for selectively supplying weight control signals to said adaptive threshold units to adjust the weighting means;

means responsive to the conditioning of said adaptive threshold units to discontinue the supply of weight control signals when said adaptive threshold units provide an output as a desired function of the inputs; and

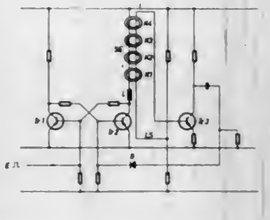
sequential control means for sequentially connecting said weight control means to said adaptive threshold units.

3,358,272

STORING- AND COUNTING-CIRCUIT WITH MAGNETIC ELEMENTS OF RECTANGULAR HYSTERESIS LOOP

Friedrich Ulrich, Stuttgart-Bad Cannstatt, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed Aug. 5, 1963, Ser. No. 299,930
Claims priority, application Germany, Aug. 28, 1962, St 19,643
2 Claims. (Cl. 340—174)



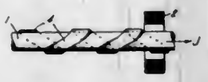
1. A storing- and counting-circuit with magnetic elements of rectangular hysteresis loop, comprising a multistable storing element having a cascade of magnetic elements reversible at various field intensities, a storing impulse source, trigger means responsive to the impulse source for generating a current flow through the cascade, a magnetic element for each counting or storing impulse, the trigger means so arranged that when reversing of any one of the elements the current flow over the cascade is switched-off and switched-on again in the opposite direction and in such a magnitude that all elements previously reversed at lower field intensities are returned into their original conditions, the trigger means being connected between the cascade and the storing impulse source to switch on and off the reversing current of the cascade, which trigger means is set through the storing- or counting-pulses in one condition and through the impulses occurring in the reading loop coupled between said magnetic elements and said trigger means is reset again.

3,358,273

MAGNETIC STORAGE CONDUCTOR DEVICE FOR ELECTRONIC COMPUTERS

Paul Heuninger and Josef Brackmann, Munich, Germany, assignors to Siemens & Halske Akiengesellschaft, Berlin and Munich, Germany, a corporation of Germany

Filed July 11, 1960, Ser. No. 42,096
Claims priority, application Germany, Aug. 6, 1959, S 64,322
4 Claims. (Cl. 340—174)



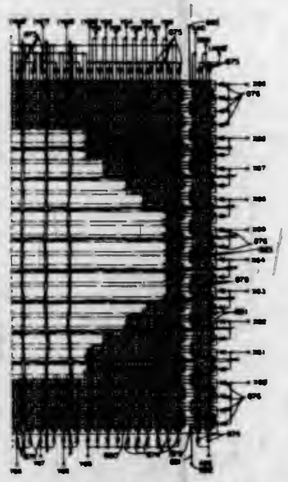
1. A conductor device for storage purposes in electronic computers, comprising conductor means, a metallic magnetic layer with a thickness of about 0.1μ to a few μ surrounding said conductor means said layer extending helically about said conductor means, and has a preferential magnetic direction imparted thereto in alignment with said helical layer configuration, and an insulating jacket surrounding said conductor means and carrying said layer.

3,358,274

MAGNETIC CORE MEMORY MATRIX

Neil D. Manor, Xenia, and James H. Randall, Dayton, Ohio, assignors to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland

Original application Dec. 15, 1959, Ser. No. 859,598, now Patent No. 3,112,394, dated Nov. 26, 1963. Divided and this application Oct. 7, 1963, Ser. No. 314,096
2 Claims. (Cl. 340—174)



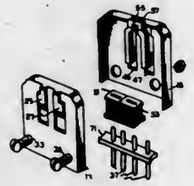
1. In a machine of the class described having a magnetic memory system of the type including a plurality of magnetic storage elements arranged in an operative row and each of which possesses a substantially rectangular hysteresis loop characteristic and capable of being magnetically saturated in one or the other of two opposite magnetic polarities, a first coil inductively coupled to all of said storage elements, and a plurality of second coils each of which is inductively coupled to a different one of said storage elements, in which system each even-numbered storage element of said row is magnetically saturated of a first magnetic polarity representative of information of a first type and is magnetically saturated of a second magnetic polarity representative of information of a second type, and in which system each odd-numbered storage element of said row is magnetically saturated of said second magnetic polarity representative of information of said first type and is magnetically saturated of said first magnetic polarity representative of information of said second type, means for determining the polarity of magnetization of each of said storage elements while minimizing undesired read-out voltages comprising: a sensing coil inductively coupled to all of said storage elements; additional means to magnetically saturate all of said storage elements in alternating magnetic polarities with respect to adjacent ones, one after the other in a sequential manner starting with the storage element terminating one end of said row and ending with the storage element terminating the opposite end of said row; means responsive to substantially an absence of induced voltage in said sensing coil during saturation of a selected storage element by said additional means, indicative of the selected storage element having been previously saturated of the same magnetic polarity, to cause all of said storage elements to be partially driven toward the opposite saturation polarity as that of the selected storage element; and means responsive to an induced voltage in said sensing coil during saturation of a selected storage element by said additional means, indicative of the selected storage element having been previously saturated of the opposite magnetic polarity, to cause all of said storage elements to be partially driven toward the opposite saturation polarity as that of the selected storage element and to additionally cause the selected storage element to be saturated of the opposite magnetic polarity, whereby the selected storage element is restored to its original saturation polarity thereby preserving the information represented by the saturation polarity thereof.

3,358,275

MAGNETIC ERASE HEAD

Paul H. Schulte, D–9 Gardenia, San Francisco Urb., Rio Piedras, Puerto Rico

Filed Nov. 1, 1963, Ser. No. 320,751
3 Claims. (Cl. 340—174.1)



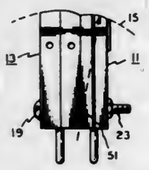
1. A magnetic erase head comprising in combination a pair of similar magnetic housings, each including peripheries partially flanged, in opposed relation; spaced apart portions of said housings projecting inwardly at corresponding locations in pairs with the projecting portions having inwardly projecting legs and depending legs therefrom and being cut from the housings to leave windows therethrough; other spaced apart portions of the housings being bossed outwardly as indexing structure; a pair of generally U-shaped magnetic pole pieces gripped between opposed pairs of depending legs of the housings when opposed and extending from said portions to penetrate a common surface of the head between the housings; a non-magnetic gap spacer disposed on either side of each pair of pole pieces to magnetically isolate the pole pieces from the housings for magnetic gap formation; said indexing structure including edges parallel to and a right angles to the gaps; an electrical coil on each pair of pole pieces for establishing magnetic flux to circulate through the pole pieces and follow paths through the housings including said portions of the housings; means for establishing electrical connection to each electrical coil; and, a filler encapsulating the pole pieces, coils and spacers and maintaining the opposed relation of the housings.

3,358,276

COMBINATION RECORD-PLAYBACK AND ERASE MAGNETIC HEAD

Paul H. Schulte, D–9 Gardenia, San Francisco Urb., Rio Piedras, Puerto Rico

Filed Nov. 1, 1963, Ser. No. 320,887
2 Claims. (Cl. 340—174.1)



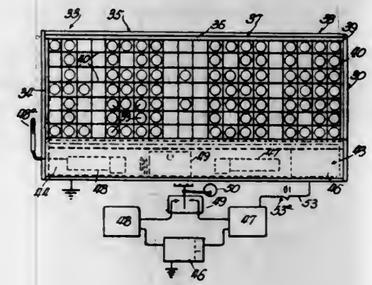
1. A combination erase and record-playback magnetic head comprising an erase head having side by side external bosses in precise alinement with each gap thereof; a record-playback head having slotted recesses in side by side relation at least partially conforming in configuration precisely to said bosses; said bosses including shoulders and said recesses including edges for abutment therewith to position the erase head with its face slightly below that of the record-playback head; the face of the erase head being finished off arcuately along a radius offset from the center line of the erase head by a few thousandths of an inch to permit tape to wrap about the operative faces of the heads comprising said combination head; and means for securing the heads together with the bosses mated in the recesses.

3,358,277

MODULAR TIME AND TEMPERATURE DISPLAY WITH CAM CONTROLLED SWITCHING APPARATUS

Guenther Selig, Skokie, Ill., assignor to Digit Display Corporation, Chicago, Ill., a corporation of Illinois

Filed Oct. 29, 1964, Ser. No. 407,368
3 Claims. (Cl. 340—338)



1. A display, comprising a bank of electric lamps adapted to be energized for the presentation of numerical information, and a programmer adapted to selectively energize said lamps, said programmer including a frame, a plurality of shafts journaled in said frame, gear means interconnecting said shafts, and means responsive to an information signal for actuating one of said shafts, each shaft being equipped with a plurality of lobe-equipped disc actuators, a switch on said frame for each actuator and positioned adjacent the shaft associated with said actuator, each switch being connected to at least one lamp, said frame being equipped with means for simultaneously actuating all switches associated with a given shaft to monitor said lamps, said actuating means containing a portion movably mounted proximate each shaft and switch on said frame and actuator means for moving each portion into engagement with each switch for simultaneously actuating all said lamps.

3,358,278

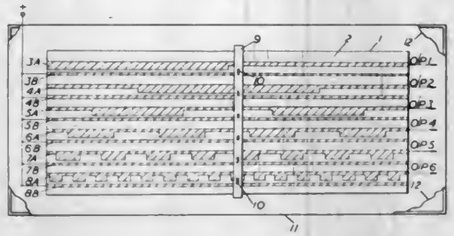
MECHANICAL DIGITISERS

Peter Jackson Clarke, Cheadle Hulme, Cheadle, England, assignor to Ferranti, Limited, Hollinwood, Lancashire, England, a company of Great Britain and Northern Ireland

Filed Sept. 18, 1963, Ser. No. 309,673
Claims priority, application Great Britain, Sept. 20, 1962, 35,781/62
10 Claims. (Cl. 340—347)

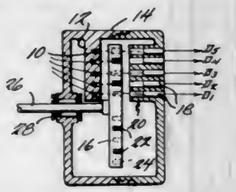
1. A mechanical digitiser for deriving an electrical indication of the relative position of two relatively movable members comprising a code plate secured to one of said members, said code plate having a plurality of separate pairs of strips of electrically conductive materials, one strip of each pair being of castellated form such that alternate wide and narrow gaps are formed between the two strips of each pair, a coating of a material extending

between the two strips of each pair, said material having an electrical resistance which varies when it is exposed to light, and for each pair of strips a light source attached to said other member, said light source being in the form



of a line extending across the narrow gaps between the two strips of the pair but not across the wide gaps, said code plate and said light source being enclosed in a light proof box.

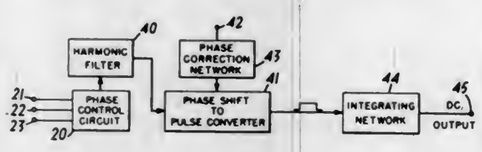
3,358,279
POSITION INDICATING APPARATUS
Henry R. Chope, Columbus, Ohio, assignor to Industrial Nucleonics Corporation, a corporation of Ohio
Filed Sept. 19, 1963, Ser. No. 309,948
23 Claims. (Cl. 340—347)



1. Position indicating apparatus comprising:
a plurality of nucleonic radiation detector means positioned relative to one another in a prescribed relationship,
a member facing said detector means,
means for causing adjacent relative movement between said detector means and member whereby different portions of said member may be presented to said detector means at different times,
means, including coding means in said member portions, for conditionally causing rays of nucleonic radiation to be directed in accordance with a prescribed code outwardly in the general direction of said detector means for detection thereby while each said member portion is presented to said detector means as aforesaid, and
means responsive to the outputs of said detector means for providing an indication of the present relative position of said member and detector means.

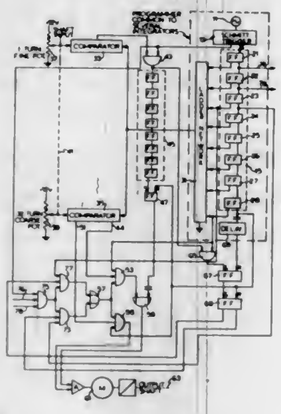
3,358,280
SYNCHRO DATA CONVERSION METHOD AND APPARATUS
James G. Dougherty, Jr., Bethesda, Md., assignor to Vitro Corporation of America, New York, N.Y., a corporation of Delaware
Filed June 26, 1964, Ser. No. 378,201
10 Claims. (Cl. 340—347)

1. A synchro data conversion apparatus including a synchro transmitter and the like having a rotor winding and three stator windings, wherein the rotor winding is adapted to have an alternating current excitation voltage applied thereto and to be rotated with respect to the stator windings, the combination therewith of output means, transformer means having primary winding means and secondary winding means, said primary winding means being adapted to be connected to two of the stator windings for combining electrical signals appearing across the two stator windings in subtractive relation, said secondary winding means having opposite ends, one of said opposite ends of said secondary winding means being electrically coupled to a reference point of given potential, voltage divider means for dividing said combined subtractive signal by a fixed proportionate factor independent of frequency and having an input coupled to the other of said opposite ends of said secondary winding means and an output coupled to said output means to



provide an electrical signal of predetermined proportionate relation to the combined signals appearing across said transformer means, and a phase shifting network providing a predetermined phase shift and having an input adapted to be connected to the third stator winding and an output coupled to said output means to provide an electrical signal to be combined with said proportionate electrical signal from said output of said voltage dividing network in a predetermined additive relation to produce an output signal at said output means having a phase shifted from that of the excitation voltage in an amount representative of the angular position of the rotor winding with respect to the stator windings.

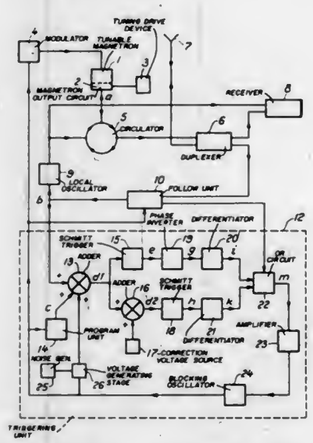
3,358,281
INTEGRATOR
Marvin Masel, West Englewood, N.J., assignor to General Precision Inc., Little Falls, N.J., a corporation of Delaware
Continuation of application Ser. No. 262,578, Mar. 4, 1963. This application July 6, 1966, Ser. No. 565,341
5 Claims. (Cl. 340—347)



1. A digital integrator comprising:
a rotatable input shaft;
a pair of potentiometers having respective movable contacts driven by said input shaft, one of said potentiometers providing coarse signal and the other fine signal of voltages applied thereto;

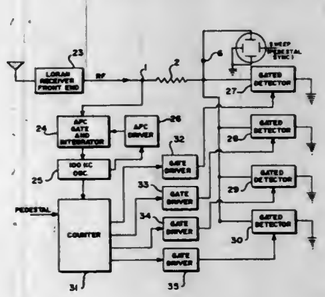
means to apply voltages across said potentiometers;
means, including a source of electrical pulses, a bank of bistable switching elements cascaded to form a counter for pulses from the pulse source, and a ladder network, to generate a voltage of cyclical staircase waveform;
first comparator means to compare the staircase waveform with the signal voltage output of the fine potentiometer and generate a gate signal when the latter is greater;
second comparator means to compare the staircase waveform with the signal voltage output of the coarse potentiometer and generate an enabling signal when one is greater and a different enabling signal when the other is greater;
a second pulse counter having a two-input AND gate in series with its input, said AND gate having one input connected to said source of pulses and the other to the output of said first comparator means;
logic circuit means connected to said counters, to the outputs of said second comparator and to said pulse source to generate digital output pulse signals in the one and the other direction representative of the position of said input shaft; and
a stepper motor coupled to said logic circuit means, said output pulse signals being applied thereto for incrementally rotating said stepper motor in the one or the other direction.

3,358,282
DEVICE FOR GENERATING HIGH FREQUENCY PULSES HAVING A PREDETERMINED FREQUENCY BY MEANS OF A CONTINUOUSLY TUNABLE MAGNETRON
Nils Arne Erland Wästerlid, Skalby, Sweden, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed June 1, 1966, Ser. No. 554,531
Claims priority, application Sweden, June 3, 1965, 7,301/65
9 Claims. (Cl. 343—14)



1. In a system for transmitting pulses of high frequency energy of predetermined frequency, said system comprising a magnetron having a tunable circuit, a source of a pulsatory excitation signal connected to said magnetron, means for continuously varing the tuning of said tunable circuit, whereby said magnetron is excited at each occurrence of a pulse of said excitation signal to transmit a pulse of high frequency energy of a frequency determined by the tuning of said tunable circuit at the instant of excitation, an auxiliary oscillator, and control means connected to said auxiliary oscillator for controlling the frequency of said oscillations to follow the tuning frequency of said tunable circuit at least for an interval of time immediately preceding each excitation of said magnetron by said excitation signal; the improvement wherein said source of a pulsatory excitation signal comprises means including a pulse generating device, means applying an electrical quantity corresponding to the instantaneous oscillator frequency to said source, and means connected to said pulse generating device and responsive to the occurrence of a predetermined value of said electrical quantity for energizing said pulse generating device to generate a pulse for energizing said magnetron.

3,358,283
RADIO NAVIGATION SYSTEM
Reuben E. Maine, Charlottesville, Va., assignor to Electronic Concepts, Inc., Charlottesville, Va., a corporation of Virginia
Filed July 23, 1965, Ser. No. 474,339
17 Claims. (Cl. 343—103)



10. In a radio navigation system in which signals are transmitted in predetermined time relationship from at least a pair of fixed transmitting stations for comparison at a receiving station to determine the position of the receiving station relative to the transmitting stations, the combination comprising, at said receiving station, integrating means for averaging signal, means for selectively completing a circuit for rendering said integrating means responsive to incoming signal, and means responsive to signal arriving from said transmitting stations to actuate said circuit completing means during only selected portions of the arriving signal for integration of said portions, and to isolate said integrating means in a circuit responsive sense during all but said selected portions.

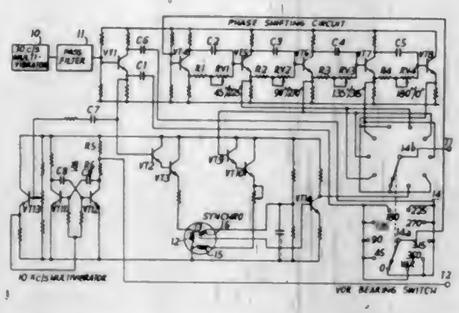
3,358,284
RADIO-FREQUENCY SOURCE FOR SIMULATING VOR SIGNALS
Robert Mathieson Gemmell Millar and Richard Morris Trim, Harlow, Essex, England, assignors to A. C. Cossor Limited, Harlow, Essex, England
Filed Dec. 16, 1965, Ser. No. 514,304
Claims priority, application Great Britain, Dec. 28, 1964, 52,570/64
13 Claims. (Cl. 343—106)

1. A radio-frequency source for simulating VOR signals, comprising, in combination:
a phase-shift circuit having input terminals and a plurality of phase-shift stages connected to shift the phase of an input signal applied to said input terminals cumulatively, each of said phase-shift stages having a pair of stage-input terminals and a pair of stage-output terminals, and changing the phase of an input signal, between said pairs of stage-input and

stage-output terminals, by a predetermined amount which is the same for all said stages;

selection means for selecting any pair of said stage-output terminals to provide a signal whose phase is variable in steps;

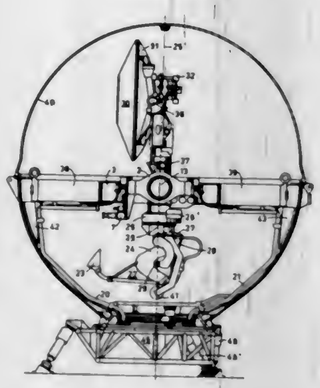
a synchro having at least two stator windings and a rotor winding;



means for separately connecting said input terminals to one of said stator windings, one pair of said stage-output terminals to said other stator winding; and

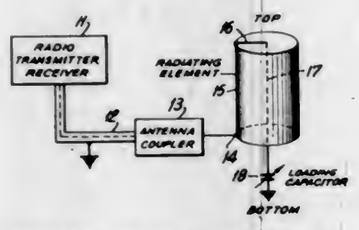
means for extracting from said rotor winding, a signal whose phase varies, in relation to said input signal, according to the position of said rotor.

3,358,285
SHIPBORNE RADAR SYSTEMS
Uilko van der Wal and Hendrik ter Brugge, Hengelo, Netherlands, assignors to N.V. Hollandse Signaalapparaten, Hengelo, Overijssel, Netherlands, a firm of the Netherlands
Filed Jan. 28, 1966, Ser. No. 523,758
Claims priority, application Netherlands, Feb. 1, 1965, 65—1,247
6 Claims. (Cl. 343—709)



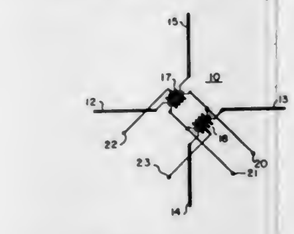
1. In a shipborne radar system of the type having an aerial system positioned within a radome that is mounted in a fixed position with respect to a ship, the improvement wherein said aerial system comprises a vertically extending common support, a gimbal suspension system having outer support means rigidly fixed to said radome and an inner member pivotally mounted to a central portion of said common support, whereby said common support is free to move about two orthogonal axes, a gyroscopically controlled servo system connected to said suspension system for maintaining said common support in a substantially vertical position, a first radar aerial mounted on one end of said common support for movement about a vertical axis, and a second radar aerial mounted on the other end of said common support for movement about a vertical axis.

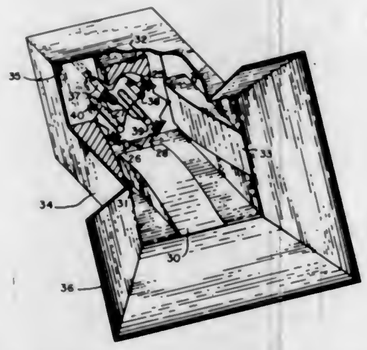
3,358,286
SMALL CYLINDRICAL STUB ANTENNA WITH LOADING CAPACITANCE
John Lewis Heins, Massapequa Park, N.Y., assignor to Eggud Electronics, Inc., Massapequa Park, N.Y., a corporation of New York
Filed Aug. 13, 1964, Ser. No. 389,293
3 Claims. (Cl. 343—750)



1. An antenna system comprising; a hollow metal open-ended tube having a length from .003 to .1 of the operating wavelength; a center conductor within said tube electrically and mechanically connected thereto at the top; and a loading capacitive reactance coupled between the bottom of said center conductor and ground.

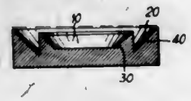
3,358,287
BROADBAND DUAL-POLARIZED ANTENNA
Helmut Brueckmann, Little Silver, N.J., assignor to the United States of America as represented by the Secretary of the Army
Filed Jan. 6, 1965, Ser. No. 423,881
8 Claims. (Cl. 343—786)





1. A daul-polarized antenna comprising; four identical antenna elements arranged in fourfold axial symmetry; first and second inputs; first and second transformers, said first input connected across the primaries of said transformers; the secondary of said first transformer connected between one adjacent pair of said antenna elements; the secondary of said second transformer connected between the other pair of said antenna elements opposed thereto; and the terminals of said second input connected to the midpoints of said secondaries of said first and second transformers respectively.

3,358,288
WIDE BAND SPIRAL ANTENNA WITH REFLECTIVE CAVITIES OF VARIED SIZES
Gérard Dubost and Pierre Amiot, Paris, France, assignors to CSF—Compagnie Generale de Telegraphie Sans Fil, a corporation of France
Filed June 26, 1964, Ser. No. 378,244
Claims priority, application France, July 4, 1963, 940,361
1 Claim. (Cl. 343—895)



An antenna for radiating a very broad frequency band, comprising in combination: two branches extending in the same plane, shaped as spirals of Archimedes and symmetrical with respect to a point; a cavity resonator behind said plane, shaped as a body of revolution about an axis perpendicular to said plane, said cavity having a central portion of a first predetermined depth for reflecting the higher frequencies, and an annular portion, having a second predetermined depth for reflecting the lower frequencies of the passing band of said antenna; said first and said second average depths being substantially proportional to the lower and the higher wavelengths to be radiated and said central and annular portions having conic walls.

3,358,289
ELECTROSTATIC TRANSDUCER APPARATUS
Po Lee, North Bergen, N.J., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed May 23, 1963, Ser. No. 282,728
15 Claims. (Cl. 346—74)

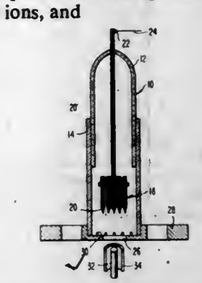
1. Electrostatic transducer apparatus comprising:

(a) means producing a corona discharge,

(b) means operably associated with said discharge means for producing a shaped electrostatic field effective to focus ions produced by said corona discharge into a beam,

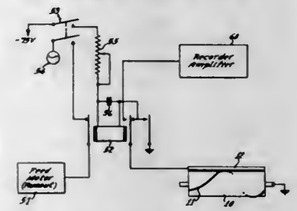
(c) means for decelerating said ion beam,

(d) means responsive to an applied potential for collecting said ions, and



(e) shield means operably associated with said collecting means and arranged in relative proximity thereto effective to control the ion beam and direct the beam to the collecting means preventing dispersal thereof.

3,358,290
ELECTROLYTIC RECORDER WITH RECORDING MEDIUM CONDUCTIVITY RESPONSIVE FEED OUT CONTROL
Peter R. Marzan, New City, N.Y., assignor to Litton Systems, Inc., Beverly Hills, Calif., a corporation of Maryland
Filed Jan. 27, 1966, Ser. No. 523,336
6 Claims. (Cl. 346—136)



1. An electrical recorder for marking a web or strip of recording paper of the type which dries out upon exposure to the atmosphere during intermittent operation of the recorder, comprising:

recording mechanism,

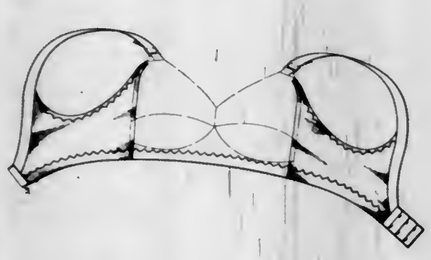
means for feeding the web of recording paper through said recording mechanism during recording, and

runout means responsive to the electrical conductivity of the paper for rapidly feeding out a length of paper which is dried to a point that affects the recording.

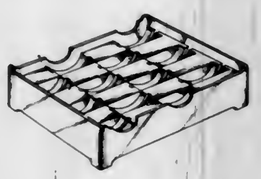
DESIGNS

DECEMBER 12, 1967

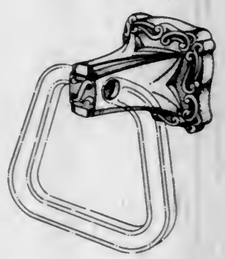
209,498
BRASSIERE
Charles M. Sachs, Fort Lee, N.J., assignor to International Playtex Corporation, a corporation of Delaware
Filed Feb. 6, 1964, Ser. No. 78,551
Term of patent 14 years
(Cl. D2—24)



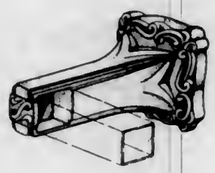
209,499
BOBBIN HOLDER
Chase L. Leavitt, Los Angeles, Calif., assignor to Reynolds Industries, Inc., Santa Monica, Calif., a corporation of California
Filed Feb. 23, 1966, Ser. No. 1,155
Term of patent 14 years
(Cl. D3—19)



209,500
BRACKET FOR A TOWEL RING
Victor O. Anderson, 13153 Rivers Road, Los Angeles, Calif. 90049
Filed Mar. 8, 1967, Ser. No. 6,116
Term of patent 14 years
(Cl. D4—3)



209,501
BRACKET FOR A TOWEL BAR
Victor O. Anderson, 13153 Rivers Road, Los Angeles, Calif. 90049
Filed Mar. 8, 1967, Ser. No. 6,117
Term of patent 14 years
(Cl. D4—3)



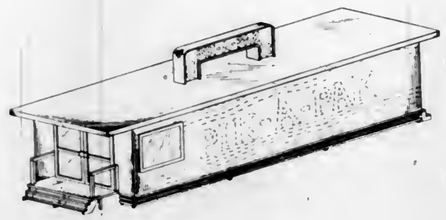
209,502
LIQUID DISPENSER FOR A FLOOR TREATING MACHINE
Frederic S. Greene, Stamford, Conn., Ralph A. W. Johanson, White Plains, N.Y., Robert C. Lampe, Stamford, Conn., and Jacques L. Le Baigue, Westbury, N.Y., assignors to Electrolux Corporation, Old Greenwich, Conn., a corporation of Delaware
Filed Nov. 4, 1965, Ser. No. 87,999
Term of patent 14 years
(Cl. D9—2)



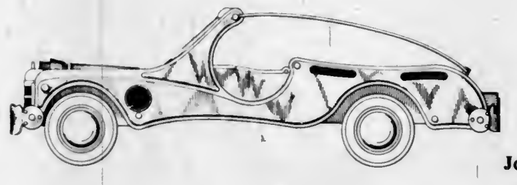
209,503
HAIR BRUSH
James E. Tucker, Chicago, Ill., assignor to The Gillette Company, Boston, Mass., a corporation of Delaware
Filed Dec. 23, 1966, Ser. No. 5,172
Term of patent 14 years
(Cl. D9—2)



209,504
RESTAURANT
Bobby L. Guy, Raleigh, N.C., assignor to Pik-A-Pak Package Stores, Inc., Goldsboro, N.C., a corporation of North Carolina
Filed May 10, 1967, Ser. No. 7,056
Term of patent 14 years
(Cl. D13—1)



209,505
MOTOR VEHICLE
Adolf J. Campos, 86 Bruen St., Newark, N.J. 07105
Filed Oct. 7, 1966, Ser. No. 4,186
Term of patent 14 years
(Cl. D14—3)



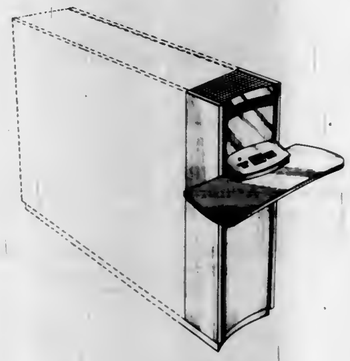
209,506
VEHICLE ANTENNA
Daniel J. Gaida, Hayward Park, St. Cloud, Minn. 56301
Filed Apr. 18, 1966, Ser. No. 1,920
Term of patent 14 years
(Cl. D14—6)



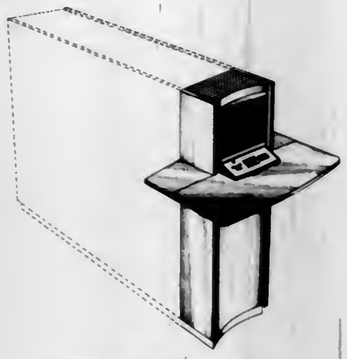
209,507
ELECTRICAL TESTING APPARATUS
Joseph A. Mas, Woodbury, N.Y., assignor to Dynamic Instrument Corporation, Plainview, N.Y., a corporation of New York
Filed Mar. 2, 1966, Ser. No. 1,256
Term of patent 14 years
(Cl. D26—1)



209,508
COMPUTER OPERATOR CONSOLE
John A. Macker, Temple City, and Emerson S. Bewley, Covina, Calif., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Mar. 28, 1966, Ser. No. 1,655
Term of patent 14 years
(Cl. D26—5)



209,509
COMPUTER OPERATOR CONSOLE
Kenneth A. Hopkins, Farmington, and Stanley C. Waechter, Detroit, Mich., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Mar. 28, 1966, Ser. No. 1,656
Term of patent 14 years
(Cl. D26—5)

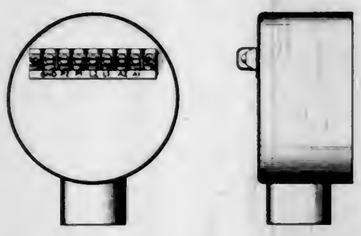


209,510
DYNAMOELECTRIC MACHINE
Fredrick J. Armstrong, Fort Wayne, Ind., assignor to General Electric Company, a corporation of New York
Filed June 2, 1966, Ser. No. 2,512
Term of patent 14 years
(Cl. D26—5)

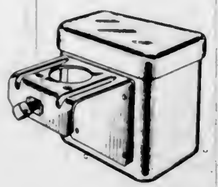




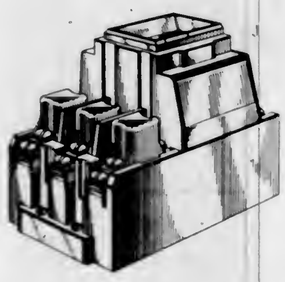
209,511
DYNAMOELECTRIC MACHINE END FRAME
Fredrick J. Armstrong, Fort Wayne, Ind., assignor to General Electric Company, a corporation of New York
Filed June 2, 1966, Ser. No. 2,513
Term of patent 14 years
(Cl. D26—5)



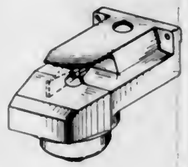
209,512
BATTERY CASE
James M. Barker, Battle Creek, Mich., assignor to Tekonsha Engineering Company, Inc., Tekonsha, Mich., a corporation of Michigan
Filed June 8, 1966, Ser. No. 2,611
Term of patent 14 years
(Cl. D26—6)



209,513
ELECTRIC SWITCH
Robert E. Walters, Village of Bayside, and Gerd C. Boysen, Milwaukee, Wis., assignors to Allen-Bradley Company, Milwaukee, Wis., a corporation of Wisconsin
Filed Dec. 13, 1965, Ser. No. 167
Term of patent 14 years
(Cl. D26—13)



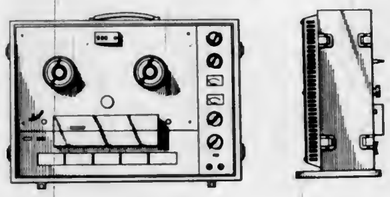
209,514
ELECTRIC SWITCH ENCLOSURE
Kenneth L. Paape, Wauwatosa, and Donald S. Bugni, Milwaukee, Wis., assignors to Square D Company, Park Ridge, Ill., a corporation of Michigan
Filed Mar. 31, 1966, Ser. No. 1,720
Term of patent 14 years
(Cl. D26—13)



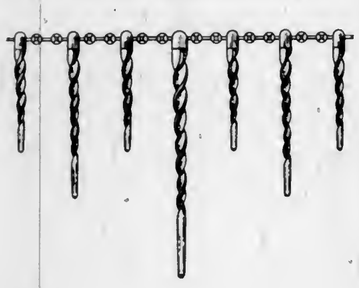
209,515
MICROPHONE
James P. Thomsen, 1114 Meadow Lane, Mount Prospect, Ill. 60056, and Robert J. Fuchs, 1708 Oaktree Lane, Prospect Heights, Ill. 60070
Filed July 5, 1966, Ser. No. 2,917
Term of patent 14 years
(Cl. D26—14)



209,516
TAPE RECORDER
Moriyuki Watanuki, Tokyo, Japan, assignor to Denki Onkyo Co., Ltd., Tokyo, Japan, a corporation of Japan
Filed Aug. 29, 1966, Ser. No. 3,633
Claims priority, application Japan Mar. 1, 1966
Term of patent 14 years
(Cl. D26—14)



209,517
GARLAND FOR A CHRISTMAS TREE
Jack Burnbaum, Newton, Mass.
(451 D St., Boston, Mass. 02127)
Filed June 13, 1966, Ser. No. 2,658
Term of patent 14 years
(Cl. D29—1)



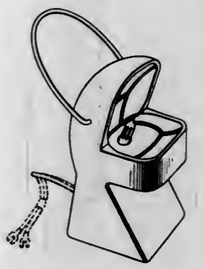
209,518
CHRISTMAS TREE ORNAMENT
Miklos von Kemenczky, 326 Curtis Ave., Point Pleasant Beach, N.J. 08742
Filed Aug. 16, 1966, Ser. No. 3,490
Term of patent 14 years
(Cl. D29—1)



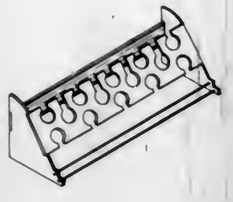
209,519
COMBINED VOTIVE ALTAR AND COIN DEPOSITORY
Kenneth W. Caldwell, Campbell, Calif.
(55 Glen Eyrie Ave., San Jose, Calif. 95125)
Filed Jan. 26, 1967, Ser. No. 5,575
Term of patent 14 years
(Cl. D29—23)



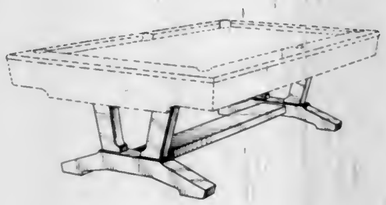
209,520
VOTIVE ALTAR FOR A VEHICLE OR THE LIKE
Kenneth W. Caldwell, Campbell, Calif.
(55 Glen Eyrie Ave., San Jose, Calif. 95125)
Filed Jan. 26, 1967, Ser. No. 5,576
Term of patent 14 years
(Cl. D29—23)



209,521
RACK FOR PRE-TIED NECKTIES
Bernard A. Penland, Southgate, Mich., assignor to The Ambassador Corporation, Lincoln Park, Mich., a corporation of Michigan
Filed Dec. 6, 1965, Ser. No. 96
Term of patent 7 years
(Cl. D33—8)



209,522
BILLIARD TABLE OR THE LIKE
George H. Hart, deceased, late of Chicago, Ill., by Vera M. Arnold, administratrix, Chicago, Ill., assignor to Brunswick Corporation, Chicago, Ill., a corporation of Delaware
Filed Feb. 23, 1967, Ser. No. 5,949
Term of patent 14 years
(Cl. D34—3)



209,523
NOVELTY PADDLE
Eleanor B. Krost, Henrico County, Va.
(308 El Dorado Drive, Richmond, Va. 23229)
Filed Mar. 28, 1967, Ser. No. 6,407
Term of patent 14 years
(Cl. D34—5)



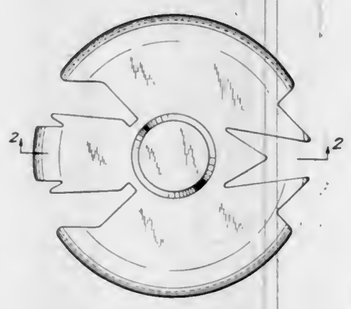
209,524
GOLF PUTTER
Robert J. Mader, 1607 Hickory St., Torrance, Calif. 90503
Filed May 24, 1967, Ser. No. 7,250
Term of patent 14 years
(Cl. D34—5)



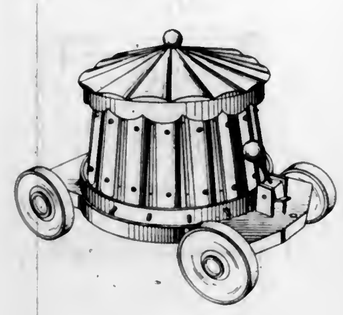
209,525
TOY SPINNING TOP
Peter Balleis, 55 Hermann-Lons-Strasse, Zirndorf, near Nurnberg, Germany
Filed Mar. 30, 1966, Ser. No. 1,687
Claims priority, application Germany Dec. 17, 1965
Term of patent 3½ years
(Cl. D34—15)



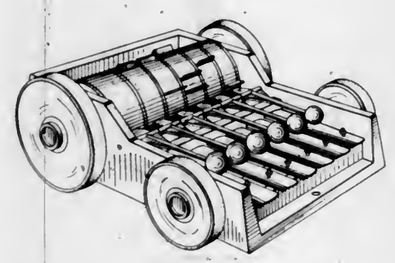
209,526
WHIRLING FLING TOY
Bruce F. Dunbar, 1420 Centennial Drive, St. Paul, Minn. 55113
Filed Oct. 13, 1966, Ser. No. 4,266
Term of patent 3½ years
(Cl. D34—15)



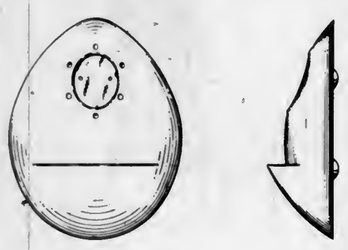
209,527
MUSICAL CAROUSEL TOY
Robert I. Genin, Scarsdale, N.Y., assignor to Child Guidance Toys Inc., Bronx, N.Y., a corporation of New York
Filed Dec. 30, 1966, Ser. No. 5,244
Term of patent 14 years
(Cl. D34—15)



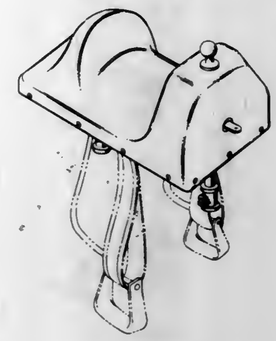
209,528
ROLLING MUSIC BOX TOY
Robert I. Genin, Scarsdale, N.Y., assignor to Child Guidance Toys Inc., Bronx, N.Y., a corporation of New York
Filed Dec. 30, 1966, Ser. No. 5,245
Term of patent 14 years
(Cl. D34—15)



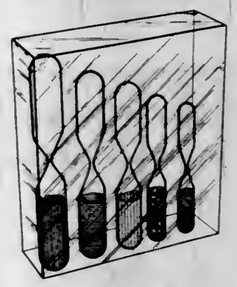
209,529
WALL HANGING PLANTER
Homer N. Humelbaugh, 126 Elkay Drive, Eugene, Oreg. 97402
Filed Aug. 31, 1966, Ser. No. 3,663
Term of patent 14 years
(Cl. D35—3)



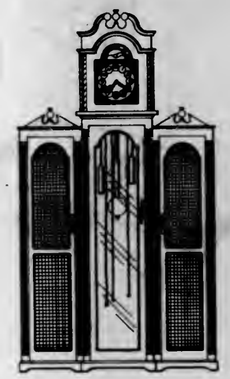
209,530
PICKUP TRUCK MOUNTED ROPING SADDLE
Thurman J. McLeish, P.O. Box 143, Dighton, Kans. 67839
Filed May 23, 1966, Ser. No. 2,411
Term of patent 14 years
(Cl. D38—15)



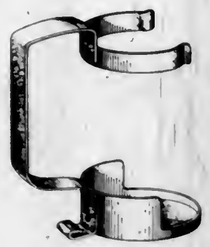
209,531
SANDGLASS TIMER
Walter Koch, 75 Glen Ridge Parkway, Glen Ridge, N.J. 07028
Filed July 14, 1965, Ser. No. 86,157
Claims priority, application Japan Apr. 27, 1965
Term of patent 14 years
(Cl. D42—7)



209,532
COMBINED HALL CLOCK AND CABINET
Stanley L. Deal, 3075 Gale Ave., Long Beach, Calif. 90810
Filed Dec. 1, 1966, Ser. No. 4,888
Term of patent 7 years
(Cl. D42—7)



209,533
BEER CAN HOLDER
Glen E. Cole, 20 E. Dennick Ave. 44505, and Wayne R. Miller, 1111 McHenry St. 44506, both of Youngstown, Ohio
Filed Nov. 8, 1966, Ser. No. 4,585
Term of patent 14 years
(Cl. D44—21)

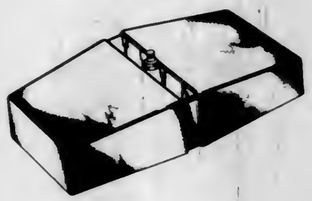


209,534
LOUVER GRID FOR LIGHTING FIXTURE
Maurice Eisenberg, Chicago, Ill., assignor to Solar Light Manufacturing Co., Melrose Park, Ill., a corporation of Illinois
Filed Oct. 12, 1966, Ser. No. 4,248
Term of patent 14 years
(Cl. D48—23)

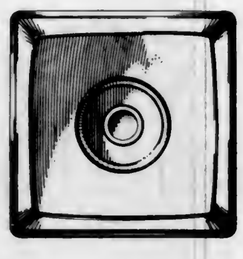




209,535
LIGHT FIXTURE
Arthur F. Gowing, Canoga Park, Calif., assignor to Wemac Company, Inglewood, Calif., a corporation of California
Filed Jan. 24, 1967, Ser. No. 5,545
Term of patent 7 years
(Cl. D48—23)



209,536
SURFACE MOUNTED LIGHT FIXTURE
Lawrence McCain, Beverly Hills, Calif., assignor to Wemac Company, Inglewood, Calif., a corporation of California
Filed Feb. 3, 1967, Ser. No. 5,681
Term of patent 7 years
(Cl. D48—23)

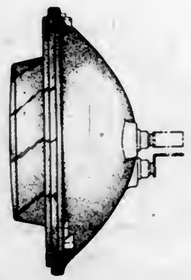


209,537
SIGNAL LIGHT HOUSING
Charles L. Craddock, 4211 Burbank Blvd., Burbank, Calif. 91505
Filed Aug. 3, 1966, Ser. No. 3,325
Term of patent 14 years
(Cl. D48—24)

209,538
BLINKER SIGNAL LIGHT
Carl Rosen, 8221 E. 3rd St., Downey, Calif. 90241
Filed Jan. 9, 1967, Ser. No. 5,355
Term of patent 14 years
(Cl. D48—24)



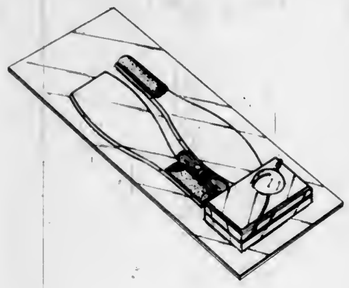
209,539
SEALED BEAM LAMP
Elam Pitkjaan, Cedar Grove, N.J., assignor to Westinghouse Electric Corporation, a corporation of Pennsylvania
Filed Dec. 19, 1966, Ser. No. 5,112
Term of patent 14 years
(Cl. D48—32)



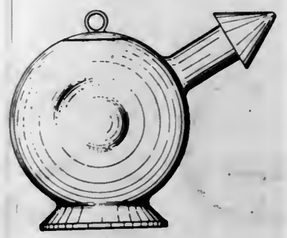
209,540
DOOR LOCK
Gari G. McKibbin, 232 Bonaire, Liberty, Mo. 64068
Filed Apr. 17, 1967, Ser. No. 6,720
Term of patent 14 years
(Cl. D50—5)



209,541
PACKAGE OF EQUIPMENT FOR A PADDLE BALL GAME
Robert E. Rodgers, Jr., 10284 Cresta, Los Angeles, Calif. 90064
Filed Oct. 3, 1966, Ser. No. 4,141
Term of patent 14 years
(Cl. D58—2)



209,542
BOTTLE
Henry B. Melamed, 78—40 164th St., Flushing, N.Y. 11366, and Joseph F. Cullen, 310 85th St., Brooklyn, N.Y. 11209
Filed May 25, 1966, Ser. No. 2,436
Term of patent 14 years
(Cl. D58—8)



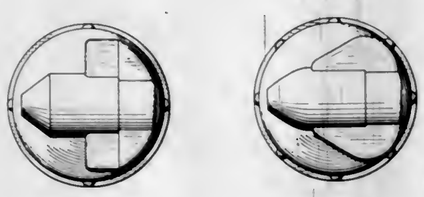
209,543
BOTTLE
Henry B. Melamed, 78—40 164th St., Flushing, N.Y. 11366, and Joseph F. Cullen, 310 85th St., Brooklyn, N.Y. 11209
Filed June 1, 1966, Ser. No. 2,499
Term of patent 14 years
(Cl. D58—8)



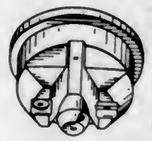
209,544
JAR
Bruce L. Roberts, Rossford, Ohio, assignor to Owens-Illinois, Inc., Toledo, Ohio, a corporation of Ohio
Filed July 7, 1966, Ser. No. 2,962
Term of patent 14 years
(Cl. D58—25)



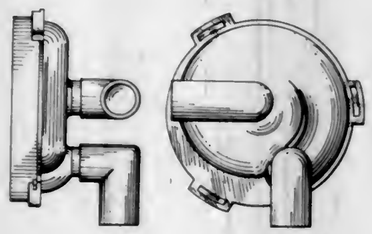
209,545
DISPENSING CLOSURE FOR A LIQUID CONTAINER
John R. Albert, 8425 Cherokee Lane, Leawood, Kans. 66206, and Asa Pickinpaugh, Kansas City, and Michael A. Waters, Independence, Mo.; said Pickinpaugh and said Waters assignors to said Albert
Filed Feb. 8, 1967, Ser. No. 5,728
Term of patent 14 years
(Cl. D58—26)



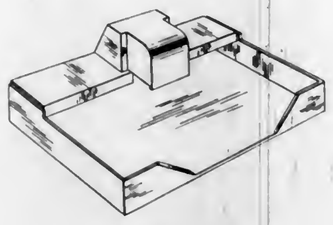
209,546
MULTIPLE ORIFICE SPRAY TIP FOR INSECTICIDES, DISINFECTANTS OR THE LIKE
Fred W. Wahlin, St. Charles, Ill., assignor to Spraying Systems Co., a corporation of Illinois
Filed May 19, 1966, Ser. No. 2,351
Term of patent 14 years
(Cl. D62—2)



209,547
AQUARIUM PUMP
Mervin F. Roberts, Basking Ridge, N.J., assignor to T.F.H. Publications, Inc., Jersey City, N.J., a corporation of New York
Filed Mar. 31, 1967, Ser. No. 6,466
Term of patent 14 years
(Cl. 65—1)



209,548
ILLUMINABLE NOTE PAD HOLDER OR THE LIKE
Jerome S. Wittenberg, 659 Eagle Rock Ave., West Orange, N.J. 07052
Filed Jan. 16, 1967, Ser. No. 5,434
Term of patent 14 years
(Cl. D74—9)



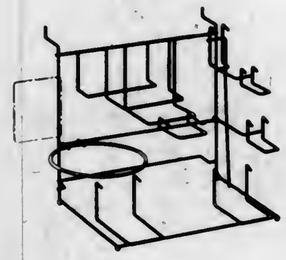
209,549
WRITING INSTRUMENT
Michael P. Arnone, Rivervale, N.J., assignor to Jacques Kreisler Manufacturing Corporation, North Bergen, N.J., a corporation of New Jersey
Filed Apr. 7, 1966, Ser. No. 1,812
Term of patent 14 years
(Cl. D74—17)



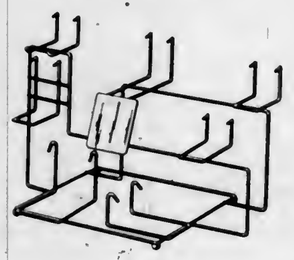
209,550
WRITING INSTRUMENT
Michael P. Arnone, 100 Coopers Lane, Rivervale, N.J. 07675
Original design application Apr. 7, 1966, Ser. No. 1,812. Divided and this application Oct. 26, 1966, Ser. No. 5,402
Term of patent 14 years
(Cl. D74—17)



209,551
DINNERWARE DISPLAY RACK OR SIMILAR ARTICLE
Elmer L. Reibold, Park Ridge, William W. Timpe, Prospect Heights, and Kasimer F. Panek, Broadview, Ill., assignors to E. L. Reibold Agency, Inc., Rosemont, Ill., a corporation of Illinois
Filed Apr. 11, 1967, Ser. No. 6,630
Term of patent 7 years
(Cl. D80—10)



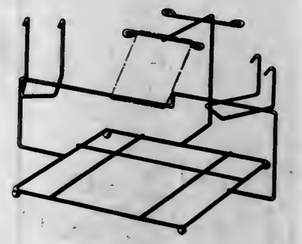
209,552
COOKWARE DISPLAY RACK OR SIMILAR ARTICLE
Elmer L. Reibold, Park Ridge, William W. Timpe, Prospect Heights, and Kasimer F. Panek, Broadview, Ill., assignors to E. L. Reibold Agency, Inc., Rosemont, Ill., a corporation of Illinois
Filed Apr. 11, 1967, Ser. No. 6,631
Term of patent 7 years
(Cl. D80—10)



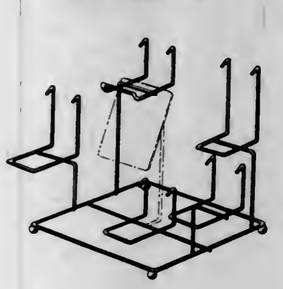
209,553
COOKWARE DISPLAY RACK OR SIMILAR ARTICLE
Elmer L. Reibold, Park Ridge, William W. Timpe, Prospect Heights, and Kasimer F. Panek, Broadview, Ill., assignors to E. L. Reibold Agency, Inc., Rosemont, Ill., a corporation of Illinois
Filed Apr. 11, 1967, Ser. No. 6,632
Term of patent 7 years
(Cl. D80—10)



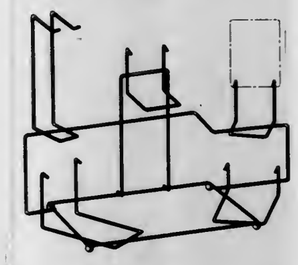
209,554
COOKWARE DISPLAY RACK OR SIMILAR ARTICLE
Elmer L. Reibold, Park Ridge, William W. Timpe, Prospect Heights, and Kasimer F. Panek, Broadview, Ill., assignors to E. L. Reibold Agency, Inc., Rosemont, Ill., a corporation of Illinois
Filed Apr. 11, 1967, Ser. No. 6,633
Term of patent 7 years
(Cl. D80—10)



209,555
COOKWARE DISPLAY RACK OR SIMILAR ARTICLE
Elmer L. Reibold, Park Ridge, William W. Timpe, Prospect Heights, and Kasimer F. Panek, Broadview, Ill., assignors to E. L. Reibold Agency, Inc., Rosemont, Ill., a corporation of Illinois
Filed Apr. 11, 1967, Ser. No. 6,634
Term of patent 7 years
(Cl. D80—10)



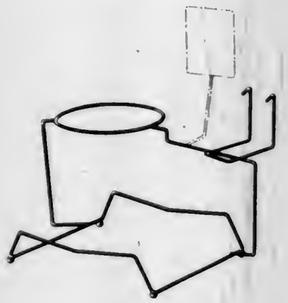
209,556
COOKWARE DISPLAY RACK OR SIMILAR ARTICLE
Elmer L. Reibold, Park Ridge, William W. Timpe, Prospect Heights, and Kasimer F. Panek, Broadview, Ill., assignors to E. L. Reibold Agency, Inc., Rosemont, Ill., a corporation of Illinois
Filed Apr. 11, 1967, Ser. No. 6,635
Term of patent 7 years
(Cl. D80—10)



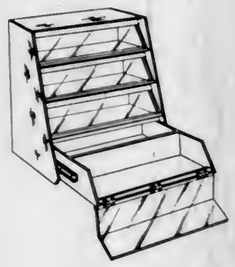
209,557
COOKWARE DISPLAY RACK OR SIMILAR ARTICLE
Elmer L. Reibold, Park Ridge, William W. Timpe, Prospect Heights, and Kasimer F. Panek, Broadview, Ill., assignors to E. L. Reibold Agency, Inc., Rosemont, Ill., a corporation of Illinois
Filed Apr. 11, 1967, Ser. No. 6,636
Term of patent 7 years
(Cl. D80—10)



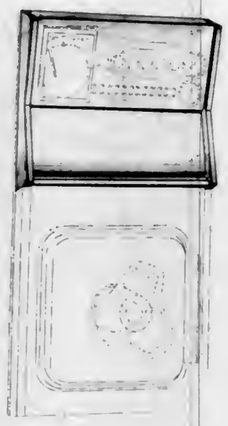
209,558
COOKWARE DISPLAY RACK OR SIMILAR ARTICLE
Elmer L. Reibold, Park Ridge, William W. Timpe, Prospect Heights, and Kasimer F. Panek, Broadview, Ill., assignors to E. L. Reibold Agency, Inc., Rosemont, Ill., a corporation of Illinois
Filed Apr. 11, 1967, Ser. No. 6,637
Term of patent 7 years
(Cl. D80—10)



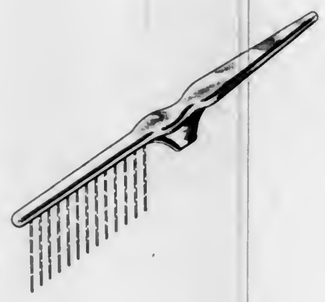
209,559
DISPLAY STAND
Olof Verner Anderson, North Kingston, R.I., assignor to Anson, Inc., Providence, R.I., a corporation of Rhode Island
Filed Jan. 1, 1967, Ser. No. 5,480
Term of patent 14 years
(Cl. D80—11)



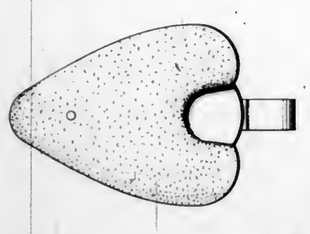
209,560
INSTRUMENT PANEL FOR A STERILIZER
Sherman B. Campbell, Erie, Pa., Charles F. Stephenson, New York, N.Y., and Raymond Spilman, Darien, Conn., assignors to American Sterilizer Company, Erie, Pa., a corporation of Pennsylvania
Continuation of design applications Ser. No. 87,548, Oct. 18, 1965, and Ser. No. 87,591, Oct. 19, 1965. This application Oct. 31, 1966, Ser. No. 5,621
Term of patent 14 years
(Cl. D83—1)



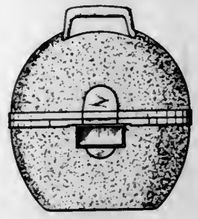
209,561
HAIR STYLING TOOL
Hector S. Cournoyer, Miami Beach, Fla., assignor to Grooming Developers, Inc., Chicago, Ill., a corporation of Illinois
Filed Oct. 3, 1966, Ser. No. 4,154
Term of patent 14 years
(Cl. D86—8)



209,562
SHOE TREE
Thomas Beyrle, 7464 Hillside Ave., Hollywood, Calif. 90028
Filed Dec. 19, 1966, Ser. No. 5,118
Term of patent 14 years
(Cl. D86—10)



209,563
CARRYING CASE FOR A WIG OR SIMILAR ARTICLE
Morris Friedman, Fort Lee, N.J. (104 E. 25th St., New York, N.Y. 10010)
Filed Jan. 16, 1967, Ser. No. 5,429
Term of patent 14 years
(Cl. D87—5)



LIST OF DESIGN PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 12TH DAY OF DECEMBER, 1967

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

Albert, John R., A. Pickinpaugh, and M. A. Waters, said Pickinpaugh, and said Waters assors. to said Albert. Dispensing closure for a liquid container. 209,545, 12–12–67, Cl. D58—26.

Allen-Bradley Co.: *See*—
Walters, Robert E., and Boysen. 209,513.

Ambassador Corp., The: *See*—
Penland, Bernard A. 209,521.

American Sterilizer Co.: *See*—
Campbell, Sherman B., Stephenson, and Spilman. 209,560.

Anderson, Olof V., to Anson, Inc. Display stand. 209,559, 12–12–67, Cl. D80—11.

Anderson, Victor O. Bracket for a towel ring. 209,500, 12–12–67, Cl. D4—3.

Anderson, Victor O. Bracket for a towel bar. 209,501, 12–12–67, Cl. D4—3.

Anson, Inc.: *See*—
Anderson, Olof V. 209,559.

Armstrong, Frederick J., to General Electric Co. Dynamoelectric machine. 209,510, 12–12–67, Cl. D26—5.

Armstrong, Frederick J., to General Electric Co. Dynamoelectric machine end frame. 209,511, 12–12–67, Cl. D26—5.

Arnold, Vera M.: *See*—
Hart, George H., and Arnold. 209,522.

Arnone, Michael P., to Jacques Kreisler Mfg. Corp. Writing instrument. 209,549, 12–12–67, Cl. D74—17.

Arnone, Michael P. Writing instrument. 209,550, 12–12–67, Cl. D74—17.

Ballels, Peter. Toy spinning top. 209,525, 12–12–67, Cl. D34—15.

Barker, James M., to Tekonsha Engineering Co., Inc. Battery case. 209,512, 12–12–67, Cl. D26—6.

Bewley, Emerson S.: *See*—
Macker, John A., and Bewley. 209,508.

Beyrle, Thomas. Shoe tree. 209,562, 12–12–67, Cl. D86—10.

Boysen, Gerd C.: *See*—
Walters, Robert E., and Boysen. 209,513.

Brunswick Corp.: *See*—
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Bugni, Donald S.: *See*—
Paape, Kenneth L., and Bugni. 209,514.

Burnbaum, Jack. Garland for a Christmas tree. 209,517, 12–12–67, Cl. D29—1.

Burroughs Corp.: *See*—
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Macker, John A., and Bewley. 209,508.

Caldwell, Kenneth W Combined votive altar and coin depository. 209,519, 12–12–67, Cl. D29—23.

Caldwell, Kenneth W. Votive altar for a vehicle or the like. 209,520, 12–12–67, Cl. D29—23.

Campbell, Sherman B., C. F. Stephenson, and R. Spilman, to American Sterilizer Co. Instrument panel for a sterilizer. 209,560, 12–12–67, Cl. D83—1.

Campos, Adolf J. Motor vehicle. 209,505, 12–12–67, Cl. D14—3.

Child Guidance Toys Inc.: *See*—
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Genin, Robert I. 209,528.

Cole, Glen E., and W. R. Miller. Beer can holder. 209,533, 12–12–67, Cl. D44—21.

Cournoyer, Hector S., to Grooming Developers, Inc. Hair styling tool. 209,561, 12–12–67, Cl. D86—8.

Craddock, Charles L. Signal light housing. 209,537, 12–12–67, Cl. D48—24.

Cullen, Joseph F.: *See*—
Melamed, Henry B., and Cullen. 209,542.
Melamed, Henry B., and Cullen. 209,543.

Deal, Stanley L. Combined hall clock and cabinet. 209,532, 12–12–67, Cl. D42—7.

Denki Onkyo Co., Ltd.: *See*—
Watanaki, Moriyuki. 209,516.

Dunbar, Bruce F. Whirling fling toy. 209,526, 12–12–67, Cl. D34—15.

Dynamic Instrument Corp.: *See*—
Mas, Joseph A. 209,507.

Eisenberg, Maurice, to Solar Light Mfg. Co. Louver grid for lighting fixture. 209,534, 12–12–67, Cl. D48—23.

Electrolux Corp.: *See*—
Greene, Frederic S., Johanson, Lampe, and LeBalgue. 209,502.

Friedman, Morris. Carrying case for a wig or similar article. 209,563, 12–12–67, Cl. D87—5.

Fuchs, Robert J.: *See*—
Thomsen, James P., and Fuchs. 209,515.

Galda, Daniel J. Vehicle antenna. 209,506, 12–12–67, Cl. D14—6.

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Armstrong, Frederick J. 209,511.

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Genin, Robert I., to Child Guidance Toys Inc. Rolling music box toy. 209,528, 12–12–67, Cl. D34—15.

Gillette Co., The: *See*—
Tucker, James E. 209,503.

Gowing, Arthur F., to Wemac Co. Light fixture. 209,535, 12–12–67, Cl. D48—23.

Greene, Frederic S., R. A. W. Johanson, R. C. Lampe, and J. L. LeBalgue, to Electrolux Corp. Liquid dispenser for a floor treating machine. 209,502, 12–12–67, Cl. D9—2.

Grooming Developers, Inc.: *See*—
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Guy, Bobby L., to Pik-A-Pak Package Stores, Inc. Resturant. 209,504, 12–12–67, Cl. D13—1.

Hart, George H., deceased (by V. M. Arnold, administratrix), to Brunswick Corp. Billiard table or the like. 209,522, 12–12–67, Cl. D34—3.

Hopkins, Kenneth A., and S. C. Waechter, to Burroughs Corp. Computer operator console. 209,509, 12–12–67, Cl. 26—5.

Humelbaugh, Homer N. Wall hanging planter. 209,529, 12–12–67, Cl. D35—3.

International Playtex Corp.: *See*—
Sachs, Charles M. 209,498.

Johanson, Ralph A. W.: *See*—
Greene, Frederic S., Johanson, Lampe, and LeBalgue. 209,502.

Koch, Walter. Sandglass timer. 209,531, 12–12–67, Cl. D42—7.

Kreisler, Jacques, Mfg. Corp.: *See*—
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Krost, Eleanor B. Novelty paddle. 209,523, 12–12–67, Cl. D34—5.

Lampe, Robert C.: *See*—
Greene, Frederic S., Johanson, Lampe, and LeBalgue. 209,502.

Leavitt, Chase L., to Reynolds Industries, Inc. Bobbin holder. 209,499, 12–12–67, Cl. D3—19.

LeBalgue, Jacques L.: *See*—
Greene, Frederic S., Johanson, Lampe, and LeBalgue. 209,502.

Macker, John A., and E. S. Bewley, to Burroughs Corp. Computer operator console. 209,508, 12–12–67, Cl. D26—5.

Mader, Robert J. Golf putter. 209,524, 12–12–67, Cl. D34—5.

Mas, Joseph A., to Dynamic Instrument Corp. Electrical testing apparatus. 209,507, 12–12–67, D26—1.

McCain, Lawrence, to Wemac Co. Surface mounted light fixture. 209,536, 12–12–67, Cl. D48—23.

McKibbin, Garl G. Door lock. 209,540, 12–12–67, Cl. D50—5.

McLeish, Thurman J. Pickup truck mounted roping saddle. 209,530, 12–12–67, Cl. D38—15.

Melamed, Henry B., and J. F. Cullen. Bottle. 209,542, 12–12–67, Cl. D58—8.

Melamed, Henry B., and J. F. Cullen. Bottle. 209,543, 12–12–67, Cl. D58—8.

Miller, Wayne R.: *See*—
Cole, Glen E., and Miller. 209,533.

Owens-Illinois, Inc.: *See*—
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Paape, Kenneth L., and D. S. Bugni, to Square D Company. Electric switch enclosure. 209,514, 12–12–67, Cl. D26—13.

Panek, Kasimer F.: *See*—
Reibold, Elmer L., Timpe and Panek. 209,551–58.

Penland, Bernard A., to The Ambassador Corp. Rack for pretied neckties. 209,521, 12–12–67, Cl. D33—8.

Pickinpaugh, Asa: *See*—
Albert John R., Pickinpaugh, and Waters. 209,545.

Pik-A-Pak Package Stores, Inc.: *See*—
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Pitkjaan, Elan., to Westinghouse Electric Corp. Sealed beam lamp. 209,539, 12–12–67, Cl. D48—32.

Reibold, E. L., Agency, Inc.: *See*—
Reibold, Elmer L., Timpe and Panek. 209,551–58.

Reibold, Elmer L., W. W. Timpe, and K. F. Panek, to E. L. Reibold, Agency, Inc. Dinnerware display rack or similar article. 209,551, 12–12–67, Cl. D80—10.

Reibold, Elmer L., W. W. Timpe, and K. F. Panek, to E. L. Reibold, Agency, Inc. Cookware display rack or similar article. 209,552, 12–12–67, Cl. D80—10.

Reibold, Elmer L., W. W. Timpe, and K. F. Panek, to E. L. Reibold, Agency, Inc. Cookware display rack or similar article. 209,553, 12–12–67, Cl. D80—10.

Reibold, Elmer L., W. W. Timpe, and K. F. Panek, to E. L. Reibold, Agency, Inc. Cookware display rack or similar article. 209,554, 12–12–67, Cl. D80—10.

Reibold, Elmer L., W. W. Timpe, and K. F. Panek, to E. L. Reibold, Agency, Inc. Cookware display rack or similar article. 209,555, 12–12–67, Cl. D80—10.

Reibold, Elmer L., W. W. Timpe, and K. F. Panek, to E. L. Reibold, Agency, Inc. Cookware display rack or similar article. 209,556, 12–12–67, Cl. D80—10.

Reibold, Elmer L., W. W. Timpe, and K. F. Panek, to E. L. Reibold, Agency, Inc. Cookware display rack or similar article. 209,557, 12–12–67, Cl. D80—10.

Reibold, Elmer L., W. W. Timpe, and K. F. Panek, to E. L. Reibold, Agency, Inc. Cookware display rack or similar article. 209,558, 12–12–67, Cl. D80—10.

Reynolds Industries, Inc.: *See*—
Leavitt, Chase L. 209,499.
Roberts, Bruce L., to Owens-Illinois, Inc. Jar. 209,544, 12-12-67, Cl. D58—25.
Roberts, Mervin F., to T.F.H. Publications, Inc. Aquarium pump. 209,547, 12-12-67, Cl. D65—1.
Rodgers, Robert E., Jr. Package of equipment for a paddle ball game. 209,541, 12-12-67, Cl. D58—2.
Rosen, Carl. Blinker signal light. 209,538, 12-12-67, Cl. D48—24.
Sachs, Charles M., to International Playtex Corp. Brassiere. 209,498, 12-12-67, Cl. D2—24.
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Eisenberg, Maurice. 209,534.
Spilman, Raymond: *See*—
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Wahlin, Fred W. 209,546.
Square D Company: *See*—
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Stephenson, Charles F.: *See*—
Campbell, Sherman B., Stephenson, and Spilman. 209,560.
T.F.H. Publications, Inc.: *See*—
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Tekonsha Engineering Co., Inc.: *See*—
Barker, James M. 209,512.
Thomsen, James B., and R. J. Fuchs. Microphone. 209,515, 12-12-67, Cl. D26—14.
Timpe, William W.: *See*—
Reibold, Elmer L., Timpe and Panek. 209,551-58.
Tucker, James E., to The Gillette Co. Hair brush. 209,503, 12-12-67, Cl. D9—2.
Von Kemeneczky, Miklos. Christmas tree ornament. 209,518, 12-12-67, Cl. D29—1.
Waechter, Stanley C.: *See*—
Hopkins, Kenneth A., and Waechter. 209,509.
Wahlin, Fred W., to Spraying Systems Co. Multiple orifice spray tip for insecticides, disinfectants or the like. 209,546, 12-12-67, Cl. D62—2.
Walters, Robert E., and G. C. Boysen, to Allen-Bradley Co. Electric switch. 209,513, 12-12-67, Cl. D26—13.
Watanuki, Moriyuki, to Denki Onkyo Co., Ltd. Tape recorder. 209,516, 12-12-67, Cl. D26—14.
Waters, Michael A.: *See*—
Albert, John R., Pickinpaugh, and Waters. 209,545.
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Wittenberg, Jerome S. Illuminable note pad holder or the like. 209,548, 12-12-67, Cl. D74—9.

LIST OF PATENTEES

TO WHOM

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ACF Industries, Inc.: *See*—
Dapoz, August J. 3,357,274.
Guilck, Ronald A. 3,357,679.
Natho, Paul J. 3,358,207.
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Brinch-Moller, Peter. 3,357,468.
AMP Inc.: *See*—
Schumscher, William L. 3,358,262.
Aakjar, Elmer. Adjustable positioning device. 3,357,661, 12-12-67, Cl. 248—23.
Abbott Laboratories: *See*—
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Perun, Thomas J. 3,357,999.
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O'Donnell, John F. 3,357,157.
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Abraham, Milton E.: *See*—
Blake, Lawrence R., Abraham, and Burr. 3,357,919.
Acciarri, Jerry A., and W. B. Carter, to Continental Oil Co. Production of alpha-olefins. 3,358,050, 12-12-67, Cl. 260—683.15.
Achter, Eugen, and P. Kahl, to Siemens & Halske Aktiengesellschaft Berlin and Munich. Process for the production of a tube for the bundled guidance of an electron beam. 3,357,096, 12-12-67, Cl. 29—592.
Acoustica Associates, Inc.: *See*—
Wolfrum, Richard L. 3,357,245.
Adair, Adolphus G. Wrenches. 3,357,285, 12-12-67, Cl. 81—93.
Adams, Campbell V., and H. G. Warrington, to Vulcan Iron Works. Inc. Power hammer. 3,357,315, 12-12-67, Cl. 91—277.
Adams, Edward J.: *See*—
Blackburn, Robert W., Brown, and Adams. 3.357,889.
Adams, Frank S., Jr., to The Procter & Gamble Co. Process for making a resinous dentifrice cleaning agent. 3,357,951, 12-12-67, Cl. 260—59.
Adams, Robert B., to Moore Products Co. Fluid control apparatus. 3 357,441, 12-12-67, Cl. 137—81.5.
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Maimin, Harold N., and Feinberg. 3,358,187.
Aeroprojects Inc.: *See*—
Boyd, Charles A., and Luckhardt. 3,357,306.
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Agfa Aktiengesellschaft: *See*—
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Air Products and Chemicals, Inc.: *See*—
Curran, Robert K., and Coleman. 3,358,140.
Air Reduction Co., Inc.: *See*—
Burch, Robert J. 3,357,256.
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Yamamoto, Mititaka, and Akamatsu. 3,357,530.
Aktiebolaget A. Ekstroms Maskinaffar: *See*—
Frykhult, Rune H. 3,357,683.
Aktiebolaget Atomenergi: *See*—
Wadmark, Lars O. T. 3,357,891.
Aktiebolaget Bofors: *See*—
Gustafsson, Per O. L., and Bergling. 3,357,509.
Albanese, Pietro: *See*—
Crotti, Argento, and Albanese. 3,357,781.
Alexakis, Nicholas G. Temperature compensated transistor and means for controlling. 3,358,152, 12-12-67, Cl. 307—88.5.
Allegretti, John E., and M. Midler, Jr., to Merck & Co., Inc. Continuous freezing process for purifying dimethyl sulfoxide. 3,358,037, 12-12-67, Cl. 260—607.
Allen-Bradley Co.: *See*—
Perkins, Laurence M. 3,358,110.
Allen and Hanburys Ltd.: *See*—
Newell, George N. 3,357,431.
Allied Chemical Corp.: *See*—
Anello, Louis G., and Yodis. 3,358.033.
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Howard, Carlton J., and Port. 3,357,796.
Klingelhoefer, William C. 3 357,799.
Liston, Thomas R. 3,358,047.
Litt, Morton H., and Schmitt. 3,358,002.
Lund, Richard B., Vitrone, and Bostian. 3,358,043.
Staiti, James J. 3,357,549.
Weed, William H., and Price. 3,357,801.
Allied Paper Corp.: *See*—
Growald, Bert. 3,357,846.
Allis-Chalmers Mfg. Co.: *See*—
Orr, Bobby J. 3,357,362.
Curtis, Donald R. 3,357,880.
Thiele, Tom N. 3,358,206.
Allman, William T., W. A. Burn, Jr., and J. H. Winger, to Celanese Corp. Apparatus for the production of fluid entangled non-woven fabrics. 3,357,074, 12-12-67, Cl. 28—1.
Allmanna Svenska Elektriska Aktiebolaget: *See*—
Ekstrom, Sven A. 3,358,211.
Fahlen, Nils, and Madzarevic. 3,358,220.
Sletback, Jarle, Virsberg, and Hylten-Cavallius. 3,358,213.
Alsch, Richard E., to Graham Transmissions, Inc. Variable speed planetary friction gear transmission. 3,357,277, 12-12-67, Cl. 74—796.
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Dunn, Lloyd G. 3,357,388.
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American Cloth-Strait Co.: *See*—
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American Machine & Foundry Co.: *See*—
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Sicard, Marcel C. 3,357,563.
American Metal Climax, Inc.: *See*—
Henrickson, Angus V. 3,357,821.
American Photocopy Equipment Co.: *See*—
Blatherwick, Delbert T. 3,357,335.
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Ampex Corp.: *See*—
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Anaconda Wire and Cable Co.: *See*—
Elch, Edward D., and D'Ascoli. 3,358,071.
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Anderson, Cleve R., to General Electric Co. Single cycle irradiated fuel reprocessing. 3,357,802, 12-12-67, Cl. 23—339.
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Anello, Louis G., and A. W. Yodis, to Allied Chemical Corp. Process for dehydrohalogenation of fluoroacetone-hydrogen halide complexes. 3,358,033, 12-12-67, Cl. 260—593.
Anketell, John E. Holder for police club. 3,357,065, 12-12-67, Cl. 24—81.
Annis, Truman W., Jr. Baseboard and floor cleaning apparatus and brush therefor. 3,357,141, 12-12-67, Cl. 51—176.
Anthony, William C.: *See*—
Ursprung, Joseph J., and Anthony. 3,357,981.
Antioch College: *See*—
Vernet, Sergius, 3,357,252.
Appel, Rolf, to Olin Mathieson Chemical Corp. Process for preparing halosulfonyl isocyanates. 3,357,804, 12-12-67, Cl. 23—357.
Appel, Rolf, to Olin Mathieson Chemical Corp. Triphenylphosphinimine dihalophosphates and their production. 3,358,021, 12-12-67, Cl. 260—543.
Appeldorn, Roger H., and D. C. Gilkeson, to Minnesota Mining and Mfg. Co. Projection objective affording variable magnification. 3,357,775, 12-12-67, Cl. 350—186.
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Williams, Henry P., Jr., Rosenbohm, and Page. 3,357,352.

Aquino, Salvatore A., and H. H. Wald. Wardrobe carton and method of assembly of hanger bar into carton. 3,357,542, 12–12–67, Cl. 206—7.

Archer, William, Jr., and S. Steingiser, to Mobay Chemical Co. Polyurethane composition containing 0.2 to 5% polyolefin or polystyrene. 3,358,052, 12–12–67, Cl. 260—859.

Arlin, Edward S., to Norwalk Thermostat Co. Reset mechanism for a stack switch which avoids closed circuit condition when a tripping condition prevails. 3,358,095, 12–12–67, Cl. 200—67.

Armco Steel Corp.: *See*—
Fisher, Christopher L. 3,357,194.
Tanczyn, Harry. 3,357,868.
Timmers, John H. 3,358,112.

Armstrong, Dale E., J. S. Coleman, B. B. McInteer, R. M. Potter, and E. S. Robinson, to United States of America, Atomic Energy Commission. High temperature rock drill. 3,357,505, 12–12–67, Cl. 175—16.

Arnesen, Arne G., and T. Basen, to Elektrokemisk A/S. Apparatus for feeding solid materials into a rotary kiln. 3,357,089, 12–12–67, Cl. 263—33.

Arnoldy, Roman F. Open arc or gas shielded granular welding. 3,358,115, 12–12–67, Cl. 219—76.

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Donovan, James, and Mendelsohn. 3,357,478.
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Artzt, Maurice, to Radio Corp. of America. Printer having print bars with zigzag struts out of phase. 3,357,533, 12–12–67, Cl. 197—1.

Asahi Kogaku Kogyo Kabushiki Kaisha: *See*—
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Ashworth, William J. Electromagnetic sound reproducer. 3,358,084, 12–12–67, Cl. 179—1.

Ashworth, William J. Self adjusting relay. 3,358,253, 12–12–67, Cl. 335—197.

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Atlantic Richfield Co.: *See*—
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Attwood, John G., to Union Special Machine Co. Device for separating stacked sheets. 3,357,699, 12–12–67, Cl. 271—18.

Auer, John H., Jr., to General Signal Corp. Traffic signal controller cycle computer. 3,358,126, 12–12–67, Cl. 235—150.24.

Austin, Benson M., to Affiliated Mfg. Corp. Radiant energy method and apparatus of determining physical characteristics. 3,357,557, 12–12–67, Cl. 209—74.

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Stantmeister, Erich. 3,357,637.

Avrameas, Stratis: *See*—
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Ayad, Kamal N., to Monsanto Chemicals Ltd. Vulcanization with heptasulfur imide. 3,357,958, 12–12–67, Cl. 260—79.5.

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Bader, Howard E., to McDonnell Douglas Corp. Cargo handling system. 3,357,372, 12–12–67, Cl. 105—369.

Badini, John A., and E. F. Yery, to Western Electric Co., Inc. Soldering apparatus. 3,357,621, 12–12–67, Cl. 228—47.

Baganoff, Frederick, to McDonnell Aircraft Corp. Analogue signal correlator. 3,358,231, 12–12–67, Cl. 324—83.

Bahls, Gene C.: *See*—
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Baird, James L., and J. E. Davis, to Artisan Industries, Inc. Wiped film processing apparatus for evaporating and concentrating viscous materials. 3,357,479, 12–12–67, Cl. 159—6.

Bakelite Xylonite Ltd.: *See*—
Baumber, Michael W. 3,357,953.

Baker, Benny R.: *See*—
Cashion, Kenneth D., and Baker. 3,358,145.

Baker, John E., to General Electric Co. Vibration damping turbomachinery blade. 3,357,850, 12–12–67, Cl. 117—69.

Baker, Joseph W., and J. P. Chupp, to Monsanto Co. Herbicidal benzamides and methods. 3,357,816, 12–12–67, Cl. 71—118.

Bakkerus, Hermanus, to Nederlandse Organisatie voor Toegepast-Natuurwetenschappelijk Onderzoek Ten behoeve van Nijverheid. Device for feeding additional materials into a stream of molten metals. 3,357,692, 12–12–67, Cl. 266—39.

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Bangert, Ernest C., ½ to A. H. Lowers. Mechanism for separating the sheets of a manifold form. 3,357,616, 12–12–67, Cl. 225—100.

Banning, Thomas A., Jr. Stereoscopic television including means to select either three dimensional or two dimensional reception. 3,358,079, 12–12–67, Cl. 178—6.5.

Bardes, Charles R., and J. W. Williams, to Yarway Corp. Liquid phase detectors or condensate indicators. 3,357,247, 12–12–67, Cl. 73—306.

Barker, Arthur F., to E. I. du Pont de Nemours and Co. Aerosol tilt valve. 3,357,604, 12–12–67, Cl. 222—402.23.

Barker, John, J. R. Birt, E. Housby, and D. M. Gorman, to The English Electric Co. Ltd. Gas blast circuit breaker and operating means therefor. 3,358,105, 12–12–67, Cl. 200—148.

Barnikel, Peter J., and R. P. Freedman, to General Dynamics Corp. Mass flow computer and control device. 3,357,087, 12–12–67, Cl. 29—407.

Barradale, Eugene W. Combination catch and live bait container. 3,357,127, 12–12–67, Cl. 43—55.

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Barton, Bernard C., W. Nudenberg, and E. A. Delaney, to Texas U.S. Chemical Co. Butadiene-isobutylene copolymers prepared by using catalyst composed of a grignard reagent and titanium tetrahalide. 3,357,960, 12–12–67, Cl. 260—85.3.

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Bauman, Robert H., T. A. Bratten, and R. D. Meixell, to General Motors Corp. Automatic brake drum and lining clearance adjuster. 3,357,527, 12–12–67, Cl. 188—79.5.

Baumann, Robert J. Remote control means for internal combustion engines. 3,357,417, 12–12–67, Cl. 123—179.

Baumber, Michael W., to Bakelite Xylonite Ltd. Polymerization of trioxane. 3,357,953, 12–12–67, Cl. 260—67.

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Beard, Colin C., and A. D. Cross, to Syntex Corp. 7a-Mono- and dihalomethyl steroids. 3,357,973, 12–12–67, Cl. 260—239.55.

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Becker, Johannes, to N. V. Optische Industrie "De Onde Delft." High aperture objective of the extended gauss-type. 3,357,776, 12–12–67, Cl. 350—210.

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Bennett, William N., to Fitchburg Paper Co. Stock dispersion apparatus utilizing pressure differential to uniformly disperse the stock. 3,357,879, 12–12–67, Cl. 162—336.

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Berg, Bennie L. Trash container for automobiles. 3,357,614, 12–12–67, Cl. 224—29.

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Bianchi, Eugenio. Dishwashing machine with double relative motion between cleansing spouts and dishes. 3,357,440, 12–12–67, Cl. 134—140.

Bickman, Bernard F., to Honeywell Inc. Control apparatus. 3,357,262, 12–12–67, Cl. 74—5.

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Brown, Arthur K., Jr., to The Bendix Corp. Power steering mechanism. 3,357,316. 12-12-67, Cl. 91—375.
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Buck, James R. 3,357,710.
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Burger, Edgar P., and B. G. Burnside, to Ford Motor Co. Air cleaner assembly for tractors. 3,357,163, 12-12-67, Cl. 55—385.
Burger, Robert. Clinical dialyzer having a flow path decreasing in width. 3,357,565, 12-12-67, Cl. 210—321.
Burgess, Carter L., and G. L. Laserson, to American Machine & Foundry Co. Bowling scoring trainer. 3,357,112, 12-12-67, Cl. 35—9.
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Cahen, Roger R., and Driffort. 3,357,459.
C & J Hampton Ltd.: *See*—
Flynn, George. 3,357,698.
CSF-Compagnie Generale de Telegraphie Sans Fil: *See*—
Dubost, Gerard, and Amiot. 3,358,288.
CTS Corp.: *See*—
Gault, Robert A. 3,358,088.
Cadiou, Jean, to Societe Anonyme Andre Citroen. Longitudinal-elasticity wheel mounting of vehicle. 3,357,718, 12-12-67, Cl. 280—96.1.
Cadotte, John E., and P. J. McGervey, to Wood Conversion Co. Acoustical panels. 3,357,516, 12-12-67, Cl. 181—33.
Cahen, Roger R., and J. P. Driffort, to CFT-Compagnie Francaise de Television. Method of making a flat wire grid. 3,357,459, 12-12-67, Cl. 140—71.5.
Cain, William P.: *See*—
Makowski, Henry S., Shim, and Cain. 3,357,961.
Calavar Corp.: *See*—
Elliott, Darius W. 3,357,502.
Caldwell, John R.: *See*—
Jackson, Winston J., Jr., and Caldwell. 3,357,942.
Calhoun, Gerald G. Straddle packer wire line tester. 3,357,504, 12-12-67, Cl. 175—4.52.
Calumet & Hecla, Inc.: *See*—
Saarivirta, Matti J. 3,357,824.
Cambridge Thermonic Corp.: *See*—
Digilio, Joseph C. 3,358,255.
Cameron Iron Works, Inc.: *See*—
Jones, Marvin R., Williams, and Gruller. 3,357,491.
Campanelli, John P.: *See*—
Anderson, Russell H., and Campanelli. 3,357,583.
Campbell, J. Allan, and J. C. Babcock, to The Upjohn Co. 4,7-dimethyl androstene derivatives. 3,357,888, 12-12-67, Cl. 167—65.
Campbell, Richard H., Jr., to The Seeburg Corp. Automatic rhythm device. 3,358,068, 12-12-67, Cl. 84—1.01.
Canadian General Electric Co., Ltd.: *See*—
Blackburn, Robert William, Brown, and Adams. 3,357,889.
Cannell, Fred J. Indicator holding clamp. 3,357,071, 12-12-67, Cl. 24—281.
Capek, Richard C., to Symons Mfg. Co. Concrete wall form panel with particular tie rod assembly. 3,357,672, 12-12-67, Cl. 249—45.
Carbonell, Jose, V. Sanahuja, and H. Siegrist, to Sandoz Ltd. (also known as Sandoz A.G.). Hydrazinium dyes, with maleic acid or its salts and dyeing therewith. 3,357,782, 12-12-67, Cl. 8—25.
Cardinal of Adrian, Inc.: *See*—
MacDonald, Robert D. 3,357,040.
Carl, William L., and J. C. Hickle, to General Electric Co. Electron discharge device and method. 3,358,177, 12-12-67, Cl. 313—292.
Carlson, David L., to United States of America, Health, Education and Welfare. Respiratory augmentor with electronic monitor and control. 3,357,428, 12-12-67, Cl. 128—145.8.

Carmichael, Edward W. Hi-fi amplification of a self-contained amplifier for guitar. 3,357,291, 12-12-67, Cl. 84—267.
Carpenter, Earl S.: *See*—
Winchester, Robert D., and Carpenter. 3,357,423.
Carpenter, Herbert L., deceased (by O. M. Carpenter, H. L. Carpenter, Jr., and O. T. Carpenter, executors), and H. L. Carpenter, Jr., to Greif Bros. Cooperage Corp. Plastic lined fiber containers. 3,357,626, 12-12-67, Cl. 229—14.
Carpenter, Herbert L., Jr.: *See*—
Carpenter, Herbert L., and H. L. Carpenter, Jr. 3,357,626.
Carpenter, Oliver T.: *See*—
Carpenter, Herbert L., and H. L. Carpenter, Jr. 3,357,626.
Carpenter, Orah M.: *See*—
Carpenter, Herbert L., and H. L. Carpenter, Jr. 3,357,626.
Carrel, Ralph E. Paint pail bracket. 3,357,668, 12-12-67, Cl. 248—210.
Carrier Corp.: *See*—
Toper, Walter B. 3,357,763.
Carruthers, Eben H. Machine for packing compressible materials into containers. 3,357,155, 12-12-67, Cl. 53—124.
Carter, William B.: *See*—
Acciarri, Jerry A., and Carter. 3,358,050.
Case, J. I., Co.: *See*—
Kulhavy, Joseph A., and Wridt. 3,357,720.
Cashion, Kenneth D., and B. R. Baker, to United States of America, National Aeronautics and Space Administration. Radiation detector readout system. 3,358,145, 12-12-67, Cl. 250—207.
Cassidy, Herbert W. D. and J. P. King, and J. J. Schwartz, to Thiokol Chemical Corp. Device for igniting a combustible material. 3,357,190, 12-12-67, Cl. 60—256.
Castagna, Eugene G., to Chevron Research Co. Unitized hairclip. 3,357,438, 12-12-67, Cl. 132—46.
Caterpillar Tractor Co.: *See*—
Grawey, Charles E., and Untz. 3,357,456.
Capewell Mfg. Co., The: *See*—
Crave, Wilbur J. 3,357,462.
Celanese Corp.: *See*—
Allman, William T., Burn, and Winger. 3,357,074.
Blake, Lawrence R., Abraham, and Burr. 3,357919.
Godwin, Joseph R. 3,357,059.
Greenwald, Emmett P., and Neff. 3,357,076.
Robeson, Max O. 3,357,899.
Witt, Enrique R. 3,358,045.
Central Mine Equipment Co.: *See*—
Rassieur, Charles L. 3,357,724.
Central Soya Co., Inc.: *See*—
Davis, Paul F. 3,357,918.
Century Fabrications 100 Ltd.: *See*—
Stukins, Derek A. 3,357,573.
Chadfield, Robert W., to Formold Plastics, Inc. Dispensing closure. 3,357,605, 12-12-67, Cl. 222—485.
Chamberlain, Michael J.: *See*—
Williamson, Malcolm R., and Chamberlain. 3,357,409.
Chamberlin, Donald W., to FMC Corp. Apparatus for feeding and orienting pear-shaped articles. 3,357,538, 12-12-67, Cl. 198—33.
Champion, Alfred. Pipe joints and swaging tools therefor. 3,357,725. 12-12-67, Cl. 285—353.
Champion Mfg. Co.: *See*—
Cooper, William M. 3,357,745.
Champion Spark Plug Co.: *See*—
Green, Sam J. 3,357,114.
Chandler, Albert T., and L. B. Johnson, to International Telephone and Telegraph Corp. Positive retention disconnectable wire splice. 3,358,266, 12-12-67, Cl. 339—205.
Chang, Wen-Hsuan, to Pittsburgh Plate Glass Co. Ketals of hexachlorocyclopentsdiene and process for their preparation. 3,358 039, 12-12-67, Cl. 260—611.
Charl, Nallan C. S., and G. S. Scarvelis, to Owens-Illinois, Inc. Corrosion inhibiting composition and method. 3,357,841. 12-12-67, Cl. 106—14.
Chase Corp.: *See*—
Henderson, John B. 3,358,267.
Chase, Ronald G., to Irving Air Chute Co., Inc. Load or component restrain harness. 3,357,613. 12-12-67. Cl. 224—5.
Chasem, Theodore W., to Koppers Co., Inc. Shaft coupling. 3,357,208. 12-12-67. Cl. 64—9.
Chauveau, Pierre A., and G. Samour, deceased (M. L. Samour, executor), to Constructions Metalliques Fillod S.A. External sheathing or curtain wall. 3,357,144, 12-12-67, Cl. 52—97.
Chemetron Corp.: *See*—
Weener, Earl, and Vander Ploeg. 3,357,983.
Chemidus Plastics Ltd.: *See*—
Haves, Ronald C., and Sands. 3,357,143.
Chen, Richard J.: *See*—
Land, Edwin H., and Chen. 3 357.337.
Chenderlin, John P., to McGraw-Edison Co. Laundry machine. 3,357,214, 12-12-67, Cl. 68—210.
Cherbuliez, Emile, and J. Rabinowitz, to Hooker Chemical Corp. Monoesters of phosphonic acids and alkali metal or alkaline earth metal salts thereof. 3,358,057, 12-12-67, Cl. 260—958.
Cherry, Edward, to United States of America, Army. Process for producing fungus spores. 3,357,895, 12-12-67, Cl. 195—81.
Chevron Research Co.: *See*—
Castagna, Eugene G. 3,357,438.
Seifert, Wolfgang K. 3,358,017.
Chicago Bridge & Iron Co.: *See*—
Larsen, Lyle V. 3,357,089.
Chicago Miniature Lamp Works: *See*—
Freeman, Ernest E., Jr., and Kreinick. 3,357,548.
Chicago Pneumatic Tool Co.: *See*—
King, Smith F. 3,357,449.
Chombard, Pierre A., to Societe Francaise d'Equipments pour la Navigation Aerienne. Erectors of vertical gyroscopes. 3,357,263, 12-12-67, Cl. 74—5.44.
Chope, Henry R., to Industrial Nucleonics Corp. Position indicating apparatus. 3,358,279, 12-12-67, Cl. 340—347.
Christie, Craig E., to Deere & Co. Power take-off shaft coupling. 3,357,206, 12-12-67, Cl. 64—6.
Chrysler Corp.: *See*—
Noble, Gardiner A. 3,358,116.
Chupp, John P.: *See*—
Baker, Joseph W., and Chupp. 3,357,816.
Cincinnati Milling Machine Co., The: *See*—
Mitchell, Charles L. 3,357,218.
Claiborne, Jefferson L., to Dixie Yarns, Inc. Batch temperature-function program controller. 3,358,161, 12-12-67, Cl. 307—140.
Clare, Cora M. Applicator pad. 3,357,034, 12-12-67, Cl. 15—104.93.
Clark, Jesse K., and J. A. Draghi, to M. H. Rhodes, Inc. Presettable timer. 3,358,092, 12-12-67, Cl. 200—38.
Clarke, Peter J., to Ferranti, Ltd. Mechanical digitisers. 3,358,278, 12-12-67, Cl. 340—347.
Clary Corp.: *See*—
Mayo, George L., and Jordan. 3,357,696.
Clay, Wallace A., to Intermountain Research and Engineering Co., Inc. Stereoscopic viewing apparatus which includes a curved lenticular screen in front of a curved picture supporting surface. 3,357,770, 12-12-67, Cl. 350—131.
Clegg, Joseph, to Porous Plastics Ltd. Conveyors for strip material. 3,357,439, 12-12-67, Cl. 134—60.
Cleveland Twist Drill Co., The: *See*—
Faust, Charles L., and Clifford. 3,357,905.
Click, James N., to Phillips Petroleum Co. Prevention of cold flow in elastomers. 3,357,965, 12-12-67, Cl. 260—94.7.
Clifford, George V., to Computing Devices of Canada Ltd. Electro-mechanical integrator. 3,358,200, 12-12-67, Cl. 318—8.
Clifford, John E.: *See*—
Faust, Charles L., and Clifford. 3,357,905.
Clinton, Henry H., to The Whitney Blake Co. Cable fault locator employing shielded tuned amplifier circuitry. 3,358,226, 12-12-67, Cl. 324—52.
Clutz, Garland W., and L. E. Garono, to United States of America, Army. Expendable dual-purpose rocket launcher shipping container. 3,357,805. 12-12-67, Cl. 89—1.815.
Coanda, George, and R. A. Ekbom, to Pharmaseal Laboratories. Tubing clamp. 3,357,674, 12-12-67, Cl. 251—7.
Cobb, James S., Jr., to E. I. du Pont de Nemours and Co. Spinnerette. 3,357,048, 12-12-67, Cl. 18—8.
Cobb, Raymond L., to Phillips Petroleum Co. Sulfolane compounds. 3,357,996, 12-12-67, Cl. 260—332.1.
Coca-Cola Co., The: *See*—
Ring, Marion F. 3,357,537.
Cohen, David D., to The Regents of The University of California. Adherent face mask having a quick disconnect fitting and disposable components. 3,357,426, 12-12-67, Cl. 128—205.
Colad Co., Inc., The: *See*—
Ketterer, Edward M. 3,357,671.
Colautti, Albert J., and D. H. Suszko, to General Motors Corp. Machine for assembling member and providing a controlled amount of tolerance between the members. 3,357,084, 12-12-67, Cl. 29—200.
Colchagoff, Robert D., to Owens-Illinois, Inc. Glass forming apparatus. 3,357,809, 12-12-67, Cl. 65—229.
Coleman, Arthur I.: *See*—
Curran, Robert K., and Coleman. 3,358,140.
Coleman, James S.: *See*—
Armstrong, Dale E., Coleman, McInteer, Potter, and Robinson. 3,357,505.
Colgate-Palmolive Co.: *See*—
Toffemire, Roderick H. 3,357,476.
Colgate, Richard M.: *See*—
Montgomery, Joseph B., III. 3,357,851.
Colchagoff, Robert D. Glass forming apparatus. 3,357,809, 12-12-67, Cl. 65—229.
Collins, John W., to Mobil Oil Corp. Electrical corrosion probe having a plurality of test specimen segments. 3,358,229, 12-12-67, Cl. 324—65.
Collins Radio Co.: *See*—
Stover, Harris A. 3,358,234.
Collins, Stuart A., Jr., and G. B. White, to Sperry Rand Corp. Laser having interferometer controlled oscillatory modes. 3,358,243, 12-12-67, Cl. 331—94.5.
Colombo, George: *See*—
Bielweiss, Arthur F., Colombo, and Dickson. 3,358,160.
Combi-Clip Co.: *See*—
De Shazor, James C., Jr. 3,357,551.
Commissariat a l'Energie Atomique: *See*—
Fahr, Henri. 3,357,756.
Community Gin Co.: *See*—
Jennings, Samuel J. 3,357,060.
Compagnie Generale des Etablissements Michelin, raison sociale Michelin & Cie: *See*—
Massoubre, Jean-Marie. 3,357,470.
Computing Devices of Canada Ltd.: *See*—
Clifford, George V. 3,358,200.
Dolan, John A. 3,358,127.
Condrashoff, Sergei F. Rectangular moulded plastic kite. 3,357,660, 12-12-67, Cl. 244—153.
Conger, Robert R., Jr., to National Video Corp. Method of controlling cathode formation in TV tube gun. 3,357,766, 12-12-67, Cl. 316—1.
Conix, Andre J.: *See*—
Bisschops, Johan H., and Conix. 3,357,855.
Conklin, George E., and J. J. Heigl, to Esso Research and Engineering Co. Have measuring apparatus with solid block with cavity. 3,358,148, 12-12-67, Cl. 250—218.
Connor Engineering Corp.: *See*—
Day, Thomas L. 3,357,483.

Connors, Myles F. Portable ice maker. 3,357,200, 12–12–67, Cl. 62—349.
Conrad, Martin B. Retrievable bridge plug. 3,357,493, 12–12–67, Cl. 166—122.
Consolidated Edison Co. of New York, The: *See*—
Philippidis, Philip A. 3,358,189.
Consolidated Electronics Industries Corp.: *See*—
Ostrander, Walter M., and Sutherland. 3,358,251.
Constructions Metalliques Fillod S.A.: *See*—
Chauveau, Pierre A., and Samour. 3,357,144.
Container Corp. of America: *See*—
Hanway, John E., Jr., and Smithson. 3,357,793.
Smith, William P. 3,357,629.
Conte, John S.: *See*—
Faessinger, Robert W., and Conte. 3,357,933.
Continental Can Co., Inc.: *See*—
Aid, Joseph J., and Jackson. 3,357,631.
Walter, Charles T. 3,357,554.
Weiss, Arthur J. 3,357,552.
Continental Oil Co.: *See*—
Acciarri, Jerry A., and Carter. 3,358,050.
Radd, Frederick J., and Wolfe. 3,357,458.
Napier, Donald R. 3,357,791.
Cook, Coleman P. Combination lock. 3,357,216, 12–12–67, Cl. 70—313.
Cook, Howard R.: *See*—
Packard, Norman M., and Cook. 3,357,318.
Cook, Larry D.: *See*—
Goldstein, Lynn E., and Cook. 3,357,036.
Cooper, Stanley: *See*—
Morley, Frederick W. W., and Cooper. 3,357,757.
Cooper, William M., to Champion Mfg. Co. Mobile concrete floor sawing machine having pivotally adjustable frame sections. 3,357,745, 12–12–67, Cl. 299—39.
Corbin, George T., Jr. Multi-part hollow casting. 3,357,875, 12–12–67, Cl. 156—425.
Cornell, William D., to Brunswick Corp. Printable material and projection system. 3,357,300. 12–12–67, Cl. 88—24.
Cornett, Jack E., to General Electric Co. Gas turbine engine fuel control system. 3,357,177, 12–12–67, Cl. 60—39.28.
Corning Glass Works: *See*—
Dalton, Robert H., and Grego. 3,357,220.
Dreyfus, Jean-Paul L. 3,357,342.
Riseman, John H., and Ross. 3,357,908.
Riseman, John H., Ross, and Eisenman. 3,357,909.
Shiller, Stanley L. 3,357,910.
Cossor, A. C., Ltd.: *See*—
Millar, Robert M. G., and Trim. 3,358,284.
Cox, Kenneth W. and V. P. Apparatus and method for viewing prospective manufactured rug patterns and the like in three dimensions. 3,357,768, 12–12–67, Cl. 350—4.
Cox, Lewis J.: *See*—
Starr, Louis, Kaplan, and Cox. 3,357,161.
Cox, Verna P.: *See*—
Cox, Kenneth W. and V. P. 3,357,768.
Coyne, William E.: *See*—
Cusic, John W., and Coyne. 3,357,998.
Crabtree, Kenneth L., to Keyes Fibre Co. Pulp partition molding. 3,357,624, 12–12–67, Cl. 229—2.5.
Crafoord, Carl-Gustaf B., to AB Bonnierforetagen. Device for compression of the contents of a container. 3,357,346, 12–12–67, Cl. 100—226.
Cragoe, Edward J., Jr.: *See*—
Schultz, Everett M., and Cragoe. 3,358,032.
Craighead, Emery M.: *See*—
Gilchrist, Ralph E., Craighead, and Hitzman. 3,357,487.
Crane Co.: *See*—
Williams, Hubert L. 3,357,680.
Crane Packing Ltd.: *See*—
Wilkinson, Samuel C. W. 3,357,706.
Crave, Wilbur J., to The Capewell Mfg. Co. Cutting blade. 3,357,462, 12–12–67, Cl. 143—133.
Crawford, Earle D., and A. E. Daniels, to Impact Container Corp. Pressurized container assembly. 3,357,601, 12–12–67, Cl. 222—397.
Crawford Fitting Co.: *See*—
Lennon, Fred A., and Zahuranec. 3,357,100.
Tasker, Jonathan. 3,357,677.
Creelman, Raymond C. Surgical instrument for conization of uterine cervix. 3,357,422, 12–12–67, Cl. 128—2.
Cremer, William C. Cloth stacking device. 3,357,701, 12–12–67, Cl. 271—68.
Crew, Beverly L., and M. N. Gunzburg, to General Electric Co. Information storage and retrieval system. 3,358,270, 12–12–67, Cl. 340—172.5.
Cripe, Maxwell L., to The Bendix Corp. Servomotor system. 3,357,311. 12–12–67, Cl. 91—446.
Criss, Donald H., to Owens-Illinois, Inc. 3,357,050, 12–12–67, Cl. 18—14.
Cromer, Charles F., and R. E. Kane, to Westinghouse Electric Corp. High-power compressed-gas circuit interrupter with double-flow contact structure disposed within gas-directing casing. 3,358,102, 12–12–67, Cl. 200—148.
Cromer, Charles F., and A. P. Strom, to Westinghouse Electric Corp. Heating means for compressed-gas circuit interrupters. 3,358,104, 12–12–67, Cl. 200—148.
Cronenberger, Lucien: *See*—
Pillon, Daniel, Pacheco, and Cronenberger. 3,357,883.
Crooker, Richard A., A. F. Lum, and F. J. Loprest, to Thiokol Chemical Corp. Operator of reaction motors. 3,357,185, 12–12–67, Cl. 60—214.
Crosby, Philip S., to Tektronix, Inc. Gating circuit having gating oscillator with internal time delay. 3,358,155, 12–12–67, Cl. 307—88.5.
Cross, Alexander D.: *See*—
Beard, Colin C., and Cross. 3,357,973.
Beard, Colin, and Cross. 3,357,975.
Crotti, Argento, and P. Albanese. Aziende Colori Nazionali Affini ACNA S.p.A. Anthraquinone dyestuffs for polyester articles and process for the dyeing thereof. 3,357,781, 12–12–67, Cl. 8—4.
Crouse-Hinds Co.: *See*—
Thoman, Byron R., and Hoxie. 3,358,133.
Crouse, John E., to Emhart Corp. Settle blowhead and baffle attachment for glassware forming machine. 3,357,810, 12–12–67, Cl. 65—234.
Crown-Iellerbach Corp.: *See*—
Wood, Robert L., Galusha, and Mader. 3,357,844.
Crump, Arthur Edgar, to The General Electric Co. Ltd. 3,358,193, 12–12–67, Cl. 317—137.
Cryer, Edward, to Joseph Lucas (Industries) Ltd. Ignition switches. 3,358,093, 12–12–67, Cl. 200—44.
Cryo-Vac, Inc.: *See*—
Simons, Ira W. 3,357,446.
Cumberland Chemical Corp.: *See*—
Mottern, Henry O., and Leeds. 3,358,041.
Cummings, Marcus A.: *See*—
Jollis, Allen Ulrich, Cummings, and Bayer. 3,357,906.
Curran, Robert K., and A. I. Coleman, to Air Products and Chemicals, Inc. Method and apparatus for analyzing an impurity gas of lower ionization potential than its carrier gas. 3,358,140. 12–12–67, Cl. 250—43.5.
Curtis, Ronald R., to Allis-Chalmers Mfg. Co. Apparatus for making fibrous webs. 3,357,880, 12–12–67, Cl. 162—344.
Cusic, John W., and W. E. Coyne, to G. D. Searle & Co. Complex amides of dihydrodibenzo[b,f][1,4]oxazepine-10-carboxylic acids. 3,357,998, 12–12–67, Cl. 260—333.
Czerch, Wolfgang: *See*—
Behrenz, Wolgang, Czerch, and Telle. 3,357,150.
D. & S. Processing Co.: *See*—
Donahue, John P., and Wright. 3,357,848.
Dale Electronics, Inc.: *See*—
Schaecher, Roland A. 3,358,260.
Dale, John R., to North American Philips Co. Inc. Semiconductor device. 3,357,870, 12–12–67, Cl. 148—175.
Dalton, Robert H., and P. Grego, to Corning Glass Works. Protection and lubrication of metals at high temperatures. 3,357,220, 12–12–67, Cl. 72—42.
D'Amato, Carl. Rug protector for furniture. 3,357,669, 12–12–67, Cl. 248—346.1.
D'Amico, John J., to Monsanto Co. Destroying undesired vegetation with alkenyl 1-polymethylenliminecarbothiolates. 3,357,815, 12–12–67, Cl. 71—88.
Dammer, Arnold. Garment hanger. 3,357,612, 12–12–67, Cl. 223—95.
Danfoss A/S: *See*—
Jensen, Arne. 3,358,192.
Daniels, Albert E.: *See*—
Crawford, Earle D., and Daniels. 3,357,601.
Danline Mfg. Co.: *See*—
Williamson, Burr, Voellmicke, and Ebrok. 3,357,038.
Danly, James C., to Danly Machine Specialties, Inc. Ball bearing die set. 3,357,755. 12–12–67, Cl. 308—6.
Danly Machine Specialties, Inc.: *See*—
Danly, James C. 3,357,755.
Dapoz, August J., to ACF Industries, Inc. Connector rod linkage. 3,357,274, 12–12–67, Cl. 74—469.
Darcy, Edward J.: *See*—
Shapiro, Homer O., Pariser, and Darcy. 3,358,238.
Darling, Horace E., to The Foxboro Co. Single-core balanceable magnetic amplifier. 3,358,221, 12–12–67, Cl. 323—89.
D'Ascoli, Ralph G.: *See*—
Eich, Edward D., and D'Ascoli. 3,358,071.
Data Packaging Corp.: *See*—
Mathus, Gregory. 3,357,546.
Datamatics International, Inc.: *See*—
Smith, Raymond T., and Parish. 3,358,124.
Daugherty, Frank J. Pipe tapping machines. 3,357,445, 12–12–67, Cl. 137—318.
Dautzenberg, Norbert: *See*—
Naeser, Gerhard, Scholz, Wessel, and Dautzenberg. 3,357,827.
David and David, Inc.: *See*—
Nichols, Victor L., and Garshelis. 3,357,649.
David, Robert J., to The American Grandby Co. Hydropneumatic tank float. 3,357,591, 12–12–67, Cl. 220—26.
Davis, Albert, to Best Plastics, Inc. Detachable bead having two part insert. 3,357,204, 12–12–67, Cl. 63—2.
Davis, Dhu A. J., to Hermetic Coil Co., Inc. Hair clipper. 3,357,101, 12–12–67, Cl. 30—210.
Davis, John E.: *See*—
Baird, James L., and Davis. 3,357,479.
Davis, Paul F., to Central Soya Co., Inc. Fluidized lecithin composition and method. 3,357,918, 12–12–67, Cl. 252—1.
Davis, Stanley M., C. M. Kraebel, and R. A. Parent, to American Cyanamid Co. Dry cells. 3,357,865, 12–12–67, Cl. 136—137.
Day, Thomas L., to Connor Engineering Corp. Air modulating means for air conditioning apparatus. 3,357,483, 12–12–67, Cl. 165—39.
Dean, Walter C., to General Motors Corp. Constant velocity universal joint. 3,357,210, 12–12–67, Cl. 64—21.
Deason, James R., to G. D. Searle & Co. 1-oxygenated 1,2,3.3a,3β,4.5,9,11,11a,11β,12,13,13a-tetradecahydro11a,13a-dimethylcyclopenta[7,8]phenanthro[2,3-C]-[1,2,6] - thiadiazine 8,8-dioxides and congeners. 3,357,972, 12–12–67, Cl. 26—239.5.
De Bellomayre, Michel. Bimetallic-strip and rackable-spring actuating snap-acting switch device. 3,358,099, 12–12–67, Cl. 200—113.
De Bosredon, Pierre. Drilling buckets. 3,357,506, 12–12–67, Cl. 175—99.

Decker, Alfred S., G. R. Obenshain, and L. H. Wideman, to Owens-Illinois, Inc. Reciprocating power bed with plural replenishing means for electrostatic printer. 3,357,349, 12–12–67, Cl. 101—114.
Deeman, Gerardus J., to North American Philips Co., Inc. Voltage regulating circuit utilizing photoelectric control. 3,358,217, 12–12–67, Cl. 323—21.
Deere & Co.: *See*—
Christie, Craig E. 3,357,206.
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Hopkinson, Eric C., and A. B. C. Marshall, to Dresser Industries, Inc. Detector gating system employed in a pulsed neutron logging system. 3,358,142, 12–12–67, Cl. 250—71.5.

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Plasser, Franz, and J. Theurer. Track tamping machine. 3,357,366, 12–12–67, Cl. 104—12.

Plummer, Walter A. Multiple channel jacketing with attached mounting strip. 3,357,455, 12–12–67, Cl. 138—106.

Pohl, Harold E., to General Mills, Inc. Petroleum wax composition. 3,357,937, 12–12–67, Cl. 260—28.5.

Polaroid Corp.: *See*—
Erikson, Herman E. 3,357,331.
Green, Milton, Husek, and Kasman. 3,357,969.
Gold, Nathan. 3,358,077.
Land, Edwin H., and Chen. 3,357,337.
Murphy, John B. 3,357,330.
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Pollock, Samuel C., to General Motors Corp. Closed car ventilation. 3,357,338, 12–12–67, Cl. 98—2.

Pomerantsev, Viktor V.: *See*—
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Poo, Oey S., to North American Philips Co., Inc. Negative-resistance circuit arrangement. 3,358,153, 12–12–67, Cl. 307—88.5.

Pooler, Carroll E., Jr. Pipe wrench having rack and slidable catch jaw adjustment means. 3,357,286, 12–12–67, Cl. 81—145.

Popp, Bernhard, and U. Onken, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Process for continuously dehydrating and/or removing water from organic compounds. 3,357,994, 12–12–67, Cl. 260—327.

Porous Plastics Ltd.: *See*—
Clegg, Joseph. 3,357,439.

Port, Eugene B.: *See*—
Howard, Carlton J., and Port. 3,357,796.

Porter, James M.: *See*—
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Positioning Devices, Inc.: *See*—
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Potter, Robert M.: *See*—
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Poulin, Valmor R., Jr.: *See*—
Gidge, Lester, and Poulin. 3,358,061.

Powell, Truman W. Coded signal alerting device. 3,358,235, 12–12–67, Cl. 325—466.

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Power, Robert F. and B. A. 3,357,926.

Power, Robert F. and B. A. Cloud seeding apparatus. 3,357,926, 12–12–67, Cl. 252—359.

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Preikschat, Fritz K., to Honeywell Inc. Optical correlator with endless grease belt recorder. 3,358,149, 12–12–67, Cl. 250—219.

Prenco Mfg. Co.: *See*—
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Pressac Ltd.: *See*—
Greasley, Eric A. 3,358,186.

Prestige, Harry T., to J&S Engineers Ltd. Method for inserting inserts through solid bodies. 3,357,081, 12–12–67, Cl. 29—155.

Price, John M.: *See*—
Weed, William H., and Price. 3,357,801.

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Prins, Daniel A.: *See*—
Schroter, Herbert, and Prins. 3,358,026.

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La Follette, Elwood L. 3,357,950.
Sutphin, Richard A. 3,357,072.

Produits Chimiques Pechiney St. Gobain: *See*—
Meiller, Francois. 3,357,952.
Raoul, Pierre. 3,357,943.

Prontor-Werk Alfred Gauthier G.m.b.H.: *See*—
Helber, Karl, and Bott. 3,357,832.
Starp, Frans W. R. 3,357,333.

Proud, Ralph A., Jr., to Harris-Intertype Corp. Tabulation and leader insertion for phototypesetting system. 3,357,827, 12–12–67, Cl. 95—45.

Provisor, Henri, and G. Lapluye, to North American Philips Co. Inc. Method of passivating supports for semiconductor sulphides, selenides and tellurides. 3,357,857, 12–12–67, Cl. 117—213.

Pullman Inc.: *See*—
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Pulp & Paper Research Institute of Canada: *See*—
Stevens, Charles F. B. 3,357,377.
Stevens, Charles F. B. 3,357,381.

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Purolator Products, Inc.: *See*—
Rutherford, Samuel J. 3,357,940.

Purkandl, Peter: *See*—
Metz, Paul, and Purkandl. 3,357,691.

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Quaker Oats Co., The: *See*—
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Dunlop, Andrew P., and Sherman. 3,358,042.

Quinby, Ripley, Jr. Human-appearing manikin and method of making. 3,357,610, 12–12–67, Cl. 223—68.

Quinton, Reginald D. Engine coolant temperature stabilizing device. 3,357,413, 12–12–67, Cl. 123—41.05.

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Halass, Thomas, and Quittenton. 3,357,837.

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Cherbulies, Emile, and Rabinowitz. 3,358,057.

Radd, Frederick J., and L. H. Wolfe, to Continental Oil Co. Process and product for improved resistance to stress corrosion. 3,357,458, 12–12–67, Cl. 138—177.

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Morrell, Albert M., and Godfrey. 3,358,175.
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Hallovic, Esref I., Radisic, and Miljkovic. 3,357,267.

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Ragan, Randall C., and C. E. Malden, to Electra Mfg. Co. Method for metallizing openings in miniature printed circuit wafers. 3,357,856, 12–12–67, Cl. 117—212.

Rain Jet Corp.: *See*—
Hruby, John O., Jr. 3,357,643.

Randall, Frank E.: *See*—
Smith, Lester L., and Randall. 3,357,374.

Randall, James H.: *See*—
Manor, Neil D., and Randall. 3,358,274.

Raoul, Pierre, to Produits Chimiques Pechiney-Saint-Gobain. Stabilization of formaldehyde polymers with thiazolidione-2,4's. 3,357,943, 12–12–67, Cl. 260—45.8.

Rassieur, Charles L., to Central Mine Equipment Co. Sealed drill-string joint. 3,357,724, 12–12–67, Cl. 285—330.

Rassman, Christoph: *See*—
Lobbe, Armin, and Rassman. 3,357,743.

Rasworschegg, Heinrich, D. Markow, and A. Sandri, to Waagner-Biro Aktiengesellschaft. Method of and installation for the utilization of hot waste gases from furnaces of metallurgical works. 3,357,820, 12–12–67, Cl. 75—60.

Rateau, Alexis. Hydraulic piston pumps. 3,357,358, 12–12–67, Cl. 103—5.

Ratliff, Harvey L., Jr., 100% to Jetru Inc. Apparatus for making wide-angle stereoscopic cartoons. 3,358,078, 12–12–67, Cl. 178—6.5.

Rätz, Rudi F. W.: *See*—
Bliss, Arthur D., and Rätz. 3,358,004.

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Raupp, Ray J., to The Bendix Corp. Fuse filter with pressure responsive closure means. 3,357,560, 12–12–67, Cl. 210—96.

Raymond, Robert E., to International Basic Economy Corp. Hydraulic machine. 3,357,363, 12–12–67, Cl. 103—173.

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Rebosio, Edgardo, to British Insulated Callender's Cables Ltd. Protected rod insulator. 3,358,076, 12–12–67, Cl. 174—179.

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Lucien, Rene. 3,357,659.

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Bernous, Tayeb, Redding, and Schwartz. 3,357,249.

Reed, George C., and W. H. Du Bois, to The Bendix Corp. Restraint system for disc brake noise reduction. 3,357,523, 12–12–67, Cl. 188—73.

Reeves, Gordon. Anti-corrosive spacer. 3,358,263, 12–12–67, Cl. 339—115.

Regents of the University of California, The: *See*—
Cohen, David D. 3,357,426.

Reindl, Adolf, to United States of America, Army. Pulse type radiotelephone system with conference capability. 3,358,233, 12–12–67, Cl. 325—55.

Reinhart, Justin H., to Olin Mathieson Chemical Corp. Method for protecting plants in a salt containing environment. 3,357,130, 12–12–67, Cl. 47—58.

Reinhart, Justin H., to Olin Mathieson Chemical Corp. Method for protecting plants in a salt containing environment. 3,357,131, 12–12–67, Cl. 47—58.

Reinhart, Justin H., to Olin Mathieson Chemical Corp. Method of protecting plants in a salt containing environment. 3,357,132, 12–12–67, Cl. 47—58.

Reischl, Artur, E. Muller, and W. Gobel, to Farbenfabriken Bayer Aktiengesellschaft. Polyurethanes containing uretdione groups modified with vinyl polymers. 3,357,939, 12–12–67, Cl. 260—30.6.

Reissmueller, Karl H., R. F. Zurcher, and M. W. Reissmueller, to Hughes Aircraft Co. Device for aligning two objects and for mounting one to the other. 3,357,091, 12–12–67, Cl. 29—470.

Reissmueller, Manfred W.: *See*—
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Renaudo, Samuel, to Phillips Petroleum Co. Polymerization process. 3,358,056, 12–12–67, Cl. 260—878.

Rentschler, Waldemar T. Photographic camera with high speed shutter operable at small diaphragm aperture settings. 3,357,334, 12–12–67, Cl. 95—63.

Renz, Jany, J.-P. Bourquin, G. Gamboni, and G. Schwarb, to Sandos Ltd., Applicazioni Viscosa S.p.A. N-(m-benzylthiophenyl)-anthranilic acid. 3,358,019, 12–12–67, Cl. 260—516.

Restivo, Albert R., to E. R. Squibb & Sons, Inc. Mercury derivatives of certain as-triazine-5(2H)-ones. 3,357,976, 12–12–67, Cl. 260—242.

Rexall Drug and Chemical Co.: *See*—
Erchak, Michael, Jr., and Kelley. 3,358,055.

Reyburn, Nathaniel R., to Owens-Illinois, Inc. Apparatus for molding plastic articles. 3,357,056, 12–12–67, Cl. 18—42.

Reynaud, Pierre, to Societe Anonyme dite: Laboratoire Roger Bellon. Thioamides. 3,358,022, 12–12–67, Cl. 260—551.

Reynolds, Blake, to Texaco Development Corp. Fluid pressure system leak detector. 3,357,255, 12–12–67, Cl. 73—407.

Reynolds, Ralph K., and D. L. Whitaker, to FMC Corp. Hinged track. 3,357,750, 12–12–67, Cl. 305—11.

Reynolds, Raymond B.: *See*—
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Rhodes, M. H., Inc.: *See*—
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Rhodes, William A., and R. A. Henes, to Henes Mfg. Co. Means and method for the electrolytic production of hydrogen and oxygen for the safe consumption thereof. 3,357,472, 12–12–67, Cl. 158—27.4.

Rice Barton Corp.: *See*—
Hamilton, Alan R. 3,357,845.

Rice, Rip G., and M. V. Ernest, to W. R. Grace & Co. Sulfonated polymeric phosphonitriles. 3,357,931, 12–12–67, Cl. 260—2.2.

Richards, David W. T., to Westland Aircraft Ltd. Flexible underportions for ground effect vehicles. 3,357,515, 12–12–67, Cl. 180—7.

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Riegger, Paul, and H. Richtzenhain, to Dynamit Nobel Aktiengesellschaft. Process for preparing 1,1,1-trichloroethane. 3,357,907, 12–12–67, Cl. 204—163.

Riester, Oskar, to Agfa Aktiengesellschaft. Photographic emulsions sensitized with cyanine dyestuffs. 3,357,833, 12–12–67, Cl. 96—105.

Riester, William C., and R. D. Page, to Trico Products Corp. Vehicle door locking system. 3,357,215, 12–12–67, Cl. 70—264.

Rinaldi, Massimo, to Industria Macchine Elettroniche-I.M.E. Circuit for displaying the decimal location in electronic type arithmetical computing devices, particularly in connection with digital data readout devices on decimal indicators. 3,358,125, 12–12–67, Cl. 235—92.

Rinehart, Dale W., to Pittsburgh Plate Glass Co. Method of strengthening a glass article by ion exchange. 3,357,876, 12–12–67, Cl. 161—1.

Ring, Marion F., to The Coca-Cola Co. Automatic container separator and method of separating containers. 3,357,537, 12–12–67, Cl. 198—31.

Rinkevics, Maija: *See*—
Levine, Albert K., Palilla, and Rinkevics. 3,357,925.

Riseman, John H., and J. W. Ross, to Corning Glass Works. Electrolytic sensor with water diffusion compensation. 3,357,908, 12–12–67, Cl. 204—195.

Riseman, John H., J. W. Ross, and G. Eisenman, to Corning Glass Works. Glass electrodes. 3,357,909, 12–12–67, Cl. 204—195.

Ritter Maudler Corp.: *See*—
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Robards, Preston O., to Equipment Research Corp. Power control receptacle having laterally extending contact pins for engaging contact assemblies of a jumper head. 3,358,265, 12–12–67, Cl. 339—195.

Roberts Dairy Co.: *See*—
Fisher, Calvin D. 3,357,840.

Roberts, David D. Apparatus for delivering power. 3,357,272, 12–12–67, Cl. 74—710.5.

Roberts, Russell R.: *See*—
Murray, Thomas C., and Roberts. 3,357,574.

Robertshaw Controls Co.: *See*—
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Robertson, James J.: *See*—
Timmons, William D., Jr., and Robertson. 3,358,051.

Robeson, Max O., to Celanese Corp. Method of recovering formic acid from a waste liquor. 3,357,899, 12–12–67, Cl. 203—15.

Robinson, Charles G.: *See*—
Dillon, Paul W., and Robinson. 3,358,067.

Robinson, Eugene S.: *See*—
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Robinson, Gary W.: *See*—
Trott, David H., and Robinson. 3,357,607.

Robinson, Harry, to Flexipak, Inc. Take-up mechanism for sheet-feeding apparatus. 3,357,651, 12–12–67, Cl. 242—65.

Robinson, John C. Livestock watering device. 3,357,406, 12–12–67, Cl. 119—73.

Rodewald, Paul G., Jr.: *See*—
Offenhauer, Robert D., and Rodewald. 3,358,046.

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Lloyd, William G., and Roelofs. 3,358,038.

Roesner, Donald B., to American Excelsior Corp. Production of shaped articles. 3,357,044, 12–12–67, Cl. 18—19.

Rogal, Edward. Multiple selective device. 3,357,558, 12–12–67, Cl. 209—110.

Rogier, Edgar R.: *See*—
Fulmer, Richard W., and Rogier. 3,357,935.

Rogov, Anatoly J., J. I. Lovtsov, and V. K. Kutelnikov, to Institute Gornogo Dela imeni A. A. Skochinskogo. Radial-piston hydraulic motor. 3,357,312, 12–12–67, Cl. 91—176.

Rohde, Robert P., to General Motors Corp. Transfer valve for utilizing plural pressure sources. 3,357,310, 12–12–67, Cl. 91—6.

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Techtmann, Wilbur H. A., and Rohl. 3,357,266.

Rohm & Haas Co.: *See*—
Freeman, Jeremiah P., and Kennedy. 3,357,803.
Freeman, Jeremiah P., and Graham. 3,358,013.

Robs, Hans G. Means for clamping relatively slidable machine tool members to each other. 3,357,077, 12–12–67, Cl. 29—1.

Rolls-Royce Ltd.: *See*—
Morley, Frederick W. W., and Cooper. 3,357,757.

Romanowski, Albert F., to Bowser, Inc. Currency controlled accumulator for fluid dispensers. 3,357,531, 12–12–67, Cl. 194—5.

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Ronceray, Robert A. M., Yeomans, Ronceray, A., and F. 3,357,648.

Ronceray, Pierre R.: *See*—
Ronceray, Robert A. M., Yeomans, Ronceray, A., and F. 3,357,648.

Ronceray, Robert A. M., deceased, by L. S. Yeomans, A. J. L. Ronceray, F. M. M. and P. R. Ronceray. Mixer-grinder for foundry sand. 3,357,648, 12–12–67, Cl. 241—110.

Roof, Lewis B., to Phillips Petroleum Co. Fluid control system for analyzers. 3,357,233, 12–12–67, Cl. 73—23.1.

Roper, Geo. D., Corp.: *See*—
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Rosebrook, Inc.: *See*—
Rosebrook, Roy, Sr. 3,357,309.

Rosebrook, Roy, Sr., to Rosebrook, Inc. Protective device for tracer mechanism. 3,357,309, 12–12–67, Cl. 90—62.

Rosenberg, Abraham. Individual urinary appliance. 3,357,430, 12–12–67, Cl. 128—295.

Rosenberg, Fred O., Jr., and J. N. Hoomans, to Burroughs Corp. Multiple cathode indicator tube having no obstruction in the form of support disks. 3,358,176, 12–12–67, Cl. 313—109.5.

Rosenberg, Kenneth P. Magnetic ski bindings. 3,357,712, 12–12–67, Cl. 280—11.35.

Rosenberger, Siegfried: *See*—
Hausermann, Heinrich, and Rosenberger. 3,357,988.

Rosenbohm, Donald A.: *See*—
Williams, Henry P., Jr., Rosenbohm, and Page. 3,357,352.

Ross, Harvey: *See*—
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Ross, James W.: *See*—
Riseman, John H., and Ross. 3,357.908.
Riseman, John H., Ross, and Eisenman. 3,357,909.

Ross, John F., to General Electric Co. Process for producing finely divided calcium fluoride having controlled particle size. 3,357,788, 12–12–67, Cl. 23—88.

Rossmann, George E.: *See*—
Marcus, Mitchell P., Rossmann, and Tunis. 3,358,271.

Rougerie, Jacques F.: *See*—
Fourestier, Max, Guiot, Rougerie, Vulmiere, H., and J. 3,357,433.

Roush, Gale S., to Phillips Petroleum Co. Blasting agent primer and tubular explosion train. 3,357,355, 12–12–67, Cl. 102—24.

Rowland Products Inc.: *See*—
Rowland, William P. 3,357,772.
Rowland, William P. 3,357,773.

Rowland, William P., to Rowland Products Inc. Phased lenticular sheets for optical effects. 3,357,772, 12–12–61, Cl. 350—167.

Rowland, William P., to Rowland Products Inc. Patterned sheet material. 3,357,773, 12–12–67, Cl. 350—167.

Rubberoid Co. Ltd., The: *See*—
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Ruckerl, Alfred: *See*—
Nitschke, Bruno, and Ruckerl. 3,357,534.

Ruf, Walter. Track wheel for track-laying vehicles. 3,357,752. 12–12–67, Cl. 305—56.

Rupp, James W., to The Bendix Corp. Electrically actuated release mechanism. 3,358,254, 12–12–67, Cl. 335—253.

Russ, William H., and H. E. Evans, to N. V. Appleton (U.K.) Ltd. Windows. 3,357,135, 12–12–67, Cl. 49—390.

Russell, Joseph L., and A. D. Silber, to Halcon International, Inc. Method for preparing phenol-type compounds employing an improved catalyst. 3,358,044, 12–12–67, Cl. 260—621.

Rutherford, Samuel J., to Purolator Products, Inc. Silicone rubber containing antimony tri sulfide and cured with peroxides. 3,357,940, 12–12–67, Cl. 260—37.

S-F-D Laboratories, Inc.: *See*—
Farney, George K. 3,358,179.

Saad, Theodore S., to Sage Laboratories, Inc. Microwave coupled line device having insulated coupled inner conductors within a common outer conductor. 3,358,248, 12–12–67, Cl. 333—10.

Saarivirta, Matti J., to Calumet & Hecla, Inc. Copper alloy. 3,357,824, 12–12–67, Cl. 75—153.

Sabet, Huschang. Sealing arrangement. 3,357,412, 12–12–67, Cl. 123—8.

Safford, Earl. Cup-saucer insert to absorb drippings. 3,357,590, 12–12–67, Cl. 220—23.83.

Sage Laboratories, Inc.: *See*—
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Saito, Sukeyoshi. Testing apparatus for applying rapidly fluctuating air pressure on test specimens. 3,357,235, 12–12–67, Cl. 73—37.

Salvajor Co., The: *See*—
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Salzer, Alexander. Water purification apparatus. 3,357,897, 12–12–67, Cl. 202—174.

Samford, Cloyd A. Vehicle seating arrangements. 3,357,717, 12–12–67, Cl. 280—87.

Samour, Guy: *See*—
Chauveau, Pierre A., Samour G., and M. L. 3,357,144.

Samour, Maurice L.: *See*—
Chauveau, Pierre A., Samour, M. L., and G. 3,357,139.

Sanahuja, Viktor: *See*—
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Sanders, Lawrence M. Synchronized fluid coupling. 3,357,180, 12–12–67, Cl. 60—54.

Sandoz Ltd.: *See*—
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Renz, Jany, Bourquin, Gamboni, and Schwarb. 3,358,019.

Sandri, Alfred: *See*—
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Sands, David H.: *See*—
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Sansui Electric Co. Ltd.: *See*—
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Sarett, Lewis H., and H. D. Brown, to Merck & Co., Inc. Anthelmintic compositions containing benzimidazole derivatives. 3,357,884, 12–12–67, Cl. 167—53.

Sato, Isuke, to Memofon Co., Ltd. Tape recorder operating device. 3,357,650, 12–12–67, Cl. 242—55.12.

Saunders, Elerington, and F. Wright, to Monsanto Co. Calcining method for conversion of alkaline earth orthophosphates to the pyrophosphate form. 3,357,790, 12–12–67, Cl. 23—108.

Saunders, John F.: *See*—
Whittle, Frank, and Saunders. 3,357,707.

Savkin, Mikhail M.: *See*—
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Sawyer, Harold T., to Vernon D. Beehler. Sonic surface cleaner. 3,357,033, 12–12–67, Cl. 15—98.

Saxl, Erwin J. Device and method for measuring gravitational and other forces. 3,357,253, 12–12–67, Cl. 73—382.

Sayigh, Adnan A. R.: *See*—
Foster, Ebenezer A. T., Odinak, and Sayigh. 3,358,025.

Scarlett, Robert M., to International Telephone and Telegraph Corp. Semiconductor device. 3,358,197, 12–12–67, Cl. 317—235.

Scarvells, Gus S.: *See*—
Charl, Nallan C. S., and Scarvells. 3,357,841.

Schaab, Michael J., to American Gas Association, Inc. Automatic coffee maker. 3,357,339, 12–12–67, Cl. 99—283.

Schacht, Werner: *See*—
Kinder, Gotthard, and Schacht. 3,357,328.

Schaecher, Roland A., to Dale Electronics, Inc. Resistor element. 3,352,260, 12–12–67, Cl. 338—318.

Schaub, Robert F., to Syncroflo, Inc. Combination fire and domestic water system. 3,357,359, 12–12–67, Cl. 103—11.

Scheinost, Kurt: *See*—
Kaess, Franz, Prietzel, and Scheinost. 3,357,980.

Scheinpflug, Hans, H. F. Jung, and G. Schrader, to Farbenfabriken Bayer Aktiengesellschaft. Thiol-phosphoric acid esters fungitoxic agents. 3,357,882, 12–12–67, Cl. 167—30.

Schering Corp.: *See*—
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Schettler, Emery L.: *See*—
Schettler, Gerhard E., and Emery L. 3,357,580.

Schettler, Gerhard E., and Emery L. Bale stack loaders and unloaders. 3,357,580, 12–12–67, Cl. 214—501.

Schibley, Raymond D., to Westinghouse Electric Corp. Oven. 3,358,120, 12–12–67, Cl. 219—395.

Schiffer, Günter, to Kleinewefers, Joh., Sohne Maschinenfabrik. Processing chamber for web material, especially wide textile material. 3,357,212, 12–12–67, Cl. 6—8.

Schittenhelm, Rudolf P.: *See*—
Petersilka, Franz Karl, Schittenhelm, and Weiss. 3,357,633.

Schleicher, Harold E., to The Arrow-Hart & Hegeman Electric Co. Fused puller switch with fuses which can be removed only when the fused section is first removed. 3,358,100, 12–12–67, Cl. 200—114.

Schloemann Aktiengesellschaft: *See*—
Grube, Dietrich. 3,357,225.

Schlossman, Irwin, and C. N. Winnick, to Halcon International, Inc. Preparation of unsaturated acid esters from unsaturated aldehydes. 3,358,015, 12–12–67, Cl. 260—486.

Schlumberger Technology Corp.: *See*—
McGill, Howard L. 3,357,488.

Schmid, Anton, to Siemens Aktiengesellschaft. Liquid contact operating through a mechanical displacement of mercury. 3,358,109, 12–12–67, Cl. 200—152.

Schmid, John H., and N. J. Anderson, to Zurn Industries, Inc. Roof drain. 3,357,561, 12–12–67, Cl. 210—163.

Schmid, John H., and R. J. Zentis, to Zurn Industries, Inc. Dual element filter assembly with backwash arms. 3,357,566, 12–12–67, Cl. 210—333.

Schmidt, Gerhard, to Gesellschaft Fuer Kernforschung m.b.H. Gas cooled nuclear reactor. 3,357,892, 12–12–67, Cl. 176—60.

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Schneider, Fredric H. Leveling rod device. 3,357,106, 12–12–67, Cl. 33—74.

Schneider, Norbert, to The British Petroleum Co., Ltd. Treatment of aromatic extracts. 3,358,049, 12–12–67, Cl. 260—674.

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Schroter, Herbert, and D. A. Prins, to Geigy Chemical Corp. Tricyclic hydroxylamines. 3,358,026, 12–12–67, Cl. 260—570.8.

Schulte, Paul H. Process for making combination magnetic head. 3,357,097, 12–12–67, Cl. 29—603.

Schulte, Paul H. Magnetic erase head. 3,358,275, 12–12–67, Cl. 340—174.1.

Schulte, Paul H. Combination record-playback and erase magnetic head. 3,358,276, 12–12–67, Cl. 340—174.1.

Schultz, Everett M., and E. J. Cragoe, Jr., to Merck & Co., Inc. Nuclear hydrocarbyloxy derivatives of 2-alkylidene-alkanophenones. 3,358,032, 12–12–67, Cl. 260—592.

Schultz, Frederick M., to Raytheon Co. Electronic trigonometric multiplier. 3,358,129, 12–12–67, Cl. 235—194.

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Korshak, Harvey. 3,357,102.
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Seal, Edgar L. Door stop. 3,357,732, 12–12–67, Cl. 292—60.

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Sears, Harold T., Jr., and W. E. Wooten, to Phillips Petroleum Co. Tubular wall structure. 3,357,593, 12–12–67, Cl. 220—72.

See, Clarence W., Jr. Safety ski binding. 3,357,713, 12–12–67, Cl. 280—11.35.

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Seifert, Wolfgang K., to Chevron Research Co. Process for producing substantially odorless alkaryl sulfonates and the composition obtained thereby. 3,358,017, 12–12–67, Cl. 260—503.

Self, Dolty R., to United States of America, Army. Switching drum catch and trip device. 3,357,261, 12–12–67, Cl. 74—1.5.

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Sher, Neil C., and W. J. Olson, to Honeywell, Inc. Control apparatus. 3,357,638, 12–12–67, Cl. 235—201.

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Shoji, Koichi, and M. Kotuji, to Deering Milliken Research Corp. Apparatus for simultaneously donning a plurality of empty bobbins. 3,357,535, 12–12–67, Cl. 198—24.

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Sinclair, Malcolm D., and A. S. Fraser. Illuminated safety helmet. 3,358,137, 12–12–67, Cl. 240—60.

Siracusa, Gianni. Garbage disposal system. 3,357,380, 12–12–67, Cl. 110—8.

Sisco, Charles F., to The Tappan Co. Oven spatter shield. 3,358,119, 12–12–67, Cl. 219—391.

Skinner, Donald A. Conveyor. 3,357,541, 12–12–67, Cl. 198—88.

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Smith, John H., and B. L. Ehrlich. Clarinet stands. 3,357,666, 12–12–67, Cl. 248—125.

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Smith, Ronald, to G. K. N. Screws & Fasteners Ltd. Self-tapping screws. 3,357,295, 12–12–67, Cl. 85—41.

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Smith, Willis R., to General Signal Corp. Car retarder control system. 3,358,139, 12–12–67, Cl. 246—169.

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Societe Nationale des Petroles d'Aquitaine: *See*—
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Stearn, Richard J., and A. C. Richardson, to The British Petroleum Co. Ltd., and Atkins Laboratories Ltd. Multistage ultrasonic probe. 3,357,246, 12–12–67, Cl. 73—290.

Steele, Raymond, to J. Bishop & Co. Process of producing oxides of platinum and palladium. 3,357,904, 12–12–67, Cl. 204—61.

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Stephens, James W. Drilling jigs. 3,357,281, 12–12–67, Cl. 77—62.

Stephenson, Norman D., to Servomatic Hydraulics (Guildford) Ltd. Bearings. 3,357,759, 12–12–67, Cl. 308—122.

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Stevens, Charles F. B., to Pulp & Paper Research Institute of Canada. Toilet waste combuster. 3,357,381, 12–12–67, Cl. 110—9.

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Stockmann, Hans H., and H. W. Blakeslee, Jr., to FMC Corp. Phenolic compound having antioxidant properties. 3,357,948, 12–12–67, Cl. 260—45.95.

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Stolz, Elmer M. Method of manufacturing a cutter or drill bit with replaceable cutting edge. 3,357,279, 12–12–67, Cl. 76—101.

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Sturlaugson, Leland S. Routing device. 3,357,103, 12–12–67, Cl. 30—2.6.

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3,357,696	3,358,142	3,357,048	3,358,283	3,358,010	3,357,720
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3,357,730	3,358,166	3,357,198	3,357,422	3,357,202	3,357,880
3,357,789	3,358,207	3,357,199	3,357,615	3,357,266	3,358,074
3,357,872	3,358,229	3,357,237	3,357,854	3,357,277	3,358,108
3,357,899	3,358,232	3,357,243	3,357,903	3,357,352	3,358,110
3,357,929	49 : 3,357,189	3,357,627	3,358,218	3,357,421	3,358,149
3,358,024	3,357,578	3,357,668	54 : 3,357,811	3,357,451	3,358,201
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3,358,115	3,357,610	3,357,815			

DESIGN PATENTS

6 : 209,499	6 : 209,538	17 : 209,552	25 : 209,517	34 : 209,539	36 : 209,543
209,500	209,541	209,553	26 : 209,509	209,547	37 : 209,504
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209,524	209,515	209,558	29 : 209,540	36 : 209,507	44 : 209,559
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209,535	209,534	209,511	209,505	209,528	55 : 209,513
209,536	209,546	20 : 209,530	209,518	209,542	209,514
209,537	209,551	209,545	209,531		

U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

December 12, 1967 Volume 845 Number 2

TRADEMARKS

NOTICES

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 195,360 (CHANEL), Chanel Industries, Inc., Perfume and toilet water, etc.; **Reg. No. 215,556** (CHANEL NO. 5), same, Perfume and toilet water; **Reg. No. 701,978**, same, Perfume, cologne, talcum powder and bath powder, **filed** Mar. 23, 1967, D.C. Del. (Wilmington), Doc. 3330, *Chanel Industries, Inc.* v. *Gramby Ltd.* Stipulation and order of dismissal, Sept. 25, 1967.

Reg. No. 215,556. (See Reg. No. 195,360.)

Reg. No. 701,978. (See Reg. No. 195,360.)

Reg. No. 826,420 (TRAVELLER'S COMPANION SERIES AND DESIGN), The Olympia Press, Books, **filed** Sept. 7, 1967, D.C. Calif. (Los Angeles), Doc. 67–1318–CC, *The Olympia Press* v. *Collectors Publications, Inc. and Marvin Miller.*

CONDITION OF TRADEMARK APPLICATIONS AS OF OCTOBER 31, 1967

Total number of applications awaiting action [excluding renewals and Sec. 12 (c)]	17,038
Date of oldest new application	Dec. 13, 1966
Date of oldest amended application (filing date)	Oct. 21, 1964

C. M. WENDT, Director, Trademark Examining Operation

TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application: New	Oldest Application: Amended
(I) L. J. BETTENDORF, Classes 2, 3, 4, 5, 7, 9, 10, 11, 27, 28, 30, 32, 33, 37, 38, 39, 40, 41, 42, 43, 50; Certification Marks, Classes A and B	1-16-67	1-11-66
(II) F. H. WETHERBEE, Classes 1, 6, 15, 18, 45, 46, 47, 48, 49, 51, 52; Collective Membership Mark, Class 200	1-18-67	11-1-65
(III) P. S. BALL, Classes 19, 21, 23, 26, 31, 34, 35, 36	12-13-66	4-16-65
(IV) M. E. ABRAMSON, Classes 8, 12, 13, 14, 16, 17, 20, 22, 24, 25, 29, 44; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, and 107	12-19-66	10-21-64
Renewals (All Classes)	10-16-67	.....
Sec. 12(c) Publications (All Classes)	10-16-67	.....

Applications filed during the month of October 1967—2,473

Registrations Issued ..... 458—No. 840,221 to No. 840,678
Renewals Issued 70

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, $12.00 per annum, foreign mailing $4.00 additional; single copies, 25 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 20 cents each. Address orders to the Commissioner of Patents, Washington, D.C., 20231.

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962. 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 243,937. Olson Electronics, Inc., Akron, Ohio. Filed Apr. 21, 1966.

OLSON

Owner of Reg. No. 755,897.

Class 21—Electrical Apparatus, Machines, and Supplies

For Amplifiers, Audio Cables, Audio Head Demagnetizers, Audio Mixers, Audio Transformers, Automobile Radios, Automobile Headlight Dimmers, Batteries, Battery Chargers, Beacon Flasher Bulbs, Binding Post Kits, Bottle Lights, Bus Wire, Capacitors, Car Map Lights, Chassis Sockets, Citizen Band Antennas, Citizen Band Transceivers, Citizen Band Walkie Talkies, Condensers, Contact Plugs and Sockets, Coaxial Wire, Electrical Connectors, Electrical Tape, Electronic Kits, Electronic Modules, Earphones, Flash Bulbs, Fluorescent Starters, Fuse Holders, Grille Cloth, Ground Wire, Headphone Adaptors, Hi-Fi Jumper Cables, Intercom Systems, Insulators, Immersion Heaters, Jumper Cables, Knobs, Knob Kits, Lantern Bulbs, Loopsticks, Lug Terminals, Magnet Wires; Microphones, Microphone Cable Wire, Microphone Cartridges, Microphone Connectors, Microphone Stands, Microphone Wire, Motors, Multimeters, Neon Panel Lamps, PA Amplifiers, Phonograph Arms, Phonograph Plugs and Jacks, Photo-Electric Light Switches, Plug Adaptors, Power Megaphones, Power Transformers, Pre-Amplifiers, Radios, Radio Intercoms, Radio Headphones, Radio Tuners, Rectifiers, Receivers, RF Signal Generators, Resistors, Signal Injectors, Solderless Test Lead Kits, Speakers, Speaker Cable, Speaker Selectors, Speaker Switches, Speaker Systems, Speaker Wall Jacks, Speaker Wire, Stereo Cartridges, Stereo Headphones, Stereo L Pads, Stereo Remote Controls, Switches, Tape Erasers, Telegraph Keys, Telephone Pickups, Television Antennas, Television Antenna Kits, Television Tuners, Television Cameras, Television Camera Lens, Television Monitors, Test Lead Kits, Transformers, Transistors, Transistor Ignition Systems, Transistor Sockets, Travel Flat Irons, Tubes, Tube Kits, Tube Shield Kits, Vacuum Brushes, and Voltage Regulators.

Class 26—Measuring and Scientific Appliances

For Automobile Compasses, Capacitance Analyzers, Citizen Band Field Strength Meters, Marine Compasses, Needle Microscopes, Panel Meters, Slide Rules, Transistor Testers, and Vacuum Tube Voltmeters.

Class 36—Musical Instruments and Supplies

For Phonograph Needles, Recording Tape, Tape Recorders, Tape Recorder Heads, and Tape Splicers.

First use Feb. 1, 1959.

SN 250,670. Medical Supply Company, Rockford, Ill. Filed July 20, 1966.

UNI/FLEX

Class 6—Chemicals and Chemical Compositions

For Spray Dog Repellent and an Anti-Bacterial and Fungicide Spray.

First use at least as early as Feb. 11, 1966.

Class 18—Medicines and Pharmaceutical Preparations

For Aerosol Burn Spray, Burn Compounds, Ammonia Inhalants and Aromatic Spirits, and Salt Tablets.

First use at least as early as Feb. 14, 1966.

Class 44—Dental, Medical, and Surgical Appliances

For First Aid Kits and Components Thereof, Bandages and Compresses, Swabs and Applicators, Stretchers, Resuscitation Training Equipment, and Rescue Breathing Devices.

First use at least as early as Feb. 11, 1966.

SN 251,946. Physicians and Hospitals Supply Co., Inc., Minneapolis, Minn. Filed Aug. 8, 1966.

PHy·Lab

Class 6—Chemicals and Chemical Compositions

For Laboratory Reagents, Specifically Drabkins Reagent, Glycerolsilicate Reagent, Coleman Flame Reagent, Sodium Tungstate and Sulphuric Acid.

Class 26—Measuring and Scientific Appliances

For Laboratory Equipment, Specifically Microscopes, Scales and Balances, Electrical Hot Plates and Hot Plate Stirrers, Incubators and Incubator Shakers, Centrifuges, Ultrasonic Cleaners, Photoelectric Fluorometers, Devices for Spectrophotometric Analyses, Osmometers, Fraction Collectors, Electrophoresis Apparatus, and Instruments for Radioisotope Measurements.

First use July 1965.

SN 253,201. Amertool Services, Inc., Cincinnati, Ohio. Filed Aug. 26, 1966.

Amertool AS Services

The drawing is lined for red, silver, and blue.

Class 102—Insurance and Financial

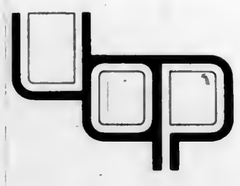
For Financing the Sale of Metal Machine Tools.

Class 103—Construction and Repair

For Repair and Servicing of Metal Machine Tools.

First use on or about Jan. 1, 1950.

SN 253,813. Universal Oil Products Company, Des Plaines, Ill. Filed Sept. 6, 1966.



The mark consists of the fanciful representation of the letters "UOP." Owner of Reg. No. 534,802.

Class 100—Miscellaneous

For Research, Design Engineering, and Development Services in the Field of Petroleum, Petrochemical, Chemical, Fragrances, Air and Water Purification, Instrumentation, Transportation Equipment, and Metal Fabrication.

First use Apr. 9, 1966.

Class 103—Construction and Repair

For Construction, Installation, Operation, and Servicing for Others of Petroleum, Petrochemical, Chemical, Water Conditioning, Water Purification and Air Polution Control Equipment, and Instrumentation Therefor.

First use May 17, 1966.

SN 254,761. Wine-Art Sales Ltd., Vancouver, British Columbia, Canada. Filed Sept. 20, 1966.

WINE-ART

Owner of Canadian Reg. No. 143,427, dated Jan. 14, 1966.

Class 6—Chemicals and Chemical Compositions

For Sterilizing Chemicals for Wine and Beer Production; and Fining and Filtering Compounds for Beer and Wine Production.

Class 46—Foods and Ingredients of Foods

For Enzymes for Use in Wine Making and Fruit Processing—Namely, Diastase Enzymes and Pectic Enzymes for Apple Juice, Peach Pulp, Cherry Pulp; Concentrates of Apples, Grapes, Apricots, Figs, and Cherries.

SN 254,762. Wine-Art Sales Ltd., Vancouver, British Columbia, Canada. Filed Sept. 20, 1966.

Wine - Art

Owner of Canadian Reg. No. 143,428, dated Jan. 14, 1966.

Class 6—Chemicals and Chemical Compositions

For Sterilizing Chemicals for Wine and Beer Production; and Fining and Filtering Compounds for Beer and Wine Production.

Class 46—Foods and Ingredients of Foods

For Enzymes for Use in Wine Making and Fruit Processing—Namely, Diastase Enzymes and Pectic Enzymes for Apple Juice, Peach Pulp, Cherry Pulp; Concentrates of Apples, Grapes, Apricots, Figs, and Cherries.

SN 257,514. The Rubber House, Inc., Atlanta, Ga. Filed Oct 28, 1966.

THE RUBBER HOUSE

The term "The Rubber House" is disclaimed apart from the mark as shown.

Class 1—Raw or Partly Prepared Materials

For Sheet Rubber and Rubber Tubing.

Class 35—Belting, Hose, Machinery Packing, and Nonmetallic Tires

For Industrial Hoses and Belts, Including Pneumatic Tool Hoses, Air Hoses, Water Hoses, Fire Hoses, Garden Hoses, Steam Hoses, and Conveyor Belts, Elevator Belts, and Transmission Belts.

Class 39—Clothing

For Rainsuits and Rubber Boots.

First use on or about July 1, 1961.

SN 260,204. Borg-Warner Corporation, Chicago, Ill. Filed Dec. 7, 1966.



Owner of Reg. Nos. 513,546, 787,366, and 793,503.

Class 1—Raw or Partly Prepared Materials

For Synthetic Resinous Materials for Use in Manufacturing.

First use on or prior to July 14, 1966.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Clutches, Universal Joints, Timing Chains, Timing Gears, Sprockets, Bearings, Water Pumps, and Motor Mounts.

First use on or prior to July 8, 1966.

Class 31—Filters and Refrigerators

For Refrigerators.

First use on or prior to Aug. 30, 1966.

SN 265,584. Sargent & Company (Delaware corporation), New Haven, Conn., assignee of Sargent & Company (Connecticut corporation), New Haven, Conn. Filed Feb. 28, 1967.

Owner of Reg. No. 98,697 and others.

SARGENT

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Door Pulls, Door Handles, Escutcheons, Push Plates, Letter-Box Plates, Key Plates, Thumb Knobs, Door Knobs, Door Knockers, Bolts for Doors and Shutters, Door Springs, Door Checks and Springs, Door Closers, Door Holders, Name Plates, Hasps, Number Plates, Door Stops, Push Bars, Door Fasts, Door Stays, Door Hooks, Door Fasteners, Door Catches, Sash Fasteners, Sash Centers, Sash Lifts, Sash Rollers and Sheaves, Blind Fasteners, Scuttle Fasteners, Sash Cord Irons, Transom Plates, Transom Chains, Transom Lifters, Cleats, Espognolette Bars, Drawer Knobs, Drawer Pulls, Drawer Handles, Chest Handles, Box Fasteners, Label or Card Plates, Brackets, and Hinges.

Class 25—Locks and Safes

For Locks, Latches, Keys, Padlocks, Strike Plates, Lock Escutcheons, Lock Cases, Lock Fronts, Door Knobs, Door Handles, and Locksets.

First use Apr. 13, 1960.

SN 265,672. Clairol Incorporated, New York, N.Y. Filed Mar. 1, 1967.

GENERATION

Class 51—Cosmetics and Toilet Preparations

For Hair Tinting, Dyeing and Coloring Preparation, Hair Lightener, Hair Groom, and Hair Conditioner.

Class 52—Detergents and Soaps

For Hair Shampoo.

First use Oct. 24, 1966.

SN 265,946. Asphalt Sealer Products Company, Inc., Columbus, Ohio. Filed Mar. 6, 1967.

ASPCO

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Motor-Driven Machines for Applying Viscous Sealing Compositions to Asphalt Pavements.

Class 29—Brooms, Brushes, and Dusters

For Hand-Operated Brushes for Applying, Spreading and Trimming Sealing Compositions on Pavement Surfaces.

First use Mar. 1, 1966.

SN 268,774. Sternco Industries, Inc., Harrison, N.J. Filed Apr. 10, 1967.

LONGLIFE

Owner of Reg. No. 674,270.

Class 2—Receptacles

For Fish Food Containers for Aquarium Tanks.

Class 50—Merchandise Not Otherwise Classified

For Hatchery Tanks Including Brine Shrimp Packs.

First use Dec. 14, 1966.

SN 270,312. The Gillette Company, Boston, Mass. Filed May 1, 1967.

NINE FLAGS

Owner of Reg. No. 820,466.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Razors and Razor Blades.
First use Mar. 21, 1967.

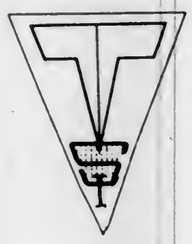
Class 51—Cosmetics and Toilet Preparations

For Shaving Cream, Hair Groom, and Deodorant for Personal Use.
First use Apr. 4, 1967.

Class 52—Detergents and Soaps

For Toilet Soap.
First use Apr. 4, 1967.

SN 278,559. Testing Systems, Inc., Glenside, Pa. Filed Aug. 18, 1967.



Class 6—Chemicals and Chemical Compositions

For Flaw Detection Materials—Namely, Liquid Penetrant, Magnetic Inspection Powder, Magnetic Inspection Liquid Concentrate, Developing Agents, and Emulsifiers.

Class 26—Measuring and Scientific Appliances

For Magnetic Crack Detector, Black Light Crack Detector, and Power Packs Therefor.

First use June 1, 1965.

SN 278,852. Percy Harms Corporation, Skokie, Ill. Filed Aug. 23, 1967.

SLIDE

Class 6—Chemicals and Chemical Compositions

For Layout Dyes and Rust and Corrosion Inhibitors.

Class 15—Oils and Greases

For Mold Release Compounds and Compositions.

First use Oct. 15, 1955.

SECTION 2

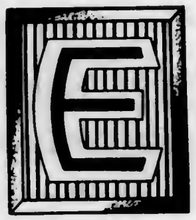
The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

SN 249,965. Exeter Bentgrass Association, Albany, Oreg. Filed July 11, 1966.



The lining on the drawing does not represent color, but reproduces a design feature of the mark.

For Grass Seed.
First use Aug. 26, 1965.

SN 256,489. Western Research & Scientific Laboratories, Inc., d.b.a. Western Research & Scientific Labs., Inc., Berkeley, Calif. Filed Oct. 14, 1966.

Friendly Fire Log

No claim is made to the words "Log" and "Fire" apart from the mark as shown.

For Composition Fireplace Logs.
First use July 15, 1966.

SN 260,568. National Distillers and Chemical Corporation, New York, N.Y. Filed Dec. 12, 1966.

HYTRANS

For Synthetic Rubber.
First use Nov. 4, 1966.

SN 261,570. Cerac, Incorporated, Butler, Wis. Filed Dec. 28, 1966.

EXOTHERM

For Powders and Wires for Bonding or Coating Metallic Articles by Plasma or Flame Spraying.
First use on or prior to Apr. 2, 1965.

SN 262,253. Lucille S. Antles, d.b.a. Antles Pollen Supplies, Wenatchee, Wash. Filed Jan. 10, 1967.



No claim is made to the word "Pollen" apart from the mark as shown.

For Live Pollen for Pollenating Plants.
First use on or about Apr. 1, 1950.

SN 262,591. Johnson-March Corporation, d.b.a. Triple E Co., Philadelphia, Pa. Filed Jan. 16, 1967.



For Litter for Small Animals Such as Cats.
First use Oct. 4, 1966.

SN 263,850. Sinclair-Koppers Company, Pittsburgh, Pa. Filed Feb. 2, 1967.

DYLEL

Owner of Reg. Nos. 631,551, 818,906, and others.
For Acrylonitrile-Butadiene-Styrene Plastic Resins.
First use Nov. 4, 1966.

SN 263,882. Allied Kid Company, Boston, Mass. Filed Feb. 3, 1967.

ZING

For Patent Leather.
First use Apr. 29, 1966.

SN 264,043. Dynamit Nobel Aktiengesellschaft, Troisdorf, Germany. Filed Feb. 6, 1967.

TROSIPLAST

Owner of German Reg. No. 820,359, dated May 7, 1966.
For Synthetic Plastics in Liquid Form and in the Form of Solutions, Emulsions, Pastes, Powders, Shavings, and Granulates; Synthetic Resinous Pressure Casting and Injection-Molding Compounds as Well as Casting Resins.

SN 264,103. Rexall Drug and Chemical Company, d.b.a. Fiberfil, Los Angeles, Calif. Filed Feb. 6, 1967.

METHACRYLAGLAS

Owner of Reg. No. 758,998.
For Reinforced Synthetic Resinous Injection-Molding Materials in Pellet or Granular Form.
First use Jan. 4, 1967.

SN 264,341. Rexall Drug and Chemical Company, d.b.a. Fiberfil, Los Angeles, Calif. Filed Feb. 9, 1967.

PROCON

For Reinforced Synthetic Resinous Injection-Molding Materials in Pellet or Granular Form.
First use Dec. 28, 1966.

SN 264,716. Allied Kid Company, Boston, Mass. Filed Feb. 15, 1967.

RETSINA

For Leather.
First use Sept. 16, 1965.

SN 276,709. Standard Milling Company, Kansas City, Mo. Filed July 24, 1967.

HICKORY RIVER

For Charcoal Briquets.
First use on or about Oct. 15, 1957.

Class 2 — Receptades

SN 233,821. Reppel & Vollmann, Kierspe, Westphalia, Germany. Filed Dec. 2, 1965.

Revolit

Priority claimed under Sec. 44(d) on German application filed June 12, 1965; Reg. No. 807,189, dated July 21, 1965.
For Household Crockery Made of Plastic—Namely, Dishes, Saucers, Plates, Cups, Cruets, and Containers for Liquid and Granular Goods.

SN 243,925. Studley Paper Company, Inc., Far Rockaway, N.Y. Filed Apr. 20, 1966.

DISGUISO

For Disposable Vacuum Cleaner Bags.
First use Mar. 17, 1966.

SN 243,926. Studley Paper Company, Inc., Far Rockaway, N.Y. Filed Apr. 20, 1966.

DUBL-VAC

For Disposable Vacuum Cleaner Bags.
First use Jan. 25, 1965.

SN 255,629. Keyes Fibre Company, Waterville, Maine. Filed Oct. 3, 1966.

POULTRY-PAK

Owner of Reg. No. 681,992.
For Folded Pulp Packing Trays.
First use May 3, 1958.

SN 271,778. East House Enterprises, Inc., New York, N.Y. Filed May 18, 1967.

east House

For Decorative Bags and Boxes.
First use Jan. 28, 1965.

SN 272,092. Ranco Container Products Limited, Burlington, Ontario, Canada. Filed May 22, 1967.

GARDEN-PAKS

For Bedding Plant Containers.
First use January 1964; in commerce October 1964.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

SN 265,332. Prince Gardner Company, Inc., St. Louis, Mo. Filed Feb. 23, 1967.

PRINCESS

Owner of Reg. Nos. 367,247 and 614,144.
For Ladies' Billfolds, French Purses, and Pocket Secretaries.
First use Feb. 10, 1967.

SN 266,423. Jacoby-Bender, Inc., Woodside, N.Y. Filed Mar. 10, 1967.

PARKEY

For Key Holders.
First use Jan. 4, 1967.

SN 267,758. Loyal Gift Products Inc., New York, N.Y. Filed Mar. 28, 1967.

PRO-STRIPE

For Luggage.
First use Mar. 6, 1967.

Class 4 — Abrasives and Polishing Materials

SN 246,762. The Drackett Company, Cincinnati, Ohio. Filed May 27, 1966.



For Floor Wax.
First use Sept. 7, 1965.

SN 246,763. The Drackett Company, Cincinnati, Ohio. Filed May 27, 1966.

New from Drackett

Owner of Reg. Nos. 303,123 and 775,589.
For Furniture Polish.
First use May 16, 1966; at least as early as January 1963 as to "Drackett"; Sept. 7, 1965, in a different form.

Class 5 — Adhesives

SN 266,745. Ercona Adhesives Ltd., Rexdale, Ontario, Canada. Filed Mar. 15, 1967.

ERCONA

For Translucent Thermoplastic Adhesive, One Use Thereof Being in the Furniture Industry for Attaching Wood and Plastic Veneer to Wood Edges; Rubber Base Adhesive for Securing Two Pieces or Articles of the Material Together and Such Articles May Be Wood, Metal, Plastic, or the Like, or Combinations of Same; and Polyurethane Adhesive Used Principally in the Shoe Trade.
First use Dec. 13, 1965; in commerce Dec. 13, 1965.

Class 6 — Chemicals and Chemical Compositions

SN 231,173. Moser Paper Company, Chicago, Ill. Filed Oct. 22, 1965.

Maliban

For Insect Spray.
First use January 1954.

SN 245,783. Water Treatment Corporation of America, Portland, Oreg. Filed May 16, 1966.

Watcoa

For Water Treating Chemicals for the Control of Corrosion, Scale, and Algae.
First use at least as early as Feb. 19, 1958.

SN 247,083. Technic, Inc., Cranston, R.I. Filed June 1, 1966.

TECHNIRHODIUM

For Rhodium Plating Solutions.
First use May 27, 1966.

SN 248,190. Electronic Space Products, Inc., Los Angeles, Calif. Filed June 14, 1966.

ESPI

For Chemicals and Chemical Compositions for the Electronic and Aerospace Industries.
First use Dec. 1, 1963.

SN 251,521. Kirk A. Dutton, D.D.S., Topeka, Kans. Filed Aug. 2, 1966.

MIRROR-CLEAR

For Chemical Composition for Use on Dental Mirrors To Prevent Fogging on the Part of Patients.
First use July 8, 1966.

SN 259,496. Whitford Chemical Corporation, West Chester, Pa. Filed Nov. 25, 1966.

WHITCON

For Powdered Lubricant Containing Polytetrafluoroethylene for Use in Dry Form, as Additives, or Dispersed in Solvents.
First use Apr. 8, 1966.

SN 259,950. Midlands Chemical Corporation, Madison, S. Dak. Filed Dec. 2, 1966.



Top Hat

For Room Fresheners, Cedar Closet Fresheners, Automobile Fresheners, Kitchen Fresheners, Bathroom Fresheners, Toilet Bowl Deodorants, and Diaper Pail Deodorants.
First use on or about Jan. 10, 1966.

SN 262,867. H. M. Royal, Incorporated, Trenton, N.J. Filed Jan. 19, 1967.

QUALITY ROYAL PRODUCTS

Without prejudice to its rights now existing or hereafter arising and for the purpose of this registration only, applicant makes no claim to the words "Quality Products" apart from the mark as shown.
For Sulfur; Accelerators and Retarders Used in Compounding Rubber; Petroleum Derived Plasticizers and Extenders for Use in Compounding Polymers; Repackaged Industrial Chemicals—Namely, Acids and Solvents; and Rubber Fillers—Namely, Calcium Carbonate.
First use Oct. 19, 1925.

SN 264,876. Peninsular Chemresearch, Inc., Gainesville, Fla. Filed Feb. 7, 1967.

PCR

For Research Chemicals—Namely, Fluorine Compounds, Silicon Compounds, and Miscellaneous Organic or Organo-Metallic Compounds for Laboratory and Manufacturing Use.
First use Nov. 23, 1966.

SN 264,918. The Drackett Company, Cincinnati, Ohio. Filed Feb. 17, 1967.

BOUTIQUE

For Air Freshener.
First use Dec. 12, 1966.

SN 265,359. Thompson-Hayward Chemical Company, Kansas City, Kans. Filed Feb. 23, 1967.

WOOL-DET

For Surfactant Used as an Industrial Wool Scouring Agent.
First use Dec. 16, 1966.

SN 267,263. The Ott Chemical Company, Muskegon, Mich. Filed Mar. 21, 1967.

Owner of Reg. No. 779,267.
For Organic Chemical Compounds.
First use Nov. 5, 1959.

SN 267,716. Bates Manufacturing Company, Incorporated, Lewiston, Maine. Filed Mar. 28, 1967.

AQUATROL

For Water and Stain Repellent Composition for Textiles, Fabrics, Rainwear, and Other Wearing Apparel.
First use Feb. 15, 1967.

SN 271,575. Diamond Alkali Company, Cleveland, Ohio. Filed May 16, 1967.

CHEXHEVE

For Silicate Drilling Fluid To Control the Disintegration of Heavy Shale and Water-Sensitive Formations in Oil Fields.
First use Apr. 27, 1967.

SN 277,869. United States Steel Corporation, Pittsburgh, Pa. Filed Aug. 9, 1967.

USS

Owner of Reg. No. 558,443.
For Sulphate of Iron, Maleic Anhydride, Phthalic Anhydride, Fumaric Acid, Ammonium Sulphate, Ammonium Nitrate, and Plasticizers.
First use 1939 on sulphate of iron.

Class 7 — Cordage

SN 258,134. N.V. Lankhorst Touwfabrieken, Sneek, Netherlands. Filed Nov. 7, 1966.

FRONTIER

For Baler and Binder Twine.
First use Oct. 7, 1966; in commerce Oct. 7, 1966.

SN 260,673. N.V. Lankhorst Touwfabrieken, Sneek, Netherlands. Filed Dec. 13, 1966.

DESERT ROSE

For Baler Twine.
First use Nov. 1, 1966; in commerce Nov. 1, 1966.

SN 269,169. The Caldwell Company, Inc., Rockford, Ill. Filed Apr. 14, 1967.

HOTFLEX

For Sling for Hoists.
First use Mar. 21, 1967.

SN 269,212. Phillips Petroleum Company, Bartlesville, Okla. Filed Apr. 14, 1967.

MAR-SHEEN

For Decorative Ribbon.
First use Oct. 28, 1966.

SN 271,779. East House Enterprises, Inc., New York, N.Y. Filed May 18, 1967.

east house

For Colored Twine, Yarn, and Ribbon for Gift Wrapping and Other Decorative Purposes.
First use Jan. 28, 1965.

Class 8 — Smokers' Articles, Not Including Tobacco Products

SN 261,244. Robert F. Winans, Doylestown, Pa. Filed Dec. 21, 1966.



For Smoking Pipes.
First use on or about Sept. 18, 1958.

SN 264,549. Jacques Kreisler Manufacturing Corporation, North Bergen, N.J. Filed Feb. 13, 1967.

VISI-TANK

For Cigarette Lighters.
First use Jan. 19, 1967.

SN 279,593. Elizabeth F. Adams and Anthony W. Du Pont, Jr. (partnership), Bristol, R.I. Filed Sept. 5, 1967.

"GO-GO-OUT"

For Cigarette Snuffers of Metal for Use in Automobiles and Other Vehicles, and Also for Use in the Office and Home.
First use Aug. 31, 1967.

Class 10 — Fertilizers

SN 219,118. Gulf Oil Corporation, Pittsburgh, Pa. Filed May 18, 1965.

Gulf

The drawing is lined for the colors orange and blue. Owner of Reg. Nos. 621,650, 742,211, and 743,637.
For Fertilizer.
First use at least as early as Feb. 28, 1965.

Class 12 — Construction Materials

SN 245,498. L'Electro-Refractaire, Paris, France. Filed May 12, 1966.

JARGAL

Owner of French Reg. No. 525,783, dated Nov. 26, 1964 (Seine); Natl. Inst. No. 235,886.
For Refractory Furnace Linings.

SN 260,607. Star Valley Lumber Co., Afton, Wyo. Filed Dec. 12, 1966.

☆ STAR ☆
STUDS

Applicant disclaims the word "Studs."
For Manufactured Lumber—Namely, Studs of Varying Lengths.
First use July 1, 1966.

SN 260,913. Acorn Structures, Inc., Concord, Mass. Filed Dec. 16, 1966.

NUTSHELL

For Prefabricated Vacation Houses.
First use Oct. 17, 1966.

SN 261,032. Ardex Chemie GmbH, Chemische Fabrik Witten, Witten-Annen, Germany. Filed Dec. 19, 1966.

ARDIT

Owner of German Reg. No. 817,269, dated July 21, 1962.
For Spackles for Floors and Walls, That Is, Adhesive and Filling Cement.

SN 275,417. Edward Hines Lumber Co., Chicago, Ill. Filed July 6, 1967.

ALL WEATHER 316

For Plywood.
First use May 15, 1967.

SN 280,581. Foseco Trading AG, Chur, Switzerland. Filed Sept. 18, 1967.

CONFAX

Priority claimed under Sec. 44(d) on Swiss Reg. No. 225,862, dated June 2, 1967.
For Chemical Compositions for Use as Heat and Sound Insulating Materials.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

SN 248,057. Shelby Corporation, Shelby, Ohio. Filed June 14, 1966.

DECOR

For Builders' Hardware—Namely, Door Closures and Related Door Fixtures.
First use Feb. 22, 1966.

SN 257,732. Taylor Plastics, Inc., Howell, Mich. Filed Nov. 1, 1966.

TP,I

For Articles Made of Plastic—Namely, Pipe, Pipe Fittings, Pipe Couplings, and Wiring Conduits.
First use Sept. 27, 1965.

SN 264,207. G & S Metal Products Co., Inc., Cleveland, Ohio. Filed Feb. 8, 1967.



For Cake Pans, Cookie Sheets, Coated Pans, and the Like.
First use in or about January 1964.

SN 265,509. The Fastron Co., Franklin Park, Ill. Filed Feb. 27, 1967.

FORM-FAST

For Screws.
First use December 1965.

SN 265,562. H. B. Sherman Manufacturing Company, Battle Creek, Mich. Filed Feb. 27, 1967.

DIAL MASTER

For Hose Nozzles, and Parts Thereof.
First use September 1964.

SN 265,563. H. B. Sherman Manufacturing Company, Battle Creek, Mich. Filed Feb. 27, 1967.

DIAL KING

For Hose Nozzles, and Parts Thereof.
First use September 1964.

SN 265,733. Progressive Metal Equipment, Inc., d.b.a. Progressive Metal Equipment Inc., Progressive Metal Equip't Inc., and Progressive Metal Equipment Incorporated, Philadelphia, Pa. Filed Mar. 1, 1967.

therm-a-creamer

Owner of Reg. No. 784,695.
For Cream Dispensers for Commercial Establishments.
First use Feb. 26, 1964.

SN 265,735. Ronard Industries, Inc., South Bend, Ind. Filed Mar. 1, 1967.

OLKEN BUCKET

For Screw Hooks, Connectors, Bolts, Nuts, Antenna Hardware, Screws, and Couplings.
First use Jan. 17, 1967, on screw hooks.

SN 265,881. American Cyanamid Company, Wayne, N.J. Filed Mar. 3, 1967.

CASCADE

Owner of Reg. No. 568,264.
For Shower Floors.
First use September 1962.

SN 266,204. Dresser Industries, Inc., Dallas, Tex. Filed Mar. 8, 1967.

STAB-CLAD

For Pipe Couplings.
First use Nov. 12, 1959.

SN 266,300. Barwood Manufacturing Corp., Everett, Mass. Filed Mar. 9, 1967.

BARLOK

Owner of Reg. No. 710,137 and others.
For Headed Fasteners With Sealing Washers.
First use Feb. 20, 1967.

SN 267,204. Tompkins Industries, Orange, Calif. Filed Mar. 20, 1967.

Skiters

For Tire Chains.
First use January 1967.

SN 267,945. William H. Harvey Company, Omaha, Nebr. Filed Mar. 30, 1967.

BOL-BOLTS

For Closet Bolt Kit for Fastening Floor-Mounted Closet Bowls to Cast Iron, Brass, or Plastic Floor Flanges.
First use January 1967.

SN 267,946. William H. Harvey Company, Omaha, Nebr. Filed Mar. 30, 1967.

BOL-CAPS

For Closet Screw Kit for Fastening Floor-Mounted Closet Bowls to Wood Floors, With or Without Closet Flanges.
First use January 1967.

SN 268,435. Southco, Inc., Lester, Pa. Filed Apr. 5, 1967.

LION

For Rotatable Stud Separable Fasteners and Component Parts Thereof.
First use Mar. 18, 1943.

SN 268,512. Milwaukee Faucets, Inc., Milwaukee, Wis. Filed Apr. 6, 1967.

LAVALIER

For Tub, Shower, and Sink Fixtures and Parts Thereof.
First use on or about Feb. 21, 1967, on sink fixtures.

SN 269,107. Rockwell-Standard Corporation, Pittsburgh, Pa. Filed Apr. 13, 1967.

SLANT

For Coil Springs.
First use Mar. 28, 1967.

Class 14—Metals and Metal Castings and Forgings

SN 245,199. Italsider S.p.A., Genoa, Italy. Filed May 9, 1966.

UNISMALT

Priority claimed under Sec. 44(d) on Italian application filed Nov. 12, 1965; Reg. No. 176,388, dated Feb. 28, 1966.
For Cold Rolled Metals—Namely, Cold Rolled Metals Treated To Facilitate the Reception on the Surfaces Thereof of Enamel Coatings, by Subjecting the Same to a Decarburizing Annealing Process.

SN 260,875. National Steel Corporation, Pittsburgh, Pa. Filed Dec. 15, 1966.

WEIRCHROME

Owner of Reg. Nos. 414,613 and 827,767.
For Corrosion-Resistant Steel Sheet and Strip.
First use Sept. 30, 1966.

Class 15—Oils and Greases

SN 253,136. Fleet-Wing Corporation, Cleveland, Ohio. Filed Aug. 25, 1966.



Owner of Reg. No. 319,772.
For Motor Oil and Automatic Transmission Fluid.
First use May 31, 1966.

SN 260,118. Village Bath Products, Inc., Minnetonka, Minn. Filed Dec. 2, 1966.

candle drops

The word "Candle" is disclaimed apart from the mark as shown.
For Aromatic Ingredients Incorporated in Candles.
First use Sept. 23, 1966.

SN 265,049. Continental Oil Company, Ponca City, Okla. Filed Feb. 20, 1967.

SUPER-STA

For Lubricating Greases.
First use Oct. 11, 1966.

SN 265,050. Continental Oil Company, Ponca City, Okla. Filed Feb. 20, 1967.

EL MAR

The English translation for the words "El Mar" means "the sea."
For Lubricating Oils.
First use Oct. 20, 1966.

SN 266,499. Berg Mfg. & Sales Co., Des Plaines, Ill. Filed Mar. 13, 1967.

BERGLUBE

Owner of Reg. No. 753,217.
For Lubricants Sold in a Tube, for Use on Valves and Spring Brakes in Vehicular Brake Systems.
First use November 1960.

SN 268,464. The American Oil Company, Chicago, Ill. Filed Apr. 6, 1967.



The drawing is lined for the colors red and blue. Owner of Reg. No. 167,769 and others.
For Gasoline, Motor Fuel, Naphtha, Lubricating Oil and Grease, and Inedible Oils for Heating and Cooking.
First use July 1, 1946.

SN 268,465. The American Oil Company, Chicago, Ill. Filed Apr. 6, 1967.



Owner of Reg. No. 167,769 and others.
For Gasoline, Motor Fuel, Naphtha, Lubricating Oil and Grease, and Inedible Oils for Heating and Cooking.
First use July 1, 1946.

SN 281,017. Strauss Stores Corporation, Maspeth, N.Y. Filed Sept. 25, 1967.

TRAVELENE

Owner of Reg. No. 372,775.
For Motor Oil.
First use 1932.

Class 16—Protective and Decorative Coatings

SN 265,893. Ellis Paint Company, Inc., Long Beach, Calif. Filed Mar. 3, 1967.

SHIP-COTE

Owner of Reg. Nos. 428,607 and 558,420.
For Ready Mixed Paints, Varnishes, and Paint Enamels.
First use June 1, 1937.

SN 267,032. General Waterproofing Corporation, Warren, Ohio. Filed Mar. 17, 1967.

Plugit

Owner of Reg. No. 386,038.
For Water Resisting Cement Paints and Putties.
First use Feb. 1, 1932.

SN 267,064. Salem Paint Inc., Hackensack, N.J. Filed Mar. 17, 1967.

ALMART

For Ready Mixed Paints.
First use May 3, 1966.

Class 17—Tobacco Products

SN 265,210. The Pinkerton Tobacco Co., Toledo, Ohio. Filed Feb. 21, 1967.

RED MAN

For Chewing Tobacco.
First use on or about June 2, 1905.

SN 266,136. The American Tobacco Company, New York, N.Y. Filed Mar. 7, 1967.

NCIW

For Cigars.
First use June 1963.

SN 272,786. Philip Morris Incorporated, New York, N.Y. Filed June 1, 1967.

ROY
CIGARETTES

The word "Cigarettes" is disclaimed apart from the mark as shown. Owner of Reg. No. 371,352.
For Cigarettes.
First use May 24, 1967.

SN 275,447. P. Lorillard Company, New York, N.Y. Filed July 6, 1967.

CENTURY

Owner of Reg. No. 438,862.
For Cigarettes.
First use June 22, 1967.

SN 280,292. The American Tobacco Company, New York, N.Y. Filed Sept. 14, 1967.

PEAK

For Cigarettes.
First use Sept. 5, 1967.

SN 280,293. The American Tobacco Company, New York, N.Y. Filed Sept. 14, 1967.

LIKE

For Cigarettes.
First use Sept. 5, 1967.

Class 18—Medicines and Pharmaceutical Preparations

SN 246,912. Knoll A.-G. Chemische Fabriken, Ludwigshafen (Rhine), Germany. Filed May 31, 1966.

BARBONIN

Owner of German Reg. No. 137,571, dated Dec. 6, 1910.
For Pharmaceutical Preparations—Namely, an Antispasmodic Agent.

SN 255,902. Istituto Farmochimico Falorni, Florence, Italy. Filed Oct. 6, 1966.

O-DUE

Priority claimed under Sec. 44(d) on Italian application filed June 15, 1966; Reg. No. 181,824, dated Sept. 22, 1966.
For Medicinal Proprietary Preparation for the Treatment of Arterial Diseases.

SN 258,693. Sheldon M. Hall, d.b.a. Hy G Laboratories, Short Hills, N.J. Filed Nov. 15, 1966.

HY GEE

For Medicated Antiseptic Solution To Be Applied to Toothbrush Before and After Use, as a Germicide.
First use Oct. 11, 1966.

SN 258,711. Naremco, Inc., Springfield, Mo. Filed Nov. 15, 1966.

FERREQUINA

For Feed Supplement for Treatment or Prevention of Iron Deficiency Anemia in Horses.
First use Apr. 20, 1965.

SN 260,168. Merck & Co., Inc., Rahway, N.J. Filed Dec. 6, 1966.

LACRICARPINE

For Medicinal Preparation for Ophthalmic Use.
First use Nov. 1, 1966.

SN 260,927. Eli Lilly and Company, Indianapolis, Ind. Filed Dec. 16, 1966.

HETRUM

For Anticholinergic Agent Comprising Heteronium Bromide.
First use Dec. 1, 1966.

SN 261,602. Texas Pharmacal Company, San Antonio, Tex. Filed Dec. 28, 1966.

LUBRICORT

For Preparations for the Treatment of Dermatosis.
First use Nov. 29, 1966.

SN 262,670. Bristol-Myers Company, New York, N.Y. Filed Jan. 17, 1967.

OASIS

For Oral Antiseptic Mouthwash for Soothing Temporary Relief of Minor Sore Throat and Mouth Irritations.
First use Oct. 11, 1966.

SN 262,676. Bristol-Myers Company, New York, N.Y. Filed Jan. 17, 1967.

SENSOR

For Oral Antiseptic Mouthwash for Soothing Temporary Relief of Minor Sore Throat and Mouth Irritations.
First use Sept. 20, 1966.

SN 262,677. Bristol-Myers Company, New York, N.Y. Filed Jan. 17, 1967.

CENSOR

For Oral Antiseptic Mouthwash for Soothing Temporary Relief of Minor Sore Throat and Mouth Irritations.
First use Sept. 20, 1966.

SN 262,679. Bristol-Myers Company, New York, N.Y. Filed Jan. 17, 1967.

DARE

For Oral Antiseptic Mouthwash for Soothing Temporary Relief of Minor Sore Throat and Mouth Irritations.
First use Sept. 22, 1966.

SN 266,443. Naremco, Inc., Springfield, Mo. Filed Mar. 10, 1967.

IRON HORSE

For Preparation for Treatment or Prevention of Iron Deficiency Anemia in Horses.
First use Feb. 23, 1967.

SN 266,612. Brunswig Drug Company, El Segundo, Calif. Filed Mar. 13, 1967.

rw
rabin-winters

For Pharmaceutical Preparations.
First use Aug. 11, 1966.

SN 274,682. Texas Pharmacal Company, San Antonio, Tex. Filed June 26, 1967.

AMCORT

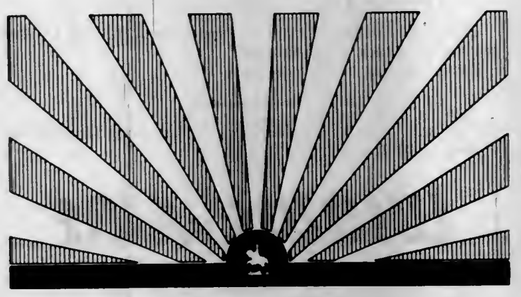
For Steroid Antibiotic Cream.
First use June 12, 1967.

SN 277,566. Organon Inc., West Orange, N.J. Filed Aug. 4, 1967.

DURADEXON

For Steroid Hormone Preparation.
First use July 24, 1967.

SN 280,836. Allied Mills, Inc., Chicago, Ill. Filed Sept. 21, 1967.



The drawing is lined for the color red, but color is not a part of the mark. Owner of Reg. No. 241,385.
For Formulated Antibiotic Vitamin Supplement for Livestock.
First use May 16, 1967.

Class 19—Vehides

SN 248,693. Arthur B. Fletcher, d.b.a. Fletcher Marine Products, Cherry Hill, N.J. Filed June 22, 1966.

JERSEY ANGEL

For Sailboats.
First use June 4, 1965.

SN 248,694. Arthur B. Fletcher, d.b.a. Fletcher Marine Products, Cherry Hill, N.J. Filed June 22, 1966.

JERSEY DEVIL

For Sailboats.
First use Oct. 13, 1965.

SN 259,899. The Commodore Corporation, Omaha, Nebr. Filed Dec. 2, 1966.

Sunset

For Travel Trailers, Pick-Up Campers, Mobile Homes, and House Trailers.
First use Nov. 17, 1966.

SN 263,492. Sumitomo Metal Industries, Ltd., Higashi-ku, Osaka, Japan. Filed Jan. 27, 1967.

SUMIRIDE

For Air Spring for Bogie Truck.
First use as early as Dec. 31, 1961; in commerce at least as early as Aug. 12, 1966.

SN 263,759. General Motors Corporation, Detroit, Mich. Filed Feb. 1, 1967.

SKYLARK

For Automobiles.
First use July 7, 1952.

SN 263,967. Joseph G. Verschingel, d.b.a. Electrical Machinery Co., Mosier, Oreg. Filed Feb. 3, 1967.

DU-ALL STAIRMOBILE

For Hand Trucks Having Powered Means Thereon for Propelling the Truck Up Stairways.
First use May 1964.

SN 264,119. W. W. Windle Company, Millbury, Mass. Filed Feb. 6, 1967.

WINDLE-AIRE

For Boats.
First use July 19, 1966.

SN 264,219. Leisure Time Products, Inc., Nappanee, Ind. Filed Feb. 8, 1967.

LEISURE TIME

For Recreational Vehicles—Namely, Pick-Up Campers and Travel Trailers.
First use Nov. 5, 1965.

SN 264,245. Redman Industries, Inc., Dallas, Tex. Filed Feb. 8, 1967.

SOUTHWOOD

For Mobile Homes.
First use Dec. 21, 1965.

SN 264,247. Redman Industries, Inc., Dallas, Tex. Filed Feb. 8, 1967.

SPARLITE

For Mobile Homes.
First use May 4, 1962.

SN 272,415. Southern Fiber Glass Products, Inc., Sanford, Fla. Filed May 25, 1967.

SEAQUEEN

For Boats (Inboard and Outboard).
First use at least as early as May 5, 1967.

SN 272,417. Southern Fiber Glass Products, Inc., Sanford, Fla. Filed May 25, 1967.

MONTE CARLO

For Boats (Inboard and Outboard).
First use at least as early as May 3, 1967.

SN 272,419. Southern Fiber Glass Products, Inc., Sanford, Fla. Filed May 25, 1967.

TORNADO

For Boats (Inboard and Outboard).
First use at least as early as May 5, 1967.

SN 272,420. Southern Fiber Glass Products, Inc., Sanford, Fla. Filed May 25, 1967.

TRADEWINDS

For Boats (Inboard and Outboard).
First use at least as early as May 3, 1967.

SN 278,294. Formula I Enterprises, Inc., New York, N.Y. Filed Aug. 15, 1967.



For Automobile Steering Wheels.
First use Mar. 31, 1966.

Class 20—Linoleum and Oiled Cloth

SN 252,854. Kentile Floors Inc., Brooklyn, N.Y. Filed Aug. 22, 1966.

CHANTILLY

For Vinyl Asbestos Tile for Floor and Walls.
First use Oct. 9, 1964.

SN 252,855. Kentile Floors Inc., Brooklyn, N.Y. Filed Aug. 22, 1966.

BEAUSHARD

Owner of Reg. No. 805,043.
For Floor and Wall Coverings in Tile and Other Forms.
First use Sept. 16, 1965.

Class 21—Electrical Apparatus, Machines, and Supplies

SN 233,866. The Barkelew Electric Manufacturing Company, Middletown, Ohio. Filed Dec. 3, 1965.



For Electrical Switches, and Parts Therefor.
First use Apr. 14, 1961.

SN 241,739. Bender Electronics Corporation, Maumee, Ohio. Filed Mar. 24, 1966.

BENCO-LITE

For Stroboscopic Ignition Timing Lights, and Custom Built Electronic Equipment Comprising Adjustable Voltage Rectifier Power Supplies and Parts Thereof, Not Used in the Communication Field.
First use May 1, 1962.

SN 245,773. Trimac Engineering, Inc., Salem, Mass. Filed May 16, 1966.

DRI-BOOT

For Electrical Heater Unit for Insertion in Articles of Footwear.
First use Mar. 1, 1966.

SN 247,612. National Automotive Parts Association, Chicago, Ill. Filed June 8, 1966.

MONOLINE

For Electric Storage Batteries.
First use Feb. 24, 1966.

SN 253,455. Sulzer Brothers Limited, Winterthur, Switzerland. Filed Aug. 30, 1966.

SULZER

Owner of U.S. Reg. Nos. 528,521, 616,842, and others.
For Electrical and Electronic Measuring, Guidance, and Control Apparatus for Use in Power Generation and Distribution, Production Control and Supervision, Production Machinery, Process Engineering, Civil Engineering and Transportation, Other Than Radio, Television and Scientific Laboratory Apparatus, and Parts Thereof.
First use 1934; in commerce 1956.

SN 254,790. Lester Controls Corporation, New York, N.Y. Filed Sept. 20, 1966.

PORTATROL

For Electronic Circuit Controls for Switching Radio, Television, Communications, Appliances, and for Controlling and Dimming Lights.
First use Aug. 31, 1966.

SN 254,791. Lester Controls Corporation, New York, N.Y. Filed Sept. 20, 1966.

PORTOSWITCH

For Electronic Circuit Controls for Switching Radio, Television, Communications, Appliances, and for Controlling and Dimming Lights.
First use Aug. 31, 1966.

SN 260,272. Newell Mfg. Co., Freeport, Ill. Filed Dec. 7, 1966.

SILENT DRAW

For Drapery Hardware—Namely, Drapery Control Motors.
First use 1961.

SN 261,085. The Jay International Corp., Palatine, Ill. Filed Dec. 19, 1966.

AUTOMARK

Owner of Reg. No. 809,207.
For Sparkplugs.
First use Sept. 19, 1966.

SN 262,056. Nicholl Brothers, Inc., Kansas City, Mo. Filed Jan. 6, 1967.

LITE-OF-THE-PARTY

For Self-Righting, Battery Operated Portable Light.
First use Sept. 24, 1966.

SN 269,296. Det Store Nordiske Telegraf-Selskab (Aktieselskab), Copenhagen, Denmark. Filed Apr. 17, 1967.

STORNO

Owner of Danish Reg. No. 1,926, dated Dec. 7, 1946.
For Radio Transmitters and Receivers.

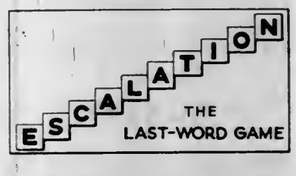
SN 269,297. Det Store Nordiske Telegraf-Selskab (Aktieselskab), Copenhagen, Denmark. Filed Apr. 17, 1967.

STORNOPHONE

Owner of Danish Reg. No. 1,778, dated July 30, 1960.
For Radio Transmitters and Receivers.

Class 22—Games, Toys, and Sporting Goods

SN 231,570. Stanley Joseloff, Westport, Conn. Filed Oct. 24, 1965.



The phrase "The Last-Word Game" is disclaimed apart from the mark as shown.
For Equipment Sold as a Unit for Playing a Board Game.
First use Sept. 30, 1965.

SN 250,768. The Geo. A. Reach Company, Cincinnati, Ohio. Filed July 21, 1966.



For Sporting and Game Equipment—Namely, Protective Football and Baseball Equipment, Game Balls, Boxing Gloves, Striking Bags, Baseball Bats and Bases, Tennis and Badminton Racquets, and Basketball Goals.
First use 1912.

SN 253,139. Gateway Promotions, Inc., St. Louis, Mo. Filed Aug. 25, 1966.

"MYSTERY TIC-TAC-TOE"

For Tickets and Ticket Savers for Use by Retail Outlets To Promote and Stimulate the Sale of Their Goods Through Sales Incentive Games and Trade Promotion Programs.
First use Feb. 10, 1964.

SN 254,295. Robert M. Leventhal, Los Angeles, Calif. Filed Sept. 12, 1966.

FREAKOUT

For Novelty Items—Namely, Playing Cards, Dolls, Balls, Dice, Mechanical Toys, Rubber Toys, Puzzles, and Equipment or Apparatus Sold as a Unit for Playing Board Type Parlor Games.
First use Sept. 8, 1966.

SN 255,979. Richard H. Higgins, Hialeah, Fla. Filed Oct. 7, 1966.

AN EDUCITING GAME

No claim of exclusive right is made to "Game" for the goods recited.
For Equipment (or Apparatus) Sold as Units for Playing Educational-Type Games.
First use July 27, 1964.

SN 256,260. Allgemeiner Zentralverein zur Forderung Schopferischen Schaffens, Salzburg, Austria. Filed Oct. 12, 1966.

ARADO

Owner of Austrian Reg. No. 54,915, dated June 24, 1965.
For Metal and Light-Metal Fittings for Sporting Equipment—Namely, Strip-Metal Parts and Section Metal Parts for the Manufacture of Skis, Sledge Runners, Ski-Bindings, Ski Tip Protectors, Ski-Tail Protectors, Ski Top Edges, Ski Sides, Ski Bases, Ski Tops, and Ski Edges.

SN 257,068. William McKusick, La Jolla, Calif. Filed Oct. 24, 1966.

WINDANSEA

For Surfboards.
First use on or about June 25, 1963.

SN 257,405. Random Consumer Products Limited, Toronto, Ontario, Canada. Filed Oct. 27, 1966.

HI-BALL

Priority claimed under Sec. 44(d) on Canadian application filed May 12, 1966; Reg. No. 149,106, dated Jan. 27, 1967. For the purposes of registration no claim is made to the exclusive right to use "Ball" apart from the mark, but the applicant waives none of its common law rights therein.
For Golf Ball Dispensers.

SN 260,109. Vornado, Inc., Garfield, N.J. Filed Dec. 5, 1966.

SWISSLANDER

The English translation of the German word "Swisslander" is "a Swiss person."
For Snow Skis.
First use in or about September 1965.

SN 260,110. Vornado, Inc., Garfield, N.J. Filed Dec. 5, 1966.

LUFTMEISTER

The English translation of the German word "Luftmeister" is "airmaster."
For Snow Skis.
First use in or about September 1965.

SN 261,536. Union Steel Chest Corporation, Le Roy, N.Y. Filed Dec. 27, 1966.

PORTA-LITE

For Lighted Fishing Tackle Box.
First use July 1966.

SN 263,363. James E. Donaldson, d.b.a. Putt Trac Golf Sales, Fort Lauderdale, Fla. Filed Jan. 26, 1967.

PUTT TRAC

For Device for Teaching and Practicing Golf Putting.
First use on or about Dec. 8, 1966.

SN 264,736. The General Tire & Rubber Company, Akron, Ohio. Filed Feb. 15, 1967.

PENNSYLVANIA

Owner of Reg. No. 513,266.
For Tennis Balls, Hand Balls, Toy Play Balls, Golf Balls, and Shuttlecocks.
First use 1913.

SN 265,661. J. Swedlin, Inc., d.b.a. Gund Manufacturing Company, Brooklyn, N.Y. Filed Feb. 28, 1967.

SNIFFLES 'N SNEEZES

For Stuffed Toys.
First use Feb. 15, 1967.

SN 265,901. Ideal Toy Corporation, Hollis, N.Y. Filed Mar. 3, 1967.

SLAP TRAP

For Parts Sold as a Game.
First use Feb. 15, 1967.

SN 266,151. Josef Fischer, d.b.a. Sportartikelerzeugung, Ried im Innkreis, Upper Austria, Austria. Filed Mar. 7, 1967.

FISCHER

Owner of U.S. Reg. No. 738,545.
For Skis (Not Including Water Skis).
First use at least by 1925; in commerce September 1955.

SN 266,235. Kebek Industries, Inc., Knoxville, Tenn. Filed Mar. 8, 1967.

WOOD-HOOD

For Golf Club Head Covers.
First use Jan. 3, 1967.

SN 267,369. Wilson Sporting Goods Co., River Grove, Ill., assignee of Wilson Sporting Goods Co., River Grove, Ill. Filed Mar. 22, 1967.

TOP NOTCH

Owner of Reg. Nos. 329,260, 749,728, and 775,702.
For Golf Balls.
First use May 13, 1935.

SN 267,618. De Luxe Topper Corporation, Elizabeth, N.J. Filed Mar. 27, 1967.

FAT SAM

For Equipment for Playing a Board Game.
First use Feb. 20, 1967.

SN 267,960. Louis Marx & Co., Inc., New York, N.Y. Filed Mar. 30, 1967.

FIGHTING EAGLE

For Toy Figures and Accessories Therefor.
First use Feb. 17, 1967.

SN 267,961. Louis Marx & Co., Inc., New York, N.Y. Filed Mar. 30, 1967.

COMANCHE

For Toy Horses and Accessories Therefor.
First use Feb. 17, 1967.

SN 268,065. Pflueger Corporation, Akron, Ohio. Filed Mar. 31, 1967.

International

For Rods, Reels, Rod and Reel Combinations, Lines, Hooks, and Baits.
First use on or about Jan. 16, 1967.

SN 268,581. Columbia Industries, Inc., San Antonio, Tex. Filed Apr. 7, 1967.



For Bowling Balls.
First use Feb. 23, 1967.

SN 268,778. J. Swedlin, Inc., d.b.a. Gund Mfg. Co., Brooklyn, N.Y. Filed Apr. 10, 1967.

TING-A-LING

For Stuffed Toys.
First use Mar. 16, 1967.

SN 268,780. J. Swedlin, Inc., d.b.a. Gund Mfg. Co., Brooklyn, N.Y. Filed Apr. 10, 1967.

DING-A-LING

For Stuffed Toys.
First use Mar. 16, 1967.

SN 268,784. J. Swedlin, Inc., d.b.a. Gund Mfg. Co., Brooklyn, N.Y. Filed Apr. 10, 1967.

RING-A-TING

For Stuffed Toys.
First use Mar. 16, 1967.

SN 268,989. Parker Brothers, Inc., Salem, Mass. Filed Apr. 12, 1967.

COUP D'ETAT

The French words "Coup d'Etat" in English mean "a sudden decisive exercise of localized or concentrated force unseating the personnel of a government."
For Equipment for Use in Playing a Card Game.
First use Dec. 9, 1966.

SN 269,041. Alexander Doll Company, Inc., d.b.a. Madame Alexander, New York, N.Y. Filed Apr. 13, 1967.

"CARROT TOP"

For Dolls.
First use Mar. 14, 1967.

SN 269,847. Barton Agencies Inc., Vancouver, British Columbia, Canada. Filed Apr. 24, 1967.

THE GREEN AVENGER

For Toy Pistols.
First use Dec. 8, 1966; in commerce Dec. 8, 1966.

SN 269,882. Hassenfeld Bros Inc., Pawtucket, R.I. Filed Apr. 24, 1967.

bangle dangles

For Toy Set for Making Jewelry.
First use on or about Feb. 27, 1967.

SN 269,888. Hassenfeld Bros Inc., Pawtucket, R.I. Filed Apr. 24, 1967.

Take-a-long

For Toy Embroidery Set.
First use on or about Feb. 27, 1967.

SN 269,982. Everlast World's Boxing Headquarters Corporation, Bronx, N.Y. Filed Apr. 25, 1967.

NEVATEAR

For Gymnasium Mats.
First use Oct. 15, 1961.

SN 274,149. Mattel, Inc., Hawthorne, Calif. Filed June 19, 1967.

LORELEI LOCKET

The mark is fanciful, and is not known to refer to any particular individual. No claim of exclusive right is made to the word "Locket," apart from the mark as shown, for the goods recited. Owner of Reg. No. 825,252.
For Dolls, Doll Clothing, and Doll Accessories.
First use May 29, 1967.

SN 274,158. Mattel, Inc., Hawthorne, Calif. Filed June 19, 1967.

LOTTIE LOCKET

The mark is fanciful, and is not known to refer to any particular individual. No claim of exclusive right is made to the word "Locket," apart from the mark as shown, for the goods recited.
For Dolls, Doll Clothing, and Doll Accessories.
First use May 29, 1967.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

SN 235,299. Heimlich Brothers, Inc., New York, N.Y. Filed Dec. 27, 1965.

MAGNA-KING

For Sewing Machine Guides.
First use Mar. 10, 1965.

SN 238,162. Bopparder Maschinenbaugesellschaft m.b.H. (Bomag), Boppard (Rhine), Germany. Filed Feb. 7, 1966.

BOMAG

Owner of German Reg. No. 725,877, dated June 8, 1959.
For Vibratory Rollers and Parts Thereof.
First use May 27, 1958; in commerce July 7, 1959.

SN 252,541. J. I. Case Company, Racine, Wis. Filed Aug. 17, 1966.

CHISEL-PLANTER

For Tractor-Drawn Agricultural Implements — Namely, Discs, Plows, Cultivators; and Seed, Insecticide, Herbicide, and Fertilizer Dispensers.
First use Mar. 15, 1965.

SN 255,632. Leverage Tools, Inc., Hastings, Nebr. Filed Oct. 3, 1966.

LEVER WRENCH

The words "Lever" and "Wrench" are disclaimed apart from the mark as shown. The drawing is lined for the color red.
For Hand Tools—Namely, Self-Adjusting Pliers.
First use Aug. 3, 1966.

SN 257,838. Faull & Son Tool & Die Company, Niles, Ohio. Filed Nov. 3, 1966.

UNI-BEND

For Tube Bending Apparatus and Parts Thereof.
First use on or about Feb. 19, 1964.

SN 257,839. Faull & Son Tool and Die Company, Niles, Ohio. Filed Nov. 3, 1966.

UNI PAC

For Hydraulic Presses and Parts Thereof.
First use on or about Oct. 21, 1966.

SN 262,789. The Hedman Company, Chicago, Ill. Filed Jan. 18, 1967.

STENOPRINT

For Shorthand Writing Machine.
First use Jan. 12, 1967.

SN 263,184. John R. Kovar Mfg. Co., Inc., Anoka, Minn. Filed Jan. 24, 1967.

CONE-COIL

For Spring Teeth for Harrows.
First use on about Oct. 25, 1966.

Class 26—Measuring and Scientific Appliances

SN 248,682. American Photocopy Equipment Company, Evanston, Ill. Filed June 22, 1966.

COMPEN—SPACER

For Compensating Polar Planimeters.
First use Apr. 28, 1964.

SN 250,236. Balcar, Paris, France. Filed July 14, 1966.

ELLIPTICA

For Electronic Flash and Exposure Metering Apparatus and Accessories for Photography and Cinematographic Screens.
First use May 1, 1965; in commerce May 1, 1965.

SN 251,071. Physio-Control Corporation, Seattle, Wash. Filed July 26, 1966.

GROUND 'A' LERT

The word "Ground" is disclaimed apart from the mark as a whole.
For Electrical Power Control and Ground Absence Indicating Apparatus.
First use Feb. 1, 1966.

SN 253,453. Showcase Programatic, Inc., New York, N.Y. Filed Aug. 30, 1966.

SHOWCASE PROGRAMATIC

For Audio-Visual Programmed Projection and Presentation Equipment, Including One or More, Sound Recordings, Slide Projection Equipment, Movie Projector Equipment, Manual and Automatic Control and Programming Equipment.
First use on or about June 25, 1966.

SN 254,434. Julius N. Cayo, Benton Harbor, Mich. Filed Sept. 14, 1966.

K·O. SPEED

KAL-KO-LATOR

For Manually Operated Device for Computing Withholding Tax and the Like.
First use Sept. 28, 1964.

SN 255,364. Textron, Inc., Bridgeport, Conn. Filed Sept. 28, 1966.



For Gas Meters.
First use Sept. 27, 1966.

SN 256,017. Tideland Signal Corporation, Houston, Tex. Filed Oct. 7, 1966.

AUDIOBEAM

For Marine Navigational Aid Device of the Type Emitting Audible Signals.
First use on or before Aug. 11, 1966.

SN 256,995. The Budd Company, Philadelphia, Pa. Filed Feb. 21, 1966.

METALFILM

Owner of Reg. No. 769,726.
For Printed Circuit Strain Gages.
First use at least as early as October 1957.

SN 260,603. Soss Manufacturing Company, Detroit, Mich. Filed Dec. 12, 1966.

VOLT-PROBE

For Voltage Testers.
First use Nov. 11, 1966.

SN 260,989. Ing. C. Olivetti & C., S.p.A., Ivrea, Italy. Filed July 18, 1966.

summa PRIMA

Owner of U.S. Reg. Nos. 689,877, 689,878, and 700,132.
For Office Machines in General—Namely, Adding and Calculating Machines, and Parts Thereof.
First use March 1960; in commerce February 1961.

SN 263,218. Thiokol Chemical Corporation, Bristol, Pa. Filed Jan. 24, 1967.

THIOMOLD

Owner of Reg. Nos. 273,385, 781,584, and others.
For Molds for Molding Tensile Strength Test Specimens.
First use May 1966.

SN 263,224. Gramercy Guild Group, Inc., Denver, Colo. Filed Jan. 9, 1967.



For Mechanical Drawing Instruments—Namely, Compasses, French Curves, Dividers, Ruling Pens, Bow Instruments, Proportional Dividers, Triangles, and Scales.
First use on or about July 1, 1955.

SN 263,515. Alpa Corporation, Provo, Utah. Filed Jan. 30, 1967.

ALPASCOPE

For Light Tolerance Measuring Device.
First use Feb. 8, 1966.

SN 270,205. The Hilsinger Corporation, Plainville, Mass. Filed Apr. 28, 1967.

EYECESSORIES

Owner of Reg. Nos. 802,650 and 674,580.
For Ophthalmic Mountings—Namely, Nose Pads, Temple Pads, Temple Hinge Rings, Temple Pocket Clips, Eyeglass Mounting Bracket, and Eyeglass Cases.
First use Mar. 29, 1967.

SN 271,568. George Stadler, d.b.a. Vulcan Photo Engraving Co., New York, N.Y. Filed May 16, 1967.

VULCAMATIC

For Photographic Cameras for the Graphic Industry.
First use August 1952.

SN 276,055. Woodward Industries, Inc., Atlanta, Ga. Filed July 14, 1967.



For Calculating Device for Computing the Proportions of Cementitious Mixtures.
First use June 19, 1967.

SN 277,246. Copystatics Manufacturing Corporation, Miami Lakes, Fla. Filed Aug. 1, 1967.

COPYSTAT 500

Owner of Reg. No. 297,573.
For Electrostatic Copying Machines.
First use Apr. 24, 1967.

Class 27 — Horological Instruments

SN 262,701. E. Gunzinger & Co., Neuchatel, Switzerland, Filed Jan. 17, 1967.

SWISS EMPEROR

Applicant disclaims exclusive rights in the term "Swiss" apart from the mark as shown. Owner of Swiss Reg. No. 213,922, dated Sept. 15, 1965.
For Watches and Parts of Watches of Swiss Origin.

Class 28 — Jewelry and Precious-Metal Ware

SN 246,433. Associated Barr Stores, Inc., d.b.a. Barr's, and Barr's Jewelers, Philadelphia, Pa. Filed May 24, 1966.

Carlisle

For Watches, Parts Thereof, and Jewelry.
First use May 18, 1956.

SN 247,518. Orla Eggert Rasmussen, d.b.a. Flora Danica Jewelry, Copenhagen-Valby, Denmark. Filed June 7, 1966.

Flora Danica

The translation of the words "Flora Danica" is "Danish plants." No claim is made to exclusive use of the word "Danica" apart from the mark as a whole. Owner of Danish Reg. No. 2,216, dated Oct. 5, 1963.
For Jewelry.
First use Aug. 10, 1952; in commerce Mar. 21, 1962.

SN 270,418. Rocket Jewelry Box, Inc., Bronx, N.Y. Filed May 1, 1967.

"PIN-UP"

For Jewelry Display Holders.
First use January 1967.

SN 271,279. Oneida Ltd., Oneida, N.Y. Filed May 11, 1967.

HUNTINGTON

For Silverplated Holloware.
First use Dec. 4, 1964.

SN 271,280. Oneida Ltd., Oneida, N.Y. Filed May 11, 1967.

ROYAL PROVINCIAL

For Silverplated Holloware and Flatware.
First use Oct. 4, 1966.

SN 271,714. The Kinney Company, Providence, R.I. Filed May 17, 1967.

KINNEY

For Jewelry.
First use in or about 1914.

SN 271,723. Pinta Products, Inc., Providence, R.I. Filed May 15, 1967.



Owner of Reg. No. 759,204.
For Jewelry.
First use on or about Apr. 23, 1967.

SN 281,008. Alma M. Kemble, d.b.a. Kemble Lapidaries, Kenmore, N.Y. Filed Sept. 25, 1967.

SWITCHIES

For Tie Tacks and Earrings Having a Replaceable Dangle.
First use Aug. 10, 1966.

Class 29 — Brooms, Brushes, and Dusters

SN 266,020. The Drackett Company, Cincinnati, Ohio. Filed Mar. 6, 1967.

LIGHT & EASY

For Sponge Mop.
First use Nov. 15, 1966.

SN 267,240. Gem Incorporated, Byhalia, Miss. Filed Mar. 21, 1967.

DUSTRAP

Owner of Reg. No. 820,065.
For Sponge Mops, Dust Mops, Dust Cloths, Toy Mops, Wet Mops and Wet Mop Heads, and Wax Applicators.
First use May 16, 1966.

Class 31 — Filters and Refrigerators

SN 243,721. Rayne Corporation, Santa Barbara, Calif., assignee of Scotti Water Conditioning Company, Waxahachie, Tex. Filed Apr. 18, 1966.



For Water Softening Units.
First use January 1966.

SN 260,900. Frank Wheatley Industries, Inc., Tulsa, Okla. Filed Dec. 15, 1966.

FWI

For Strainers, Filters, and Separators.
First use Mar. 1, 1965.

Class 32 — Furniture and Upholstery

SN 269,918. Northwest Interior Systems, Inc., Newport Beach, Calif. Filed Apr. 24, 1967.

INTERIOR SYSTEMS

Applicant disclaims the pictorial representation of the goods apart from the mark as shown.
For Wall Hanging and Free Standing Modular Furniture Units.
First use Oct. 1, 1965.

Class 33 — Glassware

SN 268,618. Riekes Crisa Corporation, Laredo, Tex. Filed Apr. 7, 1967.

IMPRESSIONS

For Crystal Tumblers.
First use Mar. 17, 1966.

SN 278,666. Century Industries, Inc., Chicago, Ill. Filed Aug. 21, 1967.

CENTURY

For Mirrors Manufactured on Plate, Crystal or Window Glass, and Framed Mirrors.
First use Jan. 10, 1951.

Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 260,243. Dow-Key Co., Broomfield, Colo. Filed Dec. 7, 1966.

SAUNA-MATIC

For Sauna Bath Heater.
First use 1964.
Subj. to Intf. with SN 276,680.

SN 276,680. Oy Siev AB, Kauklahti, Helsinki, Finland. Filed July 24, 1967.

SAUNAMATIC

For Electrically Heated Sauna Ovens.
First use Mar. 14, 1966; in commerce Jan. 31, 1967.
Subj. to Intf. with SN 260,243.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 243,855. Electric Sweeper Service Company, Cleveland, Ohio. Filed Apr. 20, 1966.

HOUSE AIDE

For Belts for Vacuum Cleaners.
First use Jan. 20, 1966.

Class 36 — Musical Instruments and Supplies

SN 251,925. Certron Corporation, Los Angeles, Calif., assignee of Interstate Engineering Corporation, Anaheim, Calif. Filed Aug. 8, 1966.

CONCERT 90

For Magnetic Recording Tape.
First use July 20, 1966.

Class 37 — Paper and Stationery

SN 260,364. Southwest Forest Industries, Inc., Phoenix, Ariz. Filed Dec. 8, 1966.

COCONINO

For Kraft Linerboard Paper.
First use at least as early as Dec. 1, 1961.

SN 261,088. Lakeside Central Company, Chicago, Ill. Filed Dec. 19, 1966.

ARTWORTHY

Owner of Reg. Nos. 606,406, 811,051, and others.
For Artists' Drawing Tablets and Artists' Drawing Paper.
First use Sept. 21, 1966.

SN 261,955. West Virginia Pulp and Paper Company, New York, N.Y. Filed Jan. 4, 1967.

PRINTKOTE

Owner of Reg. No. 711,526.
For Coated Bleached Paperboard.
First use Nov. 2, 1965.

SN 263,525. Bennett Brothers, Inc., New York, N.Y. Filed Jan. 30, 1967.

IDENT-A-GIFT

Owner of Reg. No. 709,161.
For Gift Card and Gift Tag, and for a Series of Gift Cards and Gift Tags in a Mail Order Catalog, Which Cards and Tags Are Partially Printed.
First use Sept. 20, 1966.

SN 267,682. Scripto, Inc., Atlanta, Ga. Filed Mar. 27, 1967.

SKIN-SKRIBE

For Fiber Tip Pens.
First use Mar. 1, 1967.

SN 267,992. Standard Packaging Corporation, New York, N.Y. Filed Mar. 30, 1967.

REDI-DEX

Owner of Reg. Nos. 266,667, 665,527, and others.
For Mechanically Operated Loose Leaf Sheet Memorandum and Telephone Indexes.
First use May 20, 1965.

SN 271,777. East House Enterprises, Inc., New York, N.Y. Filed May 18, 1967.

east House

For Colored Papers for Gift Wrapping and Other Decorative Purposes.
First use Jan. 28, 1965.

SN 281,522. Fox River Paper Corporation, Appleton, Wis. Filed Oct. 2, 1967.

PRELUDE

For Writing Paper.
First use Sept. 11, 1967.

Class 38 — Prints and Publications

SN 249,665. Panavision, Incorporated, Los Angeles, Calif. Filed July 6, 1966.

PANAVISION

Owner of Reg. No. 627,362.
For Motion Picture Films Produced by Special Purpose or Conventional Lenses Supplied by Applicant.
First use 1957.

SN 253,953. Chilton Company, Philadelphia, Pa. Filed Sept. 7, 1966.

WESTERN GAS

For Periodic Publication—Namely, a Trade Magazine.
First use May 1925.

SN 255,540. Medalist Publications, Inc., Chicago, Ill. Filed Sept. 30, 1966.

INSTITUTIONS
MAGAZINE OF THE SERVICE WORLD

The word "Magazine" is disclaimed apart from the mark.
Owner of Reg. No. 355,664.
For Magazine.
First use Sept. 9, 1966.

SN 258,509. Wayne T. Darling, d.b.a. Lyle Printing & Publishing Co., Salem, Ohio. Filed Nov. 14, 1966.

Farm and Dairy

For Newspaper.
First use May 10, 1918.

SN 260,579. Pittsburgh Plate Glass Company, Pittsburgh, Pa. Filed Dec. 12, 1966.

PPG INDUSTRIES

Owner of Reg. No. 443,642 and others.
For Magazines, Newspapers, and Public Service and Technical Publications, Such as Booklets, Brochures, Bulletins, Catalogs, Film Strips and Narrative Booklets Therefor, Handbooks, Manuals, Pamphlets, and Specification Sheets Relating to Adhesives, Architectural and Building Materials and Techniques, Brushes, Chemicals, Coatings, Cement, Fiber Glass, Fertilizer, Glass, Paints, Resins, Sealants, and to Consulting, Engineering and Technical Services.
First use at least as early as Oct. 24, 1966.

SN 264,384. Beede Electrical Instrument Co., Inc., Penacook, N.H. Filed Feb. 10, 1967.

BEEDE BULLETIN

For Periodical Company Newsletter.
First use Dec. 23, 1966.

SN 265,493. Byrum Fashion Publications, Inc., Evanston, Ill., assignee of Byrum Publications, Inc., Evanston, Ill. Filed Feb. 27, 1967.

COSMETICS FAIR

For Magazine of Cosmetics, Toiletry, Treatment and Fragrance Retailing.
First use Feb. 23, 1967.

SN 265,605. The Billboard Publishing Company, d.b.a. Watson-Guptill Publications, Cincinnati, Ohio. Filed Feb. 28, 1967.

WATSON-GUPTILL

For Books.
First use on or about Apr. 1, 1937.

SN 265,739. Scholastic Magazines, Inc., New York, N.Y. Filed Mar. 1, 1967.

CITATION PRESS

The word "Press" is disclaimed apart from the mark as shown.
For Books.
First use Jan. 20, 1967.

SN 265,750. Tracor Inc., Austin, Tex. Filed Mar. 1, 1967.

TRACOR TODAY

For Newsletter Published From Time to Time.
First use at least as early as August 1966.

SN 265,832. Mynena Leith, d.b.a. National Directory Service, Cincinnati, Ohio. Filed Mar. 2, 1967.

SUMMER EMPLOYMENT DIRECTORY

For Periodically Published Directory.
First use Mar. 1, 1952.

SN 266,754. The General Conference of the Church of God (Seventh Day), Denver, Colo. Filed Mar. 15, 1967.

THE BIBLE ADVOCATE

For Religious Periodical Magazine.
First use on or about Dec. 18, 1900.

SN 269,947. Western Art, Inc., Colorado Springs, Colo. Filed Apr. 24, 1967.

Sitzmark

For Greeting Cards.
First use Apr. 6, 1967.

SN 279,435. Financial Services, Inc., Lafayette, Ind. Filed Aug. 31, 1967.



The drawing is lined for the color gold, but no claim is made to color.
For Periodic Stock Market and Commodity Market Reports.
First use July 1, 1967.

Class 39 — Clothing

SN 162,331. Marx-Haas Clothing Co., St. Louis, Mo., assignee of Bennett's of New Haven, Inc., New Haven, Ind. Filed Feb. 8, 1963.

BNH It's Perfectly Natural

For Coats and Suits for Men.
First use Oct. 15, 1962.

SN 164,219. De Luxe Girdlecraft Co., Inc., New York, N.Y. Filed Mar. 8, 1963.

TOP SECRET

For Brassieres.
First use January 1951.

SN 234,804. Cooper's, Incorporated, Kenosha, Wis. Filed Dec. 17, 1965.



The drawing is lined for blue-green and gold. Owner of Reg. Nos. 509,364 and 725,380.
For Underwear and Sport Shirts.
First use Aug. 5, 1964.

SN 238,607. Cater Frock Company, New Braunfels, Tex. Filed Feb. 11, 1966.

Petite Elégants

No claim is made to the word "Petite" apart from the mark as shown.
For Dresses.
First use Sept. 28, 1965.

SN 239,534. J. R. McMullen Company, Inc., New York, N.Y. Filed Feb. 24, 1966.

IN OR O'TER

For Women's Blouses.
First use Dec. 28, 1965.

SN 240,336. Peter Pan Foundations, Inc., New York, N.Y., assignee of Peter Pan Swimwear International, Inc., New York, N.Y. Filed Mar. 7, 1966.

Peter Pan Sun Blazers

Owner of Reg. No. 578,495.
For Swimwear.
First use Jan. 6, 1966.

SN 243,302. Atlanta Braves, Inc., Atlanta, Ga. Filed Apr. 13, 1966.

Braves

For Jackets.
First use June 1, 1958.

SN 243,780. Gloverall Limited, London, England. Filed Apr. 19, 1966.

GLOVERALL

For Men's, Women's, and Children's Coats.
First use February 1955; in commerce July 1955.

SN 244,784. Wembley, Inc., New Orleans, La. Filed May 2, 1966.



For Men's Neckwear.
First use Feb. 1, 1966.

SN 245,847. Paris Skirts Inc., New York, N.Y. Filed May 17, 1966.

LONDON PLACE

For Ladies' and Children's Skirts, Suits, and Slacks.
First use Jan. 14, 1966.

SN 252,014. Lewel Manufacturing Co., Inc., New York, N.Y. Filed Aug. 9, 1966.

THIGH-TRIM

For Girdles and Panty Girdles.
First use December 1952.

SN 252,298. Teenform, Inc., New York, N.Y. Filed Aug. 12, 1966.

MINI-FLIRT

For Brassieres, Panty-Girdles, and Lingerie.
First use Aug. 4, 1966.

SN 253,547. Palmland Fashions, Inc., Miami, Fla. Filed Aug. 31, 1966.

COUNT-TEN

For Men's Sport Shirts, Swimwear, Walk Shorts, Slacks, and Leisure Jackets.
First use Aug. 29, 1966.

SN 254,668. Calzaturificio Zenth Societa in Nome Collettivo di Esdra Buzzoni & Figli, Ferrara, Italy. Filed Sept. 19, 1966.



Applicant disclaims "La Calzatura Classica" apart from the mark as shown. The expression "La Calzatura Classica" can be translated into English as "the classical shoe style."
For Men's Shoes.
First use May 16, 1933; in commerce June 7, 1957.

SN 256,229. Oxford Industries, Inc., Atlanta, Ga., by change of name from Oxford Manufacturing Company, Atlanta, Ga. Filed Oct. 11, 1966.

peppertree

For Junior Size Women's Man-Tailored Shirts, Junior Size and Junior Petite Dresses, Junior Size and Junior Petite Two-Piece Suits, Junior Size Skirts, and Junior Size Sportswear Sets.
First use August 1963.

SN 257,282. Kenrich Shoe Corporation, Maysville, Ky. Filed Oct. 26, 1966.

TIJUANA GOLD

For Shoes.
First use Oct. 17, 1966.

SN 257,801. Smart Products, Inc., Atlanta, Ga. Filed Nov. 2, 1966.

"CUSHIES"

For Footwear—Namely, Travel Slippers.
First use on or about Apr. 27, 1966.

SN 259,336. Nuger-Ford Products Company, Thompsonville, Conn., by change of name from Nuber Ford Rubber Products, Thompsonville, Conn. Filed Nov. 23, 1966.

CHEATER SNEAK

The word "Sneak" is disclaimed apart from the mark as shown.
For Foot Wear.
First use Nov. 15, 1966.

SN 259,968. Rosenbaum & Hochberg, Inc., New York, N.Y. Filed Dec. 2, 1966.

CAPPI ORIGINALS

The word "Originals" is disclaimed apart from the mark as shown.
For Fur Coats, Stoles, and Jackets.
First use Sept. 15, 1966.

SN 261,224. Pamela Martin, Inc., Fall River, Mass. Filed Dec. 21, 1966.

WE GIVE A HOOT

Owner of Reg. No. 740,949.
For Ladies' and Misses' Blouses, Dresses, Shirts, Suits, Slacks, Shorts, Pedal Pushers, Coats, Sweaters, Leotards, and Jerseys.
First use Oct. 24, 1966.

SN 261,850. Jolly Kids Togs, Inc., Chicago, Ill. Filed Jan. 3, 1967.

JANE KING

The name "Jane King" is not the name of any known living individual.
For Feminine Sportswear—Namely, Skirts, Jackets, Blouses, Slacks, and Shorts.
First use on or about Feb. 1, 1937.

SN 262,710. Petite Cheri California Originals, Los Angeles, Calif. Filed Jan. 17, 1967.

BEACHVILLE U.S.A.

Applicant disclaims the Designation "U.S.A." apart from the mark as shown.
For Beachwear.
First use Oct. 17, 1966.

SN 263,816. Chadbourn Gotham, Inc., Charlotte, N.C. Filed Feb. 2, 1967.

GENTLEMEN of GOTHAM

Owner of Reg. Nos. 197,024, 802,776, and others.
For Men's Hosiery.
First use Jan. 9, 1967.

SN 263,893. Chadbourn Gotham, Inc., Charlotte, N.C. Filed Feb. 3, 1967.

Ladies of GOTHAM

Owner of Reg. Nos. 197,024, 802,776, and others.
For Ladies' Hosiery.
First use Jan. 9, 1967.

SN 263,894. Chadbourn Gotham, Inc., Charlotte, N.C. Filed Feb. 3, 1967.

Cissie GOTHAM

The name "Cissie Gotham" is fanciful. Owner of Reg. Nos. 197,024, 802,776, and 814,562.
For Ladies' Hosiery.
First use Jan. 9, 1967.

SN 264,424. Kayser-Roth Corporation, New York, N.Y. Filed Feb. 10, 1967.

TENDER FOOT

Owner of Reg. No. 64,131.
For Men's and Women's Hosiery.
First use June 1, 1906.

SN 264,862. Teenform, Inc., New York, N.Y. Filed Feb. 16, 1967.

FUNDANGO!

For Brassieres.
First use Feb. 1, 1967.

SN 265,730. Palm Beach Company, Portland, Maine. Filed Mar. 1, 1967.

KIRACHI COORDINATES

The word "Coordinates" is disclaimed apart from the mark as shown.
For Men's and Boys' Suits, Slacks, and Sportcoats.
First use Jan. 5, 1967.

SN 265,820. Glamorise Foundations, Inc., New York, N.Y. Filed Mar. 2, 1967.

SPECIAL REQUEST

For Foundation Garments.
First use Jan. 30, 1967.

SN 266,012. Desmond's Inc., Los Angeles, Calif. Filed Mar. 6, 1967.

DURA-PRO

For Men's and Boys' Slacks and Pants.
First use Feb. 15, 1967.

SN 266,046. F. Jacobson & Sons, Inc., New York, N.Y. Filed Mar. 6, 1967.

GAMEKEEPER

For Men's Shirts, Pajamas, Jackets, Slacks, and Headwear.
First use Dec. 28, 1966.

SN 266,047. Kayser-Roth Corporation, New York, N.Y. Filed Mar. 6, 1967.

CENSORED

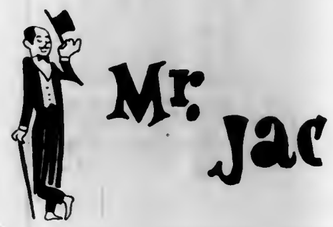
Owner of Reg. No. 731,576.
For Ladies' Swimsuits, Slacks, Blouses, Shorts, Knit Suits, Shifts, Dresses, Skirts, Jackets, Lingerie, Panties, Housecoats, Brassieres, Girdles, Hosiery, Slippers, Gloves; Men's Jackets, Coats, Pants, Shirts, Pajamas, Slippers, Underwear, Hosiery, Belts, Bathing Trunks; and Children's Underwear and Sleepwear.
First use Dec. 23, 1960.

SN 266,048. Kayser-Roth Corporation, New York, N.Y. Filed Mar. 6, 1967.

SWITCHMATES

For Ladies' Pants, Shorts, Blouses, Sweaters, Shifts, and Dresses.
First use Jan. 26, 1967.

SN 266,737. Craftex Creations, Inc., New York, N.Y. Filed Mar. 15, 1967.



For Children's, Juniors', and Ladies' Sleepwear and Lingerie.
First use May 1, 1964.

SN 266,747. Fit-Rite Pants Company, Inc., New York, N.Y. Filed Mar. 15, 1967.

GOLDEN YEARS

For Men's and Boys' Trousers and Slacks.
First use Mar. 2, 1967.

SN 266,748. Fit-Rite Pants Company, Inc., New York, N.Y. Filed Mar. 15, 1967.

GOLDEN AGE

For Men's and Boys' Trousers and Slacks.
First use Mar. 2, 1967.

SN 267,438. Mavest, Inc., New York, N.Y. Filed Mar. 23, 1967.

ALDINE

For Women's and Men's Suits, Coats, and Pants.
First use Mar. 1, 1946.

SN 267,807. Burlington Industries, Inc., New York, N.Y. Filed Mar. 29, 1967.

befitting heel

No exclusive right is claimed to the word "Heel" apart from the mark as shown.
For Women's Hosiery.
First use June 2, 1966.

SN 268,187. J. F. Hink & Son, Berkeley, Calif. Filed Apr. 3, 1967.

"±20"

For Wearing Apparel, for Young Men and Boys—Namely, Suits, Shirts, Slacks, Jeans, Hosiery, Sweaters, Top Coats, Sport Coats, Hats, Caps, Pajamas, and Underwear.
First use Mar. 7, 1966.

SN 269,996. Mars Manufacturing Company, Inc., of Asheville, N.C., Asheville, N.C. Filed Apr. 25, 1967.

the knittree.

For Children's Knit Apparel—Namely, Jumper Dresses, Coveralls, Swimsuits, Shirts, Stretch Tights, Slacks, and Shorts.
First use Mar. 10, 1967.

SN 275,196. Fairfield Knitwear, Inc., New York, N.Y. Filed July 3, 1967.

TOP TOPS

For Ladies' Knitted Shells—Namely, Sleeveless Tops and Sweaters.
First use June 12, 1967.

SN 276,507. The United States Shoe Corporation, Cincinnati, Ohio. Filed July 21, 1967.

SPECTRUMS

For Ladies' Shoes.
First use at least as early as June 20, 1967.

SN 278,056. Blue Bell, Inc., Greensboro, N.C. Filed Aug. 11, 1967.

GREY FRIARS

For Men's and Boys' Slacks.
First use June 14, 1967.

SN 279,155. Judy Wayne, Inc., New York, N.Y. Filed Aug. 28, 1967.

Melissa Farr PETITES

The word "Petites" is disclaimed apart from the mark as shown. "Melissa Farr" is the name of a living individual whose consent is of record.
For Women's and Misses' Dresses.
First use Mar. 20, 1967.

SN 280,129. Sid Berk, Inc., Los Angeles, Calif. Filed Sept. 12, 1967.

DAISY

For Ladies' Shoes.
First use July 3, 1967.

SN 281,340. Blue Bell Boots, Inc., Nashville, Tenn. Filed Sept. 28, 1967.

WEL-MOC

For Boots.
First use Sept. 22, 1967.

Class 40—Fancy Goods, Furnishings, and Notions

SN 263,414. Swedish Crown Comb Co. A/B, Goteborg, Sweden. Filed Jan. 26, 1967.

SWEDISH CROWN

Applicant disclaims the word "Swedish" apart from the mark as shown.
For Combs.
First use Dec. 28, 1966; in commerce Dec. 28, 1966.

Class 41—Canes, Parasols, and Umbrellas

SN 249,045. Mr. Mod Shop, Inc., New Orleans, La. Filed June 27, 1966.



"Authentic" is disclaimed apart from the mark as shown. Owner of Reg. No. 825,847.
For Parasols and Canes.
First use Jan. 21, 1966.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 263,848. Ronebolls Ltd., East Islip, N.Y. Filed Feb. 2, 1967.

BOLIS

For Bedspreads.
First use Jan. 25, 1967.

SN 272,902. United Merchants and Manufacturers, Inc., New York, N.Y. Filed June 2, 1967.

THALCO

For Glass Fiber Products—Namely, Fiber Glass Cloths, Industrial, Boat, and Tooling Cloth.
First use on or about Aug. 21, 1946.

SN 279,437. Howse, Mead & Sons, Inc., New York, N.Y. Filed Aug. 31, 1967.

CROSS-H

For Woolen Piece Goods.
First use Apr. 19, 1967.

Class 43—Thread and Yarn

SN 252,393. Engineered Yarns, Inc., West Warwick, R.I. Filed Aug. 17, 1966.

ARYLN

For Resin Coated Yarns for Industrial Weaving of Fabrics Such as Upholstery Fabrics.
First use at least as early as Feb. 21, 1966.

Class 44—Dental, Medical, and Surgical Appliances

SN 251,631. Hy-Tyme, Inc., Park Ridge, Ill. Filed Aug. 3, 1966.

HY-TYME

For Baby Food Feeder for Semi-Solid Foods, With Detachable Top and Nipple, and a Food Follower.
First use on about Sept. 7, 1960.

SN 260,090. Smith Kline & French Laboratories, Philadelphia, Pa. Filed Dec. 5, 1966.

DOPTONE

For Battery Operated Ultrasonic Device for the Transmission and Receipt of Ultra Sound to Detect the Motion of Organs and Blood Within the Pregnant Uterus or the Flow of Blood Within the Body.
First use June 28, 1966.

SN 262,022. Minnesota Mining and Manufacturing Company, St. Paul., Minn., assignee of Cardiosonics Medical Instruments Corporation, Cambridge, Mass. Filed Jan. 6, 1967.

ANESTHESCOPE

For Stethoscope for Observing Blood Pressure for Heart and Lung Sounds During Surgical Anesthesia.
First use at least as early as October 1966.

SN 262,757. C. R. Bard, Inc., Murray Hill, N.J. Filed Jan. 18, 1967.

FAST-N-CLAMP

No claim is made to exclusive use of the word "Clamp" apart from the mark as shown.
For Fastener for Securing Drainage or Other Medical or Surgical Tubing or the Like to Fabric Such as Bed Covering.
First use Sept. 1, 1966.

SN 262,872. Kimberly-Clark Corporation, Neenah, Wis. Filed Jan. 19, 1967.

KOTEX PLUS

Owner of Reg. Nos. 134,900, 638,516, and others.
For Sanitary Napkins, Sanitary Tampons, and Belts and Holders for Sanitary Napkins.
First use Oct. 24, 1966.

SN 276,392. Telan Corporation, Denver, Colo. Filed July 20, 1967.



The mark is comprised of the letter "T" within the letter "C."
For Medical Laboratory and Biological Laboratory Supplies—Namely, Disposable Tubes and Containers for Blood Analyses.
First use May 15, 1967.

SN 280,640. Joseph H. Schlesinger, d.b.a. Eagle Chemical Co., New York, N.Y. Filed Sept. 18, 1967.

PERMA-FILL

For Liquid Silica Adapted for Producing Insoluble Silica Glue in a Silicious Dental Filling.
First use Sept. 11, 1967.

Class 45—Soft Drinks and Carbonated Waters

SN 238,872. O. R. Groves Limited, London, England. Filed Feb. 15, 1966.

SUNLOOK

Owner of British Reg. No. 856,215, dated Nov. 6, 1963.
For Bottled or Canned Soft Drinks, and Syrups for Preparing Soft Drinks.

SN 268,072. Quality Water, Inc., Urbana, Ill. Filed Mar. 31, 1967.

AQUAN

For Purified Water.
First use July 12, 1966.

Class 46—Foods and Ingredients of Foods

SN 232,731. Sioux Honey Association, Sioux City, Iowa. Filed Nov. 15, 1965.

**INCREDIBLE!
IT'S SPREADABLE!**

Owner of Reg. No. 731,672.
For Crystallized Honey.
First use on or about Nov. 7, 1960.

SN 235,243. Vogeler, Inc., Philadelphia, Pa. Filed Dec. 23, 1965.

VOGELER'S

For Mayonnaise.
First use March 1925.

SN 248,625. George E. Judd, Fort Myers, Fla. Filed June 21, 1966.

VITARIPE

Owner of Reg. No. 413,812.
For Fresh Citrus Fruits, Canned Deciduous Fruits, Canned Fruit Juices for Food Purposes, Canned Vegetables, Canned Berries, Jams, Jellies, and Marmalades.
First use Dec. 15, 1939.

SN 249,046. Mr. Mod Shop, Inc., New Orleans, La. Filed June 27, 1966.



"Authentic" is disclaimed apart from the mark as shown.
For Mixed Nuts.
First use Jan. 21, 1966.

SN 249,054. Mr. Mod Shop, Inc., New Orleans, La. Filed June 27, 1966.



"Authentic" is disclaimed apart from the mark as shown.
For Mixed Nuts.
First use Jan. 21, 1966.

SN 250,583. John Krauss, Incorporated, Jamaica, N.Y. Filed July 19, 1966.

GOLDEN GOOSE BRAND

The word "Brand" is disclaimed apart from the mark as shown.
For Liverwurst.
First use May 16, 1966.

SN 250,933. Ralston Purina Company, St. Louis, Mo., assignee of Chic-N-Krisp, Inc., Kansas City, Mo. Filed July 25, 1966.



Owner of Reg. No. 767,946.
For Frozen, Uncooked, Batter Coated Chicken Parts and Fried Chicken.
First use Jan. 8, 1963.

SN 255,640. Paulin Chambers Co. Ltd., Winnipeg, Manitoba, Canada. Filed Oct. 3, 1966.

PIE FACE

Owner of Canadian Reg. No. 104,797, dated Oct. 26, 1956.
For Candy Bars.

SN 256,443. Friendly Ice Cream Corporation, North Wilbraham, Mass. Filed S.R. 10–14–66; Am. P.R. 10–11–67.

FRIBBLE

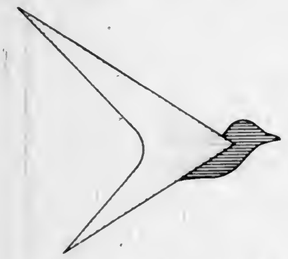
For Ice-Milk Drink.
First use June 25, 1965.

SN 256,452. Koninklijke Maatschappij de Betuwe N.V., Tiel Netherlands. Filed Oct. 14, 1966.

DE BETUWE

"De Betuwe" is a Dutch term meaning "better old land."
For Candy and Honey.
First use May 2, 1966; in commerce May 2, 1966.

SN 257,075. Pet Incorporated, d.b.a. Bluebird Potato Chip Co., St. Louis, Mo. Filed Oct. 24, 1966.



The drawing is lined for light and dark shades of blue.
Owner of Reg. Nos. 555,274 and 693,571.
For Plain and Barbecue Flavored Potato Chips and Corn Chips.
First use May 1962.

SN 257,791. Moark Productions, Inc., Neosho, Mo. Filed Nov. 2, 1966.

OZARK
DAISIES

For Fresh Eggs.
First use May 9, 1966.

SN 259,267. Schmidt Baking Co., Inc., Baltimore Md. Filed Nov. 22, 1966.

SCHMIDT'S
BLUE RIBBON
Tenderly Twisted

Applicant disclaims the word "Tenderly Twisted" apart from the mark as shown. Owner of Reg. Nos. 810,855 and 824,156.
For Bread.
First use January 1960.

SN 260,570. Nicolet-Krommenie N.V., Krommenie, Netherlands. Filed Dec. 12, 1966.

FURORE

For Cocoa Powder.
First use 1957; in commerce 1957.

SN 262,822. B. F. Trappey's Sons, Inc., New Liberia, La. Filed Jan. 18, 1967.

TRAPPEY'S

For Sauces for Meat, Fish and Soups; Pickled Peppers and Pickled Okra; Canned Frozen Crayfish Tails, Dried Sassafras Leaves for Soup Flavoring; Canned and Frozen Soups, and Canned and Frozen Vegetables.
First use approximately in December 1898.

SN 263,406. Stephen Scurich Orchard, d.b.a. Stephen "Bob" Scurich, Watsonville, Calif. Filed Jan. 26, 1967.



No claim is made to the representation of the goods, or to the words "Apple" and "Crisp," and the notation "Since 1884," apart from the mark as shown.
For Fresh Apples.
First use Dec. 19, 1966.

SN 263,686. Milton Okin, d.b.a. Prudent Foods & Confections Co., Yonkers, N.Y. Filed Jan. 31, 1967.

PRUDENT

For Dairy Products—Namely, Fluid Milk, Cream Cheese, and Ice Cream; Margarine; Edible Vegetable Oils; Candy; and Baked Goods—Namely, Cake, Crackers, and Cookies.
First use Jan. 27, 1967.

SN 264,243. Ralston Purina Company, St. Louis, Mo. Filed Feb. 8, 1967.

7

For Canned Cat Food.
First use Apr. 13, 1966.

SN 264,585. Reddi-Wip, Inc., Los Angeles, Calif. Filed Feb. 13, 1967.

KREEMIT

For Non-Dairy Vegetable Derived Liquid Cream.
First use Jan. 25, 1967.

SN 265,215. Sessions Company, Inc., Enterprise, Ala. Filed Feb. 21, 1967.

HOUSE OF SESSIONS

"House of" is disclaimed apart from the mark as shown. Owner of Reg. Nos. 604,566 and 720,400.
For Peanut Butter.
First use Nov. 30, 1966.

SN 266,516. The Eat-All Frozen Food Co., Inc., d.b.a. Two Oceans Co., Philadelphia, Pa. Filed Mar. 13, 1967.

TWO OCEANS

For Frozen, Fried Whole Small Shrimp.
First use August 1964.

SN 266,841. Vernon O. Aanenson, d.b.a. Old Dutch Foods. Filed Mar. 16, 1967.



For Potato Chips, Popped Popcorn, Cheese-Flavored Popcorn, Caramel Popcorn, Unpopped Popcorn, Processed Corn Meal Snack Foods, Processed Potato Snack Foods, Pretzels, Cheese Crackers, Nuts, Prepared Edible Sunflower Seeds, Nut and Cereal Snack Foods, Candy, Pickles, Mustard, and Salad Dressing.
First use September 1937.

SN 266,952. Universal Canning Co., Inc., Philadelphia, Pa. Filed Mar. 16, 1967.

VEEP

For Dog Food.
First use Feb. 9, 1967.

SN 267,394. Bib & Rib, Inc., Wichita, Kans. Filed Mar. 23, 1967.

BIB & RIB

For Barbecue Sauce.
First use in or about August 1964.

SN 267,454. B. F. Trappey's Sons, Inc., New Iberia, La. Filed Mar. 23, 1967.

SHIELD LABEL

The word "Label" is disclaimed except in connection with the mark as shown.
For Pepper Sauce.
First use on or about Aug. 1, 1923.

SN 267,455. B. F. Trappey's Sons, Inc., New Iberia, La. Filed Mar. 23, 1967.



The word "Label" is disclaimed except in connection with the mark as shown.
For Pepper Sauce.
First use on or about Aug. 1, 1923.

SN 267,512. Eskimo Pie Corporation, Richmond, Va. Filed Mar. 24, 1967.

ROULETTE

For Frozen Dessert Products—Namely, Ice Cream, Ice Milk, and Water Ice.
First use Mar. 22, 1967.

SN 267,514. Eskimo Pie Corporation, Richmond, Va. Filed Mar. 24, 1967.

MINI-MOD

For Frozen Dessert Products—Namely, Ice Cream, Ice Milk, and Water Ice.
First use Mar. 22, 1967.

SN 267,515. Eskimo Pie Corporation, Richmond, Va. Filed Mar. 24, 1967.

ESKIMO MINI-MOD

Owner of Reg. Nos. 300,055, 400,973, and others.
For Frozen Dessert Products—Namely, Ice Cream, Ice Milk, and Water Ice.
First use Mar. 22, 1967.

SN 267,516. Eskimo Pie Corporation, Richmond, Va. Filed Mar. 24, 1967.

ESKIMO ROULETTE

Owner of Reg. Nos. 300,055, 400,973, and others.
For Frozen Dessert Products—Namely, Ice Cream, Ice Milk, and Water Ice.
First use Mar. 22, 1967.

SN 267,517. Eskimo Pie Corporation, Richmond, Va. Filed Mar. 24, 1967.

MOD-POP

For Frozen Dessert Products—Namely, Ice Cream, Ice Milk, and Water Ice.
First use Mar. 13, 1967.

SN 267,521. The Glidden Company, d.b.a. Durkee Famous Foods, Cleveland, Ohio. Filed Mar. 24, 1967.

SATINA

For Edible Vegetable Oils.
First use Mar. 1, 1963.

SN 267,529. Lamb-Weston, Inc., Portland, Oreg. Filed Mar. 24, 1967.



For Frozen, Canned, Dried, Dehydrated, and Fresh Fruits and Vegetables.
First use Jan. 30, 1967.

SN 267,594. American Kitchen Products Company, Jersey City, N.J. Filed Mar. 27, 1967.

BLOODY BULL

Owner of Reg. No. 807,582.
For Cocktail Mix Containing Vegetable Juices, Beef Extract, Tomato Juice, and Other Ingredients.
First use Mar. 9, 1967.

SN 267,724. Central Soya Company, Inc., Fort Wayne, Ind. Filed Mar. 28, 1967.

FOODPOWER

For Soybean Protein Products—Namely, Edible Isolated Soy Protein, Soy Protein Concentrate, and Soy Flour.
First use on or before Feb. 20, 1967.

SN 272,343. Baskin-Robbins Inc., Burbank, Calif. Filed May 25, 1967.

31

Owner of Reg. Nos. 710,670, 712,570, and 796,902.
For Candy.
First use Apr. 12, 1967.

SN 273,101. Laco Corp., Baltimore, Md., assignee of Pompeian Olive Oil Corporation, Baltimore, Md. Filed June 5, 1967.

POMPEIAN

Owner of Reg. No. 252,247.
For Prepared Sauce Mixes.
First use December 1954.

SN 273,327. Suffolk Farms Packing Co., Inc., d.b.a. Suffolk Farms Packing, Chelsea, Mass. Filed June 7, 1967.

ASTRO-FRESH

For Brussels Sprouts.
First use Mar. 16, 1967.

SN 273,328. Suffolk Farms Packing Co., Inc., d.b.a. Suffolk Farms Packing Co. Chelsea, Mass. Filed June 7, 1967.

ASTRO-CRISP

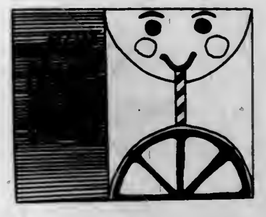
For Fresh Vegetables.
First use May 12, 1966.

SN 274,126. Gerber Products Company, Fremont, Mich. Filed June 16, 1967.

PLAYBOX

For Cookies.
First use May 23, 1967.

SN 277,108. Mutual Citrus Products Company, Anaheim, Calif. Filed July 31, 1967.



Applicant disclaims the wording "Orange Shake" and the representation of an orange apart from the association shown. The drawing is lined for blue. Owner of Reg. No. 782,543.
For Powdered Mix for Making an Orange Flavored Milk Beverage.
First use July 12, 1967.

SN 278,560. Weight Watchers International, Inc., Forest Hills, N.Y. Filed Aug. 18, 1967.



For Frozen Prepared Meals Consisting of Fish, Vegetables, Sauces, Seasonings, and Spices.
First use July 20, 1967.

SN 279,695. Weight Watchers International, Inc., Forest Hills, N.Y. Filed Sept. 5, 1967.



For Frozen Prepared Meals Consisting of Fish, Vegetables, Sauces, Seasonings, and Spices.
First use July 20, 1967.

SN 280,131. The Huntington Creek Corporation, d.b.a. Spring Garden Flavor Co., New York, N.Y. Filed Sept. 12, 1967.

I.D.

For Non-Alcoholic Mix, Consisting of Sugar, Lime Juice, Egg White, and Other Ingredients, in Powder Form, for Use in Making Alcoholic Beverages.
First use Aug. 10, 1967.

SN 281,529. Snokist Growers, Yakima, Wash. Filed Oct. 2, 1967.

SNOKIST

Owner of Reg. Nos. 196,049 and 626,668.
For Fresh Deciduous Fruits, Canned Fruits, Canned Vegetables, and Canned Vegetable Juices.
First use June 19, 1967.

SN 281,847. Fred G. Hilvert Company, Inc., Distributors, d.b.a. Fred G. Hilvert Co., Palo Verde, Ariz. Filed Oct. 5, 1967.

Specify

For Fresh Vegetables.
First use Oct. 19, 1960.

SN 281,849. John Morrell & Co., Chicago, Ill. Filed Oct. 5, 1967.

TRAK PAK

For Dog Food.
First use November 1961.

Class 47 — Wines

SN 259,786. Affiliated Distillers Brands Corp., d.b.a. Dreyfus, Ashby & Co., New York, N.Y. Filed Dec. 1, 1966.

SOLEIL BLANC

The English translation of the French words "Soleil Blanc" is "white sun."
For Wines.
First use June 21, 1966.

SN 259,787. Affiliated Distillers Brands Corp., d.b.a. Dreyfus, Ashby & Co., New York, N.Y. Filed Dec. 1, 1966.

SOLEIL NOIR

The English translation of the French words "Soleil Noir" is "black sun."
For Wines.
First use Sept. 9, 1966.

SN 261,992. Werner Motzel, d.b.a. Weingut Motzel Weingrosskellerei, Gau-Algesheim (Rhine), Germany. Filed Jan. 5, 1967.

RHEINSPIEL

The word "Rheinspiel" may be translated from the German as "Rhine play" or "Rhine game." Owner of German Reg. No. 819,180, dated Mar. 7, 1966.
For Rhine Wine.

SN 261,993. Werner Motzel, d.b.a. Weingut Motzel, Weingrosskellerei, Gau-Algesheim (Rhine), Germany. Filed Jan. 5, 1967.

MOTZELS KELLERBRUDER

The word "Kellerbruder" may be translated from the German as "cellar brother." Owner of German Reg. No. 747,452, dated Jan. 26, 1961.
For Still Wines.

Class 48 — Malt Beverages and Liquors

SN 260,500. Rheingold Breweries, Inc., d.b.a. Forrest Brewing Co., Brooklyn, N.Y. Filed Dec. 12, 1966.

GABLINGER'S

For Beer.
First use Dec. 1, 1966.

Class 50 — Merchandise Not Otherwise Classified

SN 260,419. Barry Fincham, d.b.a. Barry's Studio, Hollywood, Calif. Filed Dec. 9, 1966.

DEFENSTIK

For Small Defensive Hand Weapon.
First use on or about Sept. 15, 1966.

Class 51 — Cosmetics and Toilet Preparations

SN 247,168. Viobin Corporation, Monticello, Ill. Filed June 2, 1966.

VIOSIL

Owner of Reg. No. 713,794.
For Cosmetic Preparation for Cleaning the Skin.
First use May 23, 1966.

SN 249,548. Mayer Laboratories, Inc., San Rafael, Calif. Filed July 5, 1966.

m

For Moisturizing Cream and a Nail Cream.
First use on about Apr. 22, 1966.

SN 250,543. Viviane Woodard Corporation, Panorama City, Calif. Filed July 18, 1966.

WORLD OF BEAUTY

For Kit of Cosmetics—Namely, Skin Freshener, Facial Cleaners, Skin Moisturizer, Eye and Throat Emollient, Skin Discoloration Cover-Up, Liquid Make-Up Base, Rouge; and Translucent Face Powder.
First use June 22, 1964.
Subj. to Intf. with SN 235,171 and SN 244,912.

SN 251,877. Beauty Counselors, Inc., Grosse Pointe, Mich. Filed Aug. 8, 1966.

QUIXIT

For Antiperspirant.
First use July 15, 1957.

SN 252,861. MCM Cosmetics Corp., Great Neck, N.Y. Filed Aug. 22, 1966.

MCM
FINEST FOR MEN

The expression "Finest for Men" is disclaimed apart from the trademark as shown.
For After Shave Preparation, Talcum Powder, Personal Deodorant, Hair Cream, Shaving Cream, and Cologne for Personal Use for Men.
First use July 13, 1966.

SN 253,623. Beauty Counselors, Inc., Grosse Pointe, Mich. Filed Sept. 1, 1966.

SMOOTH-GLO

For Hair Dressing Preparation.
First use Feb. 15, 1957.

SN 253,759. Innoxa (England) Limited, London, England. Filed Sept. 2, 1966.

SUNPLAY

Owner of British Reg. No. 884,146, dated Sept. 10, 1965.
For Suntan Creams, Oils, and Lotions.

SN 260,571. Noxell Corporation, Baltimore, Md. Filed Dec. 12, 1966.

COVER GIRL "ICEBREAKERS"

Owner of Reg. Nos. 420,030, 404,783, and others.
For Lipsticks.
First use Nov. 4, 1966.

SN 260,776. Spartans Industries, Inc., New York, N.Y. Filed Dec. 14, 1966.

KOR-VAL

For Personal Deodorants, Hair Spray, Shampoos, Skin Creams and Lotions, Bath Oils, Shave Cream, After Shave Lotion, Pre-Electric Shave Lotion, Cologne, Witch Hazel, Bay Rum and Hair Tonics, and Hair Bleaching Peroxide.
First use 1957.

SN 262,875. McKesson & Robbins, Incorporated, d.b.a. McKesson Laboratories, New York, N.Y. Filed Jan. 19, 1967.

TARTARLITHINE

For Denture Cleanser.
First use at least as early as Jan. 13, 1967.

SN 263,679. Moda Mia, Inc., New York, N.Y. Filed Jan. 31, 1967.

MIA

The word "Mia" means "my" in the Italian language.
For Cologne, Lipstick, Mascara, Eye Pencil, Eye Shading, Eyeliner, Nail Lacquer, Face Powder, Facial Make-Up Powder, and Make-Up Cream.
First use in or about January 1962 on cologne.

SN 264,899. Bristol-Myers Company, New York, N.Y. Filed Feb. 17, 1967.

SPOAM

Owner of Reg. No. 418,523.
For Shaving Cream.
First use Jan. 3, 1967.

SN 265,316. George C. Miller, d.b.a. House of Rondus, San Francisco, Calif. Filed Feb. 23, 1967.

House of RONDUS

For Perfume.
First use about Dec. 15, 1966.

SN 265,360. Turner Hall Corporation, New York, N.Y. Filed Feb. 23, 1967.

SETSATION

For Setting Solution and Waving Solution.
First use Jan. 4, 1967.

SN 265,453. White Cross Stores, Inc., Monroeville, Pa. Filed Feb. 24, 1967.

RAZOR'S EDGE

For Shaving Cream.
First use Dec. 27, 1966.

SN 267,436. Lilac Time of Rochester, Rochester, N.Y. Filed Mar. 23, 1967.

Highland Lilac
OF ROCHESTER

Applicant disclaims the words "Lilac" and "of Rochester" apart from the mark as shown, and without surrendering any of its rights under the common law to the complete mark as shown.
For Fragrances, More Particularly Colognes and Perfumes.
First use Feb. 20, 1967.

SN 267,666. Revlon, Inc., New York, N.Y. Filed Mar. 27, 1967.

FROSTLINGS

For Lipstick.
First use Feb. 12, 1967.

SN 267,891. Robert J. Leigh, d.b.a. Fashion Fair Company, Arcadia, Calif. Filed Mar. 30, 1967.

Hold me tenderly
HAIR SPRAY
BY
Fashion Fair

No claim is made to the words "Hair Spray." Owner of Reg. No. 784,137.
For Hair Setting Jels and Lotions.
First use Jan. 26, 1967.

SN 273,725. Protege Corporation, Skokie, Ill. Filed June 13, 1967.

PROTEGE

For Preparations for Conditioning Hair.
First use on or about May 23, 1967.

SN 273,726. Protege Corporation, Skokie, Ill. Filed June 13, 1967.

ALKONIL

For Preparation for Treating Hair Which Is Tinted, Bleached, Permanent Waved, Fine, Limp, or Hydrolized.
First use on or about May 23, 1967.

SN 281,422. Reid-Meredith, Inc., Lawrence, Mass. Filed Sept. 29, 1967.

R & M LOVELY LUSTER

The word "Luster" is disclaimed apart from the mark as shown. Owner of Reg. Nos. 778,814, 797,587, and others.
For Cream Used To Give Luster to Wigs and Hairpieces.
First use Feb. 1, 1966.

Class 52 — Detergents and Soaps

SN 252,091. General Five Star Products, Inc., Maitland, Fla. Filed Aug. 10, 1966.



The drawing is lined for the colors red and blue.
For Drain Cleaner.
First use June 3, 1966.

SN 253,523. Gray Company, Inc., Minneapolis, Minn. Filed Aug. 31, 1966.

DIRT-TERGENT

For Detergent Preparation for Cleaning Painted and Unpainted Surfaces of Motor Vehicles, Buildings, and Machinery.
First use Sept. 3, 1958.

SN 259,907. The Drackett Company, Cincinnati, Ohio. Filed Dec. 2, 1966.



Owner of Reg. Nos. 157,669, 767,768, and others.
For Preparations for Cleaning and Disinfecting Drains and for Removing Obstructions in Drain Pipes.
First use Oct. 24, 1966.

SN 264,906. Bristol-Myers Company, New York, N.Y. Filed Feb. 17, 1967.

SPOAM

Owner of Reg. No. 418,523.
For Personal Deodorant Soap and a Personal Medicated Soap.
First use Jan. 3, 1967.

SN 266,019. The Drackett Company, Cincinnati, Ohio. Filed Mar. 6, 1967.

WINDEX

Owner of Reg. Nos. 300,651 and 531,055.
For Multi-Use Liquid Cleaner.
First use Jan. 19, 1967.

SN 279,027. Lagar Industries, Inc., Philadelphia, Pa. Filed Aug. 25, 1967.

TICKLE

For All Purpose Spray Detergent for Cleaning Walls, Floors, Glass, Household Appliances, and for General Cleaning Use.
First use July 24, 1967.

SN 279,349. The Procter & Gamble Company, Cincinnati, Ohio. Filed Aug. 30, 1967.

TOP WASH

The word "Wash" is disclaimed apart from the mark as a whole. Owner of Reg. No. 776,326.
For Laundry Detergent.
First use Oct. 11, 1966.

SN 280,837. American Home Products Corporation, New York, N.Y. Filed Sept. 21, 1967.

DEPEND-O

For Toilet Cleaner and Deodorizer.
First use June 16, 1967.

SERVICE MARKS

Class 100 — Miscellaneous

SN 235,171. The Reuben H. Donnelley Corporation, New York, N.Y. Filed Dec. 23, 1965.

WORLD OF BEAUTY CLUB

For Services of Supplying Subscribers With Advice and Information Concerning Grooming and Beautifying Aids.
First use in or before January 1965.
Subj. to Intf. with SN 244,912 and SN 250,543.

SN 239,702. Arizona Agrochemical Corporation, Phoenix, Ariz. Filed Feb. 28, 1966.

WESTAG

For Research and Consulting Services in the Field of Agricultural Chemicals.
First use Feb. 7, 1966.

SN 244,279. Vince's Chefs, Inc., Calumet City, Ill. Filed Apr. 25, 1966.



For Restaurant Services.
First use Apr. 1, 1958.

SN 246,614. Sports Car Club of America, Incorporated, Westport, Conn. Filed May 25, 1966.

SPORTSMANSHIP DEMANDS SAFE DRIVING

For Encouraging the Ownership and Operation of Sports Cars, Disseminating Information Concerning Sports Cars and Sports Car Activities, Organizing and Regulating Events and Exhibitions for Sports Car Enthusiasts, and Promoting Public Interest in Sports Cars and Sports Car Racing Throughout the United States and in Foreign Countries.
First use Dec. 31, 1955.

SN 253,965. Farrell's, Inc., Portland, Oreg. Filed Sept. 7, 1966.



Without relinquishing any of its common law rights, applicant hereby disclaims the words "Ice Cream Parlour" apart from the mark as shown.
For Restaurant and Carry-Out Food Services.
First use June 1, 1963.

SN 255,704. Gordon A. Friesen International, Inc., Washington, D.C. Filed Oct. 4, 1966.



For Consultation and Advice in the Design and Organization of Hospitals.
First use Aug. 23, 1966.

SN 257,629. Hilton Hotels Corporation, Chicago, Ill. Filed Oct. 31, 1966.

HILTON

Owner of Reg. Nos. 601,761, 810,877, and others.
For Hotel Reservation Services.
First use 1955.

SN 257,951. Flying Carpet Motor Inn, Inc., Rosemont, Ill. Filed Nov. 4, 1966.



The drawing is lined for red and blue, but no claim is made for color.
For Motel, Hotel, and Restaurant Services; Conducting Convention Services and Providing Meeting Places for the Same; and Providing Transportation Services for Airplane Passengers to and From Airports by Means of Limousine and Helicopter.
First use Sept. 16, 1960.

SN 259,842. Little Red Hen Country Chicken, Inc., Zion, Ill. Filed Dec. 1, 1966.



For Restaurant Services.
First use November 1963.

SN 260,449. Pigall's French Restaurant, Inc., Cincinnati, Ohio. Filed Dec. 9, 1966.

Pigall's

For Restaurant and Catering Services.
First use Nov. 3, 1956.

SN 261,409. Systems Technology Associates, Inc., McLean, Va. Filed Dec. 23, 1966.

S-T-A inc.

For Technical Consultation Services Relating to Information, Data, Communications, Satellite, Management and Industrial Systems.
First use Oct. 29, 1966.

SN 263,255. The Dow Chemical Company, Midland, Mich. Filed Jan. 25, 1967.

DERASPAN

Owner of Reg. Nos. 708,595 and 713,315.
For Design and Engineering Services Rendered in Connection With the Construction of Buildings.
First use at least as early as Oct. 31, 1966.

SN 263,459. John H. Frischkorn, Jr., Incorporated, Richmond, Va. Filed Jan. 27, 1967.

For Inspection and Consultation—Namely, Inspection of Factories and Plants, Especially With Reference to Pipelines, Pipe Fittings, and Similar Installations for the Conveyance and Transmission of Steam, Water or Other Fluids, and Advising Management of Any Changes Needed To Produce a More Efficient and Economical Operation.
First use December 1964.

SN 263,544. Datronic Rental Corporation, Chicago, Ill. Filed Jan. 30, 1967.

For Renting Electronic Data Processing Equipment.
First use Jan. 1, 1965.

SN 265,595. American Motor Inns of Sarasota, Inc., Sarasota, Fla. Filed Feb. 28, 1967.

Sandcastle

For Motel, Hotel, and Restaurant Services.
First use Mar. 12, 1960.

Class 101 — Advertising and Business

SN 239,232. Cody's Cosmetics, Inc., Lawrence, Mass. Filed Feb. 21, 1966.

DISCOUNT TOWN

Applicant disclaims the word "Discount" apart from the mark as shown.
For Retail Department Store Services.
First use May 1, 1964.

SN 248,317. Federal Auto Corporation, Columbus, Ohio. Filed June 17, 1966.

NATION WISE AUTO PARTS CENTERS

No claim is made to the wording "Auto Parts Centers" apart from the mark.
For Retail Sale of Automobile Parts and Accessories.
First use Apr. 29, 1964.

SN 254,588. College Temps, Inc., Bronx, N.Y. Filed Sept. 16, 1966.

COLLEGE TEMPS

For Temporary Personnel Service.
First use Mar. 28, 1966.

SN 254,928. The Goodchild Corporation, New York, N.Y. Filed Sept. 22, 1966.

For Service of Designing the Layout, Content and Style of and Producing Corporate Reports, Brochures, and Technical Journals.
First use June 20, 1966.

SN 256,705. Adams, Martin & Nelson, Inc., Minneapolis, Minn. Filed Oct. 19, 1966.

DOUBLE BONUS BULLS-EYE

For Promoting the Sale of the Goods and Services of Others Through the Use of Games to Win Trading Stamps.
First use Apr. 15, 1965.

SN 256,706. Adams, Martin & Nelson, Inc., Minneapolis, Minn. Filed Oct. 19, 1966.

COUPON CLIPPERS CLUB

For Promoting the Sale of the Goods and Services of Others Through the Use of Games To Win Trading Stamps.
First use Nov. 11, 1964.

SN 260,538. The Dunne Press, Inc., d.b.a. Dunne's International Insurance Reports, Louisville, Ky. Filed Dec. 12, 1966.

The words "Rated A+ Excellent," "Insurance Report," and "World-Wide Policyholders Reporting Service" are disclaimed apart from the mark as shown.
For Services in Preparing Rating Reports on the Financial Condition and Other Relevant Affairs of Specific Insurance Companies Upon the Request of Others.
First use on or about June 1, 1937.

SN 261,833. Martin Fromm & Associates, Inc., Kansas City, Mo. Filed Jan. 3, 1967.

For Advertising Agency Services.
First use Aug. 15, 1966.

SN 261,867. McCall Corporation, New York, N.Y. Filed Jan. 3, 1967.

For Graphic Art Services—Namely, Printing and Engraving to the Order and/or Specification of Others.
First use May 27, 1966.

SN 263,842. Nelson Auction Service, Inc., Amarillo, Tex. Filed Feb. 2, 1967.

NELSON AUCTION SERVICE

For Auctioneering Services.
First use April 1963.

SN 265,033. Robert Thomas Armstrong, Jr., d.b.a. Product Identification, Waukesha, Wis. Filed Feb. 20, 1967.

For Manufacturers' Representative of Products Used in Product Identification (Tags, Labels, Name Plates, Catalogs, and Catalog Binders).
First use Dec. 1, 1966.

SN 276,714. Target Stores, Inc., Minneapolis, Minn. Filed July 24, 1967.

TARGET

Owner of Reg. Nos. 816,107, 825,086, and others.
For Retail Department Store, Retail Grocery Store, Retail Bakery, Prescription Compounding and Dispensing, and Restaurant and Snack Bar Services.
First use on or about Apr. 30, 1962.

Class 102 — Insurance and Financial

SN 235,756. The Statesman Insurance Company, Indianapolis, Ind., assignee of The State Automobile & Casualty Underwriters, Des Moines, Iowa. Filed Nov. 22, 1965.

STATESMAN

For Underwriting of Insurance.
First use Aug. 5, 1965.

SN 236,927. Archie Slawsby Agency, Inc., Nashua, N.H. Filed Jan. 20, 1966.



The term "Protection Since 1935" is disclaimed apart from the mark as shown.
For General Insurance Agency and Bonding Agency Services.
First use Dec. 8, 1965; Nov. 1, 1959, as to the circular seal with a military figure.

SN 247,503. Group Securities, Inc., Jersey City, N.J. Filed June 7, 1966.



The words "Selective Group Investing" are disclaimed.
For Sales Promotion of Various Mutual Investment Funds.
First use June 7, 1944.

SN 247,981. Robert Uchitelle, d.b.a. Midwestern Editorial Service, Evanston, Ill. Filed June 13, 1966.

SAVE, DAVE

For Providing Prepared Advertising Material for Use by Savings Institutions.
First use Apr. 21, 1966.

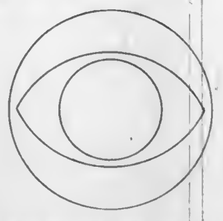
SN 253,042. Micro Eye, Grand Forks, N. Dak. Filed Aug. 24, 1966.



For Check Guarantee Service, Whereby Applicant Issues Identification Cards to Its Individual Subscribers and Guarantees Payment to Merchants and Others Who Cash Checks of Said Subscribers.
First use June 22, 1966.

Class 104 — Communication

SN 281,004. Columbia Broadcasting System, Inc., New York, N.Y. Filed Sept. 25, 1967.



Owner of Reg. Nos. 645,893, 777,570, and others.
For Television Broadcasting Services.
First use on or about Dec. 7, 1960.

Class 105 — Transportation and Storage

SN 196,694. The Miller Oil Company, d.b.a. Tag Airlines, Toledo, Ohio. Filed June 29, 1964.

TAG AIRLINES

For Transportation of Persons by Air, Furnished to the Public.
First use Oct. 30, 1956.

SN 234,602. Global Van Lines, Inc., Anaheim, Calif. Filed Dec. 13, 1965.

Owner of Reg. No. 695,839.
For Moving, Trucking, Hauling, and Storing of Household Goods.
First use on or about Aug. 1, 1963.

SN 269,394. Bergdorf & Goodman Company, New York, N.Y. Filed Apr. 18, 1967.

BERGDORF GOODMAN

For Fur Storage Service.
First use 1928.

SN 279,152. Shasta McCloud Steam Rail Tours, Inc., Livermore, Calif. Filed Aug. 28, 1967.



For Steam Powered Rail Transportation of Persons and Property.
First use June 1, 1967.

Class 107 — Education and Entertainment

SN 234,781. The Television, Radio and Film Commission of the Methodist Church, Nashville, Tenn. Filed Dec. 16, 1965.

THE WORD-AND MUSIC

For Services Rendered to Radio Stations—Namely, Providing Radio Scripts and Recorded Programs Concerning Religion for Use Over Radio.
First use Mar. 8, 1964.

SN 239,295. Jack Mulqueen, d.b.a. M. Productions, Palatine, Ill. Filed Feb. 21, 1966.



For Entertainment Services in the Nature of a Children's Television Program.
First use Jan. 1, 1966.

SN 243,806. Seymour Super, Great Neck, N.Y. Filed Apr. 19, 1966.



For Musical Entertainment Services Rendered by a Vocal and Instrumental Group.
First use May 3, 1965.

SN 253,161. Arthur Murray, Inc., New York, N.Y. Filed Aug. 25, 1966.



For Providing Dance Instruction.
First use at least July 1946.

SN 254,719. Red Dog, Inc., Lawrence, Kans. Filed Sept. 19, 1966.

THE RED DOGS

For Musical Entertainment Services Rendered by a Band.
First use during June 1965.

SN 271,986. Lawrence and the Arabians, Hyattsville, Md. Filed May 22, 1967.

LAWRENCE AND THE ARABIANS

For Musical and Variety Entertainment in the Form of Rock-and-Roll, Rhythm-and-Blues, and Pops Music and Singing.
First use on or about May 1, 1964.

COLLECTIVE MEMBERSHIP MARKS

Class 200

SN 279,135. The Cabiri International Past Potentates Association, Oakland, Calif. Filed Aug. 28, 1967.



For Indicating Membership in the Organization.
First use July 18, 1949.

CERTIFICATION MARKS

Class A — Goods

SN 243,842. Certified Ballast Manufacturers, Cleveland, Ohio. Filed Apr. 20, 1966.



The mark certifies compliance with performance and safety specifications for fluorescent lamp auxiliaries set by United States Standards Institute in American Standard Specifications C82.1, C82.2, and C82.3.

For Ballasts and Other Fluorescent Lamp Auxiliaries.

First use Nov. 1, 1963.

TRADEMARK REGISTRATIONS ISSUED
PRINCIPAL REGISTER

Class 1 — Raw or Partly Prepared Materials

840,221. RUTAG AND DESIGN. Rutgerswerke und Teerverwertung Aktiengesellschaft. MULTIPLE CLASS (Classes 1, 4, 5, 6, 12, 14, 15, 16, and 42). SN 236,542. Pub. 9–26–67. Filed 1–17–66.

840,222. QUARTANE. Raybestos-Manhattan, Inc. SN 244,740. Pub. 9–26–67. Filed 5–2–66.

840,223. VELAIRE. The Goodyear Tire & Rubber Company. SN 251,625. Pub. 9–26–67. Filed 8–3–66.

840,224. PROMEL. Pro-phy-lac-tic Brush Company. SN 253,683. Pub. 9–26–67. Filed 9–1–66.

840,225. TAVON AND DESIGN. Wyomissing Corporation. SN 255,669. Pub. 9–26–67. Filed 10–3–66.

840,226. BUCCANEER. The General Tire & Rubber Company. SN 258,534. Pub. 9–26–67. Filed 11–14–66.

840,227. ALFA-LITER. Neumond, Inc. SN 259,141. Pub. 9–26–67. Filed 11–21–66.

840,228. WISP. Stauffer Chemical Company. SN 276,284. Pub. 9–26–67. Filed 7–19–67.

840,229. TIARA. Stauffer Chemical Company. SN 276,288. Pub. 9–26–67. Filed 7–19–67.

840,230. ULTRA GLOSS 90. Minerals & Chemicals Philipp Corporation. SN 276,386. Pub. 9–26–67. Filed 7–20–67.

840,231. NYPEL NYBRAD AND DESIGN. Nypel, Inc. SN 273,354. Pub. 9–26–67. Filed 6–8–67.

Class 2 — Receptacles

840,232. STRIP-FLAP. Waldorf Paper Products Company. SN 201,161. Pub. 9–26–67. Filed 8–13–64.

840,233. CAST-PAK. Precision Metalsmiths, Inc. SN 234,362. Pub. 9–26–67. Filed 12–10–65.

840,234. FABRKON. Arkay Packaging Corporation. SN 235,809. Pub. 9–26–67. Filed 1–5–66.

840,235. GLACIER PAK AND DESIGN. Georgia-Pacific Corporation. SN 248,613. Pub. 9–26–67. Filed 6–21–66.

840,236. SWISHEE AND DESIGN. R. G. Barry Corporation. SN 248,669. Pub. 9–26–67. Filed 6–22–66.

840,237. INTRALON. The Chemical Rubber Company. MULTIPLE CLASS (Classes 2 and 26). SN 249,101. Pub. 9–26–67. Filed 6–28–66.

840,238. WOODPECKER PRODUCTS AND DESIGN. Burn-Strauss, Inc., d.b.a. Woodpecker Products. SN 249,300. Pub. 9–26–67. Filed 6–30–66.

840,239. ENCORE AND DESIGN. The Mead Corporation. SN 252,019. Pub. 9–26–67. Filed 8–9–66.

840,240. VENDPAK. Scott Paper Company. SN 257,519. Pub. 9–26–67. Filed 10–28–66.

840,241. VW (STYLIZED). Vision Wrap Industries, Inc. SN 258,180. Pub. 9–26–67. Filed 11–7–66.

840,242. FEDERAL AND DESIGN. Federal Paper Board Company, Inc. MULTIPLE CLASS (Classes 2 and 37). SN 260,903. Pub. 9–26–67. Filed 12–16–66.

840,243. ICE-O-BOX. Weyerhaeuser Company. SN 261,341. Pub. 9–26–67. Filed 12–22–66.

840,244. DRULANE. Drulane, Inc. MULTIPLE CLASS (Classes 2 and 42). SN 261,574. Pub. 9–26–67. Filed 12–28–66.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

840,245. STORK AIRLINES AND DESIGN. Airline Textile Mfg. Co. SN 223,615. Pub. 9–26–67. Filed 7–19–65.

840,246. BLUE RIBBON AND DESIGN. Blue Ribbon Leather Company, Inc. SN 246,034. Pub. 9–26–67. Filed 5–19–66.

840,247. COMFY-PET, ETC. AND DESIGN. F. W. Woolworth Co. SN 253,187. Pub. 9–26–67. Filed 8–25–66.

840,248. POCKETMASTER. Conlker Enterprises, Inc. SN 255,780. Pub. 9–26–67. Filed 10–5–66.

840,249. DRAG BAG. R. March Jamison. SN 267,893. Pub. 9–26–67. Filed 3–30–67.

Class 4 — Abrasives and Polishing Materials

840,221. (See Class 1 for this trademark.)

840,250. GREENSTONE. Greenstone Products Company. SN 239,905. Pub. 8–1–67. Filed 3–1–66.

840,251. VIPCO. Valley Institutional Products Company. MULTIPLE CLASS (Classes 4 and 52). SN 248,560. Pub. 9–26–67. Filed 6–20–66.

840,252. MINIGRIND. Norton Company. SN 259,844. Pub. 9–26–67. Filed 12–1–66.

840,253. LE VALET. Skill Vending, Inc. SN 260,460. Pub. 9–26–67. Filed 12–9–66.

840,254. SATI. Schaffner Manufacturing Company, Inc. SN 260,770. Pub. 9–26–67. Filed 12–14–66.

840,255. PREEN. American Cyanamid Company. SN 264,492. Pub. 9–26–67. Filed 2–13–67.

840,256. SOLAR GLOSS. Laco Corp., assignee of The Solarine Company. SN 271,892. Pub. 9–26–67. Filed 5–19–67.

Class 5 — Adhesives

840,221. (See Class 1 for this trademark.)

840,257. E·Z. E-Z Manufacturing Company. MULTIPLE CLASS (Classes 5 and 35). SN 233,787. Pub. 9–26–67. Filed 12–2–65.

840,258. BLACK STUFF. H. B. Fuller Company. SN 240,290. Pub. 12–13–66. Filed 3–7–66.

840,259. WHITE STUFF. H. B. Fuller Company. SN 240,291. Pub. 12–13–66. Filed 3–7–66.

840,260. MECHANICS CHOICE. Avnet, Inc. SN 256,914. Pub. 9–26–67. Filed 10–21–66.

Class 6 — Chemicals and Chemical Compositions

840,221. (See Class 1 for this trademark.)

840,261. NO-GRO. J. & L. Adikes, Inc. SN 190,011. Pub. 5–18–65. Filed 3–31–64.

840,262. PET'M. Smith Kline & French Laboratories. MULTIPLE CLASS (Classes 6, 18, and 52). SN 222,875. Pub. 8–16–66. Filed 7–7–65.

840,263. S AND DESIGN. The Sealex Corporation. SN 228,292. Pub. 12-13-66. Filed 9-20-65.

840,264. ALCHEMYL. Amylo Chemie N.V. SN 235,616. Pub. 9-26-67. Filed 1-3-66.

840,265. HEPATOSTIX. Miles Laboratories, Inc. SN 241,491. Pub. 9-26-67. Filed 3-21-66.

840,266. VACOIL. Transene Company, Inc. SN 242,861. Pub. 9-26-67. Filed 4-6-66.

840,267. RICHOPAQUE. The Richardson Company. SN 250,517. Pub. 9-26-67. Filed 7-18-66.

840,268. SURE-CROP. Arthur F. Couch, d.b.a. Sure Crop Chemical Company. SN 251,194. Pub. 9-26-67. Filed 7-28-66.

840,269. CHEVRON. Standard Oil Company of California. SN 253,176. Pub. 9-26-67. Filed 8-25-66.

840,270. SUITE SCENT. Beauty Counselors, Inc. SN 253,620. Pub. 9-26-67. Filed 9-1-66.

840,271. POP-IN. Encap Products Company. SN 254,041. Pub. 9-26-67. Filed 9-8-66.

840,272. E (DESIGN). Extracorporeal & Medical Specialties Company Inc. MULTIPLE CLASS (Classes 6 and 44). SN 258,195. Pub. 9-26-67. Filed 11-8-66.

840,273. ARPOR. The Dow Chemical Company. SN 259,529. Pub. 9-26-67. Filed 11-28-66.

840,274. JAPIDEMIC. Howard A. Chittick, d.b.a. Fairfax Biological Laboratory. SN 262,475. Pub. 9-26-67. Filed 1-13-67.

840,275. CONTINFIX. Sandoz, Inc. SN 263,483. Pub. 9-26-67. Filed 1-27-67.

840,276. GEVAMATIC. Gevaert-Agfa N.V. SN 263,561. Pub. 9-26-67. Filed 1-30-67.

840,277. CAN-AM. United States Borax & Chemical Corporation. MULTIPLE CLASS (Classes 6 and 10). SN 264,362. Pub. 9-26-67. Filed 2-10-67.

840,278. ALBAFIX LIGHT-FAST. Diamond Alkali Company. SN 267,300. Pub. 9-26-67. Filed 3-22-67.

Class 8 — Smokers' Articles, Not Including Tobacco Products

840,279. HEALTH CROSS AND DESIGN. White Cross Stores, Inc. SN 250,884. Pub. 9-26-67. Filed 7-22-66.

Class 10 — Fertilizers

840,277. (See Class 6 for this trademark.)

840,280. GRO-BELOW. Star Enterprises, Inc. SN 265,444. Pub. 9-26-67. Filed 2-24-67.

840,281. TOP Q. International Minerals & Chemical Corporation. SN 269,031. Pub. 9-26-67. Filed 4-13-67.

840,282. Q-BASE. International Minerals & Chemical Corporation. SN 269,032. Pub. 9-26-67. Filed 4-13-67.

Class 11 — Inks and Inking Materials

840,283. MASON AND DESIGN. Mason Marking Systems Corporation. MULTIPLE CLASS (Classes 11, 23, and 37). SN 258,436. Pub. 9-26-67. Filed 11-14-66.

Class 12 — Construction Materials

840,221. (See Class 1 for this trademark.)

840,284. PRO-FILM. Hillcrest Products, Inc. SN 255,091. Pub. 9-26-67. Filed 9-26-66.

840,285. MERIDIAN. Meridian Brick Co. SN 258,918. Pub. 9-26-67. Filed 11-17-66.

840,286. ARDUR AND DESIGN. Ardex Chemie G.m.b.H. Chemische Fabrik Witten. SN 261,031. Pub. 9-26-67. Filed 12-19-66.

840,287. MINIT MAN. Kristal Kraft, Inc. SN 261,307. Pub. 9-26-67. Filed 12-22-66.

840,288. AIR MASTER BLACK BUTTON. Air Master Corporation. SN 266,982. Pub. 9-26-67. Filed 3-17-67.

840,289. FINISHLINE. Madison Industries. SN 276,605. Pub. 9-26-67. Filed 7-24-67.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

840,290. HUDSON BAY. Herter's Inc. MULTIPLE CLASS (Classes 13 and 32). SN 231,123. Pub. 9-26-67. Filed 10-22-65.

840,291. CHEMINERT. Chromatronix Incorporated. SN 253,012. Pub. 9-26-67. Filed 8-24-66.

840,292. NAL-QUILL. Nalco Chemical Company. SN 254,461. Pub. 9-26-67. Filed 9-14-66.

840,293. WEST BEND AND DESIGN. The West Bend Company. MULTIPLE CLASS (Classes 13, 21, and 34). SN 256,332. Pub. 9-26-67. Filed 10-13-66.

840,294. STATE PRIDE AND DESIGN. Belk Stores Services, Inc. SN 259,396. Pub. 9-26-67. Filed 11-25-66.

840,295. CLOS-A-MAGIC. Fabmagic, Inc. SN 275,587. Pub. 9-26-67. Filed 7-10-67.

Class 14 — Metals and Metal Castings and Forgings

840,221. (See Class 1 for this trademark.)

840,296. FLEX-TAY. Levolor Lorentzen, Inc. MULTIPLE CLASS (Classes 14 and 40). SN 245,447. Pub. 9-26-67. Filed 5-12-66.

840,297. REYNOLDS METALS. Reynolds Metals Company. SN 247,061. Pub. 9-26-67. Filed 6-1-66.

840,298. GSI. General Steel Industries, Inc. CONSOLIDATED CERTIFICATE. SN 249,526, pub. 9-26-67, filed 7-5-66, Cl. 14; SN 249,525, pub. 9-26-67, filed 7-5-66, Cl. 19.

840,299. INVACUTRODE. Allegheny Ludlum Steel Corporation. SN 259,514. Pub. 9-26-67. Filed 11-28-66.

Class 15 — Oils and Greases

840,221. (See Class 1 for this trademark.)

840,300. S AND DESIGN. The Sealex Corporation. SN 228,293. Pub. 12-13-66. Filed 9-20-65.

840,301. STABL FLO AND DESIGN. Chemical Research Laboratories. SN 252,246. Pub. 9-26-67. Filed 8-12-66.

840,302. SPRINT. Wynn Oil Company. SN 263,500. Pub. 9-26-67. Filed 1-30-67.

Class 16 — Protective and Decorative Coatings

840,221. (See Class 1 for this trademark.)

840,303. RUB-R LASTIC. Harris Paint Company, d.b.a. Harris Standard Paint Company. SN 253,875. Pub. 9-26-67. Filed 9-6-66.

840,304. JW JENNISON-WRIGHT. The Jennison-Wright Corporation. SN 254,291. Pub. 9-26-67. Filed 9-12-66.

840,305. SAKURA. Cray-Pas Honpo Kabushiki Kaisha Sakura Shokai. MULTIPLE CLASS (Classes 16 and 37). SN 259,689. Pub. 9-26-67. Filed 11-30-66.

Class 17 — Tobacco Products

840,306. ACTI-FILTER. R. J. Reynolds Tobacco Company. SN 198,892. Pub. 11-24-64. Filed 7-30-64.

840,307. ACW. M & N Cigar Manufacturers, Inc. SN 275,350. Pub. 9-26-67. Filed 7-5-67.

840,308. L & M AND DESIGN. Liggett & Myers Tobacco Company. SN 274,528. Pub. 9-26-67. Filed 6-22-67.

Class 18 — Medicines and Pharmaceutical Preparations

840,262. (See Class 6 for this trademark.)

840,309. PEDI-DENT. Stanlabs, Inc. SN 250,413. Pub. 5-2-67. Filed 7-15-66.

840,310. ULTRAPEN. Bristol-Myers Company. SN 251,508. Pub. 9-26-67. Filed 8-2-66.

840,311. USYLIN. Usylin Corporation, d.b.a. Usylin Laboratory. SN 252,044. Pub. 9-26-67. Filed 8-9-66.

840,312. EAGLE (DESIGN). Taisho Pharmaceutical Co., Ltd. SN 252,296. Pub. 9-26-67. Filed 8-12-66.

840,313. 282 MEP. Charles E. Frosst & Co. SN 253,750. Pub. 9-26-67. Filed 9-2-66.

840,314. BN AND DESIGN. Bio-Neering, Inc. MULTIPLE CLASS (Classes 18 and 44). SN 253,812. Pub. 9-26-67. Filed 9-6-66.

840,315. BALMEX. Macsil, Inc. SN 256,294. Pub. 9-26-67. Filed 10-12-66.

840,316. PRE-PREP. Gray Pharmaceutical Co. SN 261,485. Pub. 9-26-67. Filed 12-27-66.

840,317. E.M.U. The Upjohn Company. SN 261,539. Pub. 9-26-67. Filed 12-27-66.

840,318. DITTOTAB. Bristol-Myers Company. SN 261,799. Pub. 9-26-67. Filed 1-3-67.

840,319. EFFTABS. Bristol-Myers Company. SN 261,800. Pub. 9-26-67. Filed 1-3-67.

840,320. DITTOCAP. Bristol-Myers Company. SN 261,801. Pub. 9-26-67. Filed 1-3-67.

840,321. NALDEVES. Bristol-Myers Company. SN 261,802. Pub. 9-26-67. Filed 1-3-67.

840,322. THEN. Unimed, Inc. SN 262,725. Pub. 9-26-67. Filed 1-17-67.

840,323. HYDERGINE. Sandoz, Inc. SN 262,810. Pub. 9-26-67. Filed 1-18-67.

840,324. IROHEME. Warren-Teed Pharmaceuticals Inc. SN 263,860. Pub. 9-26-67. Filed 2-2-67.

840,325. ZONELLE. Chemway Corporation. SN 264,145. Pub. 9-26-67. Filed 2-7-67.

840,326. BRISMOS. Bristol-Myers Company. SN 264,188. Pub. 9-26-67. Filed 2-8-67.

840,327. DYNATREX. Bristol-Myers Company. SN 264,189. Pub. 9-26-67. Filed 2-8-67.

840,328. HYMAX. Bristol-Myers Company. SN 264,190. Pub. 9-26-67. Filed 2-8-67.

840,329. DIXIE-RUB AND DESIGN. The Dixie-Rub Co. SN 264,807. Pub. 9-26-67. Filed 2-16-67.

840,330. LECTRO-SUL. Allied Mills, Inc. SN 268,362. Pub. 9-26-67. Filed 4-5-67.

840,331. GYNIL. Mead Johnson & Company. SN 268,849. Pub. 9-26-67. Filed 4-11-67.

840,332. TENIALEX. Ciba Limited. SN 269,290. Pub. 9-26-67. Filed 4-17-67.

840,333. ALO-DERM. Aloe Creme Laboratories, Inc. SN 270,109. Pub. 9-26-67. Filed 4-27-67.

840,334. COTRALUDE. William H. Rorer, Inc. SN 275,814. Pub. 9-26-67. Filed 7-12-67.

840,335. SAFEWAY. Safeway Stores, Incorporated. MULTIPLE CLASS (Classes 18, 29, and 51). SN 274,286. Pub. 9-26-67. Filed 6-20-67.

840,336. SPIRITONE. American Home Products Corporation. SN 274,688. Pub. 9-26-67. Filed 6-26-67.

Class 19 — Vehicles

840,298. CONSOLIDATED CERTIFICATE. See Class 14.

840,337. MOTHERCARE AND DESIGN. Mothercare Limited. MULTIPLE CLASS (Classes 19, 22, 32, 42, 51, and 52). SN 228,386. Pub. 9-26-67. Filed 9-22-65.

840,338. ASTON MARTIN. Aston Martin Lagonda Limited. SN 242,777. Pub. 9-26-67. Filed 2-11-66.

840,339. TM TRAIL-MOBILE AND DESIGN. Pullman Incorporated. SN 245,419. Pub. 9-26-67. Filed 5-11-66.

840,340. A-S AND DESIGN. Air-Springs Inc. SN 252,628. Pub. 9-26-67. Filed 8-18-66.

840,341. AUTOLUBE. Automotive Products Company Limited. SN 252,806. Pub. 7-18-67. Filed 8-22-66.

840,342. WHITE MAGIC AIRE. White Stores, Inc., by assignment and change of name from White Stores, Inc. SN 255,843. Pub. 9-26-67. Filed 10-5-66.

840,343. QUADRA LIFT. Winner Boats, Inc. SN 257,431. Pub. 9-26-67. Filed 10-27-66.

840,344. RASAFE. The Firestone Tire & Rubber Company. SN 258,525. Pub. 9-26-67. Filed 11-14-66.

840,345. PROWLER AND DESIGN. Fleetwood Enterprises, Inc. SN 264,661. Pub. 9-26-67. Filed 2-14-67.

840,346. D (DESIGN). Accurate Systems, Inc. SN 274,917. Pub. 9-26-67. Filed 6-28-67.

Class 21 — Electrical Apparatus, Machines, and Supplies

840,293. (See Class 13 for this trademark.)

840,347. MOGUL SOLUTROL. The North American Mogul Products Company. SN 198,491. Pub. 3-30-65. Filed 7-24-64.

840,348. SOLAR PAC. International Rectifier Corporation. SN 213,135. Pub. 5-31-66. Filed 3-2-65.

840,349. PENNCREST. J. C. Penney Company. MULTIPLE CLASS (Classes 21, 23, and 31). SN 226,670. Pub. 9-26-67. Filed 8-27-65.

840,350. CONSERV-O-MATIC. Anzac Industries, Inc. SN 233,767. Pub. 9-26-67. Filed 12-2-65.

840,351. GALV-AMP. Illinois Testing Laboratories, Inc. SN 241,299. Pub. 9-26-67. Filed 3-18-66.

840,352. MUSTANG. LTV Ling Altec, Inc. SN 242,367. Pub. 9-26-67. Filed 3-31-66.

840,353. C. C. P. Clare & Company. SN 242,430. Pub. 5-2-67. Filed 4-1-66.

840,354. TELAPPROACH. American District Telegraph Company. SN 248,953. Pub. 9-26-67. Filed 6-27-66.

840,355. MISCELLANEOUS DESIGN. Unitrode Corporation. SN 251,971. Pub. 9-26-67. Filed 8-8-66.

840,356. ADD-VERB. The Gregory Amplifier Corp. SN 252,000. Pub. 9-26-67. Filed 8-9-66.

840,357. DYNA-MOD. Dynair Electronics, Inc. SN 260,412. Pub. 9-26-67. Filed 12-9-66.

840,358. UNIVOLT. Airstream, Inc. SN 264,292. Pub. 9-26-67. Filed 2-9-67.

840,359. COLUMBIA. Columbia Broadcasting System, Inc. MULTIPLE CLASS (Classes 21 and 36). SN 268,918. Pub. 9–26–67. Filed 4–12–67.

840,360. SHOWMAN. Columbia Broadcasting System, Inc. SN 270,189. Pub. 9–26–67. Filed 4–28–67.

840,361. LINEGUARD. Continental Instruments Corp. SN 271,094. Pub. 8–15–67. Filed 5–10–67.

840,362. FLEXI-CORE AND DESIGN. Sylvania Electric Products Inc. SN 274,481. Pub. 9–26–67. Filed 6–22–67.

Class 22 — Games, Toys, and Sporting Goods

840,337. (See Class 19 for this trademark.)

840,363. CONVENIENTOTE. Gerald J. Hager, d.b.a. Hagers. SN 236,992. Pub. 9–26–67. Filed 1–21–66.

840,364. CHAMPIONSHIP GOLF. Championship Games, Inc. SN 237,085. Pub. 9–26–67. Filed 1–24–66.

840,365. SNO-MASTER. Western Import, Inc. SN 243,053. Pub. 9–26–67. Filed 4–8–66.

840,366. COLEMAN AND DESIGN. The Coleman Company, Inc. SN 256,270. Pub. 9–26–67. Filed 10–12–66.

840,367. COLEMAN. The Coleman Company, Inc. SN 256,271. Pub. 9–26–67. Filed 10–12–66.

840,368. CONSTRUCT-ALL. Transogram Company, Inc. SN 258,855. Pub. 9–26–67. Filed 11–16–66.

840,369. DEEP-VU. Ident Inc. SN 260,936. Pub. 9–26–67. Filed 12–16–66.

840,370. CYCLONE 300. SW Industries, Inc. SN 261,520. Pub. 9–26–67. Filed 12–27–66.

840,371. DOLL YA-HOO. Thompson Fishing Tackle Company, Inc. SN 261,952. Pub. 9–26–67. Filed 1–4–67.

840,372. T. V. HONEY TEENS. Princess Grace Doll, Inc. SN 262,192. Pub. 9–26–67. Filed 1–9–67.

840,373. LI'L MISS FUSSY. De Luxe Topper Corporation. SN 262,768. Pub. 9–26–67. Filed 1–18–67.

840,374. MUG-ZEE. Leonard A. Pomicter, d.b.a. Hanover Lures. SN 262,886. Pub. 9–26–67. Filed 1–19–67.

840,375. BIG LEAGUE BASEBALL. Minnesota Mining and Manufacturing Company. SN 263,729. Pub. 9–26–67. Filed 2–1–67.

840,376. STA-TRU. Warner Press, Inc. SN 264,996. Pub. 9–26–67. Filed 2–17–67.

840,377. BUTTONS 'N BOWS. R. Dakin & Company. SN 270,855. Pub. 9–26–67. Filed 5–8–67.

840,378. PORT-O-PLAY AND DESIGN. Port-O-Play, Inc. SN 271,724. Pub. 9–26–67. Filed 5–17–67.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

840,283. (See Class 11 for this trademark.)

840,349. (See Class 21 for this trademark.)

840,379. SPHERISEAL. Ransome & Marles Bearing Company Limited. SN 229,918. Pub. 1–24–67. Filed 10–7–65.

840,380. NELCO AND DESIGN. Nelco Corp. SN 232,224. Pub. 1–17–67. Filed 11–5–65.

840,381. KORPAD. Korfund Dynamics Corporation. SN 234,438. Pub. 9–26–67. Filed 12–13–65.

840,382. HUDSON BAY. Herter's Inc. SN 237,556. Pub. 9–26–67. Filed 1–28–66.

840,383. AUTOLECTRIC. Chrysler Outboard Corporation. SN 241,979. Pub. 9–26–67. Filed 3–28–66.

840,384. CARDEFLEX. Johann Hochreuter, d.b.a. Hochreuter & Baum. SN 242,414. Pub. 9–26–67. Filed 3–3–66.

840,385. POS-E-TRIP AND DESIGN. Carrier Corporation. SN 244,967. Pub. 9–26–67. Filed 5–5–66.

840,386. SKRUZIT. The W. E. Bassett Company. SN 246,643. Pub. 9–26–67. Filed 5–26–66.

840,387. LIFEGARD AND DESIGN. Wisconsin Wire Works. SN 248,753. Pub. 9–26–67. Filed 6–22–66.

840,388. MALIWATT. VEB Nähwirkmaschinenbau Mallmo Karl-Marx-Stadt. SN 249,271. Pub. 9–26–67. Filed 6–29–66.

840,389. PANTHER. Harry Mann Chevrolet. SN 249,760. Pub. 9–26–67. Filed 7–7–66.

840,390. SYNTA. Freundorfer K.G. SN 249,973. Pub. 2–28–67. Filed 7–11–66.

840,391. MISCELLANEOUS DESIGN. Remington Arms Company, Inc. SN 251,239. Pub. 9–26–67. Filed 7–28–66.

840,392. SANI-SUR. John Wood Company. SN 252,661. Pub. 9–26–67. Filed 8–18–66.

840,393. RES-UP. Clack Corporation. SN 252,820. Pub. 9–26–67. Filed 8–22–66.

840,394. YARD-MAN. Yard-Man, Inc. SN 253,808. Pub. 9–26–67. Filed 9–2–66.

840,395. TEMPO. Alco Standard Corporation, assignee of Tempo Products Company. SN 253,926. Pub. 9–12–67. Filed 9–6–66.

840,396. CON-COR. Walker-Neer Manufacturing Co., Inc. SN 255,248. Pub. 9–26–67. Filed 9–27–66.

840,397. DN AND DESIGN. Duff-Norton Company. SN 255,520. Pub. 9–26–67. Filed 9–30–66.

840,398. SBS AND DESIGN. Sturdy Broaching Service, Inc. SN 256,384. Pub. 9–26–67. Filed 10–13–66.

840,399. Y-LINE. The Yoder Company. SN 256,399. Pub. 9–26–67. Filed 10–13–66.

840,400. HAYLAGE MASTER. A. F. Klinzing Co., Inc. SN 256,566. Pub. 9–26–67. Filed 10–17–66.

840,401. VACUOLAP. The Smith and Winchester Manufacturing Company. SN 256,601. Pub. 9–26–67. Filed 10–17–66.

840,402. YARD TRAC. Textron Inc. SN 256,612. Pub. 9–26–67. Filed 10–17–66.

840,403. MARK II. Sperry Rand Corporation. SN 256,877. Pub. 7–18–67. Filed 10–20–66.

840,404. SATURN. Samuel Bingham Company. SN 257,248. Pub. 9–26–67. Filed 10–26–66.

840,405. MIGHTY MIDGET. Superior Manufacturing Co. SN 257,665. Pub. 9–26–67. Filed 10–31–66.

840,406. STATE PRIDE AND DESIGN. Belk Stores Services, Inc. SN 259,399. Pub. 9–26–67. Filed 11–25–66.

840,407. VAPOCROME. The Gillette Company. SN 275,583. Pub. 9–26–67. Filed 7–10–67.

840,408. THERMOFIX. Universal American Corporation. SN 275,586. Pub. 9–26–67. Filed 7–10–67.

840,409. SWINGER. Oury Engineering Company. SN 276,723. Pub. 9–26–67. Filed 7–25–67.

840,410. BIG GIANT. Randel's Mfg. Co., Inc. SN 272,093. Pub. 9–26–67. Filed 5–22–67.

840,411. GRIP-SEAL. Yarway Corporation. SN 272,138. Pub. 9–26–67. Filed 5–23–67.

Class 24 — Laundry Appliances and Machines

840,412. STATE PRIDE AND DESIGN. Belk Stores Services, Inc. SN 259,397. Pub. 9–26–67. Filed 11–25–66.

Class 25 — Locks and Safes

840,413. 1001EN. Independent Lock Company. SN 188,871. Pub. 5–11–65. Filed 3–17–64.

840,414. R1001EN. Independent Lock Company. SN 188,872. Pub. 5–11–65. Filed 3–17–64.

840,415. 1011P. Independent Lock Company. SN 188,873. Pub. 5–11–65. Filed 3–17–64.

840,416. O1010. Independent Lock Company. SN 188,874. Pub. 5–11–65. Filed 3–17–64.

840,417. 1004A. Independent Lock Company. SN 188,876. Pub. 3–23–65. Filed 3–17–64.

840,418. 1127DP. Independent Lock Company. SN 188,877. Pub. 3–23–65. Filed 3–17–64.

840,419. X1014F. Independent Lock Company. SN 188,878. Pub. 3–23–65. Filed 3–17–64.

840,420. 1127ES. Independent Lock Company. SN 188,879. Pub. 3–23–65. Filed 3–17–64.

840,421. SPEED-O-LOC. Speed-O-Loc. SN 259,482. Pub. 9–26–67. Filed 11–25–66.

Class 26 — Measuring and Scientific Appliances

840,237. (See Class 2 for this trademark.)

840,422. PELLETOMETER. Cabot Corporation. SN 220,071. Pub. 9–26–67. Filed 6–1–65.

840,423. RAMTEC. Ametek, Inc. SN 232,509. Pub. 5–2–67. Filed 11–12–65.

840,424. CLARY AND DESIGN. Clary Corporation. SN 238,170. Pub. 9–26–67. Filed 2–7–66.

840,425. SCAN-LINE. Fischer & Porter Co. SN 239,086. Pub. 5–16–67. Filed 3–2–66.

840,426. VERSA-VERTER. General Dynamics Corporation. SN 242,236. Pub. 9–26–67. Filed 3–30–66.

840,427. MULTIPULSE. E. W. Bliss Company. SN 246,259. Pub. 9–26–67. Filed 5–23–66.

840,428. PHOTOMONT. Joseph W. Soper, d.b.a. Photomont Company. SN 248,059. Pub. 9–26–67. Filed 6–14–66.

840,429. AUTO-LEVEL. Projects Unlimited, Inc. SN 250,767. Pub. 9–26–67. Filed 7–21–66.

840,430. W AND DESIGN. Charles A. Ball, Jr., d.b.a. Woodrow Engineering Company. SN 251,875. Pub. 9–26–67. Filed 8–8–66.

840,431. FLUOROWARE. Thermotech Industries, Inc. SN 252,910. Pub. 9–26–67. Filed 8–22–66.

840,432. PRESTONE. Union Carbide Corporation. SN 254,954. Pub. 9–26–67. Filed 9–22–66.

840,433. PHONIC MIRROR. HC Electronics, Inc. SN 255,882. Pub. 9–26–67. Filed 10–6–66.

840,434. PHONIC MIRROR AND DESIGN. HC Electronics, Inc. SN 255,883. Pub. 9–26–67. Filed 10–6–66.

840,435. CELESTRON. Valor Electronics, Inc. SN 255,934. Pub. 9–26–67. Filed 10–6–66.

840,436. PALM BEACH. Zolkind & Son, Inc. SN 256,175. Pub. 9–26–67. Filed 10–10–66.

840,437. TENDER-TIMER. Norbest Turkey Growers Association. SN 257,325. Pub. 9–26–67. Filed 9–27–66.

840,438. DENFOIL. Dentronics, Inc. SN 259,225. Pub. 9–26–67. Filed 11–22–66.

840,439. CAPRO. Ehrenreich Photo-Optical Industries, Inc. SN 276,381. Pub. 9–26–67. Filed 7–20–67.

840,440. UNI-FORM. Univis Inc. SN 276,773. Pub. 9–26–67. Filed 7–25–67.

Class 28 — Jewelry and Precious-Metal Ware

840,441. FAMILY CROWN. B. David Company. SN 235,168. Pub. 9–26–67. Filed 12–23–65.

840,442. PORT OF CALL. Anson Incorporated. SN 254,108. Pub. 9–26–67. Filed 9–9–66.

840,443. ZENTALL. Robert Zentall Inc. SN 254,755. Pub. 9–26–67. Filed 9–19–66.

840,444. CARJEAN. Tishman & Lipp, Inc. SN 263,710. Pub. 9–26–67. Filed 1–31–67.

840,445. JCC AND DESIGN. Jeweled Cross Company, Inc. SN 276,505. Pub. 9–26–67. Filed 7–21–67.

Class 29 — Brooms, Brushes, and Dusters

840,335. (See Class 18 for this trademark.)

840,446. LINO-DUSTER. DBA Products Co., Inc. SN 258,291. Pub. 9–26–67. Filed 11–9–66.

Class 30 — Crockery, Earthenware, and Porcelain

840,447. CAREFREE XL. Syracuse China Corporation. SN 263,128. Pub. 9–26–67. Filed 1–23–67.

Class 31 — Filters and Refrigerators

840,349. (See Class 21 for this trademark.)

840,448. NAPA FILTERS. National Automotive Parts Association. SN 247,246. COLLECTIVE MARK. Pub. 9–26–67. Filed 6–3–66.

840,449. MICRO-KLEAN. The Cuno Engineering Corporation. SN 251,611. Pub. 9–26–67. Filed 8–3–66.

840,450. ROGA. General Dynamics Corporation. SN 253,029. Pub. 9–26–67. Filed 8–24–66.

840,451. FLUID DYNAMICS. Fluid Dynamics, Incorporated. SN 257,703. Pub. 9–26–67. Filed 11–1–66.

840,452. SUPER-TEST. Signal Oil and Gas Company. SN 264,602. Pub. 9–26–67. Filed 2–13–67.

Class 32 — Furniture and Upholstery

840,290. (See Class 13 for this trademark.)

840,337. (See Class 19 for this trademark.)

840,453. MISCELLANEOUS DESIGN. The United States Bedding Company. SN 177,317. Pub. 8–8–67. Filed 9–18–63.

840,454. ACOUSTI CARREL. Oakland Community College. SN 229,367. Pub. 9–26–67. Filed 10–5–65.

840,455. RESTFOAM. The Upjohn Company. SN 245,776. Pub. 9–26–67. Filed 5–16–66.

840,456. FORM-FIT. Cecil C. Cunningham, d.b.a. Form-Fit Manufacturing Company. SN 247,337, Pub. 9–26–67. Filed 6–6–66.

840,457. TOOTSIE ROCKER. Jus-Rock, Inc. SN 248,478. Pub. 9–26–67. Filed 6–20–66.

840,458. PACIFIC GALLERY. W. L. Platt Co., Inc. SN 249,356. Pub. 9–26–67. Filed 6–30–66.

840,459. LOVE. Love Furniture, Inc. SN 252,111. Pub. 9–26–67. Filed 8–10–66.

840,460. MAISON DE VILLE. Broyhill Furniture Factories. SN 261,569. Pub. 9–26–67. Filed 12–28–66.

840,461. MICRO CENTER. Mosler Harbor Sales Corporation. SN 261,865. Pub. 9–26–67. Filed 1–3–67.

840,462. FLEX-CORD. Flex-O-Lators, Inc. SN 262,152. Pub. 9–26–67. Filed 1–9–67.

840,463. XTENDX. Phillocraft Company. SN 262,345. Pub. 9–26–67. Filed 1–11–67.

840,464. MARVELUX. The Stearns & Foster Co. SN 262,634. Pub. 9–26–67. Filed 1–16–67.

840,465. BODY DYNAMICS. Gertrude Enelow, d.b.a. Body Dynamics. SN 263,038. Pub. 9–26–67. Filed 1–23–67.

840,466. HIASUN AND DESIGN. Florida Foam Products, Inc. SN 263,263. Pub. 9-26-67. Filed 1-25-67.

840,467. H AND DESIGN. Florida Foam Products, Inc. SN 263,264. Pub. 9-26-67. Filed 1-25-67.

Class 34 — Heating, Lighting, and Ventilating Apparatus

840,293. (See Class 13 for this trademark.)

840,468. MISCELLANEOUS DESIGN. The Glass-Lined Water Heater Company. SN 234,895. Pub. 9-26-67. Filed 12-20-65.

840,469. DOT. Mid-States Welder Manufacturing Company. SN 241,920. Pub. 9-26-67. Filed 3-25-66.

840,470. COMPOWER. Combustion and Power Equipment Ltd. SN 243,848. Pub. 9-26-67. Filed 4-20-66.

840,471. FAN-JET. Acme Engineering and Manufacturing Corporation. SN 249,926. Pub. 9-26-67. Filed 7-11-66.

840,472. KOOLMOBILE. Correct Air Corporation. SN 251,190. Pub. 9-26-67. Filed 7-28-66.

840,473. ABRATEC. Eutectic Welding Alloys Corporation. SN 252,652. Pub. 9-26-67. Filed 8-18-66.

840,474. DEL-RAY. General Heat Distributors, Inc. SN 253,968. Pub. 9-26-67. Filed 9-7-66.

840,475. HERMET. Hermet Manufacturing Division, Lawrence Rigging, Inc. SN 255,316. Pub. 9-26-67. Filed 9-28-66.

840,476. P.V.S. Wheeling Service & Supply, Inc. SN 256,165. Pub. 9-26-67. Filed 10-10-66.

840,477. SR AND DESIGN. Sterling Radiator Co., Inc. SN 256,776. Pub. 9-26-67. Filed 10-19-66.

840,478. PLACAIR. Air Devices, Inc. SN 256,994. Pub. 9-26-67. Filed 10-11-66.

840,479. ROLL-BOND AND DESIGN. Olin Mathieson Chemical Corporation. SN 275,819. Pub. 9-26-67. Filed 7-12-67.

840,480. SAF T BRN AND DESIGN. Daniel J. Martin. SN 276,397. Pub. 9-26-67. Filed 7-20-67.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

840,257. (See Class 5 for this trademark.)

840,481. BEARCAT. Louis Fishman & Co., Inc., d.b.a. Bearcat Tire Company. SN 220,290. Pub. 2-15-66. Filed 6-3-65.

840,482. SERVOTRONICS, INC. AND DESIGN. Servotronics, Inc. SN 225,073. Pub. 9-26-67. Filed 8-5-65.

840,483. BRUTE. The Goodyear Tire & Rubber Company. SN 239,515. Pub. 9-26-67. Filed 2-24-66.

840,484. CYCLODYNAMICS SPECIALISTS. Geo. Rennie Bicycle Shop. SN 244,030. Pub. 9-26-67. Filed 4-21-66.

840,485. SUPER ALL GRIP. The General Tire & Rubber Company. SN 256,355. Pub. 8-15-67. Filed 10-12-66.

840,486. BIG JOHN. The B. F. Goodrich Company. SN 258,537. Pub. 9-26-67. Filed 11-14-66.

Class 36 — Musical Instruments and Supplies

840,359. (See Class 21 for this trademark.)

840,487. PENNCREST. J. C. Penney Company. SN 243,011. Pub. 9-26-67. Filed 4-8-66.

840,488. PEARL. Pearl Musical Instrument Manufacturing Company Limited. SN 247,146. Pub. 9-26-67. Filed 6-2-66.

840,489. TCS. Columbia Broadcasting System, Inc. SN 249,734. Pub. 9-26-67. Filed 7-7-66.

840,490. SOCKO AND DESIGN. The Total Sound, Inc. SN 276,393. Pub. 9-26-67. Filed 7-20-67.

840,491. TEC. Harry J. Coombs, d.b.a. Tec Records. SN 276,538. Pub. 9-26-67. Filed 7-21-67.

840,492. CROLYN. E. I. du Pont de Nemours and Company. SN 271,890. Pub. 9-26-67. Filed 5-19-67.

840,493. LET'S START AND DESIGN. Scholastic Magazines, Inc. SN 273,422. Pub. 9-26-67. Filed 6-8-67.

Class 37 — Paper and Stationery

840,242. (See Class 2 for this trademark.)

840,283. (See Class 11 for this trademark.)

840,305. (See Class 16 for this trademark.)

840,494. TEX. Letraset Limited. SN 220,109. Pub. 8-16-66. Filed 6-1-65.

840,495. PROJECT-A-MARK. Marsh Stencil Machine Company. SN 227,595. Pub. 3-21-67. Filed 9-10-65.

840,496. JIFFY-RITE. Chadbourn Finance Co., d.b.a. Time-Saving Specialties. SN 233,455. Pub. 10-11-66. Filed 11-29-65.

840,497. EXPANDA. Scott Paper Company. SN 249,802. Pub. 9-26-67. Filed 7-7-66.

840,498. SPEEDIMEMO. Moore Business Forms, Inc. SN 252,963. Pub. 9-26-67. Filed 8-23-66.

840,499. REDITYPE. Moore Business Forms, Inc. SN 257,976. Pub. 9-26-67. Filed 11-4-66.

840,500. PS & DESIGN. Park Sherman, Inc. SN 260,576. Pub. 9-26-67. Filed 12-12-66.

840,501. KEEPSAKE. The Parker Pen Company. SN 261,513. Pub. 9-26-67. Filed 12-27-66.

840,502. PLASTIC-PAPE & DESIGN. Fawn Products Corporation. SN 262,146. Pub. 9-26-67. Filed 1-9-67.

840,503. TRULY FINE. Safeway Stores, Incorporated. SN 275,498. Pub. 9-26-67. Filed 7-7-67.

840,504. KLEERWAE. Binney & Smith Inc. SN 274,837. Pub. 9-26-67. Filed 6-27-67.

Class 38 — Prints and Publications

840,505. DICTAPHONE. Dictaphone Corporation. SN 236,066. Pub. 8-23-66. Filed 1-10-66.

840,506. MISCELLANEOUS DESIGN. The Institute of Electrical and Electronics Engineers, Incorporated. SN 242,455. Pub. 9-26-67. Filed 4-1-66.

840,507. VANIDADES CONTINENTAL. Editorial America, S.A. SN 255,194. Pub. 9-26-67. Filed 9-27-66.

840,508. FLUB STUB. Western Air Lines, Inc. SN 255,268. Pub. 9-26-67. Filed 9-28-66.

840,509. NEWSLEASE. United States Leasing Corporation. SN 257,112. Pub. 9-26-67. Filed 10-24-66.

840,510. OFFSHORE. Industrial Trade Publications. SN 257,392. Pub. 9-26-67. Filed 10-27-66.

840,511. MISCELLANEOUS DESIGN. The Apparel Research Foundation, Inc. SN 258,032. Pub. 9-26-67. Filed 11-7-66.

840,512. TA TIMES AND DESIGN. Transamerica Corporation. SN 258,939. Pub. 9-26-67. Filed 11-17-66.

840,513. LET'S START. Scholastic Magazines, Inc. SN 259,029. Pub. 9-26-67. Filed 11-18-66.

840,514. UNIFACT. Bantam Books, Inc. SN 259,295. Pub. 9-26-67. Filed 11-23-66.

840,515. PANA-SCENES. Colourpicture Publishers, Inc. SN 259,408. Pub. 9-26-67. Filed 11-25-66.

840,516. MEDICAL ELECTRONICS NEWS. Chilton Company. SN 260,648. Pub. 9-26-67. Filed 12-13-66.

840,517. LASER-FARE. Korad Corporation. SN 264,552. Pub. 9-26-67. Filed 2-13-67.

840,518. PERMUTERM. Institute for Scientific Information, Inc. SN 269,959. Pub. 9-26-67. Filed 4-25-67.

840,519. HEART O GOLD. Heart-O-Gold Corporation. SN 271,985. Pub. 9-26-67. Filed 5-22-67.

840,520. LET'S START AND DESIGN. Scholastic Magazines, Inc. SN 273,423. Pub. 9-26-67. Filed 6-8-67.

Class 39 — Clothing

840,521. PANTHER (DESIGN). Slazengers Limited. SN 201,884. Pub. 8-3-65. Filed 9-14-64.

840,522. SUSAN WELLS. J. C. Penney Company. SN 231,479. Pub. 9-26-67. Filed 10-23-65.

840,523. DRESS LINER. American Maid Company. SN 234,988. Pub. 11-29-66. Filed 12-21-65.

840,524. LICO. Link & Co. Schuhfabrik GmbH. SN 244,332. Pub. 9-26-67. Filed 4-26-66.

840,525. ROBINITS AND DESIGN. Avalon Classics, Inc. SN 245,530. Pub. 5-9-67. Filed 5-12-66.

840,526. SUSAN HOLMES. The Thomas Holmes Corporation. SN 247,647. Pub. 9-26-67. Filed 6-8-66.

840,527. TED SAVAL. Genesco Inc. SN 248,465. Pub. 9-26-67. Filed 6-20-66.

840,528. REALITES. Oomphies, Inc. SN 248,839. Pub. 9-26-67. Filed 6-23-66.

840,529. ANGELITES AND DESIGN. R. G. Barry Corporation. SN 251,506. Pub. 5-9-67. Filed 8-2-66.

840,530. MAM'SELLE KNITS. Puritan Fashions Corporation. SN 252,891. Pub. 9-26-67. Filed 8-22-66.

840,531. TROPICAP. Kangol Wear Limited, assignee of E. Stern & Company. SN 255,929. Pub. 9-26-67. Filed 10-6-66.

840,532. LEOSHIRT. Capezio, Inc. SN 256,645. Pub. 9-26-67. Filed 10-18-66.

840,533. THE SHOE SHOW INC. AND DESIGN. The Shoe Show, Inc. SN 257,315. Pub. 9-26-67. Filed 10-26-66.

840,534. T. JONES. Tom Jones, Inc. SN 257,713. Pub. 9-26-67. Filed 11-1-66.

840,535. ROYAL HUNT AND DESIGN. L & M Knitting Mills, Inc. SN 257,867. Pub. 9-26-67. Filed 11-3-66.

840,536. FASHION REBEL AND DESIGN. L & M Knitting Mills, Inc. SN 257,868. Pub. 9-26-67. Filed 11-3-66.

840,537. JOSEPH & FEISS. The Joseph & Feiss Company (Delaware corporation), by assignment and change of name from The Joseph & Feiss Company (Ohio corporation). SN 258,552. Pub. 9-26-67. Filed 11-14-66.

840,538. MISCELLANEOUS DESIGN. A. Rivetz Co., Inc. SN 258,723. Pub. 9-26-67. Filed 11-15-66.

840,539. MISCELLANEOUS DESIGN. A. Rivetz Co., Inc. SN 258,724. Pub. 9-26-67. Filed 11-15-66.

840,540. RAMBL-STRIP'E. Farah Manufacturing Company, Inc. SN 259,540. Pub. 9-26-67. Filed 11-28-66.

840,541. GALE-LYNN. Gale Knitting Mills, Inc. SN 259,914. Pub. 9-26-67. Filed 12-2-66.

840,542. LES TEE. Grey-Wood Knitwear Industries, Inc. SN 260,249. Pub. 9-26-67. Filed 12-7-66.

840,543. THE WALK THAT RELAXES. Wellco Ro-Search Industries, Inc. SN 261,121. Pub. 9-26-67. Filed 12-19-66.

840,544. PERMA-HEM. I. C. Herman & Company, Inc. SN 261,300. Pub. 9-26-67. Filed 12-22-66.

840,545. BROOKDALE. J. J. Newberry Co. SN 265,206. Pub. 9-26-67. Filed 2-21-67.

840,546. GUESS WHICH BRAND. Chadbourn Gotham, Inc. SN 275,111. Pub. 9-26-67. Filed 6-30-67.

840,547. FURLANE BY KANGOL AND DESIGN. Kangol Wear Ltd. SN 276,074. Pub. 9-26-67. Filed 7-17-67.

840,548. IZOD. Izod, Ltd. SN 276,502. Pub. 9-26-67. Filed 7-21-67.

Class 40 — Fancy Goods, Furnishings, and Notions

840,296. (See Class 14 for this trademark.)

840,549. VICO. Kee Comb Co., Inc. SN 248,479. Pub. 9-26-67. Filed 6-20-66.

840,550. GO GO TAIL. J.L. Industries, Inc. SN 264,548. Pub. 9-26-67. Filed 2-13-67.

840,551. PERMALLOY. R. & A. Sales Co., d.b.a. R.A. Sales Co. SN 266,587. Pub. 9-26-67. Filed 3-13-67.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

840,221. (See Class 1 for this trademark.)

840,244. (See Class 2 for this trademark.)

840,337. (See Class 19 for this trademark.)

840,552. BERNAT. Emile Bernat & Sons Co. SN 206,215. Pub. 3-22-66. Filed 11-16-64.

840,553. PREMAYRE. Alison Ayres, Inc. SN 247,869. Pub. 9-26-67. Filed 6-13-66.

840,554. RESISTA-ROL. Quick Service Textiles Inc. SN 256,970. Pub. 9-26-67. Filed 10-21-66.

840,555. LOFTEX AND DESIGN. Bibb Manufacturing Company. SN 262,846. Pub. 9-26-67. Filed 1-19-67.

840,556. ALISTRANA A PERCHICK FABRIC. Abraham Perchick & Sons, Inc. SN 268,276. Pub. 9-26-67. Filed 4-4-67.

840,557. CORNUCOPIA. Lerrick & Company, Incorporated. SN 276,280. Pub. 9-26-67. Filed 7-19-67.

840,558. CORNUCOPIA AND DESIGN. Lerrick & Company, Incorporated. SN 276,283. Pub. 9-26-67. Filed 7-19-67.

Class 43 — Thread and Yarn

840,559. OPAL TWEED. Emile Bernat & Sons Co. SN 259,297. Pub. 9-26-67. Filed 11-23-66.

840,560. ICEBERG. Filatures Prouvost & Cie, La Lainiere de Roubaix. SN 262,371. Pub. 9-26-67. Filed 1-9-67.

840,561. TOM POUCE. Filatures Prouvost & Cie, La Lainiere de Roubaix. SN 263,042. Pub. 9-26-67. Filed 1-23-67.

Class 44 — Dental, Medical, and Surgical Appliances

840,272. (See Class 6 for this trademark.)

840,314. (See Class 18 for this trademark.)

Class 45 — Soft Drinks and Carbonated Waters

840,562. WITCHES BREW. Pacific Food Products Company. SN 258,571. Pub. 9-26-67. Filed 11-14-66.

Class 46 — Foods and Ingredients of Foods

840,563. SUNAID AND DESIGN. Sunaid Food Products, Inc. SN 154,067. Pub. 7-26-66. Filed 9-27-62.

840,564. BUTTER TENDER. Central Soya Company, Inc. SN 182,465. Pub. 11-17-64. Filed 12-6-63.

840,565. HONIG AND DESIGN. Honig Merkartikelen N.V., d.b.a. Honig Mills and Honig Foods Ltd. SN 184,820. Pub. 9-26-67. Filed 1-17-64.

840,566. BAKERY CHEF CARRYING ROLLING PIN AND TRAY OF DOUGHNUTS (DESIGN). Donut Shops Management Corporation. SN 204,244. Pub. 8-16-66. Filed 10-19-64.

840,567. SCALE DOWN. Specialty Franchises, Inc. SN 231,651. Pub. 9-26-67. Filed 10-26-65.

840,568. CHERRY BLOSSOM. Early California Foods, Inc., assignee of Pacific Cherry & Fruit Corp. SN 239,789. Pub. 1-3-67. Filed 2-28-66.

840,569. POTATO PIFFLES. Keebler Company, by change of name from United Biscuit Company of America. SN 240,812. Pub. 9-26-67. Filed 3-11-66.

840,570. SESAME SILLYS. Keebler Company, by change of name from United Biscuit Company of America. SN 240,813. Pub. 9-26-67. Filed 3-11-66.

840,571. ZORA. Ceskoslovenske Cokoladovny Oborovy Podnik, Modrany. SN 241,239. Pub. 9-26-67. Filed 3-17-66.

840,572. VIPCO. Valley Institutional Products Company. SN 248,559. Pub. 9-26-67. Filed 6-20-66.

840,573. ZIP 'N DIP. Golden Dipt Corporation. SN 249,640. Pub. 9-26-67. Filed 7-6-66.

840,574. ARRIVEDERCI. The Dob Corporation. SN 249,740. Pub. 9-26-67. Filed 7-7-66.

840,575. BEANEE. Stoppenbach Sausage Company. SN 251,247. Pub. 9-26-67. Filed 7-28-66.

840,576. VITA BULK. Carter-Wallace, Inc. SN 251,514. Pub. 9-26-67. Filed 8-2-66.

840,577. SPATINI. Spatini Company. SN 251,840. Pub. 9-26-67. Filed 8-5-66.

840,578. SHADY NOOK. Isadore D. Frank d.b.a. Frank Wholesale. SN 252,009. Pub. 9-26-67. Filed 8-9-66.

840,579. POWHATAN AND DESIGN. Taylor & Siedd, Inc. SN 252,496. Pub. 9-26-67. Filed 8-16-66.

840,580. HONEY NUTS AND DESIGN. Cain's Foods. SN 253,630. Pub. 9-26-67. Filed 9-1-66.

840,581. CORINA AND DESIGN. Tri-Valley Growers. SN 253,929. Pub. 9-26-67. Filed 9-6-66.

840,582. BAZOOKA. Topps Chewing Gum, Incorporated. SN 254,000. Pub. 9-26-67. Filed 9-7-66.

840,583. PACIFIC CLOUD. Balfour, Guthrie & Co., Limited. SN 254,110. Pub. 9-26-67. Filed 9-9-66.

840,584. CHEESE FROM FINLAND AND DESIGN. Atalanta Trading Corp., assignee of Valio Finnish Co-Operative Dairies Association. SN 254,340. Pub. 9-26-67. Filed 9-12-66.

840,585. COOL SCOOP. The Southland Corporation. SN 254,475. Pub. 9-26-67. Filed 9-14-66.

840,586. WONDER FLAKES. Potato Service, Inc. SN 255,015. Pub. 9-26-67. Filed 9-23-66.

840,587. PLUS+33. Wilsey-Bennett Co. SN 255,143. Pub. 9-26-67. Filed 9-26-66.

840,588. KREME KUPS. Coronet Baking, Inc. SN 255,186. Pub. 9-26-67. Filed 9-27-66.

840,589. NUTRI-EGG. A. J. Pietrus & Sons Co. SN 256,232. Pub. 9-26-67. Filed 10-11-66.

840,590. PAL-LOOP. P. Lorillard Company. SN 256,454. Pub. 9-26-67. Filed 10-14-66.

840,591. PRUNE DELIGHT. W. F. Straub & Company. SN 256,484. Pub. 9-26-67. Filed 10-14-66.

840,592. VIA VENETO. North American Food Service Corporation. SN 256,854. Pub. 9-26-67. Filed 10-20-66.

840,593. LICS. Cresca Company, Inc. SN 256,927. Pub. 9-26-67. Filed 10-21-66.

840,594. S & D AND DESIGN. S & D Coffee, Inc. SN 257,311. Pub. 9-26-67. Filed 10-26-66.

840,595. MALTINA. The F. L. Emmert Company. SN 257,375. Pub. 9-26-67. Filed 10-27-66.

840,596. MISCELLANEOUS DESIGN. The F. L. Emmert Company. SN 257,376. Pub. 9-26-67. Filed 10-27-66.

840,597. GORTON'S OF GLOUCESTER AND DESIGN. The Gorton Corporation, d.b.a. Gorton's of Gloucester. SN 258,096. Pub. 9-26-67. Filed 11-7-66.

840,598. PIZZACO AND DESIGN. H. A. McPeak, d.b.a. Pizzaco Express and Perky's Pizza. SN 258,561. Pub. 9-26-67. Filed 11-14-66.

840,599. COVENTRY FORGE INN AND DESIGN. C.F.I. Products, Inc. SN 259,083. Pub. 9-26-67. Filed 11-21-66.

840,600. SLENDER. Carnation Company. SN 261,459. Pub. 9-26-67. Filed 12-27-66.

840,601. BOWERS CANDIES AND DESIGN. C. J. Webb, Inc., d.b.a. Bowers Candies. SN 262,097. Pub. 3-28-67. Filed 1-9-67.

840,602. MACARONI MONTE BELLO. General Mills, Inc. SN 263,998. Pub. 9-26-67. Filed 2-6-67.

840,603. BEST AND DESIGN. Best Fruit and Produce Co. SN 268,659. Pub. 9-26-67. Filed 4-10-67.

840,604. SPRED-WICH. General Mills, Inc. SN 268,920. Pub. 9-26-67. Filed 4-12-67.

840,605. GOLD COAST DESSERT AND DESIGN. Allen Foods, Inc. SN 269,014. Pub. 9-26-67. Filed 4-13-67.

840,606. BEEHIVES. General Mills, Inc. SN 269,261. Pub. 9-26-67. Filed 4-17-67.

840,607. MIRIC. Van Den Bergh En Jurgens N.V. SN 269,961. Pub. 9-26-67. Filed 4-25-67.

840,608. DEAR LADY! Snokist Growers. SN 270,743. Pub. 9-26-67. Filed 5-5-67.

840,609. GREEN CREST. California Coastal Farms, Inc. SN 275,812. Pub. 9-26-67. Filed 7-12-67.

840,610. SLICE-A-DERV. Les Chefettes, Inc. SN 275,815. Pub. 9-26-67. Filed 7-12-67.

840,611. CLARKITOS. Philip Morris Incorporated, d.b.a. Clark Gum Co. SN 267,065. Pub. 9-26-67. Filed 7-17-67.

840,612. GRETTER'S BRAND AND DESIGN. Robert W. Gretter, d.b.a. Gretter's Distributing Co. and Gretter's Distrib. Co. SN 276,292. Pub. 9-26-67. Filed 7-19-67.

840,613. WW AND DESIGN. Weight Watchers International, Inc. SN 273,333. Pub. 9-26-67. Filed 6-7-67.

Class 47 — Wines

840,614. DE LADOUCETTE AND DESIGN. De Ladoucette Freres. SN 250,797. Pub. 9-26-67. Filed 7-11-66.

Class 48 — Malt Beverages and Liquors

840,615. MISCELLANEOUS DESIGN. Club Colombia Importers, Inc. SN 263,350. Pub. 9-26-67. Filed 1-26-67.

Class 49 — Distilled Alcoholic Liquors

840,616. OUDE MEESTER AND DESIGN. Distillers Corporation (S.A.) Limited. SN 239,748. Pub. 9-26-67. Filed 2-28-66.

840,617. SHIELD AND CREST (DESIGN). Schieffelin & Co. SN 254,892. Pub. 9-26-67. Filed 9-21-66.

840,618. ROYAL CRAG. Robert McNish & Company Limited, d.b.a. Craig, Marshall & Co. SN 260,670. Pub. 9-26-67. Filed 12-13-66.

840,619. BOURBON TIME. Heaven Hill Distilleries, Inc., d.b.a. R.L.D. Distilling Co. SN 261,488. Pub. 9-26-67. Filed 12-27-66.

840,620. E. REMY MARTIN & CO. AND DESIGN. Maison E. Remy Martin & Co. SN 261,956. Pub. 9-26-67. Filed 1-5-67.

840,621. ALMADEN. Almaden Vineyards, Inc. (Delaware corporation), assignee of Almaden Vineyards, Inc. (California corporation), d.b.a. Almaden Brandies. SN 267,494. Pub. 9-12-67. Filed 3-24-67.

Class 50 — Merchandise Not Otherwise Classified

840,622. EDU KIT. Litton Business Systems, Inc., by merger and change of name from Monroe International, Inc. SN 234,052. Pub. 9-26-67. Filed 12-6-65.

840,623. "RUSTICS." Charlet Corporation. SN 246,044. Pub. 9-26-67. Filed 5-19-66.

840,624. TWIST-PROOF. R. D. Werner Co., Inc. SN 254,827. Pub. 9-26-67. Filed 9-20-66.

840,625. POPPETS. Metlox Manufacturing Co. SN 256,953. Pub. 9-26-67. Filed 10-21-66.

840,626. DANNY DRIBBLE. Eldon Industries, Inc., d.b.a. Danlee Company. SN 272,546. Pub. 9-26-67. Filed 5-29-67.

840,627. SCOTCH. Minnesota Mining and Manufacturing Company. SN 273,238. Pub. 9-26-67. Filed 6-7-67.

Class 51 — Cosmetics and Toilet Preparations

840,335. (See Class 18 for this trademark.)

840,337. (See Class 19 for this trademark.)

840,628. KOSE. Kabushiki Kaisha Kobayashi Kose. MULTIPLE CLASS (Classes 51 and 52). SN 239,280. Pub. 9-26-67. Filed 2-21-66.

840,629. CRI D'AMOUR. Aloe Creme Laboratories, Inc. SN 266,987. Pub. 9-26-67. Filed 3-17-67.

840,630. NEW BORN. From the Ancients, Inc. SN 268,929. Pub. 9-26-67. Filed 4-12-67.

840,631. MIDNIGHT FROLIC. Sterling Drug Inc. SN 274,996. Pub. 9-26-67. Filed 6-28-67.

840,632. DALESMAN. Adams National Industries (Pty.) Ltd. SN 275,344. Pub. 9-26-67. Filed 7-5-67.

840,633. AMERICAN FAMILY. The Procter & Gamble Company. SN 275,985. Pub. 9-26-67. Filed 7-14-67.

840,634. FLINTLOCK. The Procter & Gamble Company. SN 276,290. Pub. 9-26-67. Filed 7-19-67.

Class 52 — Detergents and Soaps

840,251. (See Class 4 for this trademark.)

840,262. (See Class 6 for this trademark.)

840,337. (See Class 19 for this trademark.)

840,628. (See Class 51 for this trademark.)

840,635. SUPER-VISION AND DESIGN. Clarence J. Lande, d.b.a. Auto Specialty Products. SN 248,483. Pub. 9-26-67. Filed 6-20-66.

840,636. CJ COLOR JET AND DESIGN. Haas Chemical Corporation. SN 257,272. Pub. 9-26-67. Filed 10-26-66.

840,637. PHISOFOAM. Sterling Drug Inc. SN 259,348. Pub. 9-26-67. Filed 11-23-66.

840,638. LASER. Laser Laboratories, Inc. SN 259,839. Pub. 9-26-67. Filed 12-1-66.

840,639. MINER AND BURRO (DESIGN). Nugget Distributors' Cooperative of America, Inc. SN 276,615. Pub. 9-26-67. Filed 7-24-67.

Service Marks

Class 100 — Miscellaneous

840,640. FNCB SERVICES CORPORATION AND DESIGN. FNCB Services Corporation. SN 252,167. Pub. 9-26-67. Filed 8-11-66.

840,641. R ROYAL CASTLE AND DESIGN. Royal Castle System, Inc. SN 253,451. Pub. 9-26-67. Filed 8-30-66.

840,642. API. American Petroleum Institute. SN 255,181. Pub. 9-26-67. Filed 9-27-66.

840,643. IE. Iowa Electric Light and Power Company. SN 259,250. Pub. 9-26-67. Filed 11-22-66.

Class 101 — Advertising and Business

840,644. EAST COAST GUARDS ETC. AND DESIGN. East Coast Guards, Inc. SN 241,767. Pub. 9-26-67. Filed 3-24-66.

840,645. THE INTERFAITH GROUP, ETC. AND DESIGN. Presbyterian Life, Inc. SN 242,047. Pub. 9-26-67. Filed 3-28-66.

840,646. SUNNY DOLLARS AND DESIGN. Sun Oil Company, assignee of Volume Builders, Inc. SN 248,001. Pub. 9-26-67. Filed 6-14-66.

840,647. SUNNY DOLLARS. Sun Oil Company, assignee of Volume Builders, Inc. SN 248,002. Pub. 9-26-67. Filed 6-14-66.

840,648. MISCELLANEOUS DESIGN. Fort Worth Chamber of Commerce. SN 249,229. Pub. 9-26-67. Filed 6-29-66.

840,649. PAK N SAK. L. P. McCarty & Son, Inc. SN 258,393. Pub. 9-26-67. Filed 11-10-66.

840,650. PDS. Professional Detail Service, Inc. SN 258,923. Pub. 9-26-67. Filed 11-17-66.

840,651. STORK CLUB. The Stork Club, Inc. SN 267,222. Pub. 9-26-67. Filed 3-21-67.

Class 103 — Construction and Repair

840,652. LAMINITE. Laminite Plastics Corporation. SN 240,922. Pub. 9-19-67. Filed 3-14-66.

840,653. HONEYWELL. Honeywell Inc. SN 244,710. Pub. 9-26-67. Filed 5-2-66.

Class 105 — Transportation and Storage

840,654. ST AND DESIGN. Sundance Travel Service, Inc. SN 243,189. Pub. 9-26-67. Filed 4-11-66.

840,655. TREASURE CHEST (DESIGN). Norman H. Kneisel, d.b.a. Kneisel Travel. SN 258,699. Pub. 9-26-67. Filed 11-15-66.

840,656. MA AND DESIGN. Middle Atlantic Transporation Co., Inc. SN 260,341. Pub. 9-26-67. Filed 12-8-66.

Class 106 — Material Treatment

840,657. MISCELLANEOUS DESIGN. Robert Zacharias Company. SN 259,498. Pub. 9-26-67. Filed 11-25-66.

840,658. GREEN GRABBER FACE. Techni-Finish, Inc. SN 268,123. Pub. 9-26-67. Filed 4-3-67.

Class 107 — Education and Entertainment

840,659. SCREEN GEMS AND DESIGN. Screen Gems, Inc. SN 234,076. Pub. 8–8–67. Filed 12–6–65.

840,660. MISCELLANEOUS DESIGN. California College of Radio & Television Broadcasting, Inc., d.b.a. Columbia School of Broadcasting. SN 251,277. Pub. 9–26–67. Filed 7–29–66.

840,661. FIGURE OF A BIRD TIPPING ITS HAT. Baltimore Baseball Club, Inc. SN 262,541. Pub. 4–11–67. Filed 1–16–67.

840,662. FIGURE OF A BIRD SWINGING A BAT. Baltimore Baseball Club, Inc. SN 262,543. Pub. 4–11–67. Filed 1–16–67.

840,663. HEAD OF A BIRD (DESIGN). Baltimore Baseball Club, Inc. SN 262,544. Pub. 4–11–67. Filed 1–16–67.

840,664. FIGURE OF A BIRD WRITING ON A PIECE OF PAPER. Baltimore Baseball Club, Inc. SN 262,545. Pub. 4–11–67. Filed 1–16–67.

840,665. ORIOLES AND DESIGN. Baltimore Baseball Club, Inc. SN 262,546. Pub. 4–11–67. Filed 1–16–67.

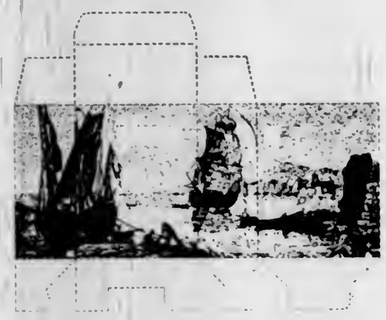
SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

SECTION 1

(Combined Certificates)

840,674. Karlsruher Parfumerie- und Toiletteseifenfabrik F. Wolff & Sohn GmbH, Karlsruhe, Germany. SN 252,506. Filed P.R. 8–17–66; Am. S.R. 10–11–67.



Class 51—Cosmetics and Toilet Preparations

For Eau de Cologne, Hair Cream, Shaving Cream, Hair Tonic, Pre-Shave Lotion, After-Shave Lotion.

Class 52—Detergents and Soaps

For Toilet Soap.

First use Aug. 15, 1961; in commerce Apr. 22, 1966.

SECTION 2

Class 18 — Medicines and Pharmaceutical Preparations

840,666. Tarmac Products, Inc., New York, N.Y. SN 253,065. Filed P.R. 8–24–66; Am. S.R. 10–5–67.

HEMORRODIL

For Pharmaceutical Preparation for a Soothing and Cooling Ointment for Pain, Burning and Itching of Hemorrhoids.
First use March 1964.

Class 45 — Soft Drinks and Carbonated Waters

840,667. The Pillsbury Company, Minneapolis, Minn. SN 265,433. Filed P.R. 2–24–67; Am. S.R. 10–9–67.

TART N' TANGY

For Powders for Making Soft Drinks.
First use May 6, 1966.

Class 46 — Foods and Ingredients of Foods

840,668. John W. Leavitt Company, d.b.a. The Leavitt Corporation, Everett, Mass. SN 236,100. Filed P.R. 1–10–66; Am. S.R. 9–15–67.

Hodge-Podge

For Cocktail Snacks, Having as Their Principal Ingredients Corn, Prepared Cereals, Pretzels, Mixed Nuts, Salt, Vegetable Oil, Spices, and Seasonings.
First use Aug. 1, 1965.

840,669. W. R. Grace & Co., New York, N.Y., assignee of Leaf Brands, Inc., Chicago, Ill. SN 254,546. Filed P.R. 9–15–66; Am. S.R. 10–2–67.

MR. ATLAS

For Chewing Gum.
First use Aug. 31, 1966.

840,670. Henri's Food Products Company, Inc., Milwaukee, Wis. SN 255,978. Filed P.R. 10–7–66; Am. S.R. 10–6–67.

SMOKY BITS

For Salad Dressing.
First use Sept. 20, 1966.

840,671. Tasty Baking Company, Philadelphia, Pa. SN 263,325. Filed P.R. 1–26–67; Am. S.R. 10–10–67.

tasty-flake

For Potato Chips.
First use Sept. 19, 1966.

840,672. Tom Huston Peanut Company, Columbus, Ga. SN 271,994. Filed P.R. 5–22–67; Am. S.R. 10–4–67.

CRIS-P-NUTS

For Peanuts.
First use Sept. 21, 1966.

Class 51 — Cosmetics and Toilet Preparations

840,674. Combined Certificate (See Section 1).

840,673. Miss Kennedy Cosmetics, Inc., New York, N.Y. SN 242,266. Filed P.R. 3–30–66; Am. S.R. 10–9–67.

Miss Kennedy

For Facial Powder, Lipstick, Face Creams and Lotions.
First use Feb. 5, 1966.

840,675. Revlon, Inc., New York, N.Y. SN 253,985. Filed P.R. 9–7–66; Am. S.R. 10–9–67.

'SLEEP CREME CONCENTRATE'

For Emollient Cream Concentrate for the Skin.
First use July 25, 1966.

840,676. Revlon, Inc., New York, N.Y. SN 253,990. Filed P.R. 9–7–66; Am. S.R. 10–9–67.

PINK COGNAC

For Lipstick and Nail Enamel.
First use July 25, 1966.

840,677. Cosmetically Yours, Inc., Yonkers, N.Y. SN 264,032. Filed 2–6–67.



For Face Powder.
First use May 1, 1964.

Class 52 — Detergents and Soaps

840,674. Combined Certificate (See Section 1).

840,678. Rexall Drug and Chemical Company, d.b.a. Rexall Drug Company, Los Angeles, Calif. SN 253,912. Filed P.R. 9–6–66; Am. S.R. 10–5–67.

better pet

For Dog Shampoo.
First use Aug. 12, 1966.

TRADEMARK REGISTRATIONS RENEWED

62,684. FATHER JOHN'S. Cl. 18. 5–21–07.
63,757. CREME SEC. Cl. 18. 7–9–07.
64,980. MEGGER. Cl. 26. 9–3–07.
65,291. SCHERING. Cl. 18. 9–17–07.
65,491. ROEBLING. Cl. 13. 10–8–07.
67,061. "SNOWDRIFT" AND BACKGROUND DESIGN. Cl. 46. 1–14–08.
67,706. "CANNON BRAND" AND REPRESENTATION OF A CANNON. Cl. 46. 2–18–08.
68,186. SUPERBA. Cl. 39. 3–10–08.
68,335. MUELLER. Cl. 23. 3–31–08.
230,709. NEP. Cl. 52. 8–2–27.
232,100. HEART O' ORANGE. Cl. 45. 8–30–27.
232,136. FERRO FLUX. Cl. 34. 8–30–27.
233,409. SILVER MOON. Cl. 42. 9–27–27.
233,736. SPEED KING. Cl. 22. 10–11–27.
233,883. "FOR THE LAND'S SAKE." Cl. 1. 10–11–27.
233,906. REX FLINTKOTE. Cl. 12. 10–11–27.
233,955. "CUBAN DRY" AND DESIGN. Cl. 45. 10–11–27.
234,264. SNOW FLAKE. Cl. 46. 10–18–27.
234,338. NETTLEFOLDS AND DESIGN. Cl. 13. 10–25–27.
234,339. NETTLEFOLDS AND DESIGN. Cl. 13. 10–25–27.
234,340. NETTLEFOLDS AND DESIGN. Cl. 13. 10–25–27.
234,435. DECO. Cl. 46. 10–25–27.
235,027. LOX-RITE AND DESIGN. Cl. 43. 11–8–27.
235,092. "LILIPUTIAN BAZAAR" AND DESIGN. Cl. 42. 11–8–27.
235,237. MARTHA WASHINGTON AND DESIGN. Cl. 46. 11–15–27.
235,584. HAPPY HOME. Cl. 46. 11–22–27.
235,950. CARBORUNDUM. Cl. 21. 11–29–27.
236,106. STURDEE AND DESIGN. Cl. 7. 12–6–27.

236,953. "CONTINUOUS INTERFOLDED" AND DESIGN. Cl. 37. 12–27–27.
237,018. REPRESENTATION OF TOOL IN HAND. Cl. 14. 1–3–28.
433,512. SUNWAX. Cl. 15. 10–14–47.
433,515. SUN MICROWAX. Cl. 15. 10–14–47.
433,594. CLAIROXIDE. Cl. 6. 10–21–47.
433,683. MARATHON AND DESIGN. Cl. 15. 10–28–47.
433,744. NIMONIC. Cl. 14. 10–28–47.
433,851. FANSTEEL AND DESIGN. Cl. 21. 11–4–47.
433,906. UNITED WALLPAPER AND DESIGN. Cl. 37. 11–4–47.
433,965. PALMOLIVE. Cl. 51. 11–4–47.
434,000. H AND DESIGN. Cl. 13. 11–4–47.
434,072. NEPTUNE. Cl. 6. 11–4–47.
237,783. TUX. Cl. 39. 1–17–28.
237,989. EQUITY. Cl. 35. 1–24–28.
239,690. MODERN PACKAGING. Cl. 38. 3–6–28.
239,943. SENATOR. Cl. 46. 3–13–28.
240,199. PANTERIC. Cl. 18. 3–20–28.
240,492. CLARKAT. Cl. 23. 3–27–28.
240,974. GD. Cl. 23. 4–10–28.
430,206. BOLTRONIZED. Cl. 6. 6–10–47.
433,500. JD AND DESIGN. Cl. 6. 10–14–47.
433,501. PRIMABSOLUE. Cl. 6. 10–14–47.
434,228. RHAPSODY. Cl. 28. 11–11–47.
434,379. ORGUEIL. Cl. 51. 11–18–47.
434,703. NYLODRINE. Cl. 18. 12–2–47.
435,011. GAVICIDE. Cl. 6. 12–9–47.
435,098. GODDESS OF CRETE. Cl. 51. 12–9–47.
435,146. ACTI-DIONE. Cl. 18. 12–9–47.
435,566. ZYMAFOLIC. Cl. 18. 12–30–47.
435,594. COROSOFOIL. Cl. 16. 1–6–48.
435,630. NECP. Cl. 12. 1–6–48.
435,658. ALECO. Cl. 51. 1–6–48.
436,515. COPROL. Cl. 46. 2–10–48.
436,566. RED ROOSTER AND DESIGN. Cl. 18. 2–10–48.
436,685. ON THE LINE. Cl. 38. 4–14–48.
437,144. INTRA GOTHICORDER AND DESIGN. Cl. 44. 3–9–48.
437,578. CUSHING'S PERFECTION DYES. Cl. 6. 3–30–48.
437,658. FASHION HILL. Cl. 39. 3–30–48.
437,661. BRENLIN. Cl. 32. 3–30–48.
437,991. SUNKIST. Cl. 13. 4–6–48.
438,046. REGINA. Cl. 49. 4–6–48.
434,288. AFTER HOURS. Cl. 51. 11–18–47.

TRADEMARK REGISTRATIONS CANCELED

Section 8

The following registrations issued Oct. 24, 1961

722,923. ROTENE. Cl. 1.
722,925. ATLAS. Cl. 1.
722,929. SPIN-A-SPICE. Cl. 2.
722,933. CONVERSATION. Cl. 4.
722,947. WIRECO BROWN STRAND. Cl. 7.
722,954. JALGRATE. Cl. 12.
722,966. PORT-O-SAN. Cl. 13.
722,969. VOSS AND DESIGN. Cl. 13.
722,975. ANOCAST. Cl. 14.
722,977. VIBROCAST AND DESIGN. Cl. 14.
722,980. ROCK-FLEX. Cl. 16.
722,987. NAM-L-FLO. Cl. 16.
722,988. GLITTER-GRIP. Cl. 16.
722,989. LAKADIZE. Cl. 16.
722,991. TYGORUST. Cl. 16.
722,994. D. R. CALLAWAY'S GOLDEN HEALER. Cl. 18.
723,000. AUTIQUE. Cl. 19.
723,001. THE JET AGE PUTT-NIK AND DESIGN. Cl. 19.
723,002. JIM RATHMANN XTERMINATOR. Cl. 19.
723,011. IPC DK AND DESIGN. Cl. 21.
723,012. MA AND DESIGN. Cl. 21.
723,014. MICRO-PATH. Cl. 21.
723,016. HOSPITALITY. Cl. 21.
723,017. TOAST 'N JAM. Cl. 21.
723,022. BUD BRITE AND DESIGN. Cl. 21.
723,023. STIMULAIRE. Cl. 21.
723,025. DILLEY AND DESIGN. Cl. 21.
723,026. GRIPPY. Cl. 21.
723,027. TARRYTRON. Cl. 21.
723,029. VARISYNC. Cl. 21.
723,030. NYLINE. Cl. 21.
723,031. PIROUETTE. Cl. 21.
723,033. FIXKIT. Cl. 21.
723,034. TWIN-RITE-LITE. Cl. 21.
723,035. CONVALURE. Cl. 21.
723,040. ROBOTOMICS. Cl. 21.
723,041. VEGATROL. Cl. 21.
723,045. QUARTER MILKER. Cl. 23.
723,049. SUR-TORK. Cl. 23.
723,051. MIDLANTIC METAL FABRICATORS AND DESIGN. Cl. 23.
723,052. LEEBAR. Cl. 23.
723,053. CESCO. Cl. 23.
723,054. LODDING FLOATING DOCTOR. Cl. 23.
723,056. MOBILTOW. Cl. 23.
723,058. KINGCUTTER. Cl. 23.
723,060. MISER MITE. Cl. 23.
723,061. FIRE MAN FIRE AND DESIGN. Cl. 23.
723,068. CONEY BURGER. Cl. 23.
723,072. MINUTE MAGIC. Cl. 23.
723,075. FARM FAIR. Cl. 23.
723,087. NOVO DIAC. Cl. 27.
723,088. REPRESENTATION OF A WOODPECKER. Cl. 27.
723,089. REPRESENTATION OF A WOODPECKER IN A TRIANGLE. Cl. 27.
723,092. SUPER SWIRL. Cl. 29.
723,094. POWDERETS. Cl. 29.
723,097. FOOD CHEF AND DESIGN. Cl. 31.
723,098. PRESSURE-MATIC. Cl. 31.
723,100. DION. Cl. 31.
723,107. GRANILITE. Cl. 32.
723,110. MISS FIXIT. Cl. 32.
723,111. KENT. Cl. 32.
723,113. CURVALUM. Cl. 32.
723,116. TRI-PAK. Cl. 34.
723,117. HORSE TORCH. Cl. 34.
723,118. EAGLE LINE. Cl. 34.
723,122. MANGANESITE ETC. AND DESIGN. Cl. 35.
723,127. CUSHIONAIRE. Cl. 39.
723,130. CIBELES AND DESIGN. Cl. 39.
723,131. VIP. Cl. 39.
723,134. PETI PETITE BY COLTON. Cl. 39.
723,137. SNOWCAPS. Cl. 39.
723,143. FREEMAN 77'S. Cl. 39.
723,155. WONDR-DENT. Cl. 44.
723,157. DUME AND DESIGN. Cl. 44.
723,162. ORTHO-TRAC. Cl. 44.
723,163. PQ. Cl. 46.
723,168. GREEN FARMS. Cl. 46.
723,172. PEANUT BOY. Cl. 46.
723,175. PAR-BAR. Cl. 46.
723,176. NUMA. Cl. 46.
723,179. FLEURS SUPREMES. Cl. 50.
723,181. PECK BAR. Cl. 50.
723,191. ANCHOR BUSINESS RECORDS AND DESIGN. Cl. 101.
723,192. MEDIPHONE. Cl. 101.
723,194. HERBERT RICHHEIMER, INC. THE HOME IMPROVER AND DESIGN. Cl. 103.
723,195. DISCOMANIA. Cl. 107.
723,203. CHILDREN'S SUPERMART AND DESIGN. Cl. 37.
723,206. THE JOE SMITH POLL. Cl. 38.
723,207. SIMSTONIC AND DESIGN. Cl. 45.
723,210. BUSY TAG. Cl. 50.

Section 18

559,969. A LEWSID JEWEL BY LLEWELLYN. Cl. 3. 6–10–52.
298,337. DEFIANCE. Cl. 31. 10–25–32.

TRADEMARK REGISTRATIONS AMENDED, DISCLAIMED, CORRECTED, ETC.

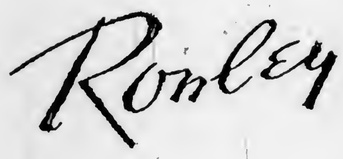
59,369. AMBERG'S. Cl. 37. 1–8–07. Amberg File & Index Co., Kankakee, Ill. Amended to appear:

AMBERG

59,370. AMBERG'S. Cl. 37. 1–8–07. Amberg File & Index Co., Kankakee, Ill. Amended to appear:

AMBERG

327,997. RONLEY AND DESIGN. Cl. 39. 9–10–35. Goldring Merchandising Corporation. Goldring Inc., New York, N.Y. Amended: In the statement, column 1, lines 8 and 9, the description of goods is deleted and *women's coats* is inserted, and the drawing is amended to appear:



437,832. THE PULSE BEAT OF INDUSTRY. Cl. 38. 3–30–48. McGraw-Hill Publishing Co., Inc. McGraw-Hill, Inc., New York, N.Y. Amended to appear:

PULSEBEAT

541,439. BAKORN AND DESIGN. Cl. 46. 4–24–57. Devonsheer Melba Corporation. R. J. Reynolds Foods, Inc., New York, N.Y. Amended to appear:

BA*KORN

739,416. PETIT LEIGUE BY CHERBERG. Cl. 39. 10–16–62. Cherberg Company, Inc. Petit Leigue, Inc., Philadelphia, Pa. Amended to appear:

PETIT LEIGUE

785,724. LOWENBRAU MUNICH DARK SPECIAL AND DESIGN. Cl. 48. 2–23–65. Löwenbräu München, Munich, Germany. Corrected: In the statement, column 2, after line 6, *No claim is made to the representations of gold medals or to any of the wording except "Löwenbräu."* should be inserted.

785,725. LOWENBRAU MUNICH LIGHT SPECIAL AND DESIGN. Cl. 48. 2–23–65. Löwenbräu München, Munich, Germany. Corrected: In the statement, column 2, after line 6, *No claim is made to the exclusive right to the use of the word "Munich" apart from the mark shown.* should be inserted.

785,726. LOWENBRAU MUNICH LIGHT SPECIAL AND DESIGN. Cl. 48. 2–23–65. Löwenbräu München, Munich, Germany. Corrected: In the statement, column 2, after line 6, *No claim is made to the representations of gold medals or to any of the wording except "Löwenbräu."* should be inserted.

785,727. LOWENBRAU MUNICH DARK SPECIAL AND DESIGN. Cl. 48. 2–23–65. Löwenbräu München, Munich, Germany. Corrected: In the statement, column 2, after line 6, *No claim is made to the exclusive right to the use of the word "Munich" apart from the mark shown.* should be inserted.

834,167. TRIANGLE WITH SEMI-CIRCLE CUTOUTS (DESIGN). Cl. 103. 8–22–67. James A. Cassidy Company, Inc., Washington, D.C. Corrected: In the statement, column 2, line 3, "mail" should be deleted and *nail* should be inserted.

835,728. BFI AND DESIGN. Cl. 1. 9–26–67. Bedford Farms, Inc., Shelbyville, Tenn. Corrected: In the statement, column 1, line 1, "Bedform" should be deleted and *Bedford* should be inserted.

838,085. TOLAS. Cl. 103. 10–31–67. Tompkins' Label Service, Philadelphia, Pa. Corrected: In the statement, column 1, line 1, "Tomkins' " should be deleted and *Tompkins'* should be inserted.

INDEX OF REGISTRANTS

DECEMBER 12, 1967

(Registered ; Renewed ; Canceled ; Amended, Disclaimed, Corrected, etc. ; New Certificates ; 12c Publications.)

A/S Dumex (Dumex Ltd.), Copenhagen, Denmark. 723,157, canc. Cl. 44.
Accurate Systems, Inc., Costa Mesa, Calif. 840,346, pub. 9–26–67. Cl. 19.
Acme Engineering and Mfg. Corp., Muskogee, Okla. 840,471, pub. 9–26–67. Cl. 34.
Adams-Mills Corp., High Point, N.C. 722,977, canc. Cl. 14.
Adams National Industries (Pty) Ltd., Durban, Natal, Republic of South Africa. 840,632, pub. 9–26–67. Cl. 51.
Adell Industries, Inc., Detroit, Mich. 723,000, canc. Cl. 19.
Adikes, J. & L., Inc., Jamaica, N.Y. 840,261, pub. 5–18–65. Cl. 6.
Admiral Shoe Corp., d.b.a. Mutual Shoe Sales Co., Manchester, N.H. 723,137, canc. Cl. 39.
Air Devices, Inc., New York, N.Y. 840,478, pub. 9–26–67. Cl. 34.
Air Master Corp., Philadelphia, Pa. 840,288, pub. 9–26–67. Cl. 12.
Airline Textile Mfg. Co., Des Moines, Iowa. 840,245, pub. 9–26–67. Cl. 3.
Air-Springs, Inc., New York, N.Y. 840,340, pub. 9–26–67. Cl. 19.
Airstream, Inc., Jackson Center, Ohio. 840,358, pub. 9–26–67. Cl. 21.
Alamo Citrus, Inc., Alamo, Tex. 723,176, canc. Cl. 46.
Alco Standard Corp., Philadelphia, Pa., from Tempo products Co., Solon, Ohio. 840,395, pub. 9–12–67. Cl. 23.
Allegheny Ludlum Steel Corp., Pittsburgh, Pa. 840,299, pub. 9–26–67. Cl. 14.
Allen Foods, Inc., St. Louis, Mo. 840,605, pub. 9–26–67. Cl. 46.
Allied Mills, Inc., Chicago, Ill. 840,330, pub. 9–26–67. Cl. 18.
Almaden Vineyards, Inc., from Almaden Vineyards, Inc., San Francisco, Calif. 840 621, pub. 9–12–67. Cl. 49.
Aloe Creme Laboratories, Inc., Fort Lauderdale, Fla. 840,333, pub. 9–26–67. Cl. 18.
Aloe Creme Laboratories, Inc., Fort Lauderdale, Fla. 840,629, pub. 9–26–67. Cl. 51.
Amberg File & Index Co., Kankakee, Ill. 59,369–70. Am. 7(d). Cl. 37.
American Cyanamid Co., Wayne, N.J. 840,255, pub. 9–26–67. Cl. 4.
American District Telegraph Co., New York, N.Y. 840,354, pub. 9–26–67. Cl. 21.
American Home Products Corp., New York, N.Y. 840,336, pub. 9–26–67. Cl. 18.
American Machine & Foundry Co., New York, N.Y. 723,049, canc. Cl. 23.
American Maid Co., Chicago, Ill. 840 523, pub. 9–26–67. Cl. 39.
American Petroleum Institute, New York, N.Y. 840,642, pub. 9–26–67. Cl. 100.
American Sales Book Co., Toronto, Ontario, Canada, Niagara Falls and Elmira, N.Y., to Moore Business Forms, Inc., Niagara Falls, N.Y. 236,953, ren. 12–12–67. Cl. 37.
Ametek, Inc., East Moline, Ill. 840,423, pub. 9–26–67. Cl. 26.
Amphenol-Borg Electronics Corp., Broadview, Ill. 723,011, canc. Cl. 21.
Amylo Chemie N.V., Koog aan de Zaan, Netherlands. 840,264, pub. 9–26–67. Cl. 6.
Anchor Business Records, Havertown, Pa. 723,191, canc. Cl. 101.
Anson Inc., Providence, R.I. 840,442, pub. 9–26–67. Cl. 28.
Anzac Industries, Inc., Cleveland, Ohio. 840,350, pub. 9–26–67. Cl. 21.
Apparel Research Foundation, Inc., The, Washington, D.C. 840,511, pub. 9–26–67. Cl. 38.
Ardex Chemie G.m.b.H. Chemische Fabrik Witten, Witten-Annen, Germany. 840,286, pub. 9–26–67. Cl. 12.
Arkay Packaging Corp., New York, N.Y. 840,234, pub. 9–26–67. Cl. 2.
Armour and Co., Chicago, Ill. 722 925, canc. Cl. 1.
Aston Martin Lagonda Ltd., Newport Pagnell, England. 840 338, pub. 9–26–67. Cl. 19.
Atalanta Trading Corp., New York, N.Y., from Valio Finnish Co-Operative Dairies Association, Helsinki, Finland. 840,584, pub. 9–26–67. Cl. 46.
Auto Craft Products, Inc., Kansas City, Mo. 723,092, canc. Cl. 29.
Auto Specialty Products : *See*—
Lande, Clarence J.
Automotive Products Co., Ltd., Leamington Spa, England. 840 341, pub. 7–18–67. Cl. 19.
Avalon Classics, Inc., New York, N.Y. 840,525, pub. 5–9–67. Cl. 39.
Avnet, Inc., New York, N.Y. 840,260, pub. 9–26–67. Cl. 5.
Ayres, Alison, Inc., New York, N.Y. 840,553, pub. 9–26–67. Cl. 42.
Balfour, Guthrie & Co., Ltd., San Francisco, Calif. 840,583, pub. 9–26–67. Cl. 46.
Ball, Charles A., Jr., d.b.a. Woodrow Engineering Co., Northbrook, Ill. 840,430, pub. 9–26–67. Cl. 26.
Ball Chemical Co., Cleveland, Ohio. 722,933, canc. Cl. 4.
Baltimore Baseball Club, Inc., Baltimore, Md. 840,661–5, pub. 4–11–67. Cl. 107.
Baltus, Benjamin M., d.b.a. Benmar Products Co., Milwaukee, Wis. 723,172, canc. Cl. 46.
Bantam Books, Inc., New York, N.Y. 840,514, pub. 9–26–67. Cl. 38.
Barry, R. G., Corp., Columbus, Ohio. 840,236, pub. 9–26–67. Cl. 2.
Barry, R. G., Corp., Columbus, Ohio. 840,529, pub. 9–26–67. Cl. 39.
Bassett, W. E., Co., The, Derby, Conn. 840,386, pub. 9–26–67. Cl. 23.
Beauty Counselors, Inc., Grosse Pointe, Mich. 840,270, pub. 9–26–67. Cl. 6.
Bedford Farms, Inc., Shelbyville, Tenn. 835,728, cor. Cl. 1.
Belk Stores Services, Inc., Charlotte, N.C. 840,294, pub. 9–26–67. Cl. 13.
Belk Stores Services, Inc., Charlotte, N.C. 840,406, pub. 9–26–67. Cl. 23.
Belk Stores Services, Inc., Charlotte, N.C. 840,412, pub. 9–26–67. Cl. 24.
Bernat, Emile, & Sons Co., Uxbridge, Mass. 840,552, pub. 3–22–66. Cl. 42.
Bernat, Emile, & Sons Co., Uxbridge, Mass. 840,559, pub. 9–26–67. Cl. 43.
Best & Co., Inc., to McCrory Corp., New York, N.Y. 235,092, ren. 12–12–67. Cl. 42.
Best Fruit & Produce Co., South San Francisco, Calif. 840,603, pub. 9–26–67. Cl. 46.
Bibb Mfg. Co., Macon, Ga. 840,555, pub. 9–26–67. Cl. 42.
Bingham, Samuel, Co., Chicago, Ill. 840,404, pub. 9–26–67. Cl. 23.
Binney & Smith Inc., New York, N.Y. 840,504, pub. 9–26–67. Cl. 37.
Bio-Neering, Inc., Indianapolis, Ind. 840,314, pub. 9–26–67. Multiple Class (Classes 18 and 44).
Black & Decker Mfg. Co., The, Towson, Md. 723,033, canc. Cl. 21.
Bliss, E. W., Co., Davenport, Iowa. 840,427, pub. 9–26–67. Cl. 26.
Blue Ribbon Leather Co., Inc., Shelbyville, Tenn. 840,246, pub. 9–26–67. Cl. 3.
Body Dynamics : *See*—
Enelow, Gertrude.
Bowers Candles : *See*—
Webb, C. J., Inc.
Breneman, Chas. W., Co., The, to Breneman, Inc., Cincinnati, Ohio. 437,661, ren. 12–12–67. Cl. 32.
Breneman, Inc. : *See*—
Breneman, Chas. W., Co., The.
Breskin & Charlton Publishing Corp., to McGraw-Hill, Inc., New York, N.Y. 239 690, ren. 12–12–67. Cl. 38.
Bristol-Myers Co., New York, N.Y. 840,310, pub. 9–26–67. Cl. 18.
Bristol-Myers Co., New York, N.Y. 840,318–21, pub. 9–26–67. Cl. 18.
Bristol-Myers Co., New York, N.Y. 840,326–8, pub. 9–26–67. Cl. 18.
Broyhill Furniture Factories, Lenoir, N.C. 840,460, pub. 9–26–67. Cl. 32.
Burdick, William H. : *See*—
Cushing, Mary F.
Burns-Strauss, Inc., d.b.a. Woodpecker Products, Los Angeles, Calif. 840.238, pub. 9–26–67. Cl. 2.
C.F.I. Products, Inc., Pottstown, Pa. 840,599, pub. 9–26–67. Cl. 46.
CF & I Steel Corp. : *See*—
Roebling's, John A., Sons Co.
Cabot Corp., Boston, Mass. 840.422, pub. 9–26–67. Cl. 26.
Cain's Foods, Tempe, Ariz. 840,580, pub. 9–26–67. Cl. 46.
California Coastal Farms, Inc., Salinas, Calif. 840,609, pub. 9–26–67. Cl. 46.
California College of Radio & Television Broadcasting, Inc., d.b.a. Columbia School of Broadcasting, San Francisco, Calif. 840 660, pub. 9–26–67. Cl. 107.
California Fruit Growers Exchange, to Sunkist Growers, Inc., Los Angeles, Calif. 437,991, ren. 12–12–67. Cl. 13.
Callaway, D. R., d.b.a. D. R. Callaway Medicine Co., Winston-Salem, N.C. 722,994, canc. Cl. 18.
Cannon, H. P., & Son Inc. : *See*—
Cannon, Henry P.
Cannon, Henry P., to H. P. Cannon & Son, Inc., Bridgeville, Del. 67,706, ren. 12–12–67. Cl. 46.
Capezio, Inc., New York, N.Y. 840,532, pub. 9–26–67. Cl. 39.
Carborundum Co., The, to The Carborundum Co., Niagara Falls, N.Y. 235,950, ren. 12–12–67. Cl. 21.
Carleton & Hovey, to Father John's Medicine Co., Inc., Lowell, Mass. 62,684, ren. 12–12–67. Cl. 18.
Carlson, F. L., d.b.a. Quarter Milker Co., Estacada, Oreg. 723,045, canc. Cl. 23.
Carnation Co., Los Angeles, Calif. 840,600, pub. 9–26–67. Cl. 46.
Carrier Corp., Syracuse, N.Y. 840,385, pub. 9–26–67. Cl. 23.
Carter-Wallace, Inc., New York, N.Y. 840,576, pub. 9–26–67. Cl. 46.
Cassidy, James A., Co., Inc., Washington, D.C. 834,167, cor. Cl. 103.
Cellulose Products Corp., Milltown, N.J. 723,094, canc. Cl. 29.
Central Soya Co., Inc., Fort Wayne, Ind. 840,564, pub. 11–17–64. Cl. 46.

Ceskoslovenske Cokoladovny, Oborovy Podnik, Modrany, Modrany, Czechoslovakia. 840,571, pub. 9–26–67. Cl. 46.
Chadbourn Finance Co., d.b.a. Time-Saving Specialties, Minneapolis, Minn. 840,496, pub. 10–11–66. Cl. 37.
Chadbourn Gotham, Inc., Charlotte, N.C. 840,546, pub. 9–26–67. Cl. 39.
Championship Games, Inc., Southport, Conn. 840,364, pub. 9–26–67. Cl. 22.
Charlescraft Products: *See*— Levin, Charles, & Co.
Charlet Corp., New York, N.Y. 840,623, pub. 9–26–67. Cl. 50.
Chemical Process Co., San Francisco, Calif. 723,100, canc. Cl. 31.
Chemical Research Laboratories, Superior, Wis. 840,301, pub. 9–26–67. Cl. 15.
Chemical Rubber Co., The, Cleveland, Ohio. 840,237, pub. 9–26–67. Multiple Class (Classes 2 and 26).
Chemische Fabrik Auf Actien (Vorm. E. Schering), Berlin, Germany, to Schering Corp., Bloomfield, N.J. 65,291, ren. 12–12–67. Cl. 18.
Chemway Corp., Wayne, N.J. 840,325, pub. 9–26–67. Cl. 18.
Cherberg Co., Inc., Petit Leigue, Inc., Philadelphia, Pa. 739,416. Am. 7(d). Cl. 39.
Children's Supermart, Inc., Washington, D.C. 723,203, canc. Cl. 37.
Chilton Co., Philadelphia, Pa. 840,516, pub. 9–26–67. Cl. 38.
Chittick, Howard A., d.b.a. Fairfax Biological Laboratory, Clinton Corners, N.Y. 840,274, pub. 9–26–67. Cl. 6.
Chromatronix, Inc., Berkeley, Calif. 840,291, pub. 9–26–67. Cl. 13.
Chrysler Outboard Corp., Hartford, Wis. 840,383, pub. 9–26–67. Cl. 23.
Ciba, Ltd., Basel, Switzerland. 840,332, pub. 9–26–67. Cl. 18.
Clack Corp., Madison, Wis. 840,393, pub. 9–26–67. Cl. 23.
Clairol Inc., Stamford, Conn. to Clairol Inc., New York, N.Y. 433,594, ren. 12–12–67. Cl. 6.
Clare, C. P., & Co., Chicago, Ill. 840,353, pub. 5–2–67. Cl. 21.
Clark Equipment Co.: *See*— Clark Tructractor Co.
Clark Gum Co.: *See*— Morris, Philip, Inc.
Clark Tructractor Co., to Clark Equipment Co., Buchanan, Mich. 240,492, ren. 12–12–67. Cl. 23.
Clary Corp., San Gabriel, Calif. 840,424, pub. 9–26–67. Cl. 26.
Club Colombia Importers, Inc., New York, N.Y. 840,615, pub. 9–26–67. Cl. 48.
Cohn, H. C., & Co., to Superba Cravats, Inc., Rochester, N.Y. 68,186, ren. 12–12–67. Cl. 39.
Coleman Co., Inc., The, Wichita, Kans. 840,366–7, pub. 9–26–67. Cl. 22.
Colgate-Palmolive Co.: *See*— Colgate-Palmolive-Peet Co. Dermetics, Inc. Rosenstein, Nettie, Inc.
Colgate-Palmolive-Peet Co., Jersey City, N.J., to Colgate-Palmolive Co., New York, N.Y. 433,965, ren. 12–12–67. Cl. 51.
Colourpicture Publishers, Inc., Jamaica Plain, Mass. 840,515, pub. 9–26–67. Cl. 38.
Columbia Broadcasting System, Inc., New York, N.Y. 840,359–60, pub. 9–26–67. Multiple Class (Classes 21 and 36).
Columbia Broadcasting System, Inc., New York, N.Y. 840,489, pub. 9–26–67. Cl. 36.
Columbia School of Broadcasting: *See*— California College of Radio & Television Broadcasting, Inc.
Combustion and Power Equipment Ltd., Montreal, Quebec, Canada. 840,470, pub. 9–26–67. Cl. 34.
Conlker Enterprises, Inc., Chicago, Ill. 840,248, pub. 9–26–67. Cl. 3.
Continental Bowling Corp., Pennsauken, N.J. 722,988, canc. Cl. 16.
Continental Instruments Corp., Lynbrook, N.Y. 840,361, pub. 8–15–67. Cl. 21.
Cook Electric Co., Chicago, Ill. 723,027, canc. Cl. 21.
Coombs, Harry J., d.b.a. Tec Records, Washington, D.C. 840,491, pub. 9–26–67. Cl. 36.
Corn Products Co.: *See*— Corn Products Refining Co.
Corn Products Refining Co., to Corn Products Co., New York, N.Y. 234,264, ren. 12–12–67. Cl. 46.
Coronet Baking, Inc., Seattle, Wash. 840,588, pub. 9–26–67. Cl. 46.
Correct Air Corp., Willoughby, Ohio. 840,472, pub. 9–26–67. Cl. 34.
Corrugated Equipment & Supply Corp., New York, N.Y. 723,053, canc. Cl. 23.
Cosmetically Yours, Inc., Yonkers, N.Y. 840,677. Cl. 51.
Couch, Arthur F., d.b.a. Sure Crop Chemical Co., Bayard, Nebr. 840,268, pub. 9–26–67. Cl. 6.
Craig, Marshall & Co.: *See*— McNish, Robert, & Co., Ltd.
Crane, E. J., & Sons: *See*— Crane, Edward J.
Crane, Edward J., to E. J. Crane & Sons, Chippewa Falls, Wis. 233,883, ren. 12–12–67. Cl. 1.
Cray-Pas Honpo Kabushiki Kaisha Sakura Shokai, Osaka, Japan. 840,305, pub. 9–26–67. Multiple Class (Classes 16 and 37).
Cresca Co., Inc., New York, N.Y. 840,593, pub. 9–26–67. Cl. 46.
Cummings Enterprises, Inc., Washington, Ga. 723,001, canc. Cl. 19.
Cunningham, Cecil C., d.b.a. Form-Fit Mfg. Co., Castro Valley, Calif. 840,456, pub. 9–26–67. Cl. 32.
Cuno Engineering Corp., The, Meridan, Conn. 840,449, pub. 9–26–67. Cl. 31.
Cushing, Mary F., executrix for the estate of C. H. Cushing, d.b.a. W. Cushing & Co., to W. H. Burdick, Dover, Foxcroft, Maine. 437,578, ren. 12–12–67. Cl. 6.
Cushing, W., & Co.: *See*— Cushing, Mary F.
DBA Products Co., Inc., Deerfield, Ill. 840,446, pub. 9–26–67. Cl. 29.
Dakin, R., & Co., San Francisco, Calif. 840,377, pub. 9–26–67. Cl. 22.
Danlee Co.: *See*— Eldon Industries, Inc.
David, B., Co., Cincinnati, Ohio. 840,441, pub. 9–26–67. Cl. 28.
Deck, Gregory J., d.b.a. Deco Refreshments, to Deco Restaurants, Inc., Buffalo, N.Y. 234,435, ren. 12–12–67. Cl. 46.
Deco Refreshments: *See* Deck, Gregory J.
Deco Restaurants, Inc.: *See*— Deck, Gregory J.
De Ladoucette Freres, Societe a Responsabilite Limitee, Paris, France. 840,614, pub. 9–26–67. Cl. 47.
De Luxe Topper Corp., Elizabeth, N.J. 840,373, pub. 9–26–67. Cl. 22.
Dentronics, Inc., Hackensack, N.J. 840,438, pub. 9–26–67. Cl. 26.
Dermetics, Inc., to Colgate-Palmollve Co., New York, N.Y. 435,098, ren. 12–12–67. Cl. 51.
DeSoto, Inc.: *See*— United Wallpaper, Inc.
Devall, James W., Fairhope, Ala. 723,181, canc. Cl. 50.
Devonsheer Melba Corp. R. J. Reynolds Foods, Inc., New York, N.Y. 541,439. Am. 7(d). Cl. 46.
De Walt, Inc., Lancaster, Pa. 723,072, canc. Cl. 23.
Diamond Alkali Co., Cleveland, Ohio. 840,278, pub. 9–26–67. Cl. 6.
Dictaphone Corp., Bridgeport, Conn. 840,505, pub. 8–23–66. Cl. 38.
Dilley Mfg. Co., The, Cleveland, Ohio. 723,025–6, canc. Cl. 21.
Distillers Corp. (S.A.), Ltd., Cape Province, Republic of South Africa. 840,616, pub. 9–26–67. Cl. 49.
Dixie-Narco, Inc., Ranson, W. Va. 723,097, canc. Cl. 31.
Dixie-Rub Co., The, Concord, N.C. 840,329, pub. 9–26–67. Cl. 18.
Dob Corp., The, Los Angeles, Calif. 840,574, pub. 9–26–67. Cl. 46.
Donut Shops Management Corp., Camden, N.J. 840,566, pub. 8–16–66. Cl. 46.
Dow Chemical Co., The, Midland, Mich. 840,273, pub. 9–26–67. Cl. 6.
Drulane, Inc., New York, N.Y. 840,244, pub. 9–26–67. Multiple Class (Classes 2 and 42).
Duff-Norton Co., Charlotte, N.C. 840,397, pub. 9–26–67. Cl. 23.
Du Pont de Nemours, E. I., and Co., Wilmington, Del. 840,492, pub. 9–26–67. Cl. 36.
Dynair Electronics, Inc., San Diego, Calif. 840,357, pub. 9–26–67. Cl. 21.
E-Z Mfg. Co., Canton, Ohio. 840,257, pub. 9–26–67. Multiple Class (Classes 5 and 35).
Early California Foods, Inc., from Pacific Cherry & Fruit Corp., Los Angeles, Calif. 840,568, pub. 1–3–67. Cl. 46.
East Coast Guards, Inc., Bloomfield, N.J. 840,644, pub. 9–26–67. Cl. 101.
Editorial America, S.A., Miami, Fla. 840,507, pub. 9–26–67. Cl. 38.
Ehrenreich Photo-Optical Industries, Inc., Garden City, N.Y. 840,439, pub. 9–26–67. Cl. 26.
Eldon Industries, Inc., d.b.a. Danlee Co., Hawthorne, Calif. 846,626, pub. 9–26–67. Cl. 50.
Ellena Brothers, to Regina Grape Products Co., Etiwanda, Calif. 438,046, ren. 12–12–67. Cl. 49.
El-Tronics, Inc., Warren, Pa. 723,031, canc. Cl. 21.
Emmert, F. L., Co., The, Cincinnati, Ohio. 840,595–6, pub. 9–26–67. Cl. 46.
Encap Products Co., Park Ridge, Ill. 840,271, pub. 9–26–67. Cl. 6.
Enelow, Gertrude, d.b.a. Body Dynamics, Chicago, Ill. 840,465, pub. 9–26–67. Cl. 32.
Engelhardt, A. L., Co., Los Angeles, Calif. 435,658, ren. 12–12–67. Cl. 51.
Eutectic Welding Alloys Corp., Flushing, N.Y. 840,473, pub. 9–26–67. Cl. 34.
Evershed & Vignoles Ltd., London, England. 64,980, ren. 12–12–67. Cl. 26.
Extracorporeal & Medical Specialties Co., Inc., Medford, N.J. 840,272, pub. 9–26–67. Multiple Class (Classes 6 and 44).
FNCB Services Corp., New York, N.Y. 840,640, pub. 9–26–67. Cl. 100.
Fabmagic, Inc., Santa Ana, Calif. 840,295, pub. 9–26–67. Cl. 13.
Fairfax Biological Laboratory: *See*— Chittick, Howard A.
Fansteel Metallurgical Corp., North Chicago, Ill. 433,851, ren. 12–12–67. Cl. 21.
Farah Mfg. Co., Inc., El Paso, Tex. 840,540, pub. 9–26–67. Cl. 39.
Father John's Medicine Co., Inc.: *See*— Carleton & Hovey.
Fawn Products Corp., New York, N.Y. 840,502, pub. 9–26–67. Cl. 37.
Federal Paper Board Co., Inc., Bogota, N.J. 840,242, pub. 9–26–67. Multiple Class (Classes 2 and 37).
Filatures Prouvost & Cie, La Lainiere de Roubaix, Societe en Commandite Par Actions, Roubaix (Nord), France. 840,560–1, pub. 9–26–67. Cl. 43.

Firestone Tire & Rubber Co., The, Akron, Ohio. 840,344, pub. 9–26–67. Cl. 19.
Fischer & Porter Co., Warminster, Pa. 840,425, pub. 5–16–67. Cl. 26.
Fishman, Louis, & Co., Inc., d.b.a. Bearcat Tire Co., Chicago, Ill. 840,481, pub. 2–15–66. Cl. 35.
Flambeau Plastics Corp., Baraboo, Wis. 723,034, canc. Cl. 21.
Fleetwood Enterprises, Inc., Riverside, Calif. 840,345, pub. 9–26–67. Cl. 19.
Flex-O-Lators, Inc., Carthage, Mo. 840,462, pub. 9–26–67. Cl. 32.
Flintkote Co., The, New York, N.Y. 233,906, ren. 12–12–67. Cl. 12.
Florabelle Plastics Corp., New York, N.Y. 723,179, canc. Cl. 50.
Florida Foam Products, Inc., Hialeah, Fla. 840,466–7, pub. 9–26–67. Cl. 32.
Fluid Dynamics, Inc., New York, N.Y. 840,451, pub. 9–26–67. Cl. 31.
Forster, Julius, New York, N.Y. 434,228, ren. 12–12–67. Cl. 28.
Fort Worth Chamber of Commerce, Forth Worth, Tex. 840,648, pub. 9–26–67. Cl. 101.
Frances Citrus Assn., Santa Ana, Calif. 239,943, ren. 12–12–67. Cl. 46.
Frank, Isadore D., d.b.a. Frank Wholesale, Clarksdale, Miss. 840 578, pub. 9–26–67. Cl. 46.
Frank Wholesale: *See*— Frank, Isadore D.
Frantz Mfg. Co.: *See*— Kohler Die & Specialty Co.
Freeman Shoe Corp., Beloit, Wis. 723,143, canc. Cl. 39.
Freundorfer K.G., Munich, Germany. 840,390, pub. 2–28–67. Cl. 23.
Friedman, Jak, d.b.a. Glen Cove Beverage Co., to Glen Cove Bottling Co., Inc., Glen Cove, N.Y. 233,955, ren. 12–12–67. Cl. 45.
From the Ancients, Inc., New York, N.Y. 840,630, pub. 9–26–67. Cl. 51.
Frosst, Charles E., & Co., Montreal, Quebec, Canada. 840,313, pub. 9–26–67. Cl. 18.
Fuller, H. B., Co., St. Paul, Minn. 840,258–9, pub. 12–13–66. Cl. 5.
G.K.N. Screws & Fasteners, Ltd.: *See*— Guest, Keen & Nettlefolds, Ltd.
Gale Knitting Mills, Inc., Bronx, N.Y. 840,541, pub. 9–26–67. Cl. 39.
Gardner-Denver Co., Quincy, Ill. 240,974, ren. 12–12–67. Cl. 23.
General Dynamics Corp., Rochester, N.Y. 840,426, pub. 9–26–67. Cl. 26.
General Dynamics Corp., New York, N.Y. 840,450, pub. 9–26–67. Cl. 31.
General Heat Distributors, Inc., Greenwich, Conn. 840,474, pub. 9–26–67. Cl. 34.
General Mills, Inc., Minneapolis, Minn. 840,602, pub. 9–26–67. Cl. 46.
General Mills, Inc., Minneapolis, Minn. 840,604, pub. 9–26–67. Cl. 46.
General Mills, Inc., Minneapolis, Minn. 840,606, pub. 9–26–67. Cl. 46.
General Steel Industries, Inc., Granite City, Ill. 840,298, pub. 9–26–67. Multiple Class (Classes 14 and 19).
General Tire & Rubber Co., The, Akron, Ohio. 840,226, pub. 9–26–67. Cl. 1.
General Tire & Rubber Co., The, Akron, Ohio. 840,485, pub. 9–26–67. Cl. 35.
Genesco Inc., Nashville, Tenn. 840,527, pub. 9–26–67. Cl. 39.
Georgia-Pacific Corp., Portland, Oreg. 840,235, pub. 9–26–67. Cl. 2.
Gevaert-Agfa N.V., Mortsel, Belgium. 840,276, pub. 9–26–67. Cl. 6.
Gillette Co., The, Boston, Mass. 840,407, pub. 9–26–67. Cl. 23.
Glass-Lined Water Heater Co., The, Cleveland, Ohio. 840,468, pub. 9–26–67. Cl. 34.
Glen Cove Beverage Co.: *See*— Friedman, Jak.
Glen Cove Bottling Co., Inc.: *See*— Friedman, Jak.
Globe Products Corp., Baltimore, Md. 723 110, canc. Cl. 32.
Golden Dipt Corp., Millstadt, Ill. 840,573, pub. 9–26–67. Cl. 46.
Goldring Merchandising Corp. Goldring Inc., New York, N.Y. 327,997. Am. 7(d). Cl. 39.
Goodrich, B. F., Co., The, Akron, Ohio. 840,486, pub. 9–26–67. Cl. 35.
Goodyear Tire & Rubber Co., The: *See*— Marathon Rubber Co., Inc.
Goodyear Tire & Rubber Co., The, Akron, Ohio. 840,223, pub. 9–26–67. Cl. 1.
Goodyear Tire & Rubber Co., The, Akron, Ohio. 840,483, pub. 9–26–67. Cl. 35.
Gorton Corp., The, d.b.a. Gorton's of Gloucester, Gloucester, Mass. 840,597, pub. 9–26–67. Cl. 46.
Gorton's of Gloucester: *See*— Gorton Corp., The.
Grace, W. R., & Co., New York, N.Y., from Leaf Brands, Inc., Chicago, Ill. 840,669. Cl. 46.
Gray Pharmaceutical Co., Yonkers, N.Y. 849,316, pub. 9–26–67. Cl. 18.
Green Farms Produce Co., Inc., Montalvo, Calif. 723,168, canc. Cl. 46.
Greenstone Products Co., Knoxville, Tenn. 840,250, pub. 8–1–67. Cl. 4.
Gregory Amplifier Corp., The, Bronx, N.Y. 840,356, pub. 9–26–67. Cl. 21.
Gretter, Robert W., d.b.a. Gretter's Distributing Co., and Gretter's Distrib. Co., Long Beach, Calif. 840,612, pub. 9–26–67. Cl. 46.
Gretter's Distributing Co.: *See*— Gretter, Robert W.
Grey-Wood Knitwear Industries, Inc., New York, N.Y. 840,452, pub. 9–26–67. Cl. 39.
Guest, Keen & Nettlefolds Ltd., to G.K.N. Screws & Fasteners Ltd., Smethwick, Warley, England. 234,338–40, ren. 12–12–67. Cl. 13.
HC Electronics, Inc., Tiburon, Calif. 840,433–4, pub. 9–26–67. Cl. 26.
Haas Chemical Corp., Taylor, Pa. 840,636, pub. 9–26–67. Cl. 52.
Hager, Gerald J., d.b.a. Hagers, Mound, Minn. 840,363, pub. 9–26–67. Cl. 22.
Hagers: *See*— Hager, Gerald J.
Hanover Lures: *See*— Pomicter, Leonard A.
Harris Paint Co., d.b.a. Harris Standard Paint Co., Tampa, Fla. 840,303, pub. 9–26–67. Cl. 16.
Harris Standard Paint Co.: *See*— Harris Paint Co.
Harrisburg Steel Corp., to Harsco Corp., Harrisburg, Pa. 434,000, ren. 12–12–67. Cl. 13.
Harrison & Eichenlaub, to Harrison's Heart of Orange, Inc., Melrose Park, Ill. 232,100, ren. 12–12–67. Cl. 45.
Harrison's Heart of Orange, Inc.: *See*— Harrison & Eichenlaub.
Harsco Corp.: *See*— Harrisburg Steel Corp.
Hearst Corp., The, New York, N.Y. 436,685, ren. 12–12–67. Cl. 38.
Heart-O-Gold Corp., Philadelphia, Pa. 840,519, pub. 9–26–67. Cl. 38.
Heaven Hill Distilleries, Inc., d.b.a. H.L.D. Distilling Co., Bardstown, Ky. 840,619, pub. 9–26–67. Cl. 49.
Henri's Food Products Co., Inc., Milwaukee, Wis. 840,670. Cl. 46.
Herman, I. C., & Co., Inc., New York, N.Y. 840,544, pub. 9–26–67. Cl. 39.
Hermet Mfg. Division, Lawrence Rigging, Inc., Woodside, N.Y. 840,475, pub. 9–26–67. Cl. 34.
Herter's, Inc., Waseca, Minn. 840,290, pub. 9–26–67. Multiple Class (Classes 13 and 32).
Herter's, Inc., Waseca, Minn. 840,382, pub. 9–26–67. Cl. 23.
Hillcrest Products, Inc., San Francisco, Calif. 840,284, pub. 9–26–67. Cl. 12.
Hochreuter & Baum: *See*— Hochreuter, Johann.
Hochreuter, Johann, d.b.a. Hochreuter & Baum, Ansbach, Mittelfranken, Germany. 840,384, pub. 9–26–67. Cl. 23.
Holmes, Thomas, Corp., The, Philadelphia, Pa. 840,526, pub. 9–26–67. Cl. 39.
Home-Burger Sales: *See*— Wirken, Frank J.
Honeywell Inc., Minneapolis, Minn. 840,653, pub. 9–26–67. Cl. 103.
Honig Merkartikelen N.V., d.b.a. Honig Mills & Honig Foods, Ltd., Koog Aan De Zaan, Netherlands. 840,565, pub. 9–26–67. Cl. 46.
Honig Mills & Honig Foods, Ltd.: *See*— Honig Merkartikelen N.V.
Hooper, Wm. E., & Sons Co., Baltimore, Md. 236,106, ren. 12–12–67. Cl. 7.
Hudnut, Richard: *See*— Hudnut's, R., Pharmacy.
Hudnut's, R., Pharmacy, New York, N.Y., to Richard Hudnut, Morris Plains, N.J. 63,757, ren. 12–12–67. Cl. 18.
Hunt-Wesson Foods, Inc.: *See*— Southern Cotton Oil Co., The.
Hupp Corp., Cleveland, Ohio. 723,116, canc. Cl. 34.
Huston, Tom, Peanut Co., Columbus, Ga. 840,672. Cl. 46.
Ident, Inc., Van Nuys, Calif. 840,369, pub. 9–26–67. Cl. 22.
Illinois Testing Laboratories, Inc., Chicago, Ill. 840,351, pub. 9–26–67. Cl. 21.
Independent Lock Co., Fitchburg, Mass. 840,413–20, pub. 5–11–65. Cl. 25.
Industrial Trade Publications, Conroe, Tex. 840,510, pub. 9–26–67. Cl. 38.
Institute For Scientific Information, Inc., Philadelphia, Pa. 840,518, pub. 9–26–67. Cl. 38.
Institute of Electrical and Electronics Engineers, Inc., The, New York, N.Y. 840,506, pub. 9–26–67. Cl. 38.
International Minerals & Chemical Corp., Skokie, Ill. 840,281–2, pub. 9–26–67. Cl. 10.
International Nickel Co., Inc., The: *See*— Wiggin, Henry, & Co., Ltd.
International Rectifier Corp., El Segundo, Calif. 840,348, pub. 5–31–66. Cl. 21.
Iowa Electric Light & Power Co., Cedar Rapids, Iowa. 840,643, pub. 9–26–67. Cl. 100.
Izod, Ltd., New York, N.Y. 840,548, pub. 9–26–67. Cl. 39.
J.L. Industries, Inc., Newark, N.J. 840,550, pub. 9–26–67. Cl. 40.
Jacobs Brothers, Inc., Baltimore, Md. 723,131, canc. Cl. 39.
Jamison, R. March, High Point, N.C. 840,249, pub. 9–26–67. Cl. 3.
Jennison-Wright Corp., The, Toledo, Ohio. 840,304, pub. 9–26–67. Cl. 16.
Jeweled Cross Co., Inc., North Attleboro, Mass. 840,445, pub. 9–26–67. Cl. 28.
Joannes Bros. Co., Green Bay, Wis., to Super Valu Stores, Inc., Hopkins, Minn. 235,237, ren. 12–12–67. Cl. 46.

Jones & Laughlin Steel Corp., Pittsburgh, Pa. 722,954, canc. Cl. 12.
Jones, Tom, Inc., New York, N.Y. 840,534, pub. 9–26–67. Cl. 39.
Joseph & Feiss Co., The, from The Joseph & Feiss Co., Cleveland, Ohio. 840,537, pub. 9–26–67. Cl. 39.
Jus-Rock, Inc., St. Louis, Mo. 840,457, pub. 9–26–67. Cl. 32.
Kabushiki Kaisha Kobayashi Kose, Tokyo, Japan. 840,628, pub. 9–26–67. Multiple Class (Classes 51 and 52).
Kangol Wear Ltd., Cleator, Cumberland, England, from E. Stern & Co., New York, N.Y. 840,531, pub. 9–26–67. Cl. 39.
Kangol Wear, Ltd., Cumberland, England. 840,547, pub. 9–26–67. Cl. 39.
Kanner, Joseph, Hat Co., Inc., South Norwalk, Conn. 723,127, canc. Cl. 39.
Karlsruher Parfumerie- und Toilettenseifenfabrik F. Wolff & Sohn G.m.b.H., Karlsruhe, Germany. 840,674. Multiple Class (Classes 51 and 52).
Kee Comb Co., Inc., Massapequa, N.Y. 840,549, pub. 9–26–67. Cl. 40.
Keebler Co., from United Biscuit Co. of America, Melrose Park, Ill. 840,569–70, pub. 9–26–67. Cl. 46.
Kennedy Baby Bath Corp., Chattanooga, Tenn. 723,113, canc. Cl. 32.
Kent Corp., The, Covington, Ky. 723,111, canc. Cl. 32.
Klinzing, A. F., Co., Inc., Milwaukee, Wis. 840,400, pub. 9–26–67. Cl. 23.
Kneisel, Norman H., d.b.a. Kneisel Travel, Portland, Oreg. 840,655, pub. 9–26–67. Cl. 105.
Kneisel Travel: *See*—
Kneisel, Norman H.
Knight, John B., Sr., d.b.a. Old 97 Co., to Old 97 Co., Tampa, Fla. 436,566, ren. 12–12–67. Cl. 18.
Kohler Die & Specialty Co., Dekalb, Ill., to Frantz Mfg. Co., Sterling, Ill. 233,736, ren. 12–12–67. Cl. 22.
Korad Corp., Santa Monica, Calif. 840,517, pub. 9–26–67. Cl. 38.
Korfund Dynamics Corp., Westbury, N.Y. 840,381, pub. 9–26–67. Cl. 23.
Kristal Kraft, Inc., Palmetto, Fla. 840,287, pub. 9–26–67. Cl. 12.
L & M Knitting Mills, Inc., Philadelphia, Pa. 840,535–6, pub. 9–26–67. Cl. 39.
LTV Ling Altec, Inc., Anaheim, Calif. 840,352, pub. 9–26–67. Cl. 21.
Laco Corp., from The Solarine Co., Baltimore, Md. 840,256, pub. 9–26–67. Cl. 4.
Laminite Plastics Corp., Chicago, Ill. 840,652, pub. 9–19–67. Cl. 103.
Lande, Clarence J., d.b.a. Auto Specialty Products, Portland, Oreg. 840,635, pub. 9–26–67. Cl. 52.
Laser Laboratories, Inc., Minneapolis, Minn. 840,638, pub. 9–26–67. Cl. 52.
Leaf Brands, Inc.: *See*—
Grace, W. R., & Co.
Leavitt Corp., The: *See*—
Leavitt, John W., Co.
Leavitt, John W., Co., d.b.a. The Leavitt Corp., Everett, Mass. 840,668. Cl. 46.
Lebrick & Co., Inc., New York, N.Y. 840,557–8, pub. 9–26–67. Cl. 42.
Lelong, Lucien, Inc., Chicago, Ill., to Parfums Lucien Lelong Corp., New York, N.Y. 434,379, ren. 12–12–67. Cl. 51.
Leonard, Ward, Electric Co., Mount Vernon, N.Y. 723,030, canc. Cl. 21.
Les Chefettes, Inc., Great Neck, N.Y. 840,610, pub. 9–26–67. Cl. 46.
Letraset Ltd., London, England. 840,494, pub. 8–16–66. Cl. 37.
Levin, Charles, & Co., d.b.a. Charlescraft Products, Lincolnwood, Ill. 723,058, canc. Cl. 23.
Levolor Lorentzen, Inc., Hoboken, N.J. 840,296, pub. 9–26–67. Multiple Class (Classes 14 and 40).
Liggett & Myers Tobacco Co., New York, N.Y. 840,308, pub. 9–26–67. Cl. 17.
Link & Co. Schuhfabrik GmbH., Weinbergastrasse, Germany. 840,524, pub. 9–26–67. Cl. 39.
Litton Business Systems, Inc., from Monroe International, Inc., Orange, N.J. 840,622, pub. 9–26–67. Cl. 50.
Llewellyn, Inc., New York, N.Y. 559,969, canc. Cl. 3.
Lodding Engineering Corp., Auburn, Mass. 723,054, canc. Cl. 23.
Lorillard, P., Co., New York, N.Y. 840,590, pub. 9–26–67. Cl. 46.
Lou Mar Co., Inc., Erie, Pa. 722,929, canc. Cl. 2.
Love Furniture, Inc., Tonawanda, N.Y. 840,459, pub. 9–26–67. Cl. 32.
Lowenbrau Munchen, Munich, Germany. 785,724–6, cor. Cl. 48.
M & N Cigar Manufacturers, Inc., Tampa, Fla. 840,307, pub. 9–26–67. Cl. 17.
Macsil, Inc., Philadelphia, Pa. 840,315, pub. 9–26–67. Cl. 18.
Madison Industries, Los Angeles, Calif. 840,289, pub. 9–26–67. Cl. 12.
Magnetic Amplifiers Division of The Siegler Corp., New York, N.Y. 723,012, canc. Cl. 21.
Manganesite Jointings Ltd., London, England. 723,122, canc. Cl. 35.
Mann, Harry, Chevrolet, Los Angeles, Calif. 840,389, pub. 9–26–67. Cl. 23.
Mfg. del Vestido S.p.A., Madrid, Spain. 723,130, canc. Cl. 39.
Marathon Oil Co.: *See*—
Ohio Oil Co., The.
Marathon Rubber Co., Inc., to The Goodyear Tire & Rubber Co., Akron, Ohio. 237,989, ren. 12–12–67. Cl. 35.
Marquette Corp., LaCrosse, Wis. 723,075, canc. Cl. 23.
Marsh Stencil Machine Co., Belleville, Ill. 840,495, pub. 3–21–67. Cl. 37.
Martin, Daniel J., Cleveland, Ohio. 840,480, pub. 9–26–67. Cl. 34.
Martin, Maison E. Remy, & Co., Cognac, France. 840,620, pub. 9–26–67. Cl. 49.
Mason Marking Systems Corp., Norfolk, Va. 840,283, pub. 9–26–67. Multiple Class (Classes 11, 23, and 37).
McCarty, L. P., & Son, Inc., Tupelo, Miss. 840,649, pub. 9–26–67. Cl. 101.
McCrory Corp.: *See*—
Best & Co., Inc.
McGraw-Edison Co., Milwaukee, Wis. 723,016–17, canc. Cl. 21.
McGraw-Edison Co., Elgin, Ill. 723,098, canc. Cl. 31.
McGraw-Hill, Inc.: *See*—
Breskin & Charlton Publishing Corp.
McGraw-Hill Publishing Co., Inc. McGraw-Hill, Inc., New York, N.Y. 437,832. Am. 7(d). Cl. 38.
McNish, Robert, & Co. Ltd., d.b.a. Craig, Marshall & Co., Glasgow, Scotland. 840,618, pub. 9–26–67. Cl. 49.
McPeak, H. A., d.b.a. Pizzaco Express and Perky's Pizza, Lincoln, Nebr. 840,598, pub. 9–26–67. Cl. 46.
Mead Corp., The, Dayton, Ohio. 840,239, pub. 9–26–67. Cl. 2.
Mead Johnson & Co., Evansville, Ind. 840,331, pub. 9–26–67. Cl. 18.
Mediphone, Inc., New York, N.Y. 723,192, canc. Cl. 101.
Meridian Brick Co., Seattle, Wash. 840,285, pub. 9–26–67. Cl. 12.
Metlox Mfg. Co., Manhattan Beach, Calif. 840,625, pub. 9–26–67. Cl. 50.
Miami Herald Publishing Co., The, Miami, Fla. 723,206, canc. Cl. 38.
Michaels Bros., from Michaels Bros., Inc., Brooklyn, N.Y. 298,337, canc. Cl. 31.
Michaels Bros., Inc.: *See*—
Michaels Bros.
Micro-Path, Inc., Los Angeles, Calif. 723,014, canc. Cl. 21.
Middle Atlantic Transportation Co., Inc., New Britain, Conn. 840,656, pub. 9–26–67. Cl. 105.
Midlantic Metal Fabricators: *See*—
Onsager, Knut H.
Mid-States Welder Mfg. Co., Chicago, Ill. 840,469, pub. 9–26–67. Cl. 34.
Miles Laboratories, Inc., Elkhart, Ind. 840,265, pub. 9–26–67. Cl. 6.
Milesmaster, Inc.: *See*—
Milesmaster, Inc. of America.
Milesmaster Inc. of America, d.b.a. Milesmaster, Inc., Chicago, Ill. 723,060, canc. Cl. 23.
Minerals & Chemicals Philipp Corp., Menlo Park, N.J. 840,230, pub. 9–26–67. Cl. 1.
Minneapolis-Moline Co.: *See*—
Motec Industries, Inc.
Minnesota Mining & Mfg. Co., St. Paul, Minn. 840,375, pub. 9–26–67. Cl. 22.
Minnesota Mining & Mfg. Co., St. Paul, Minn. 840,627, pub. 9–26–67. Cl. 50.
Miss Kennedy Cosmetics, Inc., New York, N.Y. 840,673. Cl. 51.
Monroe International, Inc.: *See*—
Litton Business Systems, Inc.
Montecatini, Societa Generale per l'Industria Mineraria e Chimica, Milan, Italy. 722,923, canc. Cl. 1.
Moore Business Forms, Inc.: *See*—
American Sales Book Co.
Moore Business Forms, Inc., Niagara Falls, N.Y. 840,498–9, pub. 9–26–67. Cl. 37.
Morris, Philip, Inc., d.b.a. Clark Gum Co., New York, N.Y. 840,611, pub. 9–26–67. Cl. 46.
Mosler Harbor Sales Corp., Belmont, Calif. 840,461, pub. 9–26–67. Cl. 32.
Motec Industries, Inc., from Minneapolis-Moline Co., Hopkins, Minn. 723,056, canc. Cl. 23.
Mothercare, Ltd., London, England. 840,337, pub. 9–26–67. Multiple Class (Classes 19, 22, 32, 42, 51, and 52).
Motloid Co., Inc., The, Chicago, Ill. 437,144, ren. 12–12–67. Cl. 44.
Mueller Co.: *See*—
Mueller, H., Mfg. Co.
Mueller, H., Mfg. Co., to Mueller Co., Decatur, Ill. 68,335, ren. 12–12–67. Cl. 23.
Nalco Chemical Co., Chicago, Ill. 840,292, pub. 9–26–67. Cl. 13.
National Automotive Parts Association, Chicago, Ill. 840,448, pub. 9–26–67. Cl. 31.
National Grocery Co.: *See*—
Schwabacher Bros. & Co., Inc.
Nelco Corp., New York, N.Y. 840,380, pub. 1–17–67. Cl. 23.
Neumond, Inc., St. Louis, Mo. 840,227, pub. 9–26–67. Cl. 1.
New England Concrete Pipe Corp., Newton Upper Falls, Mass. 435,630, ren. 12–12–67. Cl. 12.
Newberry, J. J., Co., New York, N.Y. 840,545, pub. 9–26–67. Cl. 39.
Norbest Turkey Growers Association, Salt Lake City, Utah. 840,437, pub. 9–26–67. Cl. 26.
North American Food Service Corp., Chicago, Ill. 840,592, pub. 9–26–67. Cl. 46.
North American Knitting Co., Mansfield, Ohio. 437,658, ren. 12–12–67. Cl. 39.
North American Mogul Products Co., The, Cleveland, Ohio. 840,347, pub. 3–30–65. Cl. 21.
Norton Co., Worcester, Mass. 840,252, pub. 9–26–67. Cl. 4.
Novochoc S.A., Neuchatel, Switzerland. 723,087–9, canc. Cl. 27.
Nugget Distributors' Cooperative of America, Inc., Stockton, Calif. 840,639, pub. 9–26–67. Cl. 52.

Nypel, Inc., West Conshohocken, Pa. 840,231, pub. 9–26–67. Cl. 1.
Oakland Community College, Union Lake, Mich. 840,454, pub. 9–26–67. Cl. 32.
Ohio Oil Co., The, to Marathon Oil Co., Findlay, Ohio. 433,683, ren. 12–12–67. Cl. 15.
Old 97 Co.: *See*—
Knight, John B., Sr.
Olin Mathieson Chemical Corp., New York, N.Y. 840,479, pub. 9–26–67. Cl. 34.
Onsager, Knut H., d.b.a. Midlantic Metal Fabricators, Easton, Md. 723,051, canc. Cl. 23.
Oomphies, Inc., New York, N.Y. 830,528, pub. 9–26–67. Cl. 39.
Ortho-Trac Inc., East Paterson, N.J. 723,162, canc. Cl. 44.
Oury Engineering Co., Elmhurst, Ill. 840,409, pub. 9–26–67. Cl. 23.
Oxweld Acetylene Co., to Union Carbide Corp., New York, N.Y. 232,136, ren. 12–12–67. Cl. 34.
Pacific Cherry & Fruit Corp.: *See*—
Early California Foods, Inc.
Pacific Food Products Co., Seattle, Wash. 840,562, pub. 9–26–67. Cl. 45.
Pacific Guano Co., Berkeley, to PureGro Co., Los Angeles, Calif. 435,098, ren. 12–12–67. Cl. 6.
Parfums Lucien Lelong Corp.: *See*—
Lelong, Lucien, Inc.
Park Sherman, Inc., Roseland, N.J. 840,500, pub. 9–26–67. Cl. 37.
Parke, Davis & Co., Detroit, Mich. 240,199, ren. 12–12–67. Cl. 18.
Parker Pen Co., The, Janesville, Wis. 840,501, pub. 9–26–67. Cl. 37.
Parkin Chemical Co.: *See*—
Parkin, William M.
Parkin, William M., Co., The.
Parkin, William M., d.b.a. William M. Parkin & Co., to Parkin Chemical Co., Pittsburgh, Pa. 230,709, ren. 12–12–67. Cl. 52.
Parkin, William M., & Co.: *See*—
Parkin, William M.
Parkin, William M., Co., The, to Parkin Chemical Co., Pittsburgh, Pa. 434,072, ren. 12–12–67. Cl. 6.
Pearl Musical Instrument Mfg. Co., Ltd., Sumida-Ku, Tokyo, Japan. 840,488, pub. 9–26–67. Cl. 36.
Peltzman, Morris & Son, Inc., d.b.a. Colton, New York, N.Y. 723,134, canc. Cl. 39.
Penn Fruit Co., Inc., Philadelphia, Pa. 723,163, canc. Cl. 46.
Penney, J. C., Co., Wilmington, Del., and New York, N.Y. 233,409, ren. 12–12–67. Cl. 42.
Penney, J. C., Co., New York, N.Y. 840,349, pub. 9–26–67. Multiple Class (Classes 21, 23, and 31).
Penney, J. C., Co., New York, N.Y. 840,487, pub. 9–26–67. Cl. 36.
Penney, J. C., Co., New York, N.Y. 840,522, pub. 9–26–67. Cl. 39.
Perchick, Abraham, & Sons, Inc., New York, N.Y. 840,556, pub. 9–26–67. Cl. 42.
Perky's Pizza: *See*—
McPeak, H. A.
Philliocraft Co., Fort Washington, Pa. 840,463, pub. 9–26–67. Cl. 32.
Photomont Co.: *See*—
Soper, Joseph W.
Pierpont Industries, Inc., Brooklyn, N.Y. 723,023, canc. Cl. 21.
Pietrus, A. J., & Sons Co., Sleepy Eye, Minn. 840,589, pub. 9–26–67. Cl. 46.
Pillsbury Co., The Minneapolis, Minn. 840,667. Cl. 45.
Pipe Co., Inc., McPherson, Kans. 723,117, canc. Cl. 34.
Pizzaco Express: *See*—
McPeak, H. A.
Platt, W. L., Co., Inc., Reno, Nev. 840,458, pub. 9–26–67. Cl. 32.
Polaris Engineering Corp., Chicago, Ill. 723,022, canc. Cl. 21.
Polyplastex United, Inc., Union, N.J. 723,035, canc. Cl. 21.
Pomicter, Leonard A., d.b.a. Hanover Lures, Wilkes-Barre, Pa. 840,374, pub. 9–26–67. Cl. 22.
Port-O-Play, Inc., Chicago, Ill. 840,378, pub. 9–26–67. Cl. 22.
Port-O-San Corp., Mount Vernon, N.Y. 722,966, canc. Cl. 13.
Potato Service, Inc., Presque Isle, Maine. 840,586, pub. 9–26–67. Cl. 46.
Precision Metalsmiths, Inc., Cleveland, Ohio. 840,233, pub. 9–26–67. Cl. 2.
Presbyterian Life, Inc., Philadelphia, Pa. 840,645, pub. 9–26–67. Cl. 101.
Princess Grace Doll, Inc., New York, N.Y. 840,372, pub. 9–26–67. Cl. 22.
Procter & Gamble Co., The, Cincinnati, Ohio. 840,633–4, pub. 9–26–67. Cl. 51.
Professional Detail Service, Inc., Freeport, N.Y. 840,650, pub. 9–26–67. Cl. 101.
Projects Unlimited, Inc., Dayton, Ohio. 840,429, pub. 9–26–67. Cl. 26.
Pro-Phy-Lac-Tic Brush Co., Florence, Mass. 840,224, pub. 9–26–67. Cl. 1.
Providence Braid Co., Pawtucket, R.I. 235,027, ren. 12–12–67. Cl. 43.
Pullman, Inc., Chicago, Ill. 840,339, pub. 9–26–67. Cl. 19.
Pure Gro Co.: *See*—
Pacific Guano Co.
Puritan Fashions Corp., New York, N.Y. 840,530, pub. 9–26–67. Cl. 39.
Quarter Milker Co.: *See*—
Carlson, F. L.
Quick Service Textiles, Inc., Chicago, Ill. 840,554, pub. 9–26–67. Cl. 42.
R.A. Sales Co.: *See*—
R. & A. Sales Co.
R. & A. Sales Co., d.b.a. R.A. Sales Co., Bedford Heights, Ohio. 840,551, pub. 9–26–67. Cl. 40.
R.L.D. Distilling Co.: *See*—
Heaven Hill Distilleries, Inc.
Randel's Mfg. Co., Inc., Oklahoma City, Okla. 840,410, pub. 9–26–67. Cl. 23.
Ransome & Marles Bearing Co., Ltd., Newark-on-Trent, England. 840,379, pub. 1–24–67. Cl. 23.
Rathmann, Jim, Racing Products, Inc., Dallas, Tex. 723,002, canc. Cl. 19.
Raybestos-Manhattan, Inc., Passaic, N.J. 840,222, pub. 9–26–67. Cl. 1.
Regina Grape Products Co.: *See*—
Ellena Bros.
Remington Arms Co., Inc., Bridgeport, Conn. 840,391, pub. 9–26–67. Cl. 23.
Rennie, Geo., Bicycle Shop, Rochester, N.Y. 840,484, pub. 9–26–67. Cl. 35.
Revlon, Inc., New York, N.Y. 840,675–6. Cl. 51.
Rexall Drug & Chemical Co., d.b.a. Rexall Drug Co., Los Angeles, Calif. 840,678. Cl. 52.
Rexall Drug Co.: *See*—
Rexall Drug & Chemical Co.
Reynolds Metals Co., Richmond, Va. 840,297, pub. 9–26–67. Cl. 14.
Reynolds, R. J., Tobacco Co., Winston-Salem, N.C. 840,306, pub. 11–24–64. Cl. 17.
Richardson Co., The, Melrose Park, Ill. 840,267, pub. 9–26–67. Cl. 6.
Richheimer, Herbert, Inc., Hicksville, N.Y. 723,194, canc. Cl. 103.
Rivetz, A., Co., Inc., Boston, Mass. 840,538, pub. 9–26–67. Cl. 39.
Robotomics Enterprises, Inc., Phoenix, Ariz. 723,040, canc. Cl. 21.
Roebling's, John A., Sons Co., Trenton, N.J., to CF & I Steel Corp., Denver, Colo. 65,491, ren. 12–12–67. Cl. 13.
Rorer, William H., Inc., Fort Washington, Pa. 840,334, pub. 9–26–67. Cl. 18.
Rosenstein, Nettie, Inc., to Colgate-Palmolive Co., New York, N.Y. 434,288, ren. 12–12–67. Cl. 51.
Royal Castle System, Inc., Miami, Fla. 840,641, pub. 9–26–67. Cl. 100.
Rutgerswerke und Teerverwertung Aktiengesellschaft, Frankfurt am Main, Germany. 840,221, pub. 9–26–67. Multiple Class (Classes 1, 4, 5, 6, 12, 14, 15, 16, and 42).
S & D Coffee, Inc., Concord, N.C. 840,594, pub. 9–26–67. Cl. 46.
SW Industries, Inc., Newton, Mass. 840,370, pub. 9–26–67. Cl. 22.
Safety Products Corp., Miami Beach, Fla. 723,061, canc. Cl. 23.
Safeway Stores, Inc., Oakland, Calif. 840,335, pub. 9–26–67. Multiple Class (Classes 18, 29, and 51).
Safeway Stores, Inc., Oakland, Calif. 840,503, pub. 9–26–67. Cl. 37.
St. Lawrence Chemical Co., Inc., Ogdensburgh, N.Y. 430,206, ren. 12–12–67. Cl. 6.
Sandoz, Inc., Hanover, N.J. 840,275, pub. 9–26–67. Cl. 6.
Sandoz, Inc., Hanover, N.J. 840,323, pub. 9–26–67. Cl. 18.
Schaffner Mfg. Co., Inc., Pittsburgh, Pa. 840,254, pub. 9–26–67. Cl. 4.
Schering Corp.: *See*—
Chemische Fabrik Auf Actien (Vorm. E. Schering).
Schleffelin & Co., New York, N.Y. 840,617, pub. 9–26–67. Cl. 49.
Scholastic Magazines, Inc., New York, N.Y. 840,493, pub. 9–26–67. Cl. 36.
Scholastic Magazines, Inc., New York, N.Y. 840,513, pub. 9–26–67. Cl. 38.
Scholastic Magazines, Inc., New York, N.Y. 840,520, pub. 9–26–67. Cl. 38.
Schwabacher Bros. & Co., Inc., Seattle, to Standard Grocery Co., d.b.a. National Grocery Co., Yakima, Wash. 235,584, ren. 12–12–67. Cl. 46.
Scott Paper Co., Delaware County, Pa. 840,240, pub. 9–26–67. Cl. 2.
Scott Paper Co., Delaware County, Pa. 840,497, pub. 9–26–67. Cl. 37.
Screen Gems, Inc., New York, N.Y. 840,659, pub. 8–8–67. Cl. 107.
Sealex Corp., The, San Jose, Calif. 840,263, pub. 12–13–66. Cl. 6.
Sealex Corp., The, San Jose, Calif. 840,300, pub. 12–13–66. Cl. 15.
Servotronics, Inc., Cheektowaga, N.Y. 840,482, pub. 9–26–67. Cl. 35.
Shepley, Alice C., Novato, Calif. 723,210, canc. Cl. 50.
Shoe Show, Inc., The, Kannapolis, N.C. 840,533, pub. 9–26–67. Cl. 39.
Signal Oil and Gas Co., Los Angeles, Calif. 840,452, pub. 9–26–67. Cl. 31.
Simon Freres Ltd., Paris, France. 723,207, canc. Cl. 45.
Skill Vending, Inc., Chicago, Ill. 840,253, pub. 9–26–67. Cl. 4.
Slazengers Ltd., Croydon, Surrey, England. 840,521, pub. 8–3–65. Cl. 39.
Smith Kline & French Laboratories, Philadelphia, Pa. 840,262, pub. 8–16–66. Multiple Class (Classes 6, 18, and 52).
Smith & Winchester Mfg. Co., The, South Windham, Conn. 840,401, pub. 9–26–67. Cl. 23.
Snokist Growers, Yakima, Wash. 840,608, pub. 9–26–67. Cl. 46.
Societe Anonyme des Etablissements Roure-Bertrand Fils et Justin Dupont, Paris, France. 433,500–1; ren. 12–12–67. Cl. 6.

Solarine Co., The: *See*—
LACO Corp.
Soper, Joseph W., d.b.a. Photomont Co., Houston, Tex. 840,428, pub. 9–26–67. Cl. 26.
Southern Cotton Oil Co., The, Jersey City, N.J., to Hunt-Wesson Foods, Inc., Fullerton, Calif. 67,061, ren. 12–12–67. Cl. 46.
Southern Cotton Oil Co., The, New Orleans, La., to Hunt-Wesson Foods, Inc., Fullerton, Calif. 436,515, ren. 12–12–67. Cl. 46.
Southland Corp., The, Dallas, Tex. 840,585, pub. 9–26–67. Cl. 46.
Space Ships, Inc., Los Angeles, Calif. 723,029, canc. Cl. 21.
Spatini Co., Philadelphia, Pa. 840,577, pub. 9–26–67. Cl. 46.
Specialty Francises, Inc., Woodside, N.Y. 840,567, pub. 9–26–67. Cl. 46.
Speed-O-Loc, Encino, Calif. 840,421, pub. 9–26–67. Cl. 25.
Sperry Rand Corp., New York, N.Y. 840,403, pub. 7–18–67. Cl. 23.
Sports Candles, Inc., Burlington, Wis. 723,175, canc. Cl. 46.
Stamicarbon N.V., Heerlen, Netherlands. 723,052, canc. Cl. 23.
Standard Grocery Co.: *See*—
Schwabacher Bros. & Co., Inc.
Standard Oil Co. of Calif., San Francisco, Calif. 849,269, pub. 9–26–67. Cl. 6.
Stanlabs, Inc., Portland, Oreg. 840,309, pub. 5–2–67. Cl. 18.
Star Enterprises, Inc., Cassopolis, Mich. 840,280, pub. 9–26–67. Cl. 10.
Stauffer Chemical Co., New York, N.Y. 840,228–9, pub. 9–26–67. Cl. 1.
Stearns & Foster Co., The, Cincinnati, Ohio. 840,464, pub. 9–26–67. Cl. 32.
Sterling Drug Inc., New York, N.Y. 840,631, pub. 9–26–67. Cl. 51.
Sterling Drug Inc., New York, N.Y. 840,637, pub. 9–26–67. Cl. 52.
Sterling Radiator Co., Inc., Westfield, Mass. 840,477, pub. 9–26–67. Cl. 34.
Stern, E., & Co.: *See*—
Kangol Wear Ltd.
Stoppenbach Sausage Co., Jefferson, Wis. 840,575, pub. 9–26–67. Cl. 46.
Stork Club, Inc., The, New York, N.Y. 840,651, pub. 9–26–67. Cl. 101.
Straub, W. F., & Co., Chicago, Ill. 840,591, pub. 9–26–67. Cl. 46.
Sturdilite Products, Inc., Chicago, Ill. 723,107, canc. Cl. 32.
Sturdy Broaching Service, Inc., Southfield, Mich. 840,398, pub. 9–26–67. Cl. 23.
Sun Oil Co., Philadelphia, Pa. 433,512, ren. 12–12–67. Cl. 15.
Sun Oil Co., Philadelphia, Pa. 433,515, ren. 12–12–67. Cl. 15.
Sun Oil Co., from Volume Builders, Inc., Philadelphia, Pa. 840,646–7, pub. 9–26–67. Cl. 101.
Sunaid Food Products, Inc., Miami, Fla. 840,563, pub. 7–26–66. Cl. 46.
Sundance Travel Service, Inc., Jackson Heights, N.Y. 840,654, pub. 9–26–67. Cl. 105.
Sunkist Growers, Inc.: *See*—
California Fruit Growers Exchange.
Super Valu Stores, Inc.: *See*—
Joannes Bros. Co.
Superba Cravats, Inc.: *See*—
Cohn, H. C., & Co.
Superior Mfg. Co., Albert City, Iowa. 840,405, pub. 9–26–67. Cl. 23.
Sure Crop Chemical Co.: *See*—
Couch, Arthur F.
Swale Chemicals Ltd., Croydon, Surrey, England. 722,989, canc. Cl. 16.
Sylvania Electric Products, Inc., New York, N.Y. 840,362, pub. 9–26–67. Cl. 21.
Syracuse China Corp., Syracuse, N.Y. 840,447, pub. 9–26–67. Cl. 30.
Taisho Pharmaceutical Co., Ltd., Tokyo, Japan. 840,312, pub. 9–26–67. Cl. 18.
Tarmac Products, Inc., New York, N.Y. 840,666. Cl. 18.
Tasty Baking Co., Philadelphia, Pa. 840 671. Cl. 46.
Taylor & Sledd, Inc., Richmond, Va. 840,579, pub. 9–26–67. Cl. 46.
Techni-Finish, Inc., Youngstown, Ohio. 840,658, pub. 9–26–67. Cl. 106.
Tempo Products Co.: *See*—
Alco Standard Corp.
Textron, Inc., Providence, R.I. 840,402, pub. 9–26–67. Cl. 23.
Thermotech Industries, Inc., Minneapolis, Minn. 840,431, pub. 9–26–67. Cl. 26.
Thompson-Fishing Tackle Co., Inc., Knoxville, Tenn. 840,371, pub. 9–26–67. Cl. 22.
Tishman & Lipp, Inc., New York, N.Y. 840,444, pub. 9–26–67. Cl. 28.
Titus Mfg. Corp., Waterloo, Iowa. 723,118, canc. Cl. 34.
Tompkins' Label Service, Philadelphia, Pa. 838,085, cor. Cl. 103.
Topps Chewing Gum, Inc., Brooklyn, N.Y. 840,582, pub. 9–26–67. Cl. 46.
Total Sound, Inc., The, New York, N.Y. 840,490, pub. 9–26–67. Cl. 36.
Transamerica Corp., San Francisco, Calif. 840,512, pub. 9–26–67. Cl. 38.
Transene Co., Inc., Danvers, Mass. 840,266, pub. 9–26–67. Cl. 6.
Transogram Co., Inc., New York, N.Y. 840,368, pub. 9–26–67. Cl. 22.
Tremco Mfg. Co., The, Cleveland, Ohio. 435,594, ren. 12–12–67. Cl. 16.
Tri-Valley Growers, San Francisco, Calif. 840,581, pub. 9–26–67. Cl. 46.
Unimed, Inc., Morristown, N.J. 840,322, pub. 9–26–67. Cl. 18.
Union Carbide Corp.: *See*—
Oxweld Acetylene Co.
Union Carbide Corp., New York, N.Y. 840,432, pub. 9–26–67. Cl. 26.
United Biscuit Co. of America: *See*—
Keebler Co.
United States Bedding Co., The, St. Paul, Minn. 840,453, pub. 8–8–67. Cl. 32.
United States Borax & Chemical Corp., Los Angeles, Calif. 840,277, pub. 9–26–67. Multiple Class (Classes 6 and 10).
United States Leasing Corp., San Francisco, Calif. 840,509, pub. 9–26–67. Cl. 38.
U.S. Reduction Co., East Chicago, Ind. 722,975, canc. Cl. 14.
United States Stoneware Co., The, Tallmadge, Ohio. 722,991, canc. Cl. 16.
United Wallpaper, Inc., Chicago, to DeSoto, Inc., Des Plaines, Ill. 433,906, ren. 12–12–67. Cl. 37.
Unitrode Corp., Watertown, Mass. 840,355, pub. 9–26–67. Cl. 21.
Universal American Corp., New York, N.Y. 840,408, pub. 9–26–67. Cl. 23.
Univis Inc., Fort Lauderdale, Fla. 840,440, pub. 9–26–67. Cl. 26.
Upjohn Co., The, to The Upjohn Co., Kalamazoo, Mich. 434,703, ren. 12–12–67. Cl. 18.
Upjohn Co., The, to The Upjohn Co., Kalamazoo, Mich. 435,146, ren. 12–12–67. Cl. 18.
Upjohn Co., The, to The Upjohn Co., Kalamazoo, Mich. 435,566, ren. 12–12–67. Cl. 18.
Upjohn Co., The, Kalamazoo, Mich. 840,317, pub. 9–26–67. Cl. 18.
Upjohn Co., The, Kalamazoo, Mich. 840,455, pub. 9–26–67. Cl. 32.
Usylin Corp., d.b.a. Usylin Laboratory, Lynn, Mass. 840,311, pub. 9–26–67. Cl. 18.
Usylin Laboratory: *See*—
Usylin Corp.
VEB Nahwirkmaschinenbau Mallmo Karl-Marx-Stadt, Karl-Marx-Stadt, Germany. 840,388, pub. 9–26–67. Cl. 23.
Valio Finnish Co-Operative Dairies Association: *See*—
Atalanta Trading Corp.
Valley Institutional Products Co., Decatur, Ala. 840,251, pub. 9–26–67. Multiple Class (Classes 4 and 52).
Valley Institutional Products Co., Decatur, Ala. 840,572, pub. 9–26–67. Cl. 46.
Valor Electronics, Inc., Gardena, Calif. 840,435, pub. 9–26–67. Cl. 26.
Valspar Corp., from Rockcote Paint Co., Rockford, Ill. 722,980, canc. Cl. 16.
Van Den Bergh en Jurgens N.V., Rotterdam, Holland. 840,607, pub. 9–26–67. Cl. 46.
Vanadium-Alloys Steel Co., to Vasco Metals Corp., Latrobe, Pa. 237,018, ren. 12–12–67. Cl. 14.
Vanity Fair Mills, Inc.: *See*—
Vanity Fair Silk Mills.
Vanity Fair Silk Mills, Reading, to Vanity Fair Mills, Inc., Wyomissing, Pa. 237,783, ren. 12–12–67. Cl. 39.
Vasco Metals Corp.: *See*—
Vanadium-Alloys Steel Co.
Vega Electronics Corp., Cupertino, Calif. 723,041, canc. Cl. 21.
Vision Wrap Industries, Inc., Schiller Park, Ill. 840,241, pub. 9–26–67. Cl. 2.
Volume Builders, Inc.: *See*—
Sun Oil Co.
Voss, Arthur H., Los Angeles, Calif. 722,969, canc. Cl. 13.
Waldorf Paper Products Co., St. Paul, Minn. 840,232, pub. 9–26–67. Cl. 2.
Walker-Neer Mfg. Co., Inc., Wichita Falls, Tex. 840,396, pub. 9–26–67. Cl. 23.
Warner Press, Inc., Anderson, Ind. 840,376, pub. 9–26–67. Cl. 22.
Warren-Teed Pharmaceuticals, Inc., Columbus, Ohio. 840,324, pub. 9–26–67. Cl. 18.
Webb, C. J., Inc., d.b.a. Bowers Candies, Moorestown, N.J. 840,601, pub. 3–28–67. Cl. 46.
Weight Watchers International, Inc., Forest Hills, N.Y. 840,613, pub. 9–26–67. Cl. 46.
Welico Ro-Search Industries, Inc., Waynesville, N.C. 840,543, pub. 9–26–67. Cl. 39.
Werner, R. D., Co., Inc., Greenville, Pa. 840,624, pub. 9–26–67. Cl. 50.
West Bend Co., The, West Bend, Wis. 840,293, pub. 9–26–67. Multiple Class (Classes 13, 21, and 34).
Western Air Lines, Inc., Los Angeles, Calif. 840,508, pub. 9–26–67. Cl. 38.
Western Import, Inc., Portland, Oreg. 840,365, pub. 9–26–67. Cl. 22.
Westward Dental Products Co., San Francisco, Calif. 723,155, canc. Cl. 44.
Weyerhaeuser Co., Tacoma, Wash. 840,243, pub. 9–26–67. Cl. 2.
Wheeling Service & Supply, Inc., Arlington Heights, Ill. 840,476, pub. 9–26–67. Cl. 34.
White Cross Stores, Inc., Monroeville, Pa. 840,279, pub. 9–26–67. Cl. 8.
White Stores, Inc., from White Stores, Inc., Wichita Falls, Tex. 840,342, pub. 9–26–67. Cl. 19.
Wiggin, Henry, & Co., Ltd., London, England, to The International Nickel Co., Inc., New York, N.Y. 433,744, ren. 12–12–67. Cl. 14.
Wilsey-Bennett Co., San Francisco, Calif. 840,587, pub. 9–26–67. Cl. 46.

Winner Boats, Inc., Dickson, Tenn. 840,343, pub. 9–26–67. Cl. 19.
Wire Rope Corp. of America, Inc., St. Joseph, Mo. 722,947, canc. Cl. 7.
Wirken, Frank J., d.b.a. Home-Burger Sales, Kansas City, Mo. 723,068, canc. Cl. 23.
Wisconsin Wire Works, Appleton, Wis. 840,387, pub. 9–26–67. Cl. 23.
Wood, John, Co., Midland Park, N.J. 840,392, pub. 9–26–67. Cl. 23.
Woodpecker Products: *See*—
Burns-Strauss, Inc.
Woodrow Engineering Co.: *See*—
Ball, Charles A., Jr.
Woolworth, F. W., Co., New York, N.Y. 840,247, pub. 9–26–67. Cl. 3.
World Wide Broadcasting System, Inc., New York, N.Y. 723,195, canc. Cl. 107.
Wynn Oil Co., Azusa, Calif. 840,302, pub. 9–26–67. Cl. 15.
Wyomissing Corp., Reading, Pa. 840,225, pub. 9–26–67. Cl. 1.
Yard-Man, Inc., Jackson, Mich. 840,394, pub. 9–26–67. Cl. 23.
Yarway Corp., Chestnut Hill, Pa. 840,411, pub. 9–26–67. Cl. 23.
Yoder Co., The, Cleveland, Ohio. 840,399, pub. 9–26–67. Cl. 23.
Zacharias, Robert, Co., Chicago, Ill. 840,657, pub. 9–26–67. Cl. 100.
Zac-Lac Paint & Lacquer Co., Atlanta, Ga. 722,987, canc. Cl. 16.
Zentall, Robert, Inc., Mount Vernon, N.Y. 840,443, pub 9–26–67. Cl. 28.
Zolkind & Son, Inc., Brooklyn, N.Y. 840,436, pub. 9–26–67. Cl. 26.

U.S. GOVERNMENT PRINTING OFFICE: 0——1567

U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

December 19, 1967 Volume 845 Number 3

PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of November 1967

Examiner affirmed	188
Examiner affirmed in part	36
Examiner reversed	50
Total	274

Search Room Hours

The move of the Public Search Room to Crystal Plaza is now underway and should be completed sometime in January.

Effective Jan. 2, 1968, the Public Search Room at Crystal Plaza will be open from 8 a.m. to 8 p.m. on workdays; it will not be open on Saturdays.

RICHARD A. WAHL,
Assistant Commissioner.

Nov. 30, 1967.

International Convention for the Protection of Industrial Property

Accession of Togo to the Lisbon 1958 Revision

The Secretary of State has been notified by the Embassy of Switzerland of the accession of the Republic of Togo to the International Convention for the Protection of Industrial Property, as last revised at Lisbon on October 31, 1958. The accession became effective on September 10, 1967.

EDWARD J. BRENNER,
Commissioner of Patents.

Nov. 20, 1967.

Change in Telephone Procedure for Reaching the Patent Office at Crystal Plaza

Effective December 18, 1967, a new direct dialing telephone system known as Centrex will become operational at Crystal Plaza in Arlington, Virginia, where all patent examining operations and certain other staff offices are now located.

With direct dialing, it will no longer be necessary to go through the switchboard operator at 521–5600 to place a call to an employee located at Crystal Plaza. This number becomes obsolete with the conversion to Centrex.

The new procedure to be followed for making telephone calls to Crystal Plaza is as follows: Dial 557 plus the 4-digit extension of the office or individual to be reached. The area code for long distance calls to Crystal Plaza remains the same—703.

The telephone extensions of the Electrical and Mechanical Examining Operations were published in the OFFICIAL GAZETTE on April 25, 1967 (837 O.G. 1033) and July 11, 1967 (840 O.G. 347), respectively. A consolidated and up-to-date listing of extensions of all offices at Crystal Plaza will be published as a separate item in the OFFICIAL GAZETTE as soon as compiled.

C. A. KALK,
Director of Administration.

Nov. 30, 1967.

Patents Available for Licensing or Sale

2,981,526. VAPORIZER. P. R. Grumbach, 6905 Thorny Ridge Drive, Beacon Square, Holiday, Fla., 33589.

3,327,300. BURGLAR ALARM. Louis A. Birrenkott, 36128 E. Enterprise, Creswell, Oreg., 97426.

3,332,158. DETACHABLE TOP LIFT FOR LADY'S HEEL WITH SPRING LOADED LOCK. Emilio A. Grimaudo, Via Rosolino Tusa 1, 90145 Palermo, Italy.

3,338,534. COMMAND GUIDANCE FOR GUIDED MISSILES. Contraves A.G., Zurich, Switzerland. Correspondence to: Michael S. Striker, 360 Lexington Ave., New York, N.Y., 10017.

3,339,453. METHOD FOR PREVIEWING AND PRESELECTING COIFFURES. Steve Udich, 2840–B, 177th Drive, Hammond, Ind., 46323.

3,342,108. APPARATUS FOR MACHINING THE ENDS OF WORKPIECES. Th. Kieserling & Albrecht, 565 Solingen, Germany. Correspondence to: Michael S. Striker, 360 Lexington Ave., New York, N.Y., 10017.

3,342,441. BUMPER BRACKET. Evald P. Danielson, Rte. #3, Box 868, Woodland, Calif., 95695.

The General Electric Company is prepared to grant nonexclusive licenses under the following 21 patents upon reasonable terms to domestic manufacturers.

Applications for license under the following 11 patents may be addressed to: Patent Counsel, Construction Industries Division, General Electric Company, 1285 Boston Ave., Bldg. 1–B, Bridgeport, Conn., 06602.

2,876,394.	PANEL INTERIOR MOUNTING MEANS.
2,922,004.	ELECTRIC CIRCUIT BREAKER.
2,953,650.	PLUG-IN TYPE ELECTRICAL SOCKET.
3,158,701.	MULTIPLE CIRCUIT BREAKER ASSEMBLY.
2,805,314.	FRYING APPARATUS.
2,856,502.	COOKING APPARATUS.
3,008,331.	TEMPERATURE SENSING DEVICE.
3,018,356.	TEMPERATURE CONTROL SYSTEMS.
3,095,495.	FOOD BROILING DEVICE.
3,104,304.	ELECTRONIC COOKING APPLIANCE.
3,317,700.	ELECTRONIC OVEN.

New Applications Received During October 1967

Patents	7650
Designs	428
Plant Patents	13
Reissues	14
Total	8105

Issue—December 19, 1967

Patents	1276	No. 3,358,291 to No.	3,359,566, incl.
Designs	90	No. 209,564 to No.	209,653, incl.
Plant Patents	1	No. 2,783	
Reissues	6	No. 26,322 to No.	26,327, incl.
Total	1373		

Applications for license under the following 10 patents may be addressed to: Patent Counsel, Aerospace Electronics Department, General Electric Company, Utica, N.Y., 13503.

2,932,472. AUTOMATIC TURN COMPENSATOR FOR AIRCRAFT.

3,109,090. VARIABLE INCREMENT COMPUTER.

3,214,245. REACTIVE METAL DIFFUSION PUMP.

3,239,656. ANALOG PULSE-TIME MODULATOR.

3,246,247. PULSE WIDTH TO D.C. CONVERTER.

3,263,066. HYBRID DIGITAL-ANALOG CIRCUIT.

3,264,457. HYBRID DIGITAL ANALOG NONLINEAR FUNCTION GENERATOR.

3,277,395. PULSE WIDTH MODULATOR.

3,289,159. DIGITAL COMPARATOR.

3,313,927. PULSE WIDTH COMPARATOR.

The Radio Corporation of America offers to grant nonexclusive licenses on reasonable terms and conditions under the following 89 patents.

Inquiries respecting licenses should be addressed to: Radio Corporation of America, Staff Vice President, Domestic Licensing, 30 Rockefeller Plaza, New York, N.Y., 10020.

3,323,574. LIQUID-FUEL BURNER.

3,324,343. COLOR TUBE DEGAUSSER WITH COIL ON BOTH SIDES OF SHIELD.

3,324,344. ENERGIZING CIRCUIT FOR DEGAUSSING APPARATUS.

3,324,403. MULTIPLE SUPERCONDUCTIVE ELEMENT PARAMETRIC AMPLIFIERS AND SWITCHES.

3,324,467. CONTROLLER FOR STEPPER TYPE SERVOMOTOR IN DME.

3,324,826. APPARATUS FOR METALIZING A WAFER.

3,325,707. TRANSISTOR WITH LOW COLLECTOR CAPACITANCE AND METHOD OF MAKING SAME.

3,325,715. MOTOR CONTROL APPARATUS.

3,325,741. TIMING PULSE GENERATORS.

3,325,786. MACHINE FOR COMPOSING IDEOGRAPHS.

3,325,790. LOGIC CIRCUITRY ADAPTED TO CONTROL THE TRANSFER OF INFORMATION TO A STORAGE/ELEMENT.

3,325,794. SKEW CORRECTION SYSTEM.

3,326,230. VALVE DISCRIMINATING MEANS.

3,326,626. INDEXING DEVICE.

3,327,069. PHONOGRAPH PICKUP CARTRIDGE.

3,327,133. ELECTRONIC SWITCHING.

3,327,183. CONTROLLED RECTIFIER HAVING ASYMMETRIC CONDUCTIVITY GRADIENTS.

3,327,225. TIMING PULSE GENERATOR.

3,327,230. REGENERATOR.

3,327,238. PARALLEL ACTIVE CIRCUIT ELEMENTS WITH PROVISION FOR POWER DISTRIBUTION.

3,327,247. NONRECIPROCAL SOLID STATE WAVEGUIDE AND DEVICES UTILIZING SAME.

3,327,289. REMOTE MONITORING SYSTEM.

3,327,778. LOW THERMAL EMISSIVITY SHIELD.

3,328,201. HEATER FOR ELECTRON TUBES.

3,328,519. LUMINANCE AMPLIFIER CIRCUITRY FOR A COLOR TELEVISION AMPLIFIER.

3,328,604. INTEGRATED SEMICONDUCTOR LOGIC CIRCUITS.

3,328,625. SMALL ELECTRODE SPACING ELECTRON TUBE.

3,328,760. CHARACTER READER FOR READING MACHINE PRINTED CHARACTERS AND HANDWRITTEN MARKS.

3,329,424. CARD TRANSPORT SYSTEM.

3,329,827. DECODER CIRCUITS.

3,329,835. LOGIC ARRANGEMENT.

3,329,853. IMAGE ORTHICON WITH CESIUM GETTER ADJACENT ELECTRON MULTIPLIER.

3,329,859. PINCUSHION CORRECTION CIRCUIT HAVING SATURABLE REACTOR AND MEANS FOR ADJUSTING THE PHASE AND MAGNITUDE OF THE HORIZONTAL COMPONENT.

3,329,861. DYNAMIC RASTER DISTORTION CORRECTION CIRCUIT HAVING FOUR WINDOW MAGNETIC CIRCUIT.

3,329,862. PINCUSHION CORRECTION CIRCUIT HAVING SATURABLE REACTOR WITH ASYMMETRICAL PARABOLIC WAVEFORM APPLIED TO THE CONTROL WINDING.

3,329,937. ORDERED RETRIEVAL OF INFORMATION STORED IN A TAG-ADDRESSED MEMORY.

3,329,941. AIR BEARING DATA STORAGE APPARATUS.

3,329,942. AIR BEARING DATA STORAGE APPARATUS.

3,330,208. PRINTER HAVING A SELECTIVELY VARIBLE PRINT FONT.

3,330,980. SHADOW MASK MOUNTED WITH BI-METALLIC SECTIONS CONNECTED BY EXPANSIBLE LOOP.

3,331,125. SEMICONDUCTOR DEVICE FABRICATION.

3,331,651. PHASED ARRAY LIGHT DEFLECTING SYSTEM.

3,332,137. METHOD OF ISOLATING CHIPS OF A WAFER OF SEMICONDUCTOR MATERIAL.

3,333,110. ELECTRONICALLY VARIABLE DELAY LINE.

3,333,134. SHADOW MASK FRAME WITH CURVED SUPPORTING FLANGE PARALLELING SCREEN SURFACE.

3,333,168. UNIPOLAR TRANSISTOR HAVING PLURALITY OF INSULATED GATE-ELECTRODES ON SAME SIDE.

3,333,324. METHOD OF MANUFACTURING SEMICONDUCTOR DEVICES.

3,333,333. METHOD OF MAKING MAGNETIC MATERIAL WITH PATTERN OF EMBEDDED NONMAGNETIC MATERIAL.

3,333,334. METHOD OF MAKING MAGNETIC BODY WITH PATTERN OF EMBEDDED NONMAGNETIC MATERIAL.

3,333,572. ELECTROSTATIC PRINTING.

3,333,843. DOCUMENT STACKER.

3,333,958. ELECTROPHOTOGRAPHIC DEVELOPING.

3,334,178. LINE BLANKING APPARATUS FOR COLOR BAR GENERATING EQUIPMENT.

3,334,244. INTEGRAL PULSE SWITCHING SYSTEM.

3,334,259. SHADOW MASK MOUNTING STRUCTURE.

3,334,275. MULTILAYER CIRCUIT BOARD STRUCTURES.

3,334,281. STABILIZING COATINGS FOR SEMICONDUCTOR DEVICES.

3,334,295. HARMONIC GENERATOR WITH NON-LINEAR DEVICES OPERATING IN THE SAME MODE AT A FUNDAMENTAL FREQUENCY AND A HARMONICALLY RELATED FREQUENCY.

3,335,224. SIGNAL DISTORTION DETECTION BY SAMPLING DIGITAL DIPHASE SIGNALS AT TWICE THE BIT REPETITION RATE.

3,335,355. SEMICONDUCTOR FILTER CIRCUIT.

3,335,479. METHOD OF FABRICATING AND PROCESSING CATHODE RAY TUBES.

3,336,568. SOCKET FOR ELECTRONIC DEVICES.

3,336,658. SUPERCONDUCTIVE ARTICLES.

3,336,661. SEMICONDUCTIVE DEVICE FABRICATION.

3,337,150. ENDLESS TAPE CARTRIDGE.

3,337,791. FREQUENCY MULTIPLIER.

3,338,753. GERMANIUM - SILICON THERMOELEMENT HAVING FUSED TUNGSTEN CONTACT.

3,339,089. ELECTRICAL CIRCUIT.

3,339,103. ADJUSTABLE VOLTAGE SUPPLY.

3,339,128. INSULATED OFFSET GATE FIELD EFFECT TRANSISTOR.

3,339,185. MEMORY CIRCUITS EMPLOYING NEGATIVE RESISTANCE ELEMENTS.

3,339,188. SERIAL MEMORY OF ANISOTROPIC MAGNETOSTRICTIVE MATERIAL ACCESSED BY STRESS WAVE.

3,339,190. IMBEDDED LOOP CONDUCTOR MAGNETIC MEMORY.

3,340,445. SEMICONDUCTOR DEVICES HAVING MODIFIER-CONTAINING SURFACE OXIDE LAYER.

3,340,484. RECIPROCAL LATCHED FERRITE PHASE SHIFTER.

3,340,861. TRANSISTORIZED IGNITION CIRCUIT.

3,341,655. TRANSISTORIZED PREAMPLIFER FOR TELEVSION CAMERAS.

3,341,693. PULSE COUNTER.

3,341,723. ELECTRIC MOTOR.

3,341,821. ADAPTIVE SEMICONDUCTOR DEVICE.

3,342,567. LOW RESISTANCE BONDS TO GERMANIUM-SILICON BODIES AND METHOD OF MAKING SUCH BONDS.

3,342,646. THERMOELECTRIC GENERATOR INCLUDING SILICON GERMANIUM ALLOY THERMOELEMENTS.

3,343,029. ELECTRON TUBE HAVING A SEAMED CATHODE THEREIN.

3,343,149. ROTATING RANDOM ACCESS CARD SELECTION SYSTEM.

3,343,687. MAGNETIC TAPE CARTRIDGE CHANGING MECHANISM.

3,343,956. ELECTROSTATIC PRINTING PROCESS WHEREIN DEVELOPMENT IS ACHIEVED BY SEQUENTIAL APPLICATION OF CARRIER LIQUID AND DEVELOPER PARTICLES.

3,344,365. LASER SYSTEM EMPLOYING MEANS WITH NO MOVING PARTS FOR PRODUCING AN ANGULARLY ROTATABLE BEAM OF COHERENT LIGHT.

3,344,414. MAGNETIC SHIFT REGISTER.

3,344,415. MAGNETIC SHIFT REGISTER.

PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner

CONDITION OF PATENT APPLICATIONS AS OF OCTOBER 23, 1967

PATENT EXAMINING OPERATIONS AND GROUPS	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
CHEMICAL EXAMINING OPERATION—I. MARCUS, Director.		
GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—R. L. CAMPBELL, Manager. Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices.	6-3-64	5-31-62
GENERAL ORGANIC CHEMISTRY, GROUP 120—M. STERMAN, Manager. Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	8-26-64	7-23-62
HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING, GROUP 140—L. J. BERCOVITZ, Manager. Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping and Treating Processes.	2-3-65	5-14-62
COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—J. R. LIBERMAN, Manager. Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography.	8-7-64	6-28-62
SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Manager. Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Gas; Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	7-7-64	7-23-62
ELECTRICAL EXAMINING OPERATION—N. H. EVANS, Director.		
INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—E. J. SAX, Manager. Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous.	10-2-64	9-6-63
SECURITY, GROUP 220—S. BOYD, Manager. Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedoes, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	3-24-66	4-8-64
INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—M. L. LEVY, Manager. Communications; Multiplexing Techniques; Facsimile; Data Processing, Computation and Conversion; Storage Devices and Related Arts.	3-13-64	3-15-62
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—W. L. CARLSON, Manager. Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring.	3-9-64	3-5-62
PHYSICS, GROUP 280—R. L. EVANS, Manager. Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	2-3-65	6-24-63
DESIGNS, GROUP 290—S. BOYD, Manager. Industrial Arts; Household, Personal and Fine Arts.	5-9-66	10-23-65

Total number of pending applications (excluding Designs)	181, 451
Total number of Design applications pending	4, 108
Total number of applications awaiting action (excluding Designs)	130, 272
Total number of Design applications awaiting action	2, 069
Date of oldest new application awaiting action	March 9, 1964
Date of oldest amended application awaiting action	March 5, 1962

EXPIRATION OF PATENTS

The patents within the range of numbers indicated below expire during December 1967, except those which may have been extended under the provisions of the Veterans Patent Extension Act (64 Stat. 316 as amended by 66 Stat. 321) and those which may have expired earlier due to shortened terms under the provisions of Public Law 690. A list of Veterans' patents which have been extended appears in the *Annual Index of Patents—1965*.

Patents ..... Numbers 2,532,276 to 2,536,015, inclusive

Plant Patents ..... Numbers 996 to 1,000, inclusive

PATENT EXAMINING OPERATIONS AND GROUPS (Continued)	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
MECHANICAL EXAMINING OPERATION—F. H. BRONAUGH, Director.		
HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Manager. Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid Flexible and Special Receptacles and Packages.	1-28-66	10-16-64
MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—N. BERGER, Manager. Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders; Woodworking; Tools; Cutlery; Jacks; Fasteners.	8-12-65	3-18-63
AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, Manager. Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Toiletry; Printing; Typewriters; Stationery; Information Dissemination.	5-24-65	4-30-63
HEAT AND POWER ENGINEERING, GROUP 340—C. F. GAREAU, Manager. Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission.	3-9-66	4-19-65
FIXED CONSTRUCTIONS, SUPPORTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Manager. Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports; Cabinet Structures.	2-23-66	8-12-63
TEXTILES, CLEANING AND FLUID HANDLING, GROUP 360—W. S. COLE, Manager. Fluid Handling, including Valves; Conduits; Filling Receptacles; Lubrication; Joint Packing; Bathroom Fixtures; Centrifugal Separators; Cleaning; Coating; Pressing; Agitating; Foods; Textiles; Apparel and Shoes and their Manufacture; Sewing Machines; Winding and Reeling.	10-4-65	11-8-62

DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

IN RE WARNER W. MARTIN AND CLIFTON D. SWEET, JR.

No. 7736. Decided February 16, 1967

[— CCPA —; 372 F.2d 556; 152 USPQ 610]

1. PATENTABILITY—AFFIDAVIT.

"We think this affidavit, directed as it is to the very substance of the issue before us and emanating from an affiant well versed in the subject matter, bears evidentiary weight. Although not conclusive, it is certainly an indication of what the Scott disclosure means to one skilled in the art."

2. SAME—PARTICULAR SUBJECT MATTER—"HUMIDIFIERS."

The refusal of certain claims in an application entitled "Humidifiers," as unpatentable over the prior art, is reversed.

APPEAL from the Patent Office. Serial No. 258,338.

REVERSED.

Lawrence B. Biebel (*Charles D. Ross*, of counsel) for appellants.

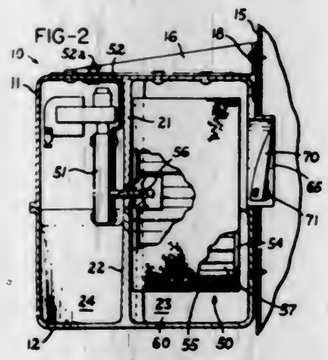
Joseph Schimmel (*Jere W. Sears*, of counsel) for the Commissioner of Patents.

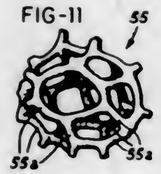
Before WORLEY, *Chief Judge*, and RICH, SMITH, and ALMOND, *Associate Judges*, and Judge WILLIAM H. KIRKPATRICK [1]

ALMOND, *J.*, delivered the opinion of the court.

This is an appeal from the decision of the Board of Appeals affirming rejection of claims 20 and 22 through 26 in appellants' application [2] for "Humidifiers." Claims 28 through 33 stand allowed. The reject was predicated on 35 U.S.C. 103.

Appellants' apparatus is depicted, in material part, in FIGURES 2 and 11 of the application drawings:





The scope of the claimed invention is reflected in representative claim 22 set forth below with each phrase lettered in aid of reference:

(*a*) A humidifier adapted to increase the amount of water vapor in air using a water supply having various salts and the like in solution,
(*b*) said humidifier comprising a housing (11),
(*c*) a reservoir (60) in said housing,
(*d*) inlet means to said reservoir through which a supply of water can be connected,
(*e*) means defining an air inlet into said housing and an air outlet (70) from said housing,

[1] Senior District Judge, Eastern District of Pennsylvania, sitting by designation.
[2] Serial No. 258,338 filed February 13, 1963.

(*f*) evaporator means (55) mounted in said housing between said inlet and said outlet to cause substantially the entire air flow therethrough to pass through said evaporator means,
(*g*) said evaporator means including a porous non-absorbent evaporator material formed of a plurality of integrally interconnected relatively thin strands (55*a*) arranged three dimensionally to form a random arrangement of interconnected pores providing passages through which the air will readily flow and on which strands a portion of the salts will collect and accumulate during evaporation of water therefrom tending gradually to decrease the size of the passages,
(*h*) said material having a porosity of 8 to 13 pores per lineal inch to maintain an effective flow of air through said evaporator material without entraining droplets of water into the air and to maintain an effective rate of evaporation for a substantially long period of operation even in the presence of accumulated salts on said strands,
(*i*) said evaporator means also including a mounting (54) for said evaporator material defining a path of movement thereof which extends through the water in said reservoir,
(*j*) fan means operatively associated with said housing to induce a flow of air between said inlet and said outlet and through said evaporator material,
(*k*) and drive means operatively connected to said mounting means for said evaporator material to move said material along said path,
(*l*) the porosity of said material being coordinated and correlated with the operation of said drive and fan means for maintaining some water present on said evaporator material to accumulate a portion of the salts thereon and the remaining portion of salts in said reservoir thus preventing accumulation on said evaporator material of all of the salts in the water.

Claims 20 and 26 differ from claim 22 in that they do not recite specific porosity. Claim 23 calls for a porosity of 10 pores per lineal inch, while claim 24 calls for the evaporation material to be easily removed to facilitate cleaning and replacement. Claim 25 calls for said material to be "polyurethane open cell foam."

The specification and drawings support the material essence and functions of appellants' invention as set forth in their brief substantially as follows:

An endless strip or belt 55 ("media") is moved along an endless path by motor 51. The belt picks up water from reservoir 60 and carries it to an evaporation zone. Evaporation occurs by passing air from a hot air furnace over and through the media. The composition of the media is preferably as stated in claim 25, the strands of which are surface wetted but do not absorb water. The pores of the media have a random three-dimensional pattern with interconnected strands 55*a* (FIG. 11) which are wetted on their surfaces as they pass through reservoir 60. The pores or apertures (FIG. 11) are "sufficiently large so that there is little or no tendency for water films to bridge over the pores." As a result of the porosity, composition and surface area of the media, an effective flow of air is maintained therethrough even after a substantial build-up of minerals thereon. It should be noted here that the principal object of the invention is to solve the problem of coping with the minerals or lime in water supplies, which precipitate on evaporation media causing a build-up of a hard deposit thereon to such an extent that a humidifier gradually decreases in efficiency and finally ceases to function. While not eliminating the minerals, appellants assert that their invention provides a synchronized or coordinated combination of factors which cooperate to accomplish a substantial reduction in the build-up of mineral deposits on the evaporation media and thereby materially reduce the adverse effect of such deposits. It is asserted to be essential that water remain on the strands of the media and that it still be wet when it returns in its

revolution to reservoir 60. Hence appellants stress that, in accordance with the invention, there is a *correlation* between the porosity of the evaporation media, the speed of movement of the media through the reservoir, and the rate of air flow.

As a result of such correlation, it is asserted that the mineral problem is controlled in three different ways:

First, as some of the water is evaporated from the strands, the concentration of mineral salts in solution increases due to the decreased volume of water on individual strands. The increased concentration causes some precipitation of minerals on the individual strands. By reason of the three-dimensional arrangement of the strands, which permits the use of a material having relatively large pores, the build-up of minerals on the individual strands has minimum adverse effects, such that the device can usually be used for a period of months or for an entire heating season, without materially affecting air flow or rate of evaporation. As long as the strands remain wet, that is, all the time the humidifier is operating, the mineral build-up thereon is reduced. However, when the cycle stops and the strands dry off, some precipitation unavoidably occurs.

Second, since the unit is deliberately designed to return the media to the reservoir while the strands are still wet, the concentrated mineral solution is rinsed off to effect removal of a substantial portion of the unprecipitated minerals which would otherwise accumulate on the media. The effect of rinsing the concentrated solution from the strands is to increase the concentration of minerals in the reservoir, with resulting precipitation of the minerals on the side walls and the bottom of the reservoir itself. Obviously this leaves less mineral to deposit on the media.

Third, the rate of air flow and the pore size of the media are so correlated, preferably in the range of 8 to 13 pores per lineal inch, that no mist or droplets are blown out of the media, since this would result in depositing the mineral salts on the walls of the furnace on which they would either build up, or from which they would tend to be blown into the rooms of the house as a fine dust.

The references are:

Ilg, 1,976,401, October 9, 1934.

French patent, 1,176,044, November 17, 1958.

By stipulation, British Patent No. 858,127 serves as a translation of corresponding French Patent No. 1,176,044. Both patents are owned by Scott Paper Company and will be referred to as Scott.

Ilg relates to an apparatus for filtering and cleaning air and regulating the moisture content thereof. The device may be used with either an air cooling or an air heating system. A fan forces air through rotating belts positioned in the air path. The belts are in the form of endless belts of "any suitable fabric material." A finely woven copper or brass mesh fabric is preferred. The belts are rotated slowly by motor and sprocket and chain means. In the process of rotation the belts dip into a reservoir containing water or oil in the bottom of the housing. Ilg states that his apparatus may be employed for filtering purposes alone, humidifying purposes alone, or for both. If employed for filtering purposes, the belt is a closely woven fabric of copper or brass which is essentially two-dimensional. The reservoir contains oil or water and the media is maintained moist. If employed for humidification, "a fabric belt of comparatively coarse mesh may be employed" which is again two-dimensional. The reservoir contains water and "enormous volumes of air" are passed through the belts at "comparatively high velocity" with rapid evaporation ensuing. Apparently, this would indicate that the belts are not maintained moist, as a result of the high velocity of air flow which would produce rapid evaporation.

As to Ilg's process for combined filtering and humidifying, his disclosure is anything but clear. In the brief of appellants' counsel, the filtering process is designated as Case I, the humidification process as Case II, and the filtering and humidifying process as Case III. Our analysis of the reference supports the view, as to this latter phase, advanced by counsel for appellants, who states:

This situation is a compromise between Cases I and II, and while there is no specific disclosure of the precise material to be used for the belt, the text of the patent would seem to infer that certain features of Case I and Case II should be combined. Thus, to achieve filtering the fabric should be finely woven copper or brass mesh. The liquid in the reservoir should be water in order to carry out the function of humidification, and to carry it out efficiently, enormous amounts of air at a comparatively high velocity would seem to be required. The patent disclosure does not indicate whether the media should be maintained moist.

Scott's disclosure states that the invention:

* * * relates to novel open-cell, cellular structures including integrally formed, 3-dimensionally reticulated and spongiform products, and to the preparation thereof. More particularly the invention relates to foamed polymeric polyurethane materials which have been modified by treatment subsequent to their formation to impart thereto improved physical properties, including softness, hydrophilicity and capillaractive effect toward water, porosity and increased strength.

The patent describes how to produce the material with the pore sizes varying from 0.05 to 20 millimeters. Scott is primarily concerned with a composition of matter and the process of making it. The patent discloses, however, that the material can be used as follows:

* * * depending on the nature and properties of the reticulated products, such as pore size and flexibility, the novel materials * * * are of utility as filtering devices, *gas-liquid contacting devices*, catalyst carriers, rug anchors, door mats, drain pads, scouring pads, sponges, insulating pads, tire liners, spacing devices, flexible partitions, draperies, upholstering padding, mattresses and pillows. [Emphasis supplied.]

The Examiner held the claims unpatentable over Ilg in view of Scott. He considered it obvious to replace the material of the belts of Ilg with the polyurethane material of Scott.

At the outset it is pertinent to note that Ilg is not concerned with the problem of lime accumulation on belts when used in the process of humidification. While the Board lightly dismissed the correlation feature of the claimed invention, it is manifest to us that appellants teach and specify in their claims that the porosity of the evaporation material, the operation of the drive means which moves this material, and the operation of the fan means which determines the amount of air flowing through the evaporation material should be so correlated that the material reenters the reservoir while it is still wet, so that the amount of moisture-softened lime deposits thereon will be reduced through a washing process as the media passes through the reservoir. We think that the claimed subject matter is specifically directed to this end, which is achieved through the disclosed structural interconnections and designed synchronization of the elements of the claimed combination. The Board's statement that "some kind of correlation" exists in Ilg's construction is no answer, in our view, to appellants' combination of elements, which is not shown in Ilg.

As we have hereinabove noted, Ilg's filter-humidifier (Case III) combination specifies a closely woven mesh fabric with a large volume of air passing therethrough, thus producing dry strands with consequent precipitation of pore-clogging mineral deposits thereon, which would stultify the effectiveness of the humidifying function.

When Ilg is used solely as a filter (Case I), fine mesh is specified, producing similar results. In Ilg's humidifier (Case II) evaporation is rapid with "enormous volumes of air" passing through the belts at comparatively high velocity. In this aspect of Ilg there is no suggestion as to keeping the belts moist. In fact, Ilg's operation as described would produce a drying of the belt. Air directed thereupon at high velocity would also undoubtedly result in undesirable blowing of droplets into the air stream.

Ilg's teaching relative to keeping the belt moist when his apparatus is used to filter (Case I) is that it will tend to pick up and retain dust on a filter media which is of fine mesh construction. This result would not be accomplished with the use of a coarse mesh as the particles would readily pass therethrough.

Turning to Ilg's humidifier (Case II) in which he recommends a coarse screen, a high velocity of air and "enormous volumes of air" are used to produce rapid evaporation so that the "humidity content of the air can be raised to a maximum." Since filtering is not the object in this phase of Ilg, but rather the use of the high velocity, high air flow to secure rapid evaporation of the water on the strands of the coarse media, it would not be consistent to maintain the coarse mesh humidifier belt wet. The higher the air flow through a given space and the greater the velocity, the more rapidly humidification occurs. While this is consistent with Ilg's teaching, it is, to say the least, remote from appellants' claimed invention.

To support its view that Ilg was aware of impurities in water and the separation thereof from the belt, the Board cited the following from the Ilg patent:

> The dirt and other impurities adhering to the screen and released in the liquid medium will settle to the bottom of the well * * *.

We are not persuaded that "dirt and other impurities" are properly susceptible to the construction placed thereon by the Board. The Board's connotation would have the phrase embrace lime or other mineral deposits precipitated from water in a humidification process. We think it more logical and more supportable from Ilg that "other impurities" refers to air-borne impurities which are filtered from air. As mentioned previously, precipitated lime adheres to the media, unlike dirt and other air-carried impurities, with only a small portion thereof being washed from the media. Appellants' apparatus does not purport to act as a filter but rather as a humidifier attached to a furnace which has a separate air filter for removing dirt. The large pores of appellants' media would preclude its service as an effective filter. The record supports appellants' view that air-carried impurities filtered from the air do not adhere to the media and can thus be easily rinsed therefrom.

The Examiner and the Board used Scott only for a showing of a three-dimensional material which is similar to that shown in the application on appeal. We must therefore determine whether it would be obvious under 35 U.S.C. 103 to substitute Scott's material for that of Ilg's belts.

As has been noted, Scott is directed to a new composition of matter, a polyurethane foam with the characteristics of sponge-like materials, capable of hydrophilicity and capillar activity. These are important liquid absorbing characteristics of a sponge. Appellants' specification states that an "important feature of the invention [is] that the sleeve [media] *not* be absorbent since it is not desired to completely saturate the sleeve but only to wet the surface area thereof." [Emphasis ours.] The pores must be open so that droplets of water are not entrained in the air as it is forced through the media.

In their sixteen-page patent Scott catalogs sixteen uses for its material. The Examiner and the Board rely on one, viz, "gas-liquid contacting devices," to bridge the gap between Ilg and Scott, reaching the conclusion that this phrase in Scott would suggest that this material could be substituted for the substantially two-dimensional material of Ilg to provide the combination defined in appellants' claims. The record discloses dissimilar characteristics for the material of Scott and appellants' media, especially with reference to water absorption and capillary action. Scott discloses a sponge-like material with small pores, while appellants' media is nonabsorbent with large pores. We are not persuaded that one of ordinary skill in this art, without the benefit of appellants' disclosure, would deem it obvious to substitute the Scott material for the media of Ilg.

In this connection our attention is directed to the affidavit of Levy. There can be little doubt that Levy's technical training and experience qualifies him as an expert in the pertinent art. He states:

> As a person skilled in this art, he understands this British patent [Scott] as disclosing a material intended to be substantially equivalent to a natural sponge such that when one portion of the material is dipped in water, the remaining portion of the material above the water level becomes wetted due to the capillary action. Since there is no disclosure to the contrary, he concludes from this patent that the urethane foam described therein would not be desirable for an evaporation media of the type used in [appellants' humidifier], since it is difficult to force air through a sponge-like material and any such air flow, due to the small pores required for capillary action and the attendant increase in velocity, would tend to entrain droplets of water in the air with consequent rusting of the associated duct work, and other undesirable effects.

[1] We think this affidavit, directed as it is to the very substance of the issue before us and emanating from an affiant well versed in the subject matter, bears evidentiary weight. Although not conclusive, it is certainly an indication of what the Scott disclosure means to one skilled in the art. In *In re Rothermel*, 47 CCPA 866, 870, 276 F.2d 393, 395, 125 USPQ 328, 331, this court said:

> Where, as here, we are faced with the necessity of determining whether a novel change is obvious, such affidavits can be particularly helpful when they are secured from those actually having skill in the art. It is the practice of this court to consider such affidavits when they supply the facts necessary for consideration in making a proper determination of the issues. The conditions under which such affidavits are to be considered were set forth in *In re McKenna et al.*, 40 CCPA 937, 203 F.2d 717, 97 USPQ 348. * * *

Appellants' media must be nonabsorbent and highly porous while providing maximum surface areas and air flow therethrough. We are not persuaded that one ordinarily skilled in the humidifier art would learn from Scott that the material disclosed therein could be used in a power operated humidifier of the type disclosed and claimed by appellants. The broad phrase "gas-liquid contacting devices" in the context here presented is not, in our judgment, a sufficient predicate to support the conclusion that the Scott material could be used in the manner claimed by appellants. The expression is generic to numerous devices other than air-water contacting devices, of which latter type humidifiers are only one example. Also, neither Ilg nor Scott affords any teaching anent the lime accumulation problem. We think

apposite here the statement of this court in *In re Shaffer*, 43 CCPA 758, 762, 229 F.2d 476, 480, 108 USPQ 326, 329:

> * * * a person having the references before him who was not cognizant of appellant's disclosure would not be informed that the problems solved by appellant ever existed. Therefore, can it be said that these references which never recognized appellant's problem would have suggested its solution? We think not, and therefore feel that the references were improperly combined since there is no suggestion in either of the references that they can be combined to produce appellant's result.

While we do not deem it necessary to launch upon a discussion of the proofs of record, cogent we think, relating to new and unobvious results or a substantial increase in humidifier efficiency or the outstanding commercial success which appellants' invention has achieved, we are persuaded from our review of the record as a whole that the Board committed reversible error in holding the appealed claims unpatentable over the cited prior art.

[2] The decision of the Board is reversed.

REVERSED.

WORLEY, *Chief Judge*, did not participate.

U.S. Court of Customs and Patent Appeals

STEINBERG BROTHERS, INC. *v.* NEW ENGLAND OVERALL CO., INC.

No. 7798. Decided May 25, 1967

[54 CCPA —; 377 F.2d 1004; 153 USPQ 745]

1. TRADEMARK—REGISTRABILITY—DECEPTIVELY MISDESCRIPTIVE—"NUHIDE" FOR DUNGAREES.

Upon considering a decision by the Trademark Trial and Appeal Board dismissing appellant's opposition to the registration of "NUHIDE" for dungarees alleged to be deceptively misdescriptive because the mark would indicate to purchasers that the dungarees are made of or containing leather "whereas such is not in fact the case," *Held* that "Having found no reversible error in the decision of the Board dismissing appellant's opposition, we affirm that decision."

APPEAL from the Patent Office. Opposition No. 43,401.

AFFIRMED.

Kaye, Scholer, Fierman, Hays & Handler (*Sidney A. Diamond*, of counsel) for appellant.

Stanley Sacks for appellee.

Before WORLEY, *Chief Judge*, and RICH, SMITH, and ALMOND, *Associate Judges*, and Judge WILLIAM H. KIRKPATRICK [1]

ALMOND, *J.*, delivered the opinion of the court.

This is an appeal from the decision of the Trademark Trial and Appeal Board dismissing appellant's opposition to appellee's application [2] to register NUHIDE for "dungarees."

Appellant is engaged in the tanning of animal hides into leather, and the sale of such leather, which is used, inter alia, in making cowboys' chaps, which are leather leggings resembling trousers without a seat and worn over regular pants as a leg protection. Appellee's dungarees, on the other hand, are not made of, nor do they contain, leather.

Appellant contends that NUHIDE is the phonetic equivalent of either "new hide" or "gnu hide," a gnu being a type of antelope, and

[1] Senior District Judge, Eastern District of Pennsylvania, sitting by designation.
[2] Serial No. 164,988, filed March 19, 1963.

that, as applied to dungarees, the mark sought to be registered by appellee is deceptive and/or deceptively misdescriptive of the goods under sections 2(a) and 2(e)(1) of the Trademark Act of 1946, 15 U.S.C. 1052(a), (e)(1), since the term NUHIDE would indicate to purchasers thereof that the goods contain, or are made of, leather or hide, whereas such is not in fact the case. In support of these contentions appellant cites the decisions of this court in *R. Neumann & Co.* v. *Bon-Ton Auto Upholstery, Inc.*, 51 CCPA 934, 326 F.2d 799, 140 USPQ 245 (1964) and *R. Neumann & Co.* v. *Overseas Shipments, Inc.*, 51 CCPA 946, 326 F.2d 786, 140 USPQ 276 (1964).[3]

The former case involved in the term VYNAHYDE for non-leather plastic film which could be made to simulate leather, and for plastic film made into furniture slip covers used to cover various types of upholstery, including leather. The latter case involved the term DURA-HYDE for plastic material of leatherlike appearance made into shoes, the uppers thereof being made to simulate both the grain appearance and the color of tanned leather. With regard to these and other precedents relied upon by appellant-opposer, we think the Board correctly and appropriately stated that:

> In each of the cases relied upon by opposer, however, the goods in question were either leather substitutes or products made of leather substitutes, whereas such is not the case with respect to the goods of the instant applicant; and none of the cited cases otherwise stand for the proposition advanced by opposer, i.e. the use of leather terms for any and all non-leather products is per se deceptive and deceptively misdescriptive.

We likewise agree with the following analysis by the Board of the particular facts and circumstances of the case at bar:

> It thus appears, and it is a matter of common knowledge, that dungarees are a particular type of garment made exclusively from a particular type of cotton fabric, as it likewise is that chaps are a distinctly different type of garment made exclusively of leather. Under these circumstances, it is our opinion that the purchasing public is not at all likely to be deceived, misled or induced by applicant's use of "NUHIDE" into buying applicant's dungarees in the mistaken belief that they are made in whole or in part of leather or into buying applicant's dungarees in the mistaken belief that they are chaps.

Appellant's arguments are largely based on the fact that dungarees, e.g. blue jeans, are one type of work pants, a class of goods which might also include cowboys' chaps. Therefore, according to appellant, the goods of the parties are competing. This argument seems to ignore the fact that chaps, which have no seat, would only be worn in conjunction with regular work pants, such as dungarees. Thus the parties' goods are not competing. Also, the description of goods in appellee's application is limited to "dungarees," not work pants broadly, and the specimen label for the goods describes them as "*A Completely Washable* Western Dungaree." While the label also apparently misdescribes the dungarees as "CHAPS," as noted by the Board, we do not consider this to be *deceptively* misdescriptive under the circumstances of this case, especially since seatless chaps may be worn in conjunction with, but not as a substitute for, dungarees.

[1] Having found no reversible error in the decision of the Board dismissing appellant's opposition, we affirm that decision.

AFFIRMED.

WORLEY, *Chief Judge*, did not participate.

[3] These two *Neumann* cases are also heavily relied upon by the appellant in a companion case heard and decided concurrently herewith, *W. D. Byron & Sons, Inc.* v. *Stein Bros. Mfg. Co.*, 54 CCPA —, — F.2d —, — USPQ —.

KIRKPATRICK, *J.*, dissenting.

As noted by the majority, this court in *R. Neumann & Co.* v. *Bon-Ton Auto Upholstery, Inc.*, 51 CCPA 934, 326 F.2d 799, 140 USPQ 245, held that "VYNAHYDE" was both deceptive and deceptively misdescriptive of plastic films and plastic films made into furniture slipcovers, because it gave the erroneous impression that they were made of leather. In the present case the majority holds that "NU-HIDE" is not deceptive or deceptively misdescriptive when applied to a type of pants known as dungarees. The fact that dungarees are made from a certain type of cloth does not in my view prevent a purchaser from assuming that the same style of pants is made from a different material, the word "dungarees" being regarded as a style designation. Under these circumstances I think that the word "NUHIDE" would convey to the prospective purchaser that he would be obtaining a pair of leather pants styled as blue jeans or dungarees are now styled. It seems to me that the majority's reasoning might lead to a conclusion that a trademark such as "LEATHER DUNGAREES" would not be deceptive or deceptively misdescriptive, presumably because no one ought to believe the statement. It is also of some significance that the specimen label misdescribes the goods in question as chaps which are normally made of leather.

I would, therefore, reverse the decision of the Board.

United States Court of Appeals
District of Columbia Circuit

HELGE ERIK LEVRING, APPELLANT
v.
EDWARD J. BRENNER, COMMISSIONER OF PATENTS, APPELLEE

No. 20,884. Decided October 31, 1967

[— U.S. App. D.C. —; — F.2d —; —USPQ —]

APPEAL from the United States District Court for the District of Columbia.

Before WILBUR K. MILLER, *Senior Circuit Judge*, and BURGER and TAMM, *Circuit Judges*

Judgment

This cause came on to be heard on the record on appeal from the United States District Court for the District of Columbia, and was argued by counsel.

ON CONSIDERATION WHEREOF It is ordered and adjudged by this court that the judgment of the District Court appealed from in this cause be, and it is hereby, affirmed.

PER CURIAM.

U.S. Court of Customs and Patent Appeals

SLIMAKER DRESS CORPORATION *v.* WARDROBE MAKER, INC.

No. 7799. Decided May 25, 1967

[54 CCPA —; 377 F.2d 1017; 153 USPQ 747]

1. TRADEMARK—CONFUSING SIMILARITY—"SLIMAKER" AND "SLIMLINER" FOR WOMEN'S OUTER APPAREL.

"We do not agree [with the decision of the Trademark Trial and Appeal Board that there is no likelihood of confusion]. Our conclusion is predicated on the facts and circumstances shown by the record that the goods of the parties are so closely related as to be virtually identical; they have the same outlets of trade distribution; and they would normally be sold in the same store sections to the same class of purchasers to be used for similar purposes. The prefix of the competing marks, 'SLIM,' is identical, the only difference residing in the suffixes 'LINER' and 'MAKER,' which end in the same two letters. Taking the marks in their entireties, they would most likely suggest to the purchaser that the apparel when worn would tend to give the wearer a slimmer appearance. In substance, we think that the suffixes do not support a distinguishing connotation, but rather indicate a complement in a verbal sense to show capability to do what the prefix indicates, that is, to make one slim or to provide one with slim lines, a fashionable streamlined appearance."

2. SAME—SAME—SAME—TRADEMARK ACT OF 1946, SECTION 2(d).

"It is our conclusion * * * that the marks SLIMAKER and SLIMLINER, when applied to items of women's outerwear which normally emanate from similar sources under circumstances indicated by this record, are so similar in appearance and meaning as to be likely to cause confusion, or to cause mistake, or to deceive within the purview of section 2(d) of the Trademark Act of 1946."

APPEAL from the Patent Office. Opposition No. 43,662.

REVERSED.

Atkins, Law & McMorrow, James Atkins, Russell L. Law, Robert G. McMorrow for appellant.

Joseph Zallen for appellee.

Before WORLEY, *Chief Judge*, and RICH, SMITH, and ALMOND, *Associate Judges*, and Judge WILLIAM H. KIRKPATRICK [1]

ALMOND, *J.*, delivered the opinion of the court.

Slimaker Dress Corporation appeals from the decision of the Trademark Trial and Appeal Board dismissing its opposition to application Serial No. 121,952, filed June 13, 1961, by Wardrobe Maker, Inc., to register SLIMLINER for women's and girls' pants and shorts. Appellant asserts prior and continuous use of SLIMAKER as a mark for women's dresses and as the dominant and distinguishing feature of its trade name, and ownership of Registration No. 525,995 covering said mark.[2]

Neither party took testimony. Appellant relies upon its registration, supra. Appellee submits on the record.

The record is clear that prior use of the mark SLIMAKER resides with appellant and that the goods here involved are women's outer wearing apparel, and supports the conclusion of the Board that they "would be assumed to originate with a single producer if sold under the same or [confusingly] similar marks."

The sole issue is, as stated by appellant:

Does SLIMLINER as applied to women's and girls' pants and shorts so resemble opposer's previously used and registered trademark SLIMAKER for [women's] dresses * * * as to be likely to cause confusion, or to cause mistake, or to deceive? [Section 2(d), Trademark Act of 1946, as amended, 15 U.S.C. 1052(d).]

In dismissing the opposition, the Board held that while the marks "bear some resemblance in view of the use in common of the word 'slim' as a prefix," yet when considered in their entireties together with the suggestive nature of the term "slim" they "differ sufficiently in sound, appearance and meaning so as to preclude a likelihood of confusion."

[1] We do not agree. Our conclusion is predicated on the facts and circumstances shown by the record that the goods of the parties are

[1] Senior District Judge, Eastern District of Pennsylvania, sitting by designation.
[2] Issued June 6, 1950 to Slimaker Dress Corporation, Inc., a corporation of Kansas.

so closely related as to be virtually identical; they have the same outlets of trade distribution; and they would normally be sold in the same store sections to the same class of purchasers to be used for similar purposes. The prefix of the competing marks, "SLIM," is identical, the only difference residing in the suffixes "LINER" and "MAKER," which end in the same two letters. Taking the marks in their entireties, they would most likely suggest to the purchaser that the apparel when worn would tend to give the wearer a slimmer appearance. In substance, we think that the suffixes do not support a distinguishing connotation, but rather indicate a complement in a verbal sense to show capability to do what the prefix indicates, that is, to make one slim or to provide one with slim lines, a fashionable streamlined appearance.

[2] It is our conclusion, therefore, that the marks SLIMAKER and SLIMLINER, when applied to items of women's outerwear which normally emanate from similar sources under circumstances indicated by this record, are so similar in appearance and meaning as to be likely to cause confusion, or to cause mistake, or to deceive within the purview of section 2(d) of the Trademark Act of 1946.

The decision of the Board is reversed.

REVERSED.

WORLEY, *Chief Judge*, concurring.

This is a close question. My agreement with the majority is based on our established principle of resolving doubt in favor of the first user and against the newcomer. See *The United States Time Corp.* v. *Jacob Tennenbaum* (*Tennenbaum & Co., Telix Watch, assignee, substituted*), 46 CCPA 895, 267 F.2d 327, 122 USPQ 15.

SMITH, *J.*, concurring.

When considered as wholes in relation to the goods to which they are applied, the marks "Slimaker" and "Slimliner" are sufficiently similar in sound, appearance and meaning that there is a likelihood of confusion as to the origin of the goods upon which they are applied. The goods are closely related, are sold to the public through the same trade outlets, and are sold to the same classes of purchasers to be used for similar purposes. Under these circumstances, I concur in the result reached by the majority.

U.S. Court of Customs and Patent Appeals

IN RE MELVIN A. COOK AND DOUGLAS H. PACK

No. 7837. Decided February 16, 1967

[— CCPA —; 372 F.2d 563; 152 USPQ 615]

1. APPEAL TO U.S. COURT OF CUSTOMS AND PATENT APPEALS—MATTER BEFORE COURT—COMBINATION OF REFERENCES.

   Stating "We are also in agreement with the contention [by the Solicitor] that the appealed claims are obvious in view of the patents to Lowe and Hayes," *Held* that "The fact that the Board affirmed the Examiner's rejection based on Hayes in view of Lowe rather than Lowe in view of Hayes is of no significance. *In re Bush*, 49 CCPA 752, 760, 296 F.2d 491, 131 USPQ 263."

2. PATENTABILITY—PARTICULAR SUBJECT MATTER—"BOOSTER."

   The refusal of certain claims in an application entitled "Booster," as unpatentable over the prior art, is affirmed.

APPEAL from the Patent Office. Serial No. 380,969.

AFFIRMED.

Edwin M. Thomas for appellants.

Joseph Schimmel (*George C. Roeming*, of counsel) for the Commissioner of Patents.

Before WORLEY, *Chief Judge*, and RICH, SMITH, and ALMOND, *Associate Judges*, and Judge WILLIAM H. KIRKPATRICK [1]

KIRKPATRICK, *J.*, delivered the opinion of the court.

This is an appeal from a decision of the Board of Appeals affirming the rejection of claims 9–11, 13, and 16–18 [2] of appellants' reissue application Serial No. 380,969, filed April 23, 1964, for "Booster." Claims 1–3, corresponding to the claims in appellants' original patent,[3] have been allowed.

All of the appealed claims are directed to a booster article [4] and claim 16 was deemed illustrative by the Board:

> 16. A protected core multiple-stage booster adapted to be used for detonating a main charge of Primacord-insensitive blasting agents of the order of sensitivity of ammonium nitrate prills with 6% fuel oil, sensitized aqueous ammonium nitrate slurries and the like, said booster per se comprising a Primacord-sensitive inner core in the form of a thin-walled tube filled with a mass of Primacord-sensitive explosive which mass is inadequate to reliably detonate said blasting agent and a larger sheath mass of Primacord-insensitive explosive of high brisance completely surrounding and compactly confining said core, said high brisance explosive being substantially more sensitive to detonation than said blasting agent, said sheath mass having a detonation-receiving perforation extending thereinto to a position adjacent to said core tube so as to cause reliable detonation of said core by the detonator, the mass of the explosive in the core being sufficient to insure reliable detonation of the sheath mass, and the sheath mass being sufficient to insure reliable detonation of the main charge.

Claims 9–11 and 13 all depend from claim 16 and they more particularly define the elements of the booster. Claims 17 and 18 are also essentially similar to claim 16 but they are more specific.

Appellants' boosters are made by providing a pair of upstanding rods on a base and winding a tube containing the Primacord-sensitive explosive about the rods. A cylindrical form is then placed over the wound rods and a molten Primacord-insensitive explosive is poured into the form. After the molten explosive is solidified, the assembly is removed from the base and the upstanding rods to yield a booster with two holes through it to receive Primacord detonating fuses.

With respect to the materials to be used in the boosters, appellants' specification states:

> The tube 11 may be made of plastic such as polyethylene, vinyl chloride, vinylidene chloride, polyethylene terephthalate or any of the synthetic rubbers or it may be of cellulosic material such as regenerated cellulose, cellulose acetate or cellulose nitrate. *Additionally, Primacord itself, which contains fine grained PETN, may be used as the tube containing Primacord-sensitive explosive.*
>
> The Primacord-sensitive explosive 12 contained within the tube is preferably fine-grained material and may be PETN, RDX, amatol, tetryl and fine-grained TNT. The latter is Primacord-sensitive whereas coarse or cast TNT is Primacord-insensitive. If fine-grained TNT is used in the tube and the sheath is cast TNT, a sufficiently heavy walled tube must be used to insulate the TNT within the tube from the heat of the molten TNT which is cast to form the sheath.
>
> The Primacord-insensitive explosive forming the sheath 10 may be cast or pressed TNT, composition B (59% RDX—40% TNT—1% wax) or composition

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[1] Senior District Judge, Eastern District of Pennsylvania, sitting by designation.

[2] Appellants have withdrawn the appeal with respect to rejected claim 12 which is a duplicate of claim 9.

[3] U.S. Patent 3,037,453, issued June 5, 1962.

[4] The method of making the booster article appears to be the subject matter claimed by appellants in a copending application.

B–TNT mixture. *The above possess high brisance but are not consistently detonable by Primacord containing 50 grains of PETN per foot.* [Emphasis added.]

* * * * * * *

As indicated above, Primacord itself may be used as the tube containing the Primacord-sensitive explosive. In a series of tests, we have found that boosters made from 6 inch to one foot lengths of 50 grain PETN/foot Primacord wound in figure 8 fashion contained within a sheath of 350 grams of cast 75% composition B, 25% TNT according to the invention yield 100% detonations with a 50 grain PETN/foot Primacord strand running through one hole only. Such boosters cut a clean hole through a one-inch thick, 6 x 6 inch steel plate.

The references relied upon are:

Hayes, 2,913,982, November 24, 1959.
Lowe, 2,709,407, May 31, 1955.

The patent to Hayes discloses a priming device for detonating insensitive explosives such as ammonium nitrate. The device consists of two concentric tubes having annular space thereinbetween filled with a charge of crystalline explosive, and a detonating fuse (such as Primacord) in the inner tube. The crystalline explosive is stated to be known in the art and includes:

* * * PETN (pentaerythritol tetranitrate), RDX (cyclonite or cyclotrimethylenetrinitramine), tetryl (tetranitromethylaniline), pentolite (mixtures of PETN and TNT), mixtures of RDX and PETN, *and mixtures of RDX and/or PETN with TNT* (trinitrotoluene). Trinitrotoluene by itself is not sufficiently sensitive for use in the invention. Consequently, when TNT is used in admixture with the more sensitive explosives, the amount of TNT employed will depend on the strength of the particular detonating fuse. In the case of pentolite, for instance, it is usually desirable to employ at least 40% of PETN. It is generally preferred that all mixtures employed have a detonation sensitivity at least as great as that of a pentolite containing 40% PETN and 60% TNT. *Mixtures of equal parts of RDX and TNT are very satisfactory.* RDX, PETN and tetryl are the preferred crystalline explosives. It is preferred to employ the explosive in particulate form although those containing TNT may be cast if desired. * * * [Emphasis added.]

The Lowe reference relates to a rigid explosive cartridge which contains a main charge explosive having a pellet booster in the center thereof. The main charge may be cast TNT or mixtures of TNT with PETN or cyclonite. The pellet booster may be formed by compression of cyclonite, PETN or tetryl, or their mixtures with TNT. A detonator is inserted into the pellet through a channel.

The Board affirmed the Examiner's rejection of the appealed claims as unpatentable over Hayes in view of Lowe. Additionally, the Board held that claims 16–18 failed to "patentably differentiate" over the structure disclosed by Hayes:

We wholly agree with the Examiner's description of the pertinent portions of the Hayes disclosure * * * which states as follows:

> "The patent to Hayes discloses a booster for detonating insensitive explosives such as ammonium nitrate explosives comprising a Primacord-sensitive inner core 44 in the form of a thin-walled tube filled with a mass of Primacord-sensitive explosive (PETN) and a larger sheath mass of insensitive explosive 43 completely surrounding and confining said core. The sheath mass 43 has a detonator receiving perforation extending therethrough to a position adjacent said core tube."

Applying the above Hayes disclosure to the structural elements called for in the broadest claim 16, we find that a "Primacord-sensitive inner core in the form of a thin-walled tube filled with a mass of Primacord-sensitive explosive which mass is inadequate to reliably detonate said blasting agent," is readable on element 44 in Hayes, and can be considered equivalent to appellants' first-stage booster material. The "larger sheath mass of Primacord-insensitive explosive of high brisance completely surrounding and compactly confining said core, said high brisance explosive being substantially more sensitive to detonation than said blasting agent," which constitutes appellants' second-stage booster, is readable on the insensitive explosive 43 in Hayes, which has "a detonator-receiving perforation extending therethrough to a position adjacent said core tube."

With regard to insensitive explosive 43, this can be semi-gelatin dynamite, as admitted by appellants (page 13 in their brief), and which, as further admitted by appellants, is of high brisance and is *more* sensitive to detonation than the claimed ammonium nitrate slurries (bottom of page 6 in the brief), thus meeting the required sensitivity differential set forth in the claims.

With regard to claims 9 through 13 and claims 17 and 18 which call for specific explosive compositions, it is our view that the substitution of other similar commercially available, insensitive explosives would be obvious to the skilled artisan.

Appellants contend that the art had no concept of a multiple-stage booster. It is the appellants' position that Lowe and Hayes do not show the use of a second stage booster material which is more sensitive than the main charge but less sensitive than the explosive in the booster core.

The Solicitor, on the other hand, urges that all the claims were properly rejected under 35 U.S.C. 103 as obvious to one skilled in the art in light of the patents to Lowe and Hayes. In addition, the Solicitor construes the Board's decision as including a rejection of claims 16–18 under 35 U.S.C. 102.

After a thorough review of the record, we are of the opinion that appellants' contentions do not demonstrate reversible error by the Board and that the decision below must be affirmed.

Appellants' claims are directed to a booster which has an inner core of a Primacord-sensitive explosive and a sheath mass of Primacord-insensitive explosive surrounding the core. The above quoted passages from appellants' specification show that the Primacord-sensitive explosive may be Primacord itself or it may be PETN, RDX, tetryl and fine-grained TNT. The Primacord-insensitive explosive may be cast or pressed TNT, a "composition B" (59% RDX—40% TNT—1% wax) or composition B–TNT mixtures. In view of these definitions for the Primacord-sensitive and Primacord-insensitive explosives, we are in agreement with the Board that the elements recited in claim 16 are found in the disclosure of Hayes. Hayes' priming device is shown to be made of a Primacord inner core surrounded by a mass of a crystalline explosive which may be PETN, RDX, and mixtures of RDX and/or PETN with TNT. Hayes found mixtures of about equal parts of RDX and TNT are very satisfactory and that such mixture may be cast if desired. We note that such crystalline explosive mixtures are substantially the same as that disclosed by appellants for their Primacord-insensitive explosive, i.e., composition B or composition B–TNT mixtures. The fact that appellants chose to call their mixture "Primacord-insensitive explosive" and Hayes termed his mixture "crystalline explosive" is of no importance. As indicated above, Hayes' priming device is intended for detonating relatively insensitive blasting agents such as ammonium nitrate.

We are also in agreement with the contention that the appealed claims are obvious in view of the patents to Lowe and Hayes.[5] Lowe discloses an explosive cartridge having an inner core of cyclonite, PETN or tetryl, or their mixture with TNT. This inner core is sur-

[1] [5] The fact that the Board affirmed the Examiner's rejection based on Hayes in view of Lowe rather than Lowe in view of Hayes is of no significance. *In re Bush*, 49 CCPA 752, 760, 296 F.2d 491, 131 USPQ 263.

rounded by a main charge of cast TNT. A detonator is inserted to reach the core through a channel in the cartridge. Thus, the only structural difference between Lowe's explosive cartridge and appellants' claimed booster is the "thin-walled tube," recited in the appealed claims, which separates the sensitive core and relatively insensitive sheath mass. We agree that it would be obvious to one skilled in the art to employ such a tube as a housing for the sensitive core as shown by Hayes.

Appellants have filed several affidavits in attempts to overcome the references cited by the Examiner. These affidavits all emphasize the multiple-stage feature of appellants' booster. The affiants allege that no multiple-stage booster is disclosed in the reference patents. However, appellants' affidavits are inadequate to overcome what we think is plainly shown in these references.

[2] The decision is affirmed.

AFFIRMED.

SMITH, *J.*, concurs in the result.

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

1,108,449. (See 3,044,878.)

2,757,672, R. W. Ogle, SYRINGE, **filed** Sept. 11, 1967, D.C., C.D. Calif. (Los Angeles), Doc. 67–1330–FW, *Robert W. Ogle v. Becton, Dickinson and Company.*

2,806,331, E. J. Hoye, GRINDING WHEELS, **filed** Sept. 15, 1967, D.C., E.D. Wis. (Milwaukee), Doc. 67–C–299, *Emmett J. Hoye v. Manhattan Rubber Mfg. Co. et al.*

2,856,229, R. Adell, PROTECTIVE TRIM MOLDING FOR VEHICLE DOOR EDGES; **2,887,338,** same, TRIM MOLDING FOR CURVED VEHICLE DOOR OUTER EDGES; **D. 172,414,** same, AUTOMOBILE, **filed** Aug. 22, 1967, D.C., E.D. Mich. (Detroit), Doc. 30272. *Adell Manufacturing Inc. et al. v. Victro Sales Corp. and Victra Corp.*

2,887,338. (See 2,856,229.)

2,991,398, C. W. Strong, METER BOX; **3,123,744,** J. T. Fisher, METER BOX WITH A MOISTURE BARRIER ASSEMBLY, **filed** July 19, 1967, D.C., N.D. Ga. (Atlanta), Doc. 11077, *H. W. Strong and B & C Metal Stamping Company v. Sangamo Electric Company.*

3,029,150, W. Bickel, METHOD OF CURING MEAT AND COMPOSITION THEREFOR, **filed** Nov. 1, 1965, D.C.N.J. (Newark), Doc. 1164–65, *Joh. A. Benckiser G.m.b.H. v. Hygrade Food Products Corporation.* Consent judgment for dismissal, Sept. 15, 1967.

3,044,878, O. S. Knedlik, PROCESS FOR THE PREPARATION OF A BEVERAGE; **1,108,449,** W. N. Kidder, ARTIFICIAL TOOTH, **filed** Aug. 25, 1967, D.C., N.D. Tex. (Dallas), Doc. CA–3–2209, *John E. Mitchell Company v. Cornelius Company et al.*

3,046,526, J. R. Scantlin, SELECTOR APPARATUS, **filed** Sept. 18, 1967, D.C., C.D. Calif. (Los Angeles), Doc. 67–1364–EC, *Scantlin Electronics, Inc. v. Motorola, Inc. et al.*

3,055,201, J. D. Smith, WINDSHIELD LIGHTER STRUCTURE; **D. 188,622,** S. Rapport, LIGHTER OR SIMILAR ARTICLE, **filed** Aug. 16, 1967, D.C.N.J. (Newark), Doc. 876–67, *R. J. Reynolds Tobacco Co., Jayme Products, Inc. v. Ronson Corporation.*

3,093,177, J. P. Villo, THREAD LOCK AND METHOD OF MAKING THE SAME, **filed** Oct. 18, 1966, D.C.N.J. (Trenton), Doc. C1047–66, *Elastic Stop Nut Corporation of America v. Standard Pressed Steel Co.* Stipulation and order of dismissal, Sept. 18, 1967.

3,123,744. (See 2,991,398.)

3,315,041, Coover and Joyner, DYEABLE POLYPROPYLENE FIBERS CONTAINING POLYMERS OF VINYL PYRIDINES, **filed** Sept. 18, 1967, D.C., S.D.N.Y., Doc. 67–C–3595, *Sidney O. Sampson v. Sony Corporation of America.* **Same,** Doc. 67–C–3596, *Sidney O. Sampson v. Ampex Corporation.*

3,327,500, J. A. Currier, KNITTED PRODUCTS; **3,340,706,** same, METHODS AND MACHINES FOR STOCKING PRODUCTION, **filed** Sept. 25, 1967, D.C., S.D.N.Y., Doc. 67–C–3688, *W. E. Booton, Ltd. v. Scott & Williams, Inc.*

3,340,706. (See 3,327,500.)

D. 172,414. (See 2,856,229.)

D. 174,482, Willinger and Nestler, BOTTOM AQUARIUM FILTER, **filed** July 19, 1967, D.C., E.D.N.Y. (Brooklyn), Doc. 67–C–696, *Aquariums Inc. v. Acqua-Life Products Corp. et al.*

D. 188,622. (See 3,055,201.)

REISSUES

DECEMBER 19, 1967

Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

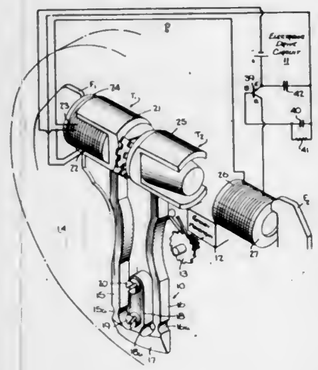
26,322

ELECTRONICALLY-CONTROLLED TIMEPIECE AND MOTION TRANSFORMER THEREFOR

William O. Bennett, Bayside, N.Y., and William W. Mutter, Paramus, and Egbert Van Haaften, Closter, N.J., assignors to Bulova Watch Company, Inc., New York, N.Y., a corporation of New York

Original No. 3,184,981, dated May 25, 1965, Ser. No. 302,956, Aug. 19, 1963, which is a division of Ser. No. 89,896, Jan. 19, 1961. Application for reissue May 10, 1967, Ser. No. 641,738

5 Claims. (Cl. 74—142)



1. In an electronic timepiece where an electromagnetically-actuated tuning fork mounted on a pillar plate constitutes the timekeeping standard and wherein the gear works of the timepiece are driven to a toothed index wheel; a motion transformer for translating the vibratory action of the fork into rotary motion, said transformer comprising an index finger fixedly attached to one tine of said fork and engaging the teeth of said wheel to transmit turning impulses thereto, and a pawl adjustably mounted on said pillar plate to engage said index wheel at a position relative to said index finger at which the phase between said finger and pawl is several teeth plus one-half tooth.

26,323

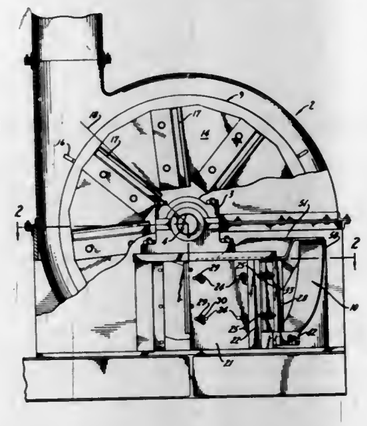
WOOD CHIPPER

Paul J. Fontaine, Chicago, Ill., assignor, by mesne assignments, to Westinghouse Air Brake Company, Pittsburgh, Pa., a corporation of Pennsylvania

Original No. 3,123,311, dated Mar. 3, 1964, Ser. No. 52,451, Aug. 29, 1960. Application for reissue Mar. 2, 1966, Ser. No. 535,638

14 Claims. (Cl. 241—28)

1. A method of reducing an elongated slab of wood into wood chips in a wood chipper having a chipper disc rotating about a horizontal axis with a plurality of chipper knives on one face moving past a fixed vertical anvil positioned generally parallel to the vertical radius of the disc, including the steps of positioning a slab below the axis of rotation of the disc, feeding the slab horizontally at an acute angle to the face of the disc, contacting the slab in an on-edge relationship with the chipper knives, keeping the width of the slab against the anvil,



and maintaining the slab in on-edge relationship with the disc so that the knives cut across the slab.

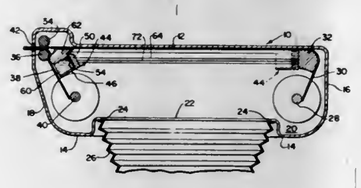
26,324

PHOTOGRAPHIC APPARATUS

Edwin H. Land, Cambridge, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

Original No. 3,194,138, dated July 13, 1965, Ser. No. 242,271, Dec. 4, 1962. Application for reissue July 13, 1966, Ser. No. 569,769

9 Claims. (Cl. 95—13)



1. In photographic apparatus for exposing successive areas of [a] photosensitive image-recording sheet *material,* means for treating said areas of said image-recording sheet with a processing liquid comprising, in combination:

a liquid applicator including a member having two surfaces disposed in adjacent face-to-face relation and defining a capillary interspace between said surfaces;

said surfaces and said capillary interspace defined thereby terminating in an edge defined by edge portions of said member;

a reservoir for said processing liquid constructed to maintain the liquid contents of said reservoir substantially at ambient pressure;

said member being positioned with the end of said capillary in erspace opposite said edge immersed in said liquid within said reservoir;

means for supporting said member within said apparatus with said edge portions thereof defining said edge of said interspace in contact with said image-recording sheet and moving said member and said sheet relative to one another to apply said liquid to said sheet from said capillary interspace;

the last-named means including means for moving said applicator and said reservoir from a first to a second position to apply said liquid to said sheet; and

means for engaging said edge portions of said member at said first position for closing said capillary interspace against the flow of said liquid.

26,325

AMMONIUM NITRATE EXPLOSIVE COMPOSITION CONTAINING AMMONIA

Joseph R. Hradel, Mount Pleasant, and Carl Kenneth Bjork, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Original No. 3,094,443, dated June 18, 1963, Ser. No. 784,895, Jan. 5, 1959. Application for reissue June 9, 1965, Ser. No. 462,768

8 Claims. (Cl. 149—1)

1. An explosive composition comprising from 20 to 95 percent by weight of ammonium nitrate, from 1 to 65 percent by weight of a solid light metal in particulate form, said particulate metal having a particle size of from about 20 to 140 mesh, not more than 1 percent of the said metal particles passing a 200 mesh sieve, from 2 to 50 percent by weight of ammonia and not more than 6 percent by weight of water, at least a portion of said ammonium nitrate being present as an ammoniacal solution of ammonium nitrate and the remainder of the ammonium nitrate being present in solid particulate form in a particle size ranging from about 8 to 100 mesh, and said solid light metal being selected from the group consisting of magnesium, magnesium-base alloys, aluminum, aluminum-base alloys and mixtures thereof.

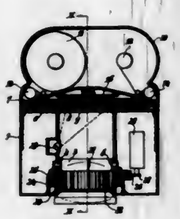
26,326

AUTOMATIC DIAPHRAGM CONTROL FOR AERIAL CAMERA

Willen Hendrik van der Feyst and Dirk Johan Groot, Delft, Netherlands, assignors to N.V. Optische Industrie "De Oude Delft," Delft, Netherlands

Original No. 3,245,331, dated Apr. 12, 1966, Ser. No. 278,845, May 8, 1963. Application for reissue Sept. 19, 1966, Ser. No. 584,311

7 Claims. (Cl. 352—141)



5. In a photographic camera having automatic exposure control, the combination of an optical objective, an image window substantially in the focal plane of said objective, focal plane shutter means arranged closely adjacent said image window for movement past said image window, said focal plane shutter means having a diffusely reflective surface substantially parallel to the focal plane and so arranged that light from said objective is incident thereon at times when said surface is in conjunction with said image window, photosensitive means mounted outside the path of light between said objective and said image window so as to directly receive light diffusely reflected by said surface, and means to effectively control the amount of light incident on said focal plane during exposure in response to an output of said photosensitive means.

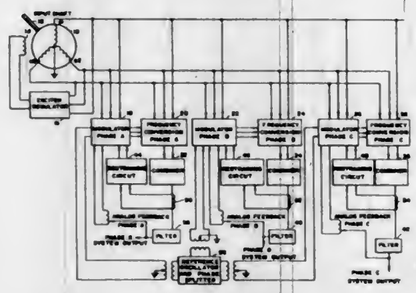
26,327

SYSTEM FOR PROVIDING A RANGE OF DETERMINATE FREQUENCIES FROM A VARIABLE SPEED SOURCE

Lawrence R. Peaslee, Waynesboro, Va., and Samuel C. Caldwell, Chagrin Falls, Ohio, assignors to General Electric Company, a corporation of New York

Original No. 3,148,324, dated Sept. 8, 1964, Ser. No. 130,177, Aug. 8, 1961. Application for reissue June 2, 1966, Ser. No. 562,032

17 Claims. (Cl. 321—61)



12. A frequency conversion system comprising a power source producing a sinusoidal output of an indeterminate varying frequency, means coupled to said power source for converting said sinusoidal output to a cosinusoidal output, a first group of switching devices coupled to said power source, each switching device of said first group being actuated into conductivity by switching signals being applied thereto when said switching device is enabled by the output from said power source of one polarity, a second group of switching devices coupled to said power source, each switching device of said second group being actuated into conductivity by switching signals being applied thereto when said switching device is enabled by the output from said power source of the opposite polarity, a reference frequency source, the frequency of said reference frequency source being less than the lowest frequency of said power source, modulating means coupled to said cosinusoidal output and to the output of said reference frequency source, said modulating means including a number of control means, each control means being coupled to a corresponding one of said switching devices to supply said switching signals thereto at times controlled by the combined output of said reference frequency source and said cosinusoidal output, and combining means coupled to said switching devices to combine the outputs thereof to produce a power output having the frequency of said reference frequency source.

PLANT PATENTS

GRANTED DECEMBER 19, 1967

Illustrations for plant patents are usually in color and therefore it is not practicable to reproduce the drawing.

2,783

PLUM TREE

John M. Garabedian, Fresno, Calif., assignor to Peach & Willow Farms, Fresno, Calif., a corporation of California

Filed Oct. 13, 1966, Ser. No. 586,580

1 Claim. (Cl. Plt.—38)

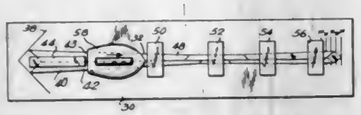
A new and distinct variety of plum tree, substantially as illustrated and described, which is a regular and productive bearer of large, yellow flesh, clingstone fruit having yellow-green skin partially overspread with a bright pinkish red; characterized by general resemblance in tree and fruit to the Laroda plum but specifically distinct therefrom by a harvest period which is about ten days later.

PATENTS

GRANTED DECEMBER 19, 1967

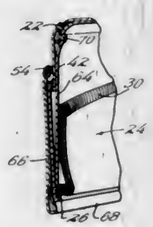
GENERAL AND MECHANICAL

3,358,291
METHOD FOR MANUFACTURE OF NECKTIES
Herman Davidowitz, 140 E. 95th St. 10028, and Jacob Davidowitz, 320 Riverside Drive 10025, both of New York, N.Y.
Filed Nov. 4, 1965, Ser. No. 506,309
8 Claims. (Cl. 2—146)



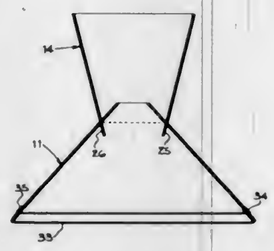
1. A method for the manufacture of neckties consisting of cutting strips of material having preselected dimensions from a length of basic tie fabric; securing said basic fabric strips together in a predetermined manner to form a basic fabric piece; placing strips of reinforcing material on said basic fabric piece; folding the edges of said basic fabric piece to enclose said reinforcing material strips; straightening said basic fabric piece; steaming said basic piece while in a straightened condition by placing a steam-producing means in proximity but not touching said basic fabric strip; and securing said basic fabric piece to form a completed necktie.

3,358,292
CAP
Chaim Bonk, 1916 Morgan Ave., and Samuel Rafowitz, 1922 Morgan Ave., both of St. Paul, Minn. 55116
Filed Apr. 9, 1965, Ser. No. 446,948
4 Claims. (Cl. 2—172)



1. A multiple sized cap comprising:
(a) a crown,
(b) resilient front, rear, and side portions having inner and outer surfaces depending from said crown adapted to generally encircle the head of a person,
(c) said front, rear, and side portions having lower edges forming a substantially continuous edge along a substantially common plane,
(d) an elongated resilient vertically-ribbed ear flap in overlying relation to said inner surfaces of said rear and side portions, and being stretchable to a greater extent longitudinally than transversely,
(e) a tightly gathered seam marginally securing said earflap marginally upward from the lower edges of said rear and side portions,
(f) the marginal free edge of the earflap including a resilient stretch member,
(g) an elongated resilient outer band having a lower edge and forward ends in overlying relation to said rear and side portions,
(h) said outer band secured at the lower edge of each forward end to the lower edge of said front portion with the remaining portion of said outer band lower edge being free of attachment,
(i) said tightly gathered seam and said resilient member of said earflap normally holding said earflap concavely contoured to snugly embrace the sides and back of a person's head when unfolded with said outer hand optionally unfoldable in overlying relation to said earflap.

3,358,293
PARTY HAT
Don E. Wanamaker, 4400 Tangent Drive, Kettering, Ohio 45429
Filed May 6, 1966, Ser. No. 548,290
5 Claims. (Cl. 2—195)

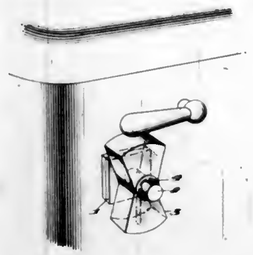


1. a cardboard party hat including first and second frusto-conical sections, said first frusto-conical section having its smaller end of a diameter less than the diameter of the smaller end of said second frusto-conical section and having its larger end of a diameter greater than the diameter of the larger end of said second frusto-conical section, the smaller end of said first frusto-conical section being disposed within the smaller end of said second frusto-conical section, and means securing the smaller end of said second frusto-conical section to said first frusto-conical section adjacent the smaller end of said first frusto-conical section.

3,358,294
TOILET HANDLE LOCK
Meryl R. Nolan and Gaillard R. Nolan, both of 7513 Spring Lake Drive, Bethesda, Md. 20034
Filed Sept. 1, 1964, Ser. No. 393,707
1 Claim. (Cl. 4—1)

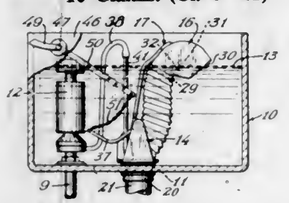
A toilet handle lock for selective immobilization of an externally mounted rotatable toilet handle comprising:
(a) a base section having an adhesive backing for attachment to the wall of the toilet;
(b) a shaft protruding normally from the base, and having spaced indentations;
(c) a generally rectangular body rotatably mounted on said shaft;
(d) a lock washer holding the body on the shaft;

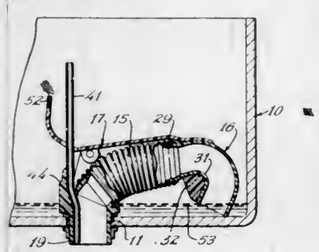
(e) a spring mounted plunger within said body cooperating with said indentations to hold the handle in pre-selected positions whereby said handle lock when



disposed beneath the flush handle with the body in a vertical position immobilizes the flush handle and when the body is in the horizontal position it allows the handle to flush the toilet.

3,358,295
TOILET FLUSH VALVE
John R. Wolfgram, 558 E. Idaho Ave., St. Paul, Minn. 55101
Filed Oct. 24, 1965, Ser. No. 504,422
10 Claims. (Cl. 4—42)



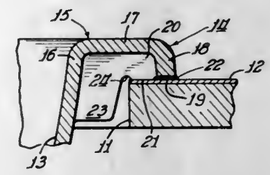


1. A flush tank siphoning apparatus in combination with a flush tank having an outlet opening at its lower end, and liquid supply means adaptable to refill the tank to a predetermined level, the apparatus including:
a flexible tube connected to said outlet opening,
a hook-shaped hollow siphon head on said flexible tube having an inlet end, an outlet end connected to said tube, and an intermediate bend always above the level of portions of said inlet and outlet ends,
means pivotally supporting said siphon head for movement from a position with the inlet end of the siphon head closely adjacent to the tank bottom to a position in which a portion of the siphon head projects above said predetermined liquid level.
a buoyant means connected to the siphon head to raise said head as the fluid level raises in the tank,
a portion of the inlet end of said siphon head and the intermediate bend thereof being supported by said float above said predetermined liquid level when said liquid is at said level, and
means for forcing said siphon head below the predetermined fluid level to drain the liquid from said tank.

ERRATUM

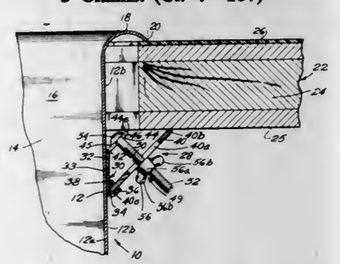
For Class 4—172 see:
Patent No. 3,358,761

3,358,296
SELF-RIMMING LAVATORY
Krell Bosler, Mansfield, Ohio, assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed Oct. 24, 1965, Ser. No. 504,596
5 Claims. (Cl. 4—187)



1. An improved countertop lavatory comprising a bowl adapted to be recessed in the countertop, a rim secured to said bowl and extending outwardly from said bowl over the countertop, and lugs secured to said rim and extending downwardly into engagement with the countertop for supporting said lavatory on the countertop with said rim positioned a predetermined distance from the countertop for receiving a sealant between said rim and the countertop.

3,358,297
SINK FASTENER
Karl K. Kaempfer, Tucson, Ariz., assignor to H. D. Drain Corporation, Addison, Ill., a corporation of Illinois
Filed Nov. 19, 1965, Ser. No. 508,654
5 Claims. (Cl. 4—187)

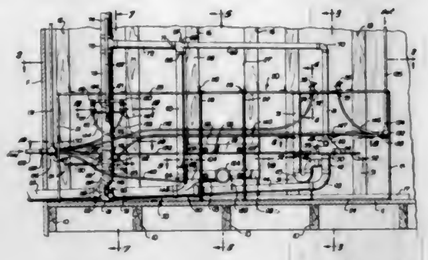


1. In a fastener for use with a sink and a counter,
seating means for receiving a bracing member affixed to the sink,
a bracing member seated in said seating means and extending between the sink and the counter, and
adjustable means to hold the bracing member in positive contact with said seating means and the underside of the counter, said adjustable means permitting alteration of the angular position of said bracing means in the seating means.

3,358,298
WALL PLUMBING ASSEMBLY
Peter J. Beyerle, 84 D St., Chula Vista, Calif. 92010
Filed Dec. 23, 1963, Ser. No. 332,649
24 Claims. (Cl. 4—211)

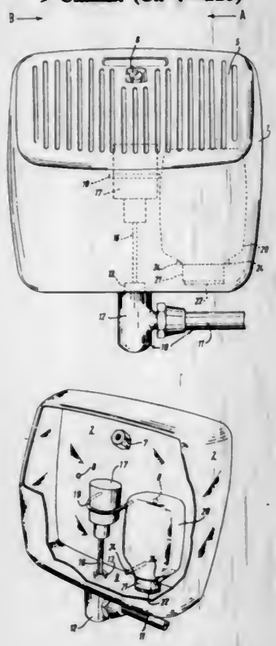
1. In combination: a wall having opposed generally vertical studs spaced from each other; a frame disposed lengthwise in said wall between said opposed studs and comprising longitudinally extending parallel frame sections spaced horizontally from each other and cross members secured to said sections and to said opposed studs to

constitute the primary means holding said studs in spaced relation along the entire length of said studs; a drain pipe structure carried by said frame and extending between said opposed studs and having one or more inlets for

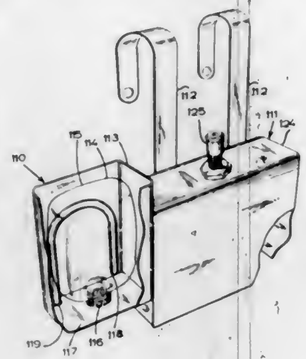


receiving effluent from one or more plumbing fixtures, said drain pipe structure including a main drain line in said wall extending lengthwise thereof between said opposed studs and one or more vent pipes extending upwardly from and connected to said main drain line.

3,358,299
MAINTENANCE OF URINALS, WATER CLOSET BASINS AND THE LIKE
Edward Maude, Nantwich, England, assignor to Calmic Limited, Crewe, England, a British company
Filed June 18, 1965, Ser. No. 465,133
Claims priority, application Great Britain, May 28, 1963, 21,196/63; Nov. 7, 1964, 45,473/64
9 Claims. (Cl. 4—225)

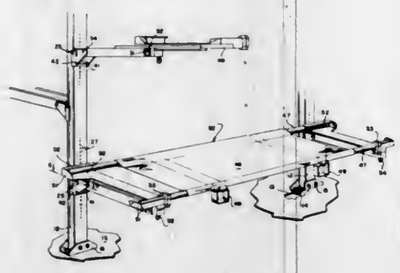


1. A device for maintaining a convenience having a flushing system, such as a urinal or water closet in a relatively clean, odour-free and sanitary condition, comprising an outer container, a pipe connection leading from the base of the outer container for feeding water to the outer container via said pipe connection during a flush to fill said outer container to a given level from the flushing system and for returning it to the flushing system at the end of a flush, an inner container for a mobile viscous disinfectant composition, said inner container being open at its lower end which is spaced above the base of the outer container, a wad of foraminous material such as a sponge plug closing the open end of said inner container and on the upper face of which the disinfectant



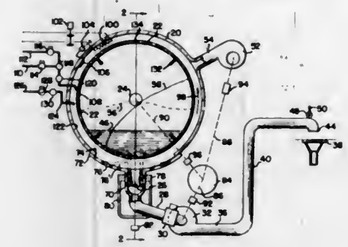
composition can rest, and a weir between the inner container and said pipe connection, said weir being located below said given level and above at least a portion of said wad to permit water to return to the flushing system and to retain a sufficient depth of water beneath the inner container to keep the retained water at least in contact with the lower face of said wad.

3,358,300
MOUNTING AND SUPPORTING APPARATUS FOR LITTERS
Donald G. Smith, Marietta, Ga., assignor to Lockheed Aircraft Corporation, Burbank, Calif.
Filed May 23, 1966, Ser. No. 552,229
8 Claims. (Cl. 5—9)



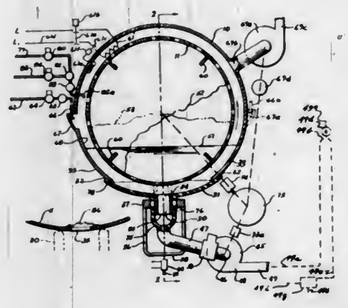
1. A mounting and supporting apparatus for litters comprising a stanchion, a cantilevered frame mounted on and projecting laterally of said stanchion, said frame defining a generally rectangular area and being extendible and retractable with respect to said stanchion, a sliding connection between said frame and said stanchion operative to adjust the position of said frame linearly on said stanchion, said connection including a pivot for limited rotation of said frame relative to said stanchion during the linear adjustment thereof as aforesaid, a stop operative concurrently with said lock to render said pivot inoperative, a lock to secure said frame in the adjusted position, and a releasable litter engagement carried by said frame and operative to secure a litter when disposed thereon against all relative movement.

3,358,301
LAUNDRY MACHINE AND METHOD
Robert R. Candor, Miami Township, Montgomery County, and James T. Candor, Centerville, Ohio, assignors to Whirlpool Corporation, Benton Township, Mich., a corporation of Delaware
Filed Oct. 22, 1963, Ser. No. 318,001
18 Claims. (Cl. 8—159)



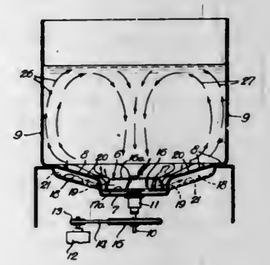
1. In a laundry machine, a substantially fluid tight confining means for receiving wet laundry, said confining means having a foraminous portion for supporting wet laundry in said confining means on one side of said foraminous portion, passage defining means having inlet means disposed in substantially sealed relation against the other side of said foraminous portion and operatively interconnecting said foraminous portion with the exterior of said confining means, and means operatively interconnected to said confining means for creating a fluid pressure in said confining means greater than in said passage defining means and greater than outside said confining means so that there is a tendency to force a large volume of fluid from said confining means directly through said wet laundry and said foraminous portion into said passage defining means when said wet laundry is in aligned relation with said inlet means of said passage defining means and on said one side of said foraminous portion.

3,358,302
LAUNDRY MACHINE AND METHOD
Robert R. Candor, Miami Township, Montgomery County, Ohio, assignor to Whirlpool Corporation, Benton Township, Mich., a corporation of Delaware
Application Sept. 18, 1963, Ser. No. 311,608, now Patent No. 3,231,909, Feb. 1, 1966, which is a continuation of application Ser. No. 839,232, Sept. 10, 1959. Divided and this application Sept. 20, 1965, Ser. No. 488,647
31 Claims. (Cl. 8—159)



1. In a laundry machine, a confining means for receiving wet laundry, said confining means having a movable non-absorbent foraminous portion for supporting and tumbling said wet laundry on one side of said foraminous portion, means for moving said foraminous portion to tumble said wet laundry thereon, strong unidirectional suction means, nozzle means operatively connected to said suction means and having inlet means disposed in substantially sealed relation against the other side of said foraminous portion to suck moisture from said wet laundry only when said wet laundry is aligned with said inlet means of said nozzle means by only drawing a large volume of air from said confining means through said wet laundry and said foraminous portion into said suction means in unimpeded relation between said foraminous portion and said inlet means while said foraminous portion is being moved whereby said suction means applies an unimpeded suction directly on the layer of laundry disposed against said one side of said foraminous portion, and heater means for heating the air to be subsequently drawn directly through said wet laundry and said foraminous portion into said suction means to tend to further dry said wet laundry when said wet laundry is aligned with said inlet means of said nozzle means and said nozzle inlet means is disposed in substantially sealed relation against said other side of said foraminous portion while said foraminous portion is being moved.

3,358,303
METHOD OF WASHING CLOTHES
George M. Gibson, % G. M. Gibson Corp., Bellevue, Iowa 52031
Original application Mar. 21, 1963, Ser. No. 267,887, now Patent No. 3,233,436, dated Feb. 8, 1966. Divided and this application Oct. 4, 1965, Ser. No. 492,603
14 Claims. (Cl. 8—159)



1. A method of washing clothes by providing a body of fluid in a tub for the clothes, which comprises generating a forceful fluid expanding motion to rotate the fluid in one direction in one plane of action across the tub fluid body to cause the fluid to follow a given continuous expanding path of rotational action and simultaneously diverting said fluid into a reversed rotational direction motion from the aforesaid given path of action in said one plane while causing said reversed rotary fluid to leave said one plane of action to expand into the body of fluid and into the clothes in said fluid of the tub to counteract continuous clothes rotation in said one plane.

3,358,304
LAUNCHING DEVICE FOR WATER SKIERS
Edward N. Esmay, Brighton, N.Y. (301 Fair Oaks Ave., Rochester, N.Y. 14618)
Filed June 6, 1966, Ser. No. 555,631
4 Claims. (Cl. 9—310)

1. An aquatic launching device for water skiers comprising the combination of

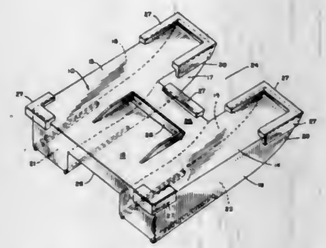
a pair of similar hull members arranged in parallel and spaced relation to each other,

each hull member comprising a pair of substantially vertical side plates and a flat bottom plate connected along its marginal longitudinal edges to said vertical plates,

each hull further comprising means joining the upper edges of said side plates from end to end,

the forward portion of said bottom plate being continuously upcurved to meet said means along a common front edge,

a terminal rear wall in each hull member fixed to the rear ends of the side, and bottom plates and joining means,

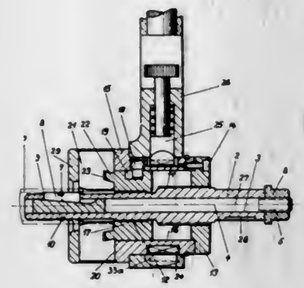


said combination further including an interposed deck member of shorter length than said hull members which is rigidly fixed to and between said hull members at a distance rearwardly of said common front edges,

said deck member defining a supporting structure for the body of a skier over the center of flotation of said device and permitting the positioning of the ski-supported legs of the skier in an open space located between the forward portions of said hull members, and

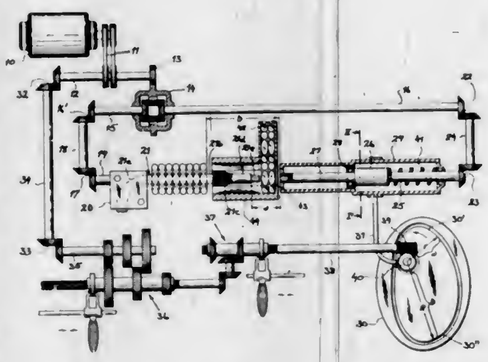
towing means fixed to said deck member and adapted for frictionally engaging the body of the skier while grasping a tow line to thereby transmit a towing force to said launching device.

3,358,305
SCREW STOCK
Erwin Ottersbach, Singen, and Peter Zimmermann, Stahringen, near Constance, Germany, assignors to Georg Fischer Aktiengesellschaft, Schaffhausen, Switzerland
Filed Jan. 19, 1966, Ser. No. 521,624
Claims priority, application Switzerland, Jan. 29, 1965, 1,292/65
3 Claims. (Cl. 10—124)



1. A thread-cutting device, especially for cutting a conical thread onto a pipe, which includes: housing means, first nut means connected to said housing means, thread carrier means having a first circumferential thread with a pitch corresponding to the pitch of the thread to be cut and also having a second circumferential thread with a pitch less than the pitch of said first thread, said first thread being in threaded engagement with said first nut means, second nut means axially displaceable in said housing means and in threaded engagement with said second thread, said housing means being rotatable relative to said first and second nut means to effect an axial movement of the latter relative to said housing means, and thread-cutting means radially adjustably mounted in said housing means for cutting a thread into a pipe, said thread cutting means and said second nut means being in operative engagement with each other to selectively bring about a radial movement of said thread-cutting means in response to an axial movement of said second nut means relative to said housing means.

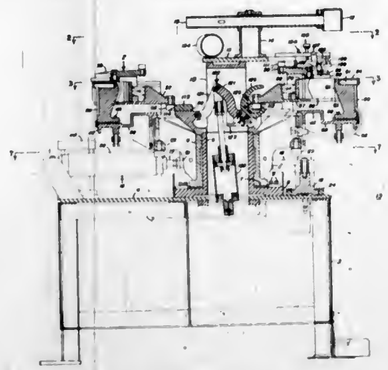
3,358,306
AUTOMATIC NUT TAPPER
Ilija Stollkov Haralampiev and Assen Atanassov Valev, Sofia, Bulgaria, assignors to Darjavno Stopansko Obedinenie Metaloobrabotvashti i Darvoobrabotvashti Mashini i instrumenti, Sofia, Bulgaria, a corporation of Bulgaria
Filed Aug. 17, 1965, Ser. No. 480,461
Claims priority, application Bulgaria, Aug. 17, 1964, I–661
5 Claims. (Cl. 10—133)



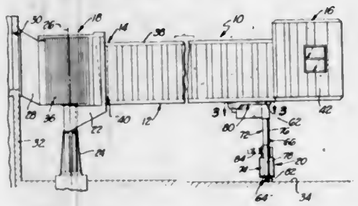
1. In a machine for internally threading blanks to form nuts and having a pair of axially aligned spindles provided at confronting ends with gripper means and adapted to engage nut blanks fed between them, one of the spindles carrying a tap for threading a nut blank upon its engagement by the spindles, and common drive means connected with the spindles at their extremities remote from their confronting ends for rotating said spindles jointly, the improvement which comprises torque-equalizing differential means in said drive means between said spindles for affording at least limited relative rotation thereof and equalizing the torque applied thereto by said drive means.

3,358,307
SHOE MACHINE
Placentino Lauretti, Newville, Pa., assignor to Proctor-Lauretti Machine Company, St. Louis, Mo., a corporation of Missouri
Filed Mar. 1, 1965, Ser. No. 436,245
19 Claims. (Cl. 12—53.5)

1. A shoe machine comprising a rotary turret, a plurality of mold assemblies mounted on and spaced about said turret, a fluid cylinder unit for indexing said turret to rotatably present said assemblies in succession at an operator's station, and a second fluid cylinder unit cooperating with said first-named unit for locking said turret against rotation except during said indexing.



3,358,308
SWING-TYPE LOADING RAMP
Charles D. Henchbarger, Playa Del Rey, Calif., assignor to Stanray Corporation, Chicago, Ill., a corporation of Delaware
Filed Oct. 20, 1965, Ser. No. 498,601
4 Claims. (Cl. 14—71)



1. In a vehicle loading ramp, the combination of:

(a) a passageway having inner and outer ends;

(b) inner supporting means connected to said inner end of said passageway and supporting same for horizontal swinging movement of said passageway about an upright axis and for vertical pivotal movement of said passageway about an inner transverse horizontal axis;

(c) outer supporting means supporting said outer end of said passageway for horizontal swinging movement of said passageway about said upright axis, and for vertically pivoting said passageway about said inner transverse horizontal axis;

(d) means pivotally interconnecting said outer supporting means and said passageway for relative pivotal movement thereof about an outer transverse horizontal axis;

(e) said outer supporting means including ground-engaging wheel means movable along a predetermined arc about said upright axis;

(f) said outer supporting means including means for vertically pivoting said passageway about said inner transverse horizontal axis to raise and lower said outer end of said passageway; and

(g) control means interconnecting said outer supporting means and said passageway for pivoting said outer supporting means relative to said passageway about said outer transverse horizontal axis in directions to maintain said wheel means substantially on said predetermined arc as said outer end of said passageway is raised and lowered.

3,358,309
CORDLESS ELECTRIC VIBRATING HAIR BRUSH, OR LIKE VIBRATING MANIPULATORS
William P. Richardson, Greenwich, Conn., assignor to Empire Brushes, Inc., Port Chester, N.Y., a corporation of New York
Filed Dec. 27, 1965, Ser. No. 516,293
2 Claims. (Cl. 15—22)

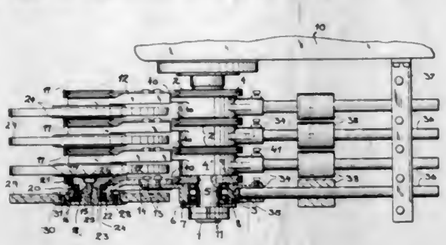


1. In combination, a hollow body comprising a head and a handle, and means in said head for vibrating said body, said head and handle being in alignment, said body being split longitudinally through said body and handle into upper and lower coextensive body parts having peripheral meeting edges, means to attach said body parts together, said lower body part having a bottom wall at its head end disposed below said handle, a pair of longitudinally spaced, transverse walls extending up from said bottom wall, an electric motor disposed longitudinally between said upwardly extending walls, said motor having a shaft supported on one of said upwardly extending walls, offset weight means on said shaft, a spring contact on the other upwardly extending wall, conductively connected to said motor and extending rearwardly therefrom, a second spring contact mounted on said lower body part and extending forwardly, a dry battery mounted in the lower body part in tandem with said motor, and between said spring contacts, and having its terminals engaging said spring contacts, said motor and battery projecting upwardly into the upper body part, means to hold said motor down on said lower body part and means to hold said battery down on the lower body part, and manipulating means longitudinally slidably mounted on the underside of said bottom wall, said motor and battery being liftable upwardly off said lower body part upon removing said motor hold down means and said battery hold down mans, said attach means comprising means at one end of one body part to hookingly and disengageably engage the adjacent end of said other body part, means on said parts other than said meeting edges to abut each other, and screw means in said abut means to removably screw one part to the other.

3,358,310
POLISHING ROLLER
Werner Wrobbel, Nurtingen, Germany, assignor to Metabowerke K.G. Closs, Rauch & Schnizler, Nurtingen, Wurttemberg, Germany, a corporation of Germany
Filed July 30, 1964, Ser. No. 386,366
Claims priority, application Germany, Sept. 5, 1963, M 58,073
3 Claims. (Cl. 15—97)

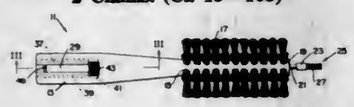
1. A polishing roller comprising a shaft adapted to be driven by a power source; a plurality of outrigger arms journaled alongside one another on said shaft for independent swinging movement thereabout in planes perpendicular to the axis of said shaft; a respective polishing disk journaled on each of said arms at a location remote from said shaft for rotation about a respective axis parallel to said shaft, the axes of all disks being in substantial alignment with one another, said arms being biased for swinging said disks parallel to the respective plane toward a workpiece juxtaposed therewith; and respective transmission means coupling each of said disks with said shaft for rotary entrainment thereby, said transmission

means including a driving pulley on said shaft adjacent each arm and a driven pulley on each of the respective disks, and an adjustable friction coupling between said



driven pulley and said disk, said friction coupling comprising mating frustoconical boss portions directly on said driven pulley and said disk.

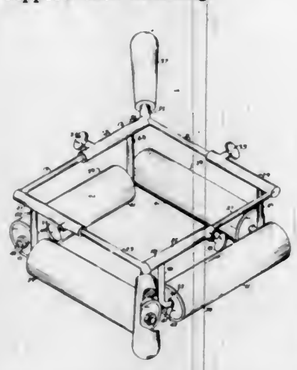
3,358,311
COMBINED HAIRBRUSH AND STYLE LIFT
Beulah F. Cunningham, P.O. Box 144, Gideon, Mo. 63848, and Bradie W. Thompson, P.O. Box 222, Malden, Mo. 63863
Filed Dec. 12, 1966, Ser. No. 600,946
2 Claims. (Cl. 15—105)



1. In combination with a hair brush having a handle, an elongated bristle carrying portion and bristles attached to said bristle carrying portion, secondary brush means attached to the free end of said bristle carrying portion, the bristles of which extend away from the handle, a channel formed in said handle adjacent to and rearward of said bristle portion opening at the free end of the handle, slide base means in shiftable engagement with said channel, said handle being provided with groove means in underlying alinement with said channel, a spring carried by said slide base means longitudinally shiftable within said groove means and engaging a wall thereof, pronged hair lifting means mounted upon said slide base means extending from said slide base means into said channel, slot means in said handle overlying the said channel, means affixed to said slide base means in slidable engagement with said slot means for extending said hair lifting means through said channel beyond the free end of said handle, and means attaching said spring to said slide base means.

3,358,312
POST PAINTER
Edward L. Parr, 301 N. Cuyamaca, El Cajon, Calif. 92020
Filed Dec. 6, 1965, Ser. No. 512,580
6 Claims. (Cl. 15—230.11)

2. A paint applicator of the roller type for painting a post, which applicator comprises in combination:
(A) a rectangularly shaped frame including:
(1) first, second, third and fourth sections, each including:
(a) a hollow member,
(b) and a shaft member disposed at right angles to the hollow member, the shaft member of the second section telescoping with the hollow member of the first section, the shaft member of the third section telescoping with the hollow member of the second section, the shaft member of the fourth section telescoping with the hollow member of the third section, and the shaft member of the first section telescoping with the hollow member of the fourth section;
(2) first, second, third and fourth supports extending downwardly from and connected, respectively, with one of the members of the first, second, third and fourth members of the frame, said supports each including:



(a) a horizontally extending bearing;
(B) first, second, third and fourth horizontally disposed paint applying rollers supported for rotation, respectively, about horizontally extending axes by said bearings.

3,358,313
DUST MOP HAVING PLASTIC FRAME FOR DUST-ABSORBING PAD
Roland S. Grimes, Sr., 2508 Maynard Drive, Duarte, Calif. 91010
Filed Oct. 20, 1965, Ser. No. 498,395
4 Claims. (Cl. 15—231)



1. A dust mop comprising a handle having an end knob at the free end and a push-puller ring means secured to an intermediate point along the length of said handle, and a mop frame coupled by a universal joint to the other end of said handle, said mop frame being constructed of a lightweight vinyl plastic having a degree of resilience and flexibility without breaking or rusting, and in which the plastic frame is provided with a substantially flat surface for pressing a disposable dust-absorbing pad against the floor when secured to the frame, said disposable dust-absorbing pad including means for absorbing dust on both sides thereof, and in which one side of said pad engages said surface, and a substantially

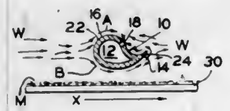
peripheral annular recess disposed about said surface for retaining a plastic tubing therein while securing the disposable dust-absorbing pad upon the surface.

3,358,314
COMBINATION TOOTHBRUSH AND TOOTHBRUSH CLEANER
Felipe O. Matibag, Dumaguete City, Philippines
Filed May 8, 1967, Ser. No. 636,685
3 Claims. (Cl. 15—246)



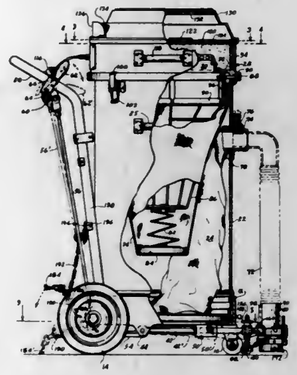
1. A toothbrush cleaner adapted to be attached to a toothbrush handle comprising a cleaner handle with an end portion and a central portion, said end portion is curved outwardly along its length to define a hollow, semi-elliptical cross-section where the brush handle is inserted, said central portion is contoured with reduced section at its center for better gripping; a cleaner brush head having a thickened underside the outer end of which is provided with rows of bristles that are stiffer and longer than the bristles of its toothbrush member.

3,358,315
FLUID CONDUCTING APPARATUS
William N. Bennett, Franconia, N.H., assignor to Fitchburg Paper Company, Fitchburg, Mass., a corporation of Delaware
Continuation of applications Ser. No. 295,956, July 18, 1963, and Ser. No. 440,236, Mar. 16, 1965. This application Apr. 14, 1966, Ser. No. 542,505
15 Claims. (Cl. 15—306)



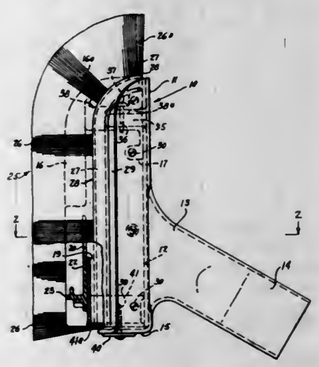
1. A fluid conducting apparatus adapted to be disposed in a fluid medium comprising:
(a) a tubular member;
(b) said member having a transverse cross section of a substantially aerodynamic configuration, such that upon the relative movement between said transverse cross section of said tubular member and a fluid, a portion of the fluid follows a first path adjacent a first surface of said cross section of said tubular member and another portion of the fluid follows a second path adjacent a second surface of said cross section of said tubular member;
(c) said first path having a longer distance, as measured along said first surface, than said second path, as measured along said second surface, thus producing an aerodynamic fluid flow about the cross section of said tubular member and creating an area of partial pressure adjacent said first surface of said cross section of said tubular member;
(d) one or more apertures formed in said first surface of said cross section of said tubular member;
(e) each such aperture providing a fluid path from said first surface of said cross section of said tubular member to the hollow within said tubular member to collect fluid therewithin; and
(f) fluid directing means disposed proximate an end of said tubular member to direct any fluid collected within said hollow of said tubular member away from said tubular member and the fluid medium within which said tubular member is disposed.

3,358,316
SUCTION CLEANER
Nathaniel N. Okun, Cedarhurst, N.Y., assignor to Atlas Floor Surfacing Machinery Corporation, New York, N.Y., a corporation of New York
Filed Jan. 8, 1965, Ser. No. 424,329
3 Claims. (Cl. 15—352)



1. A suction cleaner of large size comprising a nozzle connected to a relatively long upright dust collector bag, a suction blower and motor above the collector bag, and a relatively long upright; breather filter below the blower between the bag and the blower, said breather filter including a flexible filter, and resilient means to stretch the filter taut in a direction opposite to the direction in which it is moved by the suction of the blower, the bag and filter being so shaped and dimensioned and relatively located that they engage and move one another during operation, whereby the breathing action of the breather filter helps clear the bag as well as the filter of clogging by accumulated dirt.

3,358,317
VACUUM BRUSH
Oscar G. Woodruff, 404 N. Oro St., Stockton, Calif. 95205
Filed Oct. 23, 1965, Ser. No. 503,054
5 Claims. (Cl. 15—398)



1. A vacuum cleaner brush attachment comprising an elongated hollow body having an opening in the bottom thereof and a suction neck secured to said body, said hollow body having an air inlet opening providing communication into said hollow body, a pair of elongated brushes each including an elongated brush head and

bristle tufts, means mounting said brushes in outwardly diverging relation on each side of said hollow body with said air inlet being disposed therebetween, an arcuate shell positioned over said body and having outwardly diverging suction diverting side walls, said shell having lug means therein, complementary lug means carried by said hollow body, and means securing said first mentioned lug and complementary lug means in related assembly.

3,358,318
DOOR CHECK
Gary G. Ingham, Oklahoma City, Okla., assignor to Roto-Swing Door Co., Inc., Oklahoma City, Okla., a corporation of Oklahoma
Filed Mar. 5, 1965, Ser. No. 437,390
5 Claims. (Cl. 16—82)



1. A dampening device comprising a housing constructed of an aluminum material and having a chamber for receiving a fluid therein, a rod member extending longitudinally within the chamber and reciprocal therein, a piston head slidably disposed on the rod, said piston head being constructed from a thermoplastic material and having an outer diameter slightly less than the inner diameter of the chamber to provide a slight clearance therebetween for reducing wear on the piston head, stop means on the rod for retaining the piston head on the rod and limiting the slidable movement of the piston head on the rod, passageway means in the rod providing communication of the fluid from one side of the piston head to the opposite side thereof, spring means cooperating with the stop means and piston for constantly urging the piston in one direction for closing one end of the passageway to preclude the passage of fluid therethrough, and said spring means being yieldable upon movement of the rod in one direction for permitting the piston head to move to a position for opening of the passageway whereby fluid may flow therethrough, said fluid being a silicone fluid having a minimum dimension greater than the clearance between the piston head and chamber whereby the fluid will not leak therebetween.

3,358,319
MONOCURTAIN SCREENING SWITCH
William A. Hillenbrand, Franklin County, and Eugene H. Fullenkamp, Batesville, Ind., assignors to Hill-Rom Company, Inc., Batesville, Ind., a corporation of Indiana
Filed Oct. 11, 1965, Ser. No. 494,644
13 Claims. (Cl. 16—87.4)

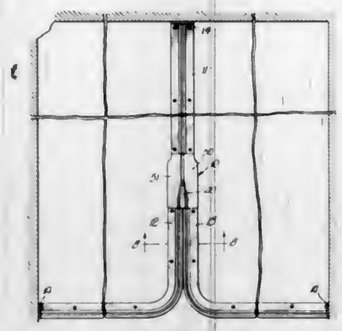
1. Mechanism for enabling a single curtain to be moved selectively into position to screen either one of a pair of hospital beds, comprising:

(a) a track supported by the ceiling between the beds and extending from the head ends thereof towards the foot ends thereof;

(b) a switch mechanism supported by the ceiling adjacent the foot end of said track;

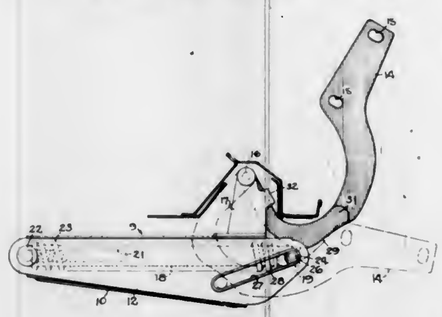
(c) a pair of tracks one for each bed are supported by the ceiling and extend from the switch mechanism towards the foot ends of the beds, thence across the foot end of the associated bed;

(d) hook means for supporting the curtain beneath said tracks;



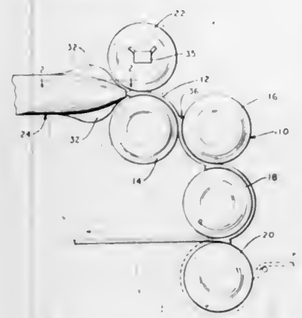
(e) and means on the lead one of said hook means for operating said switch mechanism responsive to swinging the lead edge of the curtain towards the bed to be screened, thereby to set the switch to lead the hook means into the foot end track associated with the selected bed.

3,358,320
HINGE FOR CLOSURE ELEMENTS
Leslie Ralph Shaw and Joseph Henry Cotton, both % The Bloxwich Lock & Stamping Company, Limited, Alexander Works, Bloxwich, near Walsall, Staffordshire, England
Filed Sept. 11, 1964, Ser. No. 395,658
4 Claims. (Cl. 16—128.1)



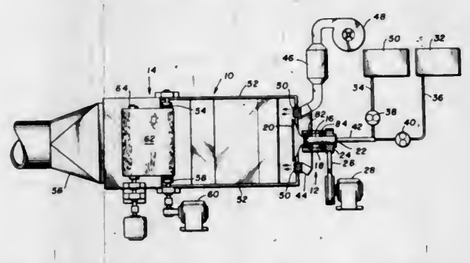
1. A hinge comprising an elongated bracket, said bracket being provided with a plurality of fixedly spaced pivot points, at least one of which is disposed laterally of the longer axis of the bracket; a hinge arm mounted on said laterally disposed pivot point, said hinge arm including a cam surface, movable with said hinge arm toward and away from the other pivot point; a longitudinally expansible guide fixed to said last mentioned pivot point and being movable angularly thereabout; a cam follower on the movable end of said guide and in constant engagement with the cam surface of said hinge arm throughout the full range of movement of the latter, means on said bracket connected to the movable end of said guide for permitting angular and longitudinal movement of said follower relative to said last mentioned pivot point toward and away from said laterally disposed pivot point along a path intersecting the arcuate path of movement of the said hinge arm about said laterally disposed pivot point; and means constantly biasing said guide for longitudinal expansion whereby said follower exerts a continuous biasing force against the cam surface on said hinge arm.

3,358,321
CALENDER WITH EXTRA ROLL
Rex C. Seanor, Akron, Ohio, and S. Everett Perlberg, Fairlawn, N.J., assignors to Adamson United Company, Akron, Ohio, a corporation of Ohio
Filed Apr. 12, 1966, Ser. No. 542,097
3 Claims. (Cl. 18—2)



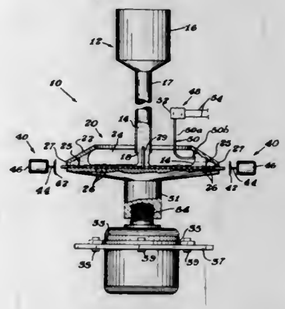
1. A conventional four roll inverted L-type calender including a top roll, a middle roll, a bottom roll, and an offset roll characterized by an extra calender roll positioned parallel to and in vertical alignment with the offset roll, and extruder means delivering stock to the bite between the extra roll and the offset roll, said extruder means including a wide flat die extending substantially the full width of the calender rolls so that as the stock emerges from between the offset roll and extra roll a substantially flat sheet of stock is directed to the bite between the offset roll and the top roll.

3,358,322
PROCESS AND APPARATUS FOR SPINNING BI-COMPONENT MICRO-DENIER FIBERS
Hunter S. Woodbery, Decatur, Ala., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Filed June 10, 1965, Ser. No. 462,898
8 Claims. (Cl. 18—2.5)



1. An apparatus for spinning conjugate micro-fibers comprising a frame; a hollow frustoconical member rotatably mounted on the frame and having therein a circular central opening, means for rotating said member about its axis, said member having in communication with the central opening thereof an annular chamber having a diameter greater than the diameter of said central opening for receiving a spinning solution, said solution being held in the chamber by centrifugal force when said member is rotated, a pair of inlet lines extending through said central opening for feeding two different spinning solutions through said opening and into said chamber, said spinning solution overflowing from said chamber outward through the central opening and onto the inner face of said frustoconical member, and means surrounding said member for directing a stream of heated air past said member to carry away fibers formed by rotation of said member.

3,358,323
PROCESSING OF PLASTIC
Douglas S. Chisholm, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Original application Mar. 25, 1963, Ser. No. 268,215. Divided and this application Jan. 13, 1966, Ser. No. 535,633
15 Claims. (Cl. 18—2.6)



1. An apparatus for the preparation of particulate thermoplastic material, the apparatus comprising

a means to supply a heat plastified viscoelastic thermoplastic resinous material to an internal cavity of a rotor, the means to supply the heat plastified resinous material comprising

a tube for delivery of the plastified material, a discharge portion of the tube being positioned generally axially with and opposed to said rotor,

a flow control means positioned within the cavity of the rotor and facing the discharge portion of said tube, the flow control means being in spaced adjacent relationship to the tube, said rotor comprising

a generally circular body, said body defining the internal cavity,

a plurality of circumferential passageways generally radially disposed with respect to the axis of rotation of said rotor, said passageways communicating between said cavity and the periphery of the rotor,

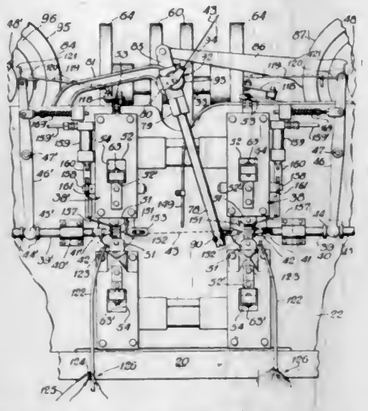
means to rotate the rotor, and

means to sever the thermoplastic resinous material positioned generally adjacent to and spaced from the periphery of the said rotor and said passageways.

3,358,324
MACHINE FOR PRODUCING LOOPED ENDS IN FISHHOOK LEADERS
Louis H. Morin, Bronx, N.Y., assignor of one-fourth to Madeline F. McGill, Denver, Colo., and one-fourth to J. R. Hanna, Bronxville, N.Y.
Filed Sept. 8, 1965, Ser. No. 485,814
18 Claims. (Cl. 18—5)

1. A machine of the character described employing two spaced strand looping and twisting stations, means movable between said stations for feeding a plastic strand, means at each station for forming a loop in said strand,

means for rotating said last named means in forming a twist in said strand adjacent said loop, means at each station for retaining the twist in said strand, means at each station for severing the strand in forming, in each



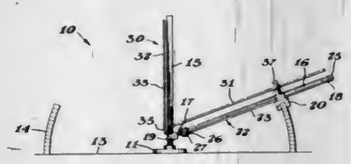
cycle of operation of the machine, two end products, each product comprising a retained twist and a loop adjacent said twist, and means at each station for ejecting the formed end product from said second named means of each station.

3,358,325

CURVE TRACING AND APPARATUS THEREFOR

Douglas S. Chisholm, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Mar. 28, 1966, Ser. No. 537,935
15 Claims. (Cl. 18—5)



1. A method for tracing a curve, the method comprising providing

a conduit having two open ends, a passage therein, the conduit having a first leg and a second leg, the first and second leg of the conduit being disposed in angular relationship to each other,

disposing a liquid within the conduit which will flow at a desired rate under the influence of gravity,

varying the angular relationship of at least one leg of the conduit with respect to a horizontal plane to cause the level of the liquid within at least one leg to trace a curve as the leg is rotated about a pivot point.

10. A curve tracing apparatus comprising a support means,

the support means having a first arm, the first arm being pivotally mounted to the support by means of a pivot,

a conduit having a first leg and a second leg, each leg of the conduit having an open end,

a liquid disposed within the conduit, one leg of the conduit affixed to the pivot arm and adapted to pivot therewith, and

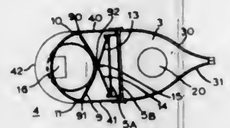
means to determine the level of liquid in the leg fixed to the pivot arm.

3,358,326

DEVICE FOR THE PRODUCTION OF ARTIFICIAL FILAMENTS BY THE MELT SPINNING METHOD

Johan P. Nommensen, Stein, and Hendrik Waning, Geleen, Netherlands, assignors to Stamicarbon N.V., Heerlen, Netherlands

Filed Dec. 1, 1965, Ser. No. 510,925
Claims priority, application Netherlands, Dec. 3, 1964, 64—14,014
10 Claims. (Cl. 18—8)



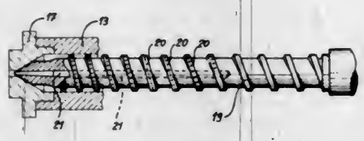
1. Apparatus for quenching melt spun synthetic filaments comprising wall means defining a quenching chamber having inlet means for receiving just spun synthetic filaments into said quenching chamber and outlet means for issuing the synthetic filaments from said quenching chamber after they have been quenched; wall means defining a plenum chamber adjoining said quenching chamber, said wall means including a first foraminous wall between said quenching chamber and said plenum chamber through which the plenum chamber communicates with the quenching chamber; inlet means for admitting fluid to said plenum chamber for transit through said first foraminous wall and into said quenching chamber; the plenum chamber wall means comprising two opposed sidewalls adjoining the opposite lateral extremes of said first foraminous wall; a quenching fluid-impervious baffle symmetrically mounted in said plenum chamber with respect to an imaginary centerline plane extending parallel to the direction of travel of the synthetic filaments through the quenching chamber and normal to the first foraminous wall; said baffle extending throughout substantially the full height of the plenum chamber and being interposed between the fluid inlet means and the first foraminous wall; said baffle being approximately parallel to the first foraminous wall and terminating short of said opposed sidewalls to define two gaps, one at each lateral edge thereof; and a second foraminous wall, mounted within said plenum chamber between the baffle and the first foraminous wall, and extending substantially from the intersection of said centerline plane and said baffle to said two opposed sidewalls, whereby fluid passing from said plenum chamber into said quenching chamber must pass around said baffle through said gaps then through said second and said first foraminous walls.

3,358,327

SCREW FOR EXTRUSION APPARATUS

Charles E. Maillefer, Renens, Switzerland, assignor to Maillefer S.A., Renens, Switzerland

Filed Dec. 20, 1960, Ser. No. 77,117
Claims priority, application Switzerland, Dec. 3, 1959, 82,535/59
2 Claims. (Cl. 18—12)



1. In an extruding machine, such as, the combination of a cylinder, having a cylinder wall terminating with an

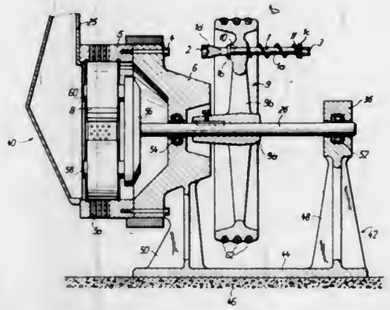
extrusion port, a conveyor screw, having a tip, provided with at least one thread defining a substantially helical groove and mounted for rotation in said cylinder with said tip facing said extrusion port, said screw being provided with an axial channel having a closed end and an open end with said open end opening at said screw tip and with a plurality of radial channels extending between said axial channel and the outer periphery of the screw thread, means for feeding material to be extruded into the screw groove, heating means mounted in said cylinder wall for melting the material as it progresses along the revolving screw inside the cylinder, the material, as it is heated in contact with the inner surface of the cylinder, melting and flowing into the radial channels and thence into the axial channel of the screw towards the tip of the latter and into the extruding port of the cylinder.

3,358,328

ANNULAR PRESS DEVICE

Reinhard Kuhn, Uzwil, Saint Gall, and Albert Hafliger, Gossau, Saint Gall, Switzerland, assignors to Gebruder Buhler, Uzwil, Switzerland

Filed Apr. 5, 1966, Ser. No. 540,393
Claims priority, application Switzerland, Apr. 10, 1965, 5,051/65
14 Claims. (Cl. 18—12)



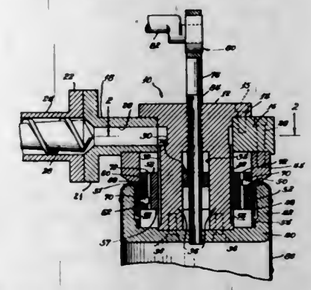
1. An annular press device comprising an end wall member, a press ring having peripheral openings for the discharge of pressed material therethrough and having an end in abutting relationship with said end wall member, said end wall member substantially closing the space enclosed within said press ring on one end thereof, a central shaft member extending through said end wall member, a roller carried by said shaft within said press ring and being relatively movable in respect to the interior surface of said press ring, a driving pulley on said shaft member being located adjacent said end wall member and being connected between said shaft member and said press ring and end wall member to provide relative rotation of said shaft member with said roller in respect to said ring press and said end wall member, said pulley having at least one opening extending axially therethrough, at least one securing bolt extending substantially axially through a portion of said end wall member and threaded into said press ring, and an axially displaceable coupling supported adjacent said end wall member having a head portion engageable with the head of said securing bolt when said coupling is displaced toward said securing bolt and an outer portion engageable for turning the bolt head which extends axially away from said bolt toward said pulley to a location where said outer portion is directly engageable through the opening of said pulley from the opposite side of said pulley from said end wall member.

3,358,329

EXTRUSION APPARATUS AND PRODUCTS THEREFROM

Allan D. Martin, Sanford, and Irving S. Houvener, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Continuation of application Ser. No. 141,163, Sept. 27, 1961. This application Mar. 16, 1964, Ser. No. 353,315
11 Claims. (Cl. 18—14)



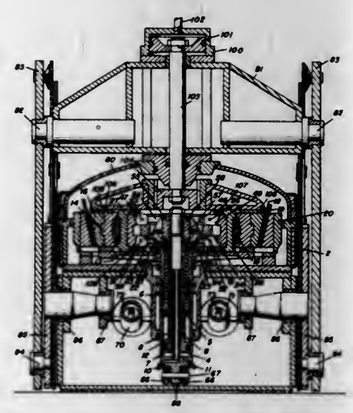
1. Apparatus for extruding tubular webbing comprising means to extrude material in fluid form, a cylindrical first nozzle member having a chamber with a circumferential opening, said means to extrude communicating with said chamber, a second nozzle member reciprocally movable within said first nozzle member and having a circumferential gate of irregular path in its wall, means to reciprocally move said second nozzle member, said circumferential gate of said second nozzle member being positioned adjacent said circumferential opening of said first nozzle member, whereby upon reciprocation of said second nozzle member and extrusion of material into said chamber, tubular webbing will be extruded through said circumferential opening.

3,358,330

APPARATUS FOR PRODUCING THE TREAD BAND OF FLEXIBLE TREAD RINGS WHILE IN A PLASTIC STATE

Antonio Pacciarini and Dario Giletta, Milan, Italy, assignors to Pirelli S.p.A., Milan, Italy

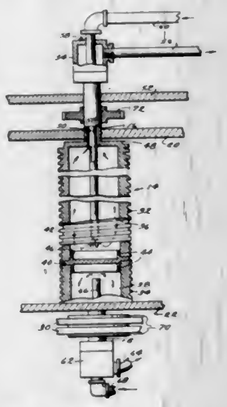
Filed June 2, 1964, Ser. No. 371,898
Claims priority, application Italy, July 27, 1963, 15,741/63
15 Claims. (Cl. 18—17)



1. Apparatus for treating a flexible ring in a plastic state, said apparatus comprising a collapsible inner ring

having at least two rigid arcuate segments, means to simultaneously radially displace said segments in the same plane into and from a position engaging the inner surface of said flexible ring, a circular outer mold coaxial with said inner ring, said outer mold having at least two sectors each having radial projections on its inner surface, means to radially displace said sectors into engagement with said flexible ring after said ring has been engaged by said segments to completely enclose said flexible ring, the initial engagement of said flexible ring by said segments being at a different plane than the initial engagement of said flexible ring by said sectors, and means forming a temporary support for said flexible ring during its initial engagement by said segments.

3,358,331
CONTAINER LIP ROLLING MACHINE
Walter O. Weber, Newark, Del., assignor, by mesne assignments, to Haveg Industries, Inc., a wholly-owned subsidiary of Hercules Powder Company, New Castle, Del., a corporation of Delaware
Filed Mar. 9, 1964, Ser. No. 350,398
5 Claims. (Cl. 18—19)



1. An apparatus for forming an annular smoothly curved lip on the upper peripheral edge of a container comprising:

a plurality of generally cylindrical rotatable members, each having a helical groove in its outer peripheral surface, said rotatable members having a lip-forming portion in the upper portion thereof and a lip-setting portion in the lower portion thereof, said rotatable members being equiradially disposed from a common central axis and said rotatable members defining therebetween an annular passageway through which the containers pass with the peripheral edge engaged in said grooves of said members;

each of said rotatable members having a heating chamber defined within said lip-forming portion of said rotatable member and a cooling chamber defined within said lip-setting portion of said rotatable member, said heating chamber having an upper end wall and said cooling chamber having a lower end wall;

means for heating said heating chamber passing through said upper end wall of at least one of said rotatable members in alignment with the vertical axis of said rotatable member;

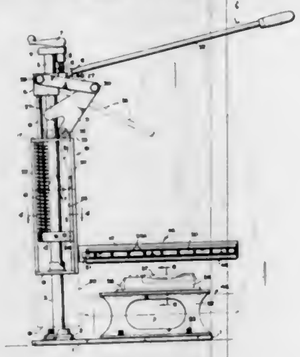
means for cooling said cooling chamber passing through said lower end wall of at least one of said rotatable members in alignment with the vertical axis of said rotatable member;

means defining a thermal insulator axially separating said heating and cooling chambers of each of said rotatable members;

said helical groove, in said outer peripheral surface of said lip-forming portion of said cylindrical member, above said insulator means, varying in cross-section for forming the annular, smoothly curved lip on the upper peripheral edge of the container and said helical groove in said outer peripheral surface of said lip-setting portion of said cylindrical member, below said insulator means, remaining substantially constant in cross-section for setting the annular, smoothly curved lip on the upper peripheral edge of the container; and

means for simultaneously rotating said plurality of cylindrical members whereby the annular, smoothly curved lip on the upper peripheral edge of the container can be formed when engaged within said helical grooves.

3,358,332
PRESS FOR MOLDING PLASTIC
Margaret A. Downey, 1650 NE. 16th, Portland, Oreg. 97232
Filed Nov. 16, 1964, Ser. No. 411,322
3 Claims. (Cl. 18—19)



1. In a molding press having a base, a vertical column secured to one end of the base and a lever actuated box-like housing mounted for vertical slidable movement on the column, the improvement comprising;

a horizontally disposed U-shaped frame,

means securing said frame to said housing for vertical movement therewith along said column,

a flexible sheet of mold-conforming material secured to said frame along both sides thereof,

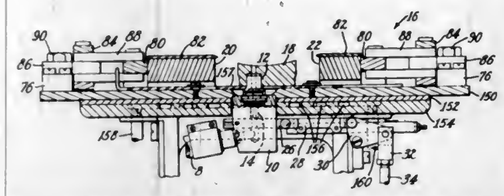
a pedestal removably secured to said base and adapted to support a positive mold with an overlying sheet of moldable material,

said pedestal and a positive mold supported thereon being of less length and width than said frame,

whereby downward movement of said frame under pressure will, by its contained said sheet of flexible material, force said moldable material into complete conformity with the contour and profile of said positive mold.

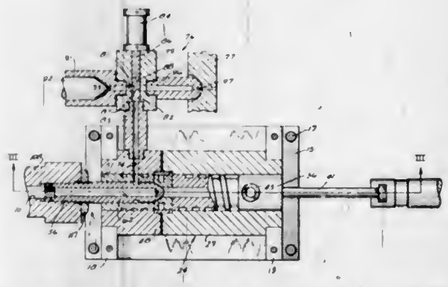
3,358,333
TWO-STATION INJECTION SOLE MOLDING MACHINES
Charles J. Kitchener and Paul W. Senfleben, Beverly, William P. Crossen, Magnolia, Robert J. Desmond, Ipswich, and Jack A. Card, Beverly, Mass., assignors to United Shoe Machinery Corporation, Flemington, N.J., a corporation of New Jersey
Filed Apr. 30, 1965, Ser. No. 452,213
8 Claims. (Cl. 18—30)

1. An injection molding machine comprising a frame, a mold assembly mounted on said frame, a top mold member mounted for movement on said frame, means mounted on said frame for moving said top mold member into engagement with said mold assembly for forming a mold cavity, table means mounted on said frame for



supporting said mold assembly, said table means having at least one conduit therein for the flow of cooling fluid therethrough, and means for charging said mold cavity with injection molding material.

3,358,334
PLASTIC WORKING MACHINE IMPELLING MATERIAL TO BE WORKED AGAINST A ROTATING CONE
James W. Hendry, Fremont, Ohio, assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed Jan. 30, 1967, Ser. No. 612,676
32 Claims. (Cl. 18—30)



1. In a plasticizing device, the combination comprising:

head means having a sloped surface adjacent one end thereof;

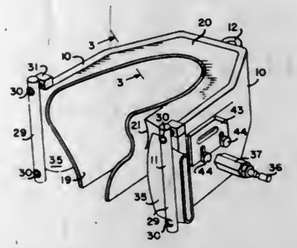
a seat coaxial with said head means and spaced opposite and closely adjacent to said sloped surface and defining therewith a substantially annular axially elongated passage which increases in diameter from one axial end toward the other axial end thereof, the radial thickness of said passage being small throughout the entire length thereof;

means for rotating one of said head means and seat with respect to the other; and

feeding means for forcing material to be plasticized between said sloped surface and said seat at one said axial end of said passage whereby to frictionally work said material for plasticizing same as same flows radially outwardly between said surface and said seat through said passage.

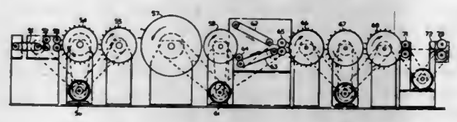
3,358,335
APPARATUS FOR LASTING FOOTWEAR
George T. Ralphs, Oadby, and Harold A. Boddy, Leicester, England, assignors to Ralphs Unified Limited, Leicester, England
Filed May 28, 1965, Ser. No. 459,727
Claims priority, application Great Britain, May 30, 1964, 22,493/64
13 Claims. (Cl. 18—34)

13. A mould for embracing an end portion of the upper of a shoe comprising three components detachable from one another, namely an outer U-shaped support having its arms capable of relative movement laterally of the mould, an inflatable bag detachably carried within the support to extend around the mould and an inner member comprising a shoe-engaging apron with a substantially non-yieldable backing piece attached thereto, said back-



ing piece extending around the apron over a part only of the depth of the apron to provide solidarity at the region of the feather line of the shoe and presenting a lip tapering in thickness away from the feather line region, and means detachably mounting said inner member within the outer support with the bag between the apron and the support.

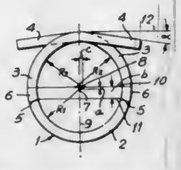
3,358,336
CONTINUOUS FIBRE DISENTANGLING AND STRAIGHTENING APPARATUS
Malcolm Chaikin, 26 Martin Road, Centennial Park, New South Wales, and Alexander Douglas Dircks, 18 Woolwich Road, Hunters Hill, New South Wales, Australia
Filed Oct. 5, 1965, Ser. No. 493,164
Claims priority, application Australia, Oct. 9, 1964, 50,327/64
5 Claims. (Cl. 19—128)



1. Apparatus for continuously disentangling, straightening and aligning textile fibers, having means for gripping a relatively thick layer of loose, entangled fibers while feeding it continuously towards a pin-bearing cylinder mounted for rotation about its axis, the cylinder having projecting from its peripheral surface a plurality of pins arranged to penetrate the layer completely as the cylinder rotates, means for rotating the cylinder at a rate such that the surface speed of the cylinder is greater than the speed at which the layer of fibers is fed towards the cylinder, whereby fibers from the layer are subjected to a combing and drafting action while being taken up by the pins on the cylinder, at least one similar pin-bearing cylinder being mounted for rotating about its axis adjacent said first-mentioned pin-bearing cylinder and forming with said first mentioned pin-bearing cylinder a train of adjacently arranged said pin-bearing cylinders, each pin-bearing cylinder within said train rotating in an opposite direction from the one before it and at a speed such that its surface speed is greater than the surface speed of the preceding cylinder in said train and being arranged so that the pins thereon act to strip completely the layer of fibers from the preceding cylinder with a combing and drafting action and to deliver fibers therefrom, and a condensing means comprising means to strip the layer of fibers completely from the surface of a preceding pin-bearing cylinder without buckling the fibers including

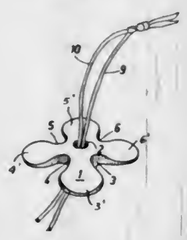
means to detach portions of said layer of fibers and to arrange said portions in overlapping relationship to form a thickened layer, and means for feeding said thickened layer to a succeeding pin-bearing cylinder.

3,358,337
HOSE CLAMP
Helmut Schuchardt, 18 Im Holze, 318 Wolfsburg, Germany
Filed July 20, 1966, Ser. No. 566,670
Claims priority, application Germany, July 24, 1965, Sch 37,435
9 Claims. (Cl. 24—27)



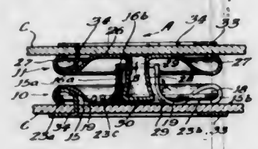
1. A hose clamp comprising a springy, ring-shaped member having a pair of overlapping free gripping ends which cross each other at a predetermined location, said member having an inner diameter which in an unstressed condition of said member is smaller than the outer diameter of a hose to be clamped by said member, and said member having opposed to said free gripping ends thereof a section of approximately semicircular configuration and between said approximately semicircular section and said free gripping ends a pair of quarter-circle limbs from which said free ends respectively extend, said limbs respectively having radii of curvature which cross each other at a straight line which is perpendicular to a tangent to said free ends at said predetermined location where they cross each other, and said approximately semicircular section having a center of curvature situated on said straight line at a given distance from a second straight line extending perpendicularly across said first-mentioned straight line and interconnecting the centers of curvature of said quarter-circle limbs, and said center of curvature of said approximately semicircular section being situated between said second straight line and said section of approximately semicircular configuration.

3,358,338
FASTENING DEVICE
Heinrich Clasen, Brandholzweg, Burg in Dithmarschen, Germany
Filed Jan. 10, 1966, Ser. No. 519,700
Claims priority, application Germany, Jan. 27, 1965, C 34,960
1 Claim. (Cl. 24—117)



A fastening device for frictionally holding filaments, particularly for tying shoe laces, comprising a winged member having two convexly shaped faces, an apertured hub portion at the thicker medial portion of said member, and a plurality of spaced wings extending outwardly from said hub portion toward the thinner portion of said member and defining between themselves inwardly tapered recesses so that, when filamentary material is passed through said apertured hub portion from one to the other face of said member, that length of said material which extends beyond said other face can thereupon be threaded through said recesses and along opposite sides of said wings, said wings comprising two pairs of wings with the wings of each pair being diametrically opposite one another and with all of said wings being equidistantly spaced about the circumference of said hub portion.

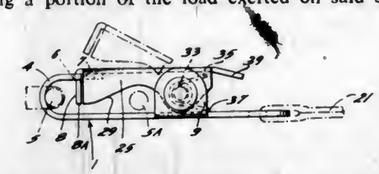
3,358,339
SIDE ENTRANCE FASTENER WHICH ON CLOSING GIVES AN AUDIBLE CLICK AND LOCKS
Mary A. Strehlein, 7460 N. Greenview, Chicago, Ill. 60626
Filed Oct. 4, 1965, Ser. No. 492,535
4 Claims. (Cl. 24—224)



1. A fastener for detachably securing two portions of garments together, comprising in combination: a latch-equipped member attachable to one garment portion and having a generally circular body portion and an upstanding generally cylindrical, hollow boss having an outer annular wall and an upper end wall, said body portion having an annular generally S-shaped configuration extending laterally away from said boss whereby the inner end of said annular S-shape forms a downwardly and outwardly curved extension of the outer wall of said boss and whereby the outer end of said S-shape comprises an outer downwardly and inwardly extending hooked portion about the outer periphery of said body portion to form an outer subjacent annular recess within said hooked portion on the underside of said body and an inner annular recess adjacent to and about said boss on the upperside of said body, said latch-equipped member also having a mouth opening laterally from the center of the end wall of said boss to one edge of said body; a stud-equipped member attachable to the other garment portion and having a generally circular body portion and an upstanding stud laterally insertable into said mouth on relative lateral motion of the two members in parallel planes to a position wherein said stud seats securely within said boss; and a wire like spring means on, and constituting the latch of, said latch-equipped member and having an arcuately shaped supporting portion seated in said outer annular recess formed on the underside of said latch-equipped member, inwardly directed hooked portions at said mouth removably blocking lateral passage of said stud through the mouth to releasably retain the stud against lateral movement out of said mouth and resiliently deflectable by the stud to permit lateral insertion and removal thereof, and inner arcuately shaped end portions seated in said inner annular recess about said upstanding boss.

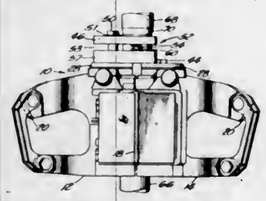
3,358,340
BRIDLE BUCKLE
Nori Higuchi, Northport, N.Y., assignor to Davis Aircraft Products, Inc., Northport, N.Y.
Filed Oct. 23, 1965, Ser. No. 502,883
12 Claims. (Cl. 24—235)

1. A connector comprising a support means for engaging a load element, retainer means cooperating with said support means for preventing said load element from disengaging said support means, means for movably mounting said retainer means for allowing said load element to be disengaged from said support means, means for distributing a portion of the load exerted on said support



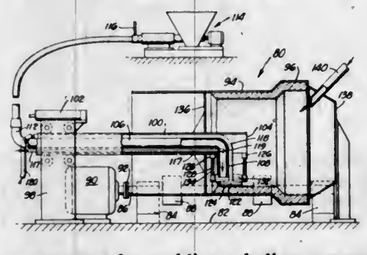
means through said retainer means; said last mentioned means including means for preventing movement of said retainer means in response to movement of said load element.

3,358,341
PIPE HOLDING DEVICE AND SLIP SETTING DEVICE THEREFOR
William M. Burstall, Lakewood Heights, Huffman, Tex., assignor to Byron Jackson Inc., Long Beach, Calif., a corporation of Delaware
Filed May 23, 1966, Ser. No. 552,147
10 Claims. (Cl. 24—263)



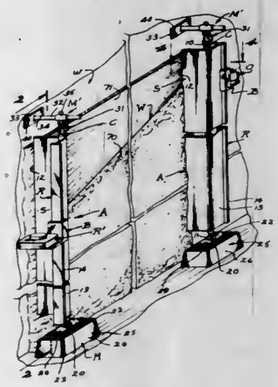
8. A slip-setting device comprising:
(a) a setting plate;
(b) a pressure plate above said setting plate and spaced therefrom;
(c) resilient means for moving said setting plate downward in response to downward movement of said pressure plate, said resilient means allowing relative vertical movement between said plates, said relative vertical movement between said plates being limited by contact of said pressure plate with said setting plate; and
(d) guide means for maintaining vertical alignment between said plates during said relative vertical movement.

3,358,342
APPARATUS FOR FORMING CONCRETE ARTICLES
Gerald M. Spence, Tehachapi, Calif., assignor to Monolith Portland Cement Co., Los Angeles, Calif., a corporation of California
Filed Nov. 9, 1964, Ser. No. 409,718
1 Claim. (Cl. 25—30)



In an apparatus for molding a hollow concrete article, said apparatus comprising:
a hollow mold having an axis and having an interior surface;
distributing head means located within said mold, said mold means being rotatable with respect to said distributing head upon said axis;
means for causing relative movement between said mold and said distributing means along the length of said axis;
means for supplying a concrete mixture to the interior of said mold, wherein the improvement comprises:
at least one roller located on said distributor head means, said roller being mounted on said distributor head means so as to have an axis substantially parallel to said mold axis, said roller being positioned with respect to said interior surface of said mold so that said roller is positioned to form the concrete mixture against the interior surface of said mold, said roller being movably mounted with respect to said distributor head means so as to be movable towards and away from the interior surface of said mold;
at least one shield positioned with respect to said mold so as to substantially retain carbon dioxide gas within said mold;
means for substantially filling the interior of said mold with carbon dioxide gas, said means including a gas distributor hood positioned against said roller and directed to face the interior surface of said mold.

3,358,343
OSCILLATING WIRE TRIMMING APPARATUS
Henry A. Kahili, 411 W. 6th St., Long Beach, Calif. 90812
Filed Oct. 19, 1964, Ser. No. 404,787
7 Claims. (Cl. 25—105)



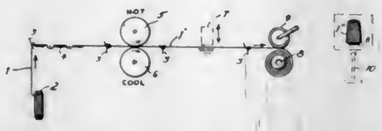
5. An apparatus for trimming an uncured coating of cement applied to a wall to establish a straight flat surface on said coating including, a pair of laterally spaced, elongate, vertical columns, means releasably mounting said columns in fixed spaced relationship to said wall, each column having an inwardly projecting longitudinal spacer flange with a longitudinal straight edge and projecting toward said wall with said edge occurring on the plane of said flat surface on the coating, a laterally outwardly projecting longitudinal rail on each column and a vertically shiftable carriage on each rail, a trimming wire coupled with the carriages to extend over and between the straight edges of said spacer flanges, said wire being adapted to be moved through and to trim the coating upon vertical shifting of the carriages.

3,358,344
PROCESS AND APPARATUS FOR TREATING STRANDS

Benjamin S. Daniel, West Point, Ga., assignor, by mesne assignments, to Techniservice Corporation, Philadelphia, Pa., a corporation of Pennsylvania

Original application Jan. 13, 1958, Ser. No. 708,666. Divided and this application Oct. 19, 1965, Ser. No. 498,050

20 Claims. (Cl. 28—1)



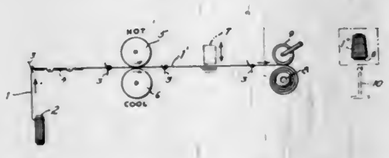
10. Strand-treating apparatus comprising a pretensioning device, a pair of counter-rotating nip rolls adapted to receive and forward therebetween a multifilament strand tensioned by the pretensioning device, thermal means adapted to establish a temperature differential transversely of the strand entering the roll nip, means for withdrawing the strand from the roll nip including winding means adapted to wind the strand under reduced tension, strand-agitating means located between the roll nip and the winding means and adapted to displace the component filaments of the strand transversely, and heating means located between the strand-agitating means and the winding means for heating the strand substantially uniformly.

3,358,345
PROCESS AND APPARATUS FOR CRIMPING STRANDS

Benjamin S. Daniel, Columbus, Ohio, assignor, by mesne assignments, to Techniservice Corporation, Philadelphia, Pa., a corporation of Pennsylvania

Filed Jan. 13, 1958, Ser. No. 708,666

12 Claims. (Cl. 28—1)



1. Strand-treating process comprising tensioning a thermoplastic strand composed of linear polymeric material, simultaneously rolling opposite sides of the tensioned strand, one side being rolled at a temperature effective to plasticize and flatten the strand and the opposite side being rolled at a lower temperature ineffective to plasticize the strand, substantially reducing the tension on the strand immediately after the rolling thereof, whereby the molecular orientation of the strand composition at the first side is decreased relative to that at the opposite side, and deplasticizing the rolled portion of the strand with the first side thereof having been lengthened with respect to the opposite side.

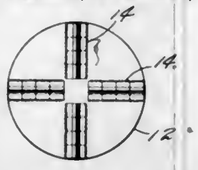
8. Strand-treating apparatus comprising forwarding means including a pair of counter-rotating nip rolls adapted to admit and forward a strand therebetween, a tensioning device adapted to apply restraining tension to said strand entering the roll nip, heating means effective to increase the temperature of the peripheral surface of one of the rolls, and cooling means effective to maintain the peripheral surface of the other roll at a lower temperature than that of the first roll, and means for withdrawing the strand from the roll nip under substantially lower tension.

3,358,346
CARBIDE CUTTING TOOLS AND METHODS OF FABRICATION

Fred H. Samuelson, Suffield, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed May 6, 1966, Ser. No. 548,095

6 Claims. (Cl. 29—103)



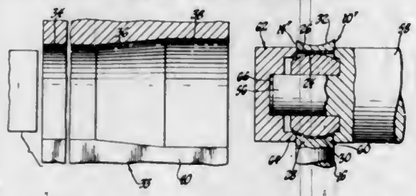
6. A cutting tool comprising a tool body having at least one groove found in its cutting end, a plurality of metallic insert-supporting members of substantial thickness welded to the sides of the groove along the length thereof, the individual insert-supporting members on opposite sides of the groove being axially coextensive with each other and defining an insert-receiving cavity therebetween and a carbide cutting insert closely received in each cavity between the opposing insert-supporting members and brazed thereto, the brazed joints constituting the sole connections between the respective inserts and the rest of the tool assembly.

3,358,347
METHOD OF MAKING A ROD END BEARING

George I. Bannister, Orange, Calif., assignor, by mesne assignments, to Lear Siegler, Inc., Santa Monica, Calif., a corporation of Delaware

Continuation of abandoned application Ser. No. 470,375, July 8, 1965. This application Feb. 20, 1967, Ser. No. 617,419

7 Claims. (Cl. 29—149.5)



1. A method of forming a rod end bearing including a rod end member and a spherical ball comprising the steps of:

forming a portion of the rod end member with a cylindrical inner surface and a circumferentially inwardly arcuate outer surface;

forming the remainder of said rod end member with a spherical inner surface;

disposing a spherical ball in said rod end member;

and forcing said rod end member and said ball through a die for conforming the portion of said inner surface of said rod end member to the outer surface of said ball, said swaging die having an axial slot therein to permit passage therethrough of said rod portion.

3,358,348
METHOD OF ASSEMBLING A TRUSS JOINT

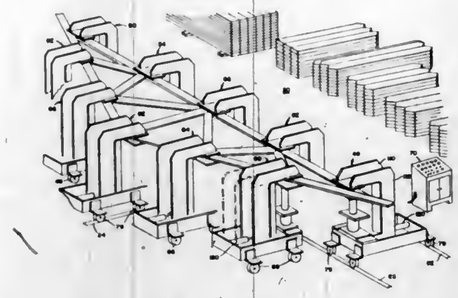
Arthur E. McGlinchey, Columbus, Ohio, assignor to Idaco Engineering and Equipment Co., a division of Idaco Company, Oakland, Calif., a corporation of California

Filed June 14, 1965, Ser. No. 463,566

4 Claims. (Cl. 29—155)

1. The method of assembling a truss joint comprising the steps of supporting each truss member to be joined

only at points spaced from its joint end for free movement only along a line intersecting the lines of movement of all the other truss members to be joined thereto at a common point, gripping said truss members at their points



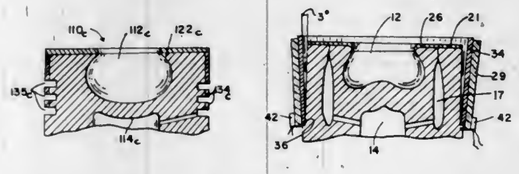
of support and imparting movement thereto along said lines to bias said members into compressive engagement with one another; and connecting said truss members together while thus biased.

3,358,349
METHOD OF EXPLOSION CLADDING IRREGULAR ALUMINUM OBJECTS

Carl G. A. Rosen, Woodside, Calif., assignor to Darlite Corporation, Peoria, Ill., a corporation of Illinois

Filed Aug. 5, 1964, Ser. No. 387,715

13 Claims. (Cl. 29—156.5)



12. The method of cladding a predetermined surface area of an aluminum body element with a mono-molecular film of metalized molybdenum therein with a ferrous metal veneer of appreciable thickness comprising positioning a substantially rigid sheet element of the veneer having a surface shaped conformably to said surface area disposed in close proximity thereto and diverging therefrom to define an included angle therewith on the order of 3° with the apex thereof within the confines of said surface area, driving said sheet element at a velocity within the approximate range of 25 to 35 mm./μ seconds progressively in a direction away from said apex along the face thereof opposite to said shaped surface to progressively collide said sheet element against said body with extreme shock at a collision point velocity within the range of substantially 3.35–4.0 mm./μ seconds and thereby express the air between them and generate a surface melting heat to ripple the interfaces of the elements in bonded molecularly displaced and diffused relationship with the metalized molybdenum over a bonding interface area than the initial area defined by the elements within said included angle whereby the metals are bonded under compacting pressure above the dynamic yield stress of the bonded materials which is not relieved over a range of temperatures from −60° F. to +550° F.

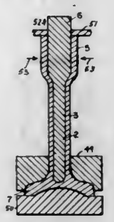
3,358,350
METHOD OF MAKING A VALVE MEMBER FOR INTERNAL COMBUSTION ENGINES

Gerhard Kubera, Barsinghausen, Germany, assignor to Teves-Thompson & Co. G.m.b.H., Frankfurt am Main, Germany, a corporation of Germany

Filed Jan. 18, 1963, Ser. No. 252,497

Claims priority, application Germany, Jan. 26, 1962, K 45,772

12 Claims. (Cl. 29—156.7)



5. A method of making a valve member for an internal combustion engine, comprising the steps of:

(a) forming a generally cylindrical billet with a blind axially extending bore opening at one extremity of said billet and terminating short of the other extremity thereof;

(b) inserting into said hole a block of a relatively plastically deformable material;

(c) inserting into said hole behind said block an extrudable mandrel of lesser plastic deformability than said block;

(d) extruding said billet and said mandrel to form an elongated generally cylindrical stem;

(e) forging said other extremity of said billet by applying axial pressure thereto with a valve head extending transversely to said stem and unitarily integral therewith while leaving said other extremity of said billet unperforated deforming said block generally radially; and

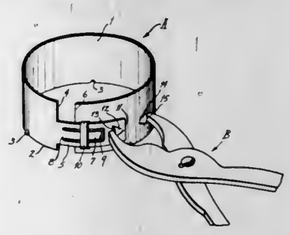
(f) removing said mandrel subsequently to extrusion in step (d) to produce a bore in said stem.

3,358,351
PISTON RING CONTRACTION DEVICE

William F. Ott, St. Louis, Mo., assignor to McQuay-Norris Manufacturing Company, St. Louis, Mo., a corporation of Missouri

Filed Feb. 18, 1966, Ser. No. 528,613

1 Claim. (Cl. 29—224)



A device for contracting and retaining piston rings within a piston groove during installation in a cylinder, comprising, an annular band having inherent flexibility providing for circumferential change, said band having ends which are in proximity to each other, a strap member integral with said band and projecting from one of said ends, a locking tab integral with said strap member and being flexible for allowing for bending from planar

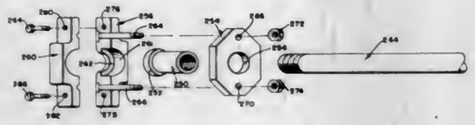
alignment with said strap member, a first lug provided proximate to a free end of said strap member, a closed loop member provided proximate to the other end of said band and disposed for receiving in sliding engagement said strap member and locking tab, a projection provided on said band proximate said loop member and disposed for slidingly engaging said locking tab, for forcing said locking tab from planar alignment with the strap member, a second lug provided on said band and disposed in alignment with said first lug, means cooperating with said lugs for compelling said band into smaller circumference, and said locking tab cooperating with said loop member for retaining said band in closure.

3,358,352

AXLE BEARING PULLER

Luther H. Wilcox, 517 Benson St., Reading, Ohio 45215

Filed July 20, 1964, Ser. No. 385,549
3 Claims. (Cl. 29—263)



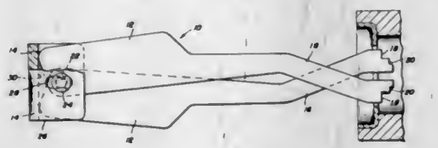
1. A device for pulling bearings and the like from an axle comprising an elongated hollow housing having a pair of opposed open ends, an annular member removably connected to one of said open ends of said housing, said annular member having a shoulder on one end of greater periphery than the periphery of said annular member, a pair of bearing pulling members, means connecting said pulling members to said annular member to interconnect said pulling members to said housing (said connecting means including a flange member disposed on the side of said shoulder remote from said pulling members and means connecting said pulling members to said flange member), said pulling members being spaced from said housing, and said pulling members having cooperating flanges to engage a bearing disposed between said pulling members and said annular member of said housing.

3,358,353

BEARING CUP REMOVER

Jack A. Bares, Moreland Hills, and Merritt Osborn, Cleveland Heights, Ohio, assignors to Milbar Corporation, Cleveland, Ohio, a corporation of Ohio

Filed Apr. 8, 1966, Ser. No. 541,255
5 Claims. (Cl. 29—275)



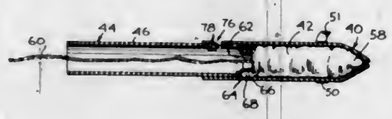
1. A bearing cup removing tool comprising, first and second levers, each of said levers including a shank portion having a bearing cup engaging end and a handle portion having an impact receiving surface at the opposite end, means pivotally interconnecting said levers, said levers being relatively movable about said pivot means between a bearing cup engaging position wherein the cup engaging ends are relatively widely spread and an access position wherein said cup engaging ends are relatively closely spread, said handle portions being configured and arranged to urge said cup engaging ends toward the bearing cup engaging position when the handle portions are squeezed together, an impact receiving and transmitting cap disposed over the impact receiving surfaces of said levers, and means to secure said cap to said levers to permit relative movement of said levers within said cap and maintain contact of said cap and the impact receiving surfaces of said levers.

3,358,354

METHODS OF MAKING HYGIENIC DEVICES

Joseph A. Voss, 1223 Race St., Apt. 906, Denver, Colo. 80206, and Carl W. Johnson, Boulder, Colo.; said Johnson assignor to said Voss

Original application Mar. 21, 1963, Ser. No. 266,914, now Patent No. 3,204,635. Divided and this application June 15, 1965, Ser. No. 464,127
15 Claims. (Cl. 29—419)



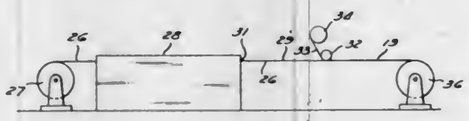
1. A method of fabricating an improved hygienic device, which method comprises partially folding one end of a hollow tube to a generally conical shape, thereafter treating said end, including fully folding said partially folded end of said tube to provide said end with a substantially smooth essentially continuous generally conically shaped surface comprising a plurality of abutting dovetailed folds with fold lines between the folds in a condition such that said end can be readily unfolded by passage of an hygienic medium therethrough without substantial distortion or compression of said medium, disposing an hygienic medium in said hollow tube adjacent said generally conically shaped portion, and then releasably disposing an hygienic medium-ejecting means within said hollow tube rearward of said medium.

3,358,355

SIDING PANEL AND METHOD OF MAKING SAME

Dale J. Youssi and Eugene D. Heck, Dover, Ohio, assignors to Alsco, Inc., Akron, Ohio, a corporation of Delaware

Filed June 2, 1966, Ser. No. 562,029
26 Claims. (Cl. 29—424)



1. A method of manufacturing siding panels having an irregular cross section with an exposed portion and an edge adapted to be overlapped by part of a similar panel comprising applying an exterior finish to a flat strip of sheet material at least along the section thereof which becomes the exposed portion, bonding a protective strippable coating to said exterior finish over at least a substantial part of said section, and thereafter forming said cross section by bending said strip, said protective coating being thereafter strippable after similar panels are overlapped to expose said exterior finish without marring its surface.

3,358,356

METHOD FOR EXOTHERMIC BRAZING OF METAL JOINTS

Roger A. Long, San Diego, Calif., assignor to Whittaker Corporation, Los Angeles, Calif., a corporation of California

No Drawing. Filed Sept. 15, 1966, Ser. No. 579,477
7 Claims. (Cl. 29—498.5)

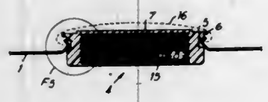
1. The method of brazing two metal surfaces together which comprises pre-placing at the metal surfaces a brazing material having a melting point lower than that of the metal which forms the surfaces and higher than 900° F., selected from the group consisting of non-ferrous metals and alloys thereof, pre-placing adjacent to, and in heat transfer relation to, and physically separated by, a solid barrier from, the brazing material, solid reactant materials which are from the group consisting of those which, when heated to a temperature below the brazing temperature react with each other and evolve, by an oxide reduction process wherein no gaseous oxygen is evolved, said materials being a mixture selected from the group consisting of at least one metal oxide and at least one material taken from the group consisting of metals and metal hydrides, heat at sufficient temperature and in sufficient amount to melt and flow the brazing material, which reactant materials, when reacting are non-gas forming, and then heating the materials to said low temperature to initiate said reaction, and then maintaining the physical separation of the reactant materials and brazing material throughout the entire reaction said barrier comprising one of said two metal surfaces.

3,358,357

METHOD OF SECURING A PLASTIC COLLAR IN THE ORIFICE OF A VESSEL

Marcel Defauw, Ghent, Belgium, assignor to Rheem Manufacturing Company, San Francisco, Calif.

Filed Sept. 25, 1964, Ser. No. 399,220
Claims priority, application Belgium, Sept. 30, 1963, 637,970; June 22, 1964, 649,562
3 Claims. (Cl. 29—510)



1. Method for securing a plastic collar in the orifice of a vessel, characterized in that it comprises, parting on the one hand from a vessel having a charging and discharging orifice delimited by a neck, and on the other hand from a collar of plastic material, preferably having very little elasticity, said collar comprising a ring-shaped body having at least one U-shaped annular channel formed in the outer face thereof, the steps of inserting and fitting said collar in said orifice of said vessel so as to fully enclose said channel within said neck, and deforming said neck at the periphery thereof to form an annular groove of V-shaped cross section that penetrates into said peripheral channel in said collar and contacts the outer edges of said collar along two continuous circumferential lines of contact between the deformed portion of the neck and the edge portions of the channel to produce a fluid seal between the vessel neck and said collar that also precludes any disengagement thereof.

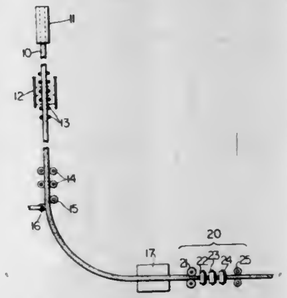
3,358,358

METHOD OF REDUCING WIDTH OF METAL SLABS

Stephen M. Jenks, Sewickley Heights Borough, and Edwin L. Tindall and Howard S. Orr, Upper St. Clair Township, Allegheny County, Pa., assignors to United States Steel Corporation, a corporation of Delaware

Filed Dec. 31, 1964, Ser. No. 422,726
7 Claims. (Cl. 29—528)

1. A process for making a metal slap comprising continuously casting metal to produce a casting of essentially rectangular cross section having a width greater than that of the slab desired, passing the casting through edge rolls to reduce its width while said casting retains sufficient heat for hot rolling, said reduction in width normally causing the metal in said casting to be laterally displaced to form a cross section of a dog-bone appearance to such degree that the faces of the casting cannot



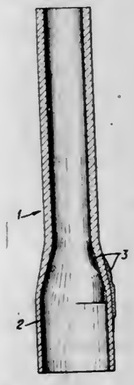
subsequently be flattened by rolling, and applying tension to said casting during edge rolling to materially reduce such lateral displacement.

3,358,359

METHOD OF MAKING A SOCKET MOLD

Wilhelm Görtzen, Gelsenkirchen, Germany, assignor to Rheinstahl Huttenwerke A.G., Essen, Germany

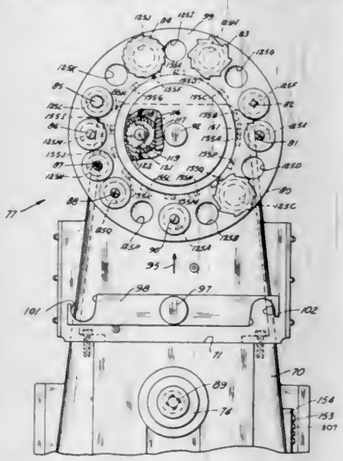
Filed Jan. 19, 1965, Ser. No. 426,516
Claims priority, application Germany, Mar. 13, 1964, R 37,441
3 Claims. (Cl. 29—529)



1. A method for producing socket molds for use in centrifugal casting from a seamless drawn steel pipe comprising widening the steel pipe adjacent one end into a funnel-shaped configuration of reduced thickness and supplementing the thickness on at least one side of the wall of the widened portion by built-up welding.

3,358,360
MACHINE TOOL WITH A TOOL CHANGER
Frank Zankl, Milwaukee, and Theodore A. Wetzel, Brookfield, Wis., assignors to Kearney & Trecker Corporation, West Allis, Wis., a corporation of Wisconsin
Filed Oct. 4, 1966, Ser. No. 584,261
11 Claims. (Cl. 29—568)

1. In a tool change mechanism for a machine tool having a tool operator and a tool change station;
a movable tool storage magazine having a plurality of storage positions in which tools are removably stored in the order of utilization in the tool operator;
a tool transfer member operable to transfer a tool from a storage position of the magazine located at the tool change station to the tool operator and to transfer the previously used tool from the tool operator to a storage position of said magazine located at the tool change station;
means to effect the movement of said magazine in a first direction an angular distance equal to twice the distance between two adjacent storage positions, said means being also operable in response to the operation of said transfer member operating in a tool change cycle of operation to effect the movement of said magazine in a second direction an angular distance equal to the spacing between adjacent storage

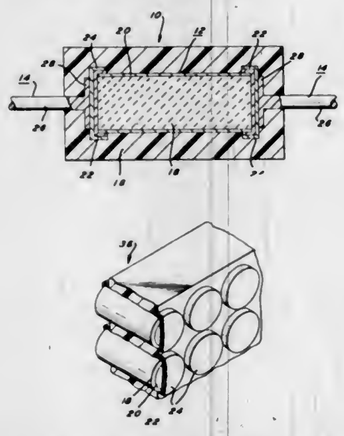


positions prior to said transfer member completing its cycle of movement;
whereby the movement of said magazine in the first direction will position a storage position with a succeeding tool to be used in the tool operator at the tool change station and the movement in the second direction will serve to position an empty storage position in which the tool in the tool operator had been stored at the tool change station so that the tool withdrawn from the tool operator will be returned to its original storage position in said magazine by said tool operator.

3,358,361
SUPERCONDUCTING WIRE
Carl L. Kolbe, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
No Drawing. Filed Jan. 4, 1965, Ser. No. 423,307
5 Claims. (Cl. 29—599)

1. In the process for producing superconductive wire the steps comprising, providing a rod-like solid metal body composed of a first metal, inserting the rod-like body into a hollow tube composed of a second metal capable of reacting with the first metal to form a superconductive metal, enclosing the rod-like body and the hollow tube in a jacket of a third metal which is substantially non-reactive with respect thereto and physically drawing the bodies from the original to a smaller diameter, removing the jacket of the third metal, and heating the drawn assembly of the first and second metal bodies to a temperature sufficient to cause reaction therebetween with formation of a superconductive alloy.

3,358,362
METHOD OF MAKING AN ELECTRICAL RESISTOR
David E. McElroy, Oreland, Pa., assignor to International Resistance Company, Philadelphia, Pa.
Filed Jan. 21, 1965, Ser. No. 426,754
7 Claims. (Cl. 29—621)

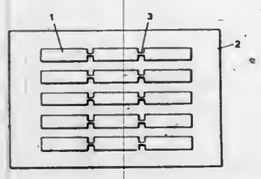


1. A method of making electrical resistors comprising the steps of:
coating the surface of each of a plurality of elongated, cylindrical ceramic rods with a film of an electrical resistance material;
arranging said coated rods in closely spaced parallel relation;
encapsulating said coated rods in a block of a plastic material;
cutting through said block and the coated rods at longitudinally spaced points along planes perpendicular to the longitudinal axes of said rods to form a plurality of wafers, each of which contains a plurality of coated substrates;
removing from the surface of each of said wafers a layer of the plastic to expose a portion of the resistance material film at each end of each of said substrates;
simultaneously coating the exposed surfaces of the substrates and the resistance material films of each of said wafers with a film of an electrically conductive metal;
then coating each of said metal films with a layer of an electrically conductive solder; and
then separating said coated substrate from the plastic of its respective wafers.

3,358,363
METHOD OF MAKING FUSE ELEMENTS
Eric Jacks, John Feenan, and Charles Frederick Leece, Liverpool, England, assignors to The English Electric Company Limited, London, England, a British company
Filed July 13, 1964, Ser. No. 382,201
Claims priority, application Great Britain, July 19, 1963, 28,654/63
1 Claim. (Cl. 29—623)

A method of producing fuse elements from a sheet of silver foil comprising the steps of

coating one side of the foil with a light-sensitive material,
positioning over the said side a photographic negative which defines a plurality of spaced replicas of the desired shape of each element,
irradiating with light the coated parts of said side which are uncovered by the negative,
developing the light-sensitive material whereby to harden and render etchant-resistant the light-irradiated parts of the said material,



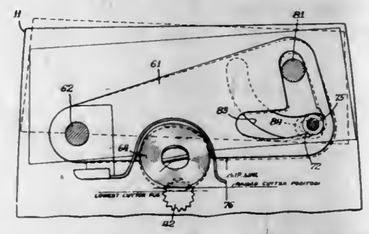
applying to the opposite side of the foil a hardenable etchant-resistant solution of the vinyl copolymer group so as to provide a supporting backing for the foil,
etching away from the said one side of the foil those parts thereof which have not been irradiated with light whereby to define spaced silver strip fusible elements of the desired shape, and
dissolving away the supporting backing, this step being delayed whereby more readily to permit the handling of the fuse elements prior to their assembly.

3,358,364
METHOD OF MAKING ELECTRICAL CONTACTS BY COLD WELDING SOLDERING AND COINING
Childress B. Gwyn, Jr., Export, Pa., assignor, by mesne assignments, to Talon, Inc., a corporation of Pennsylvania
Filed Apr. 25, 1963, Ser. No. 274,334
6 Claims. (Cl. 29—630)



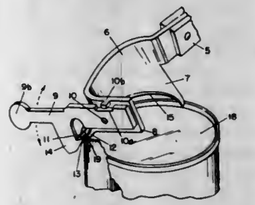
1. A method of forming an integral make-and-break electrical contact element comprising:
(a) disposing a substantially planar contact face member constituted of silver, gold, a platinum group metal, or alloys of such materials, adjacent a backing member for the electrical contact element constituted of copper, nickel, a ferrous metal, aluminum, or alloys of such materials, said backing member having a substantially planar shape and incorporating a recess extending therethrough and defined by annular tubular walls upstanding from one face of said backing member;
(b) cold welding the adjacent contact face and backing members in order to form a bonded composite contact element, the tubular walls of said backing member being disposed remote from the adjacent face of the contact face member bonded thereto and the recess in said backing member communicating with the interface between the respective members;
(c) placing a soldering element of a tin- or silver-containing solder within said recess;
(d) heating said composite contact element to a temperature of at least 400° F. to effect diffusion of the solder across said interface, said solder integrating the contact face and backing members into a permanent unitary contact element; and
(e) coining the composite contact element thus formed by forcing a coining die having a concave-forming surface against the upstanding tubular walls of the backing member to fold said walls over the recess defined thereby, the material constituting said walls flowing over itself to provide a homogeneous welding projection, whose outer surface has a substantially concave cross-section, upon said unitary contact element.

3,358,365
CONTAINER OPENER
Richard K. Carlson, Chicago, Samuel B. McMaster, Deerfield, and Karl Maiershofer, Park Ridge, Ill., assignors, by direct and mesne assignments, of one-half to Cory Corporation, a corporation of Delaware, and one-half to Universal Tool and Manufacturing Corporation, Chicago, Ill., a corporation of Illinois
Filed July 12, 1965, Ser. No. 471,155
24 Claims. (Cl. 30—4)



21. In a container opener the combination comprising: a feed wheel for driving a container in rotation, electric motor means for rotating said feed wheel, a cutter, a cutter carrying plate pivotally mounted about a first axis, said cutter being fixed to said plate at a point spaced from said plate pivot, a first slot in said plate generally aligned on an arc about the plate pivot, a second cam slot in said plate generally aligned with a line extending through said plate pivot, said cam slot extending away from said pivot beyond said arc, a lever for pivoting said cutter plate between an inactive position and a cutting position, said lever having a pivot extending through said first slot and a projection spaced from said lever pivot and engaging said cam slot, said cam slot and means including and projection cooperating so that said cutter pierces the container and then withdraws slightly therefrom whereby the cutter initially pierces an enlarged opening in the container to minimize the starting load on said electric motor means.

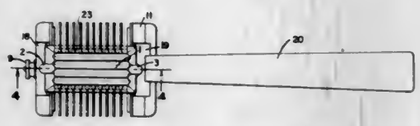
3,358,366
CAN OPENERS
Herbert H. Vollrath, 100 Calabria Ave., Coral Gables, Fla. 33134
Filed May 6, 1966, Ser. No. 548,088
2 Claims. (Cl. 30—22)



1. A can opener for opening a can having a bead around its top surface and said bead extending above the lid of said can, comprising an elongated handle including a shank, a head carried at one end of the shank and directed inwardly to extend toward the center of the lid of the can to be opened, a catch connected to the

outer face of the head, said head having at its lower outer corner a lid-engaging point engageable with the upper face of the can lid just inside of said bead, a depending arm extending from said catch and terminating in a biting point to bite into the underside of said bead, said lid-engaging point and said bead-biting point extending in directions opposed to each other, a blade carried by the shank, said blade having a beveled cutting edge and said edge being concavely curved along its length, said blade having means thereon to hug and smooth the inner face of the can inwardly of the bead during the lid cutting operation, said catch and said head having means thereon that cooperate to move said lid-engaging point and said bead biting point apart when the shank and handle are moved upwardly, and move said points together to forcibly engage the bead and the lid when the handle is thrust downwardly, said catch and head means including a portion extending outwardly from said catch and having a weight thereon, and said catch being pivotally mounted upon said head.

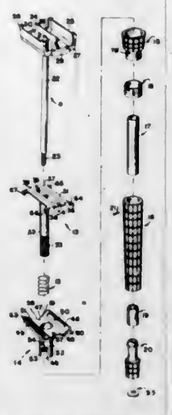
3,358,367
HAIRCUTTING DEVICE
Samuel C. Bartley, Calverton, Va. 22016
Filed Mar. 11, 1966, Ser. No. 541,885
1 Claim. (Cl. 30—30)



In a haircutting device, a bladeholder conforming in shape generally to the perimeter of a safety razor blade, two opposite edges of said bladeholder being oblique surfaces which in operation are under corresponding reverse oblique and overlapping surfaces in fixed relation to a plane surface, the friction between said oblique surfaces being controlled by adjustments holding the bladeholder and blade tightly upon the plane surface and permitting them to reciprocate in directions parallel to the oblique surfaces, each of the upper oblique surfaces having a slot cut downward and partially through said upper oblique surfaces, the length of the slots being equivalent to the travel distance of the bladeholder in reciprocation, the ends of said slots being stops for the movements of the bladeholder, said bladeholder having projections from the oblique surfaces of its bearing edges to reciprocate within said slots to restrict the movements of the bladeholder to the area of the bladeholder support surface and lock the bladeholder within the slots.

3,358,368
ADJUSTABLE DOUBLE EDGE RAZOR
Leopold K. Kuhnl, Stratford, Conn., assignor to Eversharp, Inc., Milford, Conn., a corporation of Delaware
Filed Mar. 8 1966, Ser. No. 532,599
3 Claims. (Cl. 30—60.5)

1. An adjustable safety razor of the double edge type comprising a tubular handle, razor blade clamping means carried by said tubular handle, said razor blade clamping means including a blade supporting seat member having a tubular mounting portion extending into said tubular handle and a pair of cap sections co-operating with said blade supporting seat member to clamp a razor blade to said blade supporting seat member, a guard member positioned below said blade supporting seat member, means to incrementally vary the distance between said guard member and said clamped razor blade, said last named means including an adjusting knob having a portion thereof engaging said tubular handle to hold it against axial movement, cam track means carried on said adjusting knob, cam follower means carried on said guard member and engageable with said cam track means on said adjusting knob, spring means urging



said cam follower means against said cam track means whereby said portion of said adjusting knob will be urged against said handle, and one of said members being engageable with said cam follower means and shiftable in response to rotation of said adjustment knob.

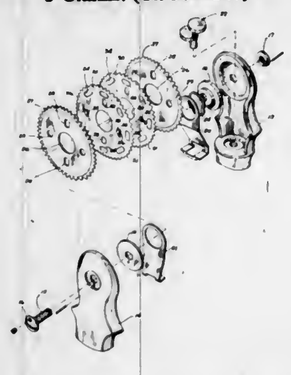
3,358,369
ADJUSTABLE DOUBLE EDGE RAZOR
Leopold K. Kuhnl, Stratford, Conn., assignor to Eversharp, Inc., Milford, Conn., a corporation of Delaware
Filed Mar. 21, 1966, Ser. No. 536,114
1 Claim. (Cl. 30—60.5)



An adjustable safety razor of the double edge type comprising a tubular handle, razor blade clamping means carried by said tubular handle, said razor blade clamping means including a blade supporting seat member and a pair of cap sections, said blade supporting seat member having a tubular mounting portion joined to said tubular handle, said pair of cap sections being mounted on a spider stem disposed within said tubular mounting portion and shiftable to cause said cap sections to close over said blade supporting seat member to clamp a razor blade between said blade supporting seat member and said cap sections, a guard member positioned below said blade supporting seat member, spring means urging said guard member away from said blade supporting seat member, adjustment means for incrementally varying the clearance between said guard member and said clamped razor

blade without affecting the clamping force on said razor blade, said adjustment means including a threaded sleeve held against rotational and axial movement relative to said blade supporting seat member and a complementary threaded adjusting knob threadably engaging said threaded sleeve, said adjusting knob having one end portion thereof engaging said guard member, said adjusting knob being rotatable relative to said handle and said threaded sleeve whereby said guard member may be adjusted relative to said blade supporting seat, an opposite end of said adjusting knob being provided with notch means, an axially movable detent received in an axially extending slot, said spring means urging said detent against said notch means to cause an audible sound and provide locating means for fine adjustment on rotational movement of said adjusting knob, and means on said adjusting knob to engage said detent to limit rotation thereof.

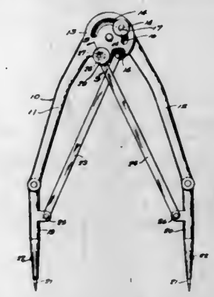
3,358,370
COMPOSITE BLADE STRUCTURE
Richard W. Logan, Brixham Road, York, Maine 03909
Filed Aug. 1, 1966, Ser. No. 569,136
5 Claims. (Cl. 30—347)



1. In a composite blade structure, a pair of disklike blade-backing members in opposing spaced-apart relation to one another disposed on a common axis, and a pair of disposable blade elements, one backed by each member in intimate face-to-face relation, said blade elements having toothed cutting edges on their peripheries, coacting means on the blade elements and the respective backing members for supporting the former, and each blade element being provided in an area spaced from the toothed periphery of the element but close thereto with a series of circumferentially arranged and spaced voids, tending to reduce heat generated in said blade elements during the operation of the latter on oscillation of one backing member relatively to the other, pocket means defined by the voids in each of said elements cooperating with the companion backing member, said pocket means providing for the collection of foreign material tending to work between the blade elements during their operation.

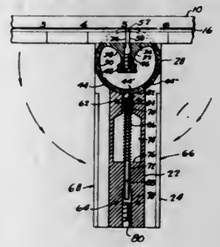
3,358,371
SCRIBING COMPASS OR DIVIDER
Fred H. Liesong, Sr., 12925 Tulane St., Brookfield, Wis. 53005
Filed Dec. 7, 1966, Ser. No. 599,813
2 Claims. (Cl. 33—27)

1. A compass or divider including a pair of legs, integral circular head portions thereon, pivot means for pivotally mounting the head portions together, extensions pivotally mounted on said legs, link members pivoted to and connecting the head portions and said extensions to maintain parallel relation of said extensions during movement of the legs, and a combination knob cam rotatably mounted



in one head portion, an off-center pin on said cam connected with one link for fine adjustment of the extension associated therewith.

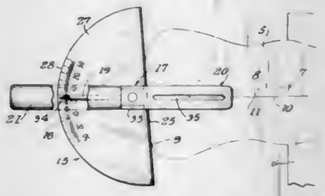
3,358,372
FOLDING SQUARE
William R. Johnson, 107 Live Oak St., Planada, Calif. 95365
Filed Feb. 28, 1967, Ser. No. 619,378
5 Claims. (Cl. 33—102)



1. A folding square which comprises, in combination:
- a straight edge scale member of the type having a groove along at least one side;
- a generally annular pivot ring, said ring being provided with a slot for receiving the scale member;
- means connected to the pivot ring for engaging the scale member groove and movably securing the scale member to the pivot ring;
- a handle pivotally receiving the pivot ring for permitting angular adjustment between the handle and the scale member, said handle comprising,
  - a pair of opposed handle members having a circular opening therethrough adjacent one end, said circular openings receiving said pivot ring,
  - a central support block, and
  - means securing the handle members on opposite sides of said block in spaced apart relation for permitting the scale member to be received in a slot formed by said spaced apart handles to thereby permit said handle to be folded approximately parallel to the scale member;
- said central support block being provided with a ball guide passage and the pivot ring having a plurality of ball receiving recesses in the exterior perimeter thereof;
- a ball received in said ball guide passage for being received in selected recesses to fix the angular relationship of the handle relative to the scale member; a compression spring urging the ball into contact with the pivot ring; and

a ball guide member slidably received in said ball guide passage to permit rolling contact of said ball between said ball guide member and the perimeter of the pivot ring, said compression spring urging the slidable ball guide member toward said pivot rings.

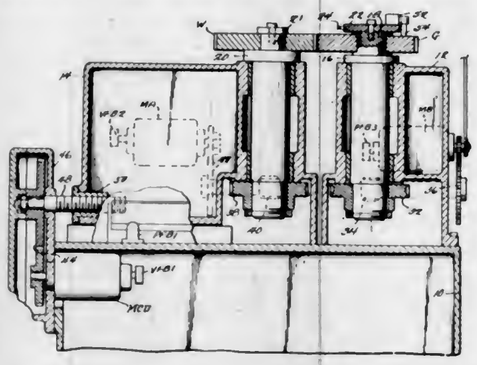
3,358,373
ANGULATION GAUGE TO MEASURE FOOT VARUS
Kenneth L. Martin, 1934 Del Mar Ave., San Gabriel, Calif. 91776
Filed May 6, 1965, Ser. No. 453,843
5 Claims. (Cl. 33—174)



1. A gauge to measure the varus angle of a foot comprising:
(a) a gauge piece having a part adapted to be placed into contact with the ball of the foot and provided with a scale reading in degrees on both sides of zero which is disposed on a line normal to said gauge part,
(b) a post rotationally mounted on the gauge piece,
(c) an index extending from said post in visual and operative relation to the scale on the gauge piece, and
(d) a plate extending from the upper end of the post in a direction opposite to the index and having a longitudinal slot for sighting along a line that extends from the sole of the foot to the knee joint of said foot, to define an angle between said line and a line that extends from the ankle joint of said foot to and normal to the sole, said scale and index visually showing an equal and opposite angle,
(e) the gauge piece comprising an angle member that has a first leg adapted for the mentioned contact with the ball of the foot, and a second leg extending normal to the first leg to extend longitudinally outward beyond the sole when said first leg is placed in contact with the ball of the foot, the mentioned post being mounted on and extending normally upwardly from said second leg.

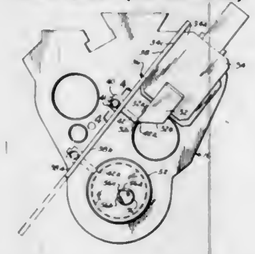
3,358,374
MEASURING AND INSPECTING DEVICE FOR GEARS AND THE LIKE
Joseph Franklin Jones, Jr., Springfield, Vt., assignor to The Fellows Gear Shaper Company, Springfield, Vt., a corporation of Vermont
Filed June 25, 1965, Ser. No. 466,989
6 Claims. (Cl. 33—179.5)

1. An apparatus for inspecting a work gear so as to determine the presence and degree of any deviation in the tooth form thereof from the tooth form of a master gear comprising in combination: a base means; a first housing means slidably carried by said base means; a second housing means fixedly carried by said base; a first spindle means mounted in said first housing means so as to be rotatable about a first axis of rotation; a second spindle means mounted in said second housing means so as to be rotatable about a second axis of rotation spaced from, and parallel to, said first axis of rotation; said first spindle means being adapted to fixedly mount on of said gears for rotation therewith; said second spindle means being adapted to rotatably mount the other gear so that said other gear will be free to rotate relative to said second spindle means and in meshing alignment with the gear mounted on said first spindle means; a sensing means operatively associated with said second spindle means and the gear rotatably mounted thereon operatively responsive to relative rotational movement between said second spindle means and the gear mounted thereon; indicator means actuated by said sensing means; first, second, and third motive means being operatively connected to the first spindle means to effect rotation thereof, said second motive means being operatively connected to the second spindle means to



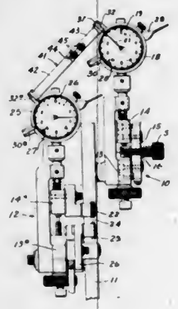
effect rotation thereof, and said third motive means being operatively connected to the first housing member to impart lateral movement thereof to effect meshing of the gears mounted on said first and second spindle means; and motive control means for controlling and coordinating said first, second, and third motive means so as to automatically maintain said gears in continuous mesh during an inspection operation and so as to impart predetermined rotation to said first and second spindle means, whereby the gear carried by said first spindle means will effect rotation of the gear carried by said second spindle means so that deviations in the tooth form of the work and master gears will result in relative rotation between said second spindle means and the gears carried thereby.

3,358,375
GAUGE
Gilbert F. Lutz, Chesterland, Ohio, assignor to The Warner & Swasey Company, Cleveland, Ohio, a corporation of Ohio
Filed May 27, 1966, Ser. No. 553,465
14 Claims. (Cl. 33—185)



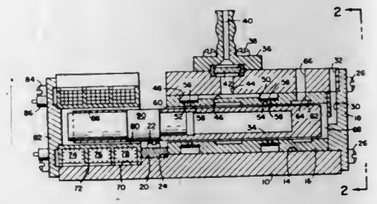
1. An apparatus for use in positioning the cutting edge of a cutter supported by a cutter holder on a radial line extending through the axis of rotation of a workpiece comprising an elongated member having a substantially planar surface portion adapted to engage a first reference surface on the cutter holder, a member having a reference portion arranged on the axis of the workpiece, and a gauging member supported on said elongated member to project outwardly thereof, said gauging member having an end surface spaced from said planar surface portion of said elongated member a distance equal to the distance between the first reference surface of the cutter holder and the cutting edge of the cutter and movable into a position where said end surface engages said reference portion while said planar surface engages said first reference surface whereby said cutting edge of the cutter is located on said radial line.

3,358,376
DIFFERENTIAL GAGE INDICATING MEANS, AND A DIFFERENTIAL THREAD GAGE COMBINATION
Stanley G. Johnson, West Hartford, Conn., assignor to The Johnson Gage Company, Bloomfield, Conn., a corporation of Connecticut
Original application May 14, 1965, Ser. No. 455,884. Divided and this application Apr. 20, 1967, Ser. No. 632,306
5 Claims. (Cl. 33—199)



1. A differential thread gaging combination comprising frame means having fixed arm means including at least one fixed arm, movable arm means including at least two movable arms, mounting means movably mounting the movable arms with respect to the fixed arm means, gaging means including a plurality of gages mounted on the arm means, each gage having a plurality of gaging elements with at least one gaging element mounted on the fixed arm means and at least one gaging element mounted on the movable arm means, the gage elements of each gage being cooperatively positioned to engage a test part, each gaging element having gaging surfaces, the gaging surfaces of the gagin elements for each gage being of a form to gage a different thread characteristic, an indicator means including at least one indicator for each movable arm carried by one of the arm means, each indicator having a contactor, a dial, and a pointer movable over the dial in response to the movement of the contactor, the contactor of the indicator means being operatively connected with the other arm means and moving the indicator pointer over the dial in response to the position of the movable arm means with a test part within the gaging elements of a gage, each indicator having at least one tolerance marker, differential pointer means for each indicator, each differential pointer means including at least two differential pointers spaced circumferentially from each other, and secured together in fixed spaced relation, and mounting means mounting each differential pointer means on its indicator for manual adjustment circumferentially with respect to the dial of the indicator, and means operatively connecting together the differential pointers for the indicators to move the same to the same relative position with respect to their respective dials.

3,358,377
LEVEL INDICATING DEVICE WITH AIR BEARING PENDULUM
Robert C. Martin, Fritz K. Mueller, and Heinrich C. Rothe, Huntsville, Ala., assignors to the United States of America as represented by the Secretary of the Army
Filed Oct. 4, 1965, Ser. No. 492,951
1 Claim. (Cl. 33—206)

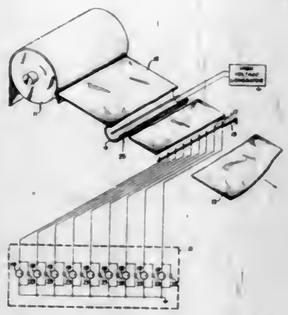


A level indicating device including a housing, said housing having a bore therethrough; a sleeve mounted in said bore and toward one end of said housing; means securing said sleeve in said bore; a piston mounted in said sleeve with an air bearing clearance space therebetween; a closure cap secured to one end of said housing and defining with one end of said piston and sleeve a damping chamber; means defining a restricted passage communicating air to and from said chamber to dampen movement of said piston, said means defining said restricted passage including a passage in said cap communicating with a passage in said housing and said closure cap being adjustably secured to said housing by screws passing through arcuate slots in the closure cap to allow the closure cap to be rotated relative to the housing and adjust the passage therein relative to the housing passage in communication therewith; passage means in said housing and sleeve communicating air circumferentially of and at spaced positions along said piston to provide air to said air bearing space, said passage means in said housing and sleeve including a plurality of spaced circumferential grooves in said sleeve and ports in said sleeve that open into said air bearing space; means in said housing and sleeve for exhausting air from said air bearing space, said means for exhausting air including a cut out portion in said housing in communication with one end of said sleeve, and passages in said housing and sleeve adjacent the other end of said sleeve; differential transformer means including coils mounted in said bore and toward the other end of said housing and a movable core mounted in said coils and connected to said piston by a non-magnetic member; and an end closure secured to the other end of said housing and holding said coils in place inside said bore.

3,358,378
METHOD AND APPARATUS FOR MEASUREMENT OF MOISTURE
Martin L. Downs, Grand Chute, Wis., assignor to Thilmany Pulp & Paper Company, Kaukauna, Wis., a corporation of Wisconsin
Filed Apr. 19, 1965, Ser. No. 448,937
10 Claims. (Cl. 34—1)

1. In a method of measuring the moisture content of a moving web of paper, the steps comprising simultaneously collecting the electrostatic charge from the web of paper at a plurality of points spaced generally transversely

across the web, transmitting the charges collected at each point to an indicator, and converting the transmitted



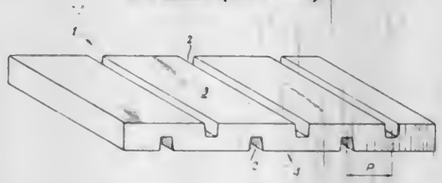
charges to a plurality of signals indicative of the relative moisture content of the web.

3,358,379

PROCESS FOR FREEZE-DRYING FROZEN BLOCKS OF MATERIAL CONTAINING WATER

Reginald Frederick George Coley, Wiltshire, England, assignor to Vickers Limited, London, England, a British company

Filed Apr. 20, 1966, Ser. No. 543,940
Claims priority, application Great Britain, Apr. 30, 1965, 18,397/65
3 Claims. (Cl. 34—5)



1. In a process for freeze-drying materials containing water in which the watery material to be dried is frozen into a block and thereafter subjected to freeze-drying under vacuum conditions whilst supplying heat to the block to drive off the water present therein as ice directly from the ice state to the water vapor state, wherein the improvement comprises freezing the water-containing material to be subjected to freeze-drying in a mold shaped to provide a frozen relatively thin block compared to its width and length having opposite faces defining spaced relatively deep grooves, whereby the removal of the water vapor from the block during the freeze-drying and heating steps of the process is facilitated by the presence of said grooves which serves to facilitate the escape of water vapor from the block.

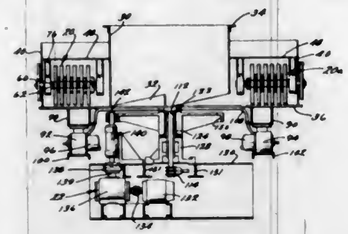
3,358,380

SAND COOLER

Oscar V. Murphy, Newaygo, Mich., assignor to Newaygo Engineering Company, Newaygo, Mich., a corporation of Michigan

Continuation of application Ser. No. 404,447, Oct. 16, 1964. This application Mar. 30, 1966, Ser. No. 544,651
5 Claims. (Cl. 34—20)

1. Sand cooling apparatus comprising: a rotatably-mounted, perforated disc; air supply means to the perforations of said disc; said perforations being oriented upwardly to blow through and suspend recirculated sand on said disc; sand supply and distributing means above said disc; sand agitating and aerating means adjacent said disc to loosen the recirculating sand; and sand discharge means adjacent a portion of said disc, displaced from said sand



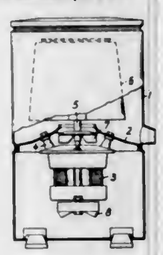
supply and distributing means with said cooling zone and said agitating and aerating means therebetween.

3,358,381

SPIN DRYER HAVING A SHADED-POLE MOTOR

Werner Sowa and Siegfried Tillner, Oldenburg in Oldenburg, Germany, assignors to Licentia Patent-Verwaltungs-G.m.b.H., Frankfurt am Main, Germany

Filed July 28, 1965, Ser. No. 475,341
Claims priority, application Germany, July 29, 1964, L 48,407
16 Claims. (Cl. 34—58)



1. A spin dryer comprising, in combination:
a housing;
a shaded pole motor having a drive shaft extending vertically therefrom, said motor including a rotor and a short circuited winding, said short circuited winding and the resistance of said rotor, in conjunction with high saturation being arranged so that the torque-speed characteristic is raised in the low speed range and at the expense of the breakdown torque to such an extent that the integral of the torque-speed characteristic is substantially equal to the integral of the torque-speed characteristic of a motor which is constructed to have a maximum breakdown torque;
a centrifugal drum mounted on said drive shaft and defining an assembly therewith; and
spring means for vertically suspending said assembly in said housing.

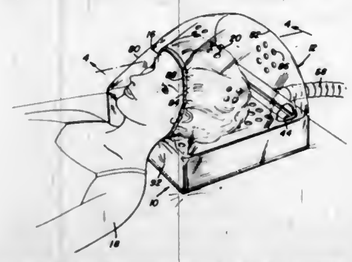
3,358,382

CUSHION HAIR DRYER WITH AIR DIVERTER

Georgia Ella Glintz, 2909 University Ave., Des Moines, Iowa 50311

Filed Sept. 24, 1965, Ser. No. 489,900
7 Claims. (Cl. 34—99)

1. A cushion for drying hair of a person disposed in a reclining position, said cushion comprising a hollow base, padding over said base, a cover over said padding, aligned air passages in said base, said padding and said cover, means communicating said hollow base with a heated air supply, a hood extending over the cushion and overlying a person's head having their hair dried, said base and cover having a slot-like opening communicating the hollow base with the interior of the hood and air diverting means for diverting a portion of heated air coming into the hollow base upwardly into the interior



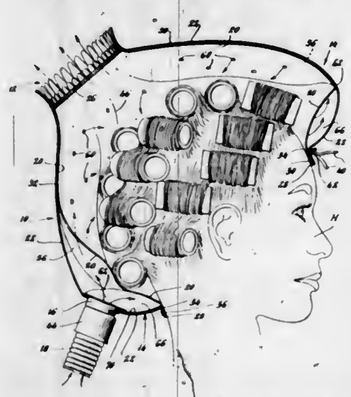
of the hood while the remainder of the air passes upwardly through the aligned air passages for more efficiently drying the hair.

3,358,383

HAIR DRYER BONNET COMPRISING AN INFLATABLE ANNULAR AIR CUSHION

Gerald H. Snider, Norwalk, Conn., assignor to General Electric Company, a corporation of New York

Filed May 11, 1966, Ser. No. 549,211
10 Claims. (Cl. 34—99)



1. A hair dryer bonnet comprising: a flexible outer wall; a flexible inner wall; a plurality of seams securing said walls to each other at a plurality of spaced locations to form a generally cylindrical double-walled bonnet structure having a plurality of internal communicating air distributing channels formed between the walls; and an annular pressurized static air chamber formed around and adjacent the bottom portion of the bonnet between said walls; means for holding the bottom portion of the bonnet in close contact with the head of the user below the hair line; air inlet means formed in said outer wall adapted to have an air tube connected to it for admitting heated air between said walls into said channels and said static air chamber; means defining a plurality of spaced air discharge openings in said inner wall for permitting the heated air to exit from said channels and be uniformly distributed throughout the hair; said static air chamber being substantially larger in its outer diameter than the head of the user and located adjacent said holding means whereby it spaces the air distributing channel forming portions of said bonnet upwardly away from the hair of the user; and said air inlet means being spaced from the bottom edge of said bonnet and communicating with said static air chamber whereby said static air chamber is inflated and maintained under pressure in use and thereby supports said air inlet means and its connected air tube away from the head of the user.

3,358,384

DEVICE FOR REGULATING THE DISCHARGE OF A GASEOUS MEDIUM

Rune Gustafsson, Stockholm, and Ake Johansson, Klinten, Sweden, assignors to Aktiebolaget Svenska Flaktfabriken, Stockholm, Sweden

Filed Aug. 22, 1966, Ser. No. 574,053
Claims priority, application Sweden, Aug. 25, 1965, 11,078/65
10 Claims. (Cl. 34—111)



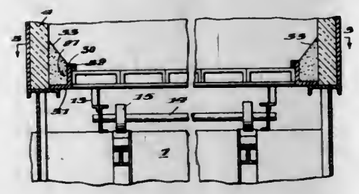
1. In a device for regulating the distribution and direction of a gaseous medium being blown against a web, said device consisting of a supply chamber for the gaseous medium, a distribution conduit arranged across the web and being formed with outlet openings along its length for said medium, said conduit having an inlet opening at one end connected to said supply chamber, a control conduit extending parallel to said distribution conduit, said control conduit having an inlet opening into said supply chamber at said one end and connected to said distribution conduit at the opposite end to afford flow of gaseous medium into the opposite end of said distribution conduit, the improvement wherein said distribution conduit is provided with a partition intermediate its ends to form two separate spaces along the length of the said distribution conduit, one of said spaces communicating with said supply chamber directly through the inlet opening of said distribution conduit and the other of said spaces being connected to said supply chamber through said control conduit, and adjusting means for proportioning the flow of gaseous medium from said supply chamber to the respective spaces, said adjusting means in one limit position affording total flow into said one space and no flow into said other space, and in the other limit position, affording total flow into said other space and no flow into said one space.

3,358,385

RECIPROCATING GRATE CONVEYOR WITH SIDE WALL DAMAGE PREVENTING MEANS

John H. Maberry, Macungie, Pa., assignor to Fuller Company, a corporation of Delaware

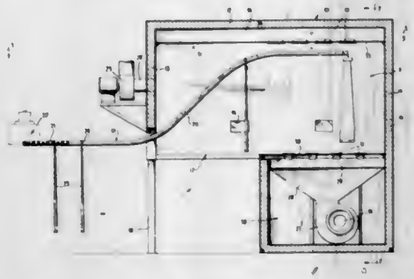
Filed Apr. 12, 1965, Ser. No. 447,197
5 Claims. (Cl. 34—164)



1. In a heat-exchange apparatus comprising a longitudinal, substantially horizontally-disposed chamber, having an insulated casing disposed therein, an entrance for material at one end of said casing and a discharge port for material at the other end, a means for transporting said material from said entrance to said discharge port, said transporting means extending longitudinally of the chamber adjacent said sides of said casing, the improvement comprising means positioned between the sides of said casing and said transporting means for confining and interrupting a transportation of a predetermined quantity

of said material to form a flexible material wall therebetween, said confined material serving as an insulating means to protect the casing against damage from the transported material.

3,358,386
CURING APPARATUS FOR PRESS-FREE GARMENTS AND THE LIKE
Bryan J. Perry, Jr., Greenville, S.C., assignor to Kitchen & Perry, Inc., Greenville, S.C., a corporation of South Carolina
Filed Sept. 29, 1965, Ser. No. 491,216
2 Claims. (Cl. 34—208)

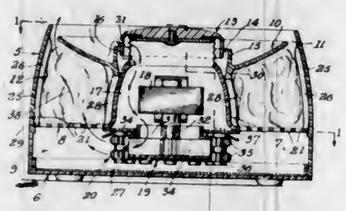


1. A curing oven particularly for use in processing press-free garments comprising an elevated relatively large main curing chamber having a large bottom opening near one end thereof and including insulated end, side and top walls, an exhaust device connected with said curing chamber on one wall thereof substantially above the elevation of the bottom opening, a heating chamber means below the main curing chamber at the end of the curing chamber remote from the large bottom opening and including a heating element and serving to support the adjacent end portion of the elevated curing chamber and constituting a bottom closure for the end portion of the curing chamber above the heating chamber means, a blower mounted below the main curing chamber adjacent one side wall thereof and having an inlet in communication with the heating chamber means and an upwardly flaring outlet nozzle which is elongated lengthwise of the main curing chamber, a vertically shallow plenum chamber above the outlet nozzle in communication therewith and extending transversely across the bottom of the main curing chamber and substantially for that part of the length of the curing chamber which is above the heating chamber means, plural spaced air diffuser elements connected with the shallow plenum chamber for directing heated air upwardly into the bottom of the main curing chamber at a plurality of points spaced from the large bottom opening, a vertically shallow return air chamber at the top of the main curing chamber and substantially spanning the main curing chamber transversely between the side walls thereof and also longitudinally between the end walls of the main curing chamber, plural spaced air diffuser elements connected in said return air chamber and communicating with the top of the main curing chamber, a substantially vertical return air duct leading downwardly from one corner of the shallow return air chamber and opening into the top of the heating chamber means adjacent one corner thereof and being separated from communication with the main curing chamber and said shallow plenum chamber, and an endless conveyor structure for press-free garments including an elevated substantially horizontal loop within that portion of the main curing chamber above the heating chamber means, an inclined entrance and exit portion in that part of the curing chamber above said large bottom opening and allowing suspended garments to pass freely through the large bottom opening, and another generally horizontal section extending outside of the main curing chamber at one end thereof and being arranged near the elevation of said large bottom opening and allowing the garments to hang freely without contacting the floor which supports the curing oven.

ERRATUM

For Class 34—218 see:
Patent No. 3,358,392

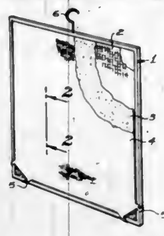
3,358,387
HOSIERY DRYER
Garnet H. Eckardt, Palm Springs, Calif. (70880 Windsor Circle, Cathedral City, Calif. 92234), and Louis B. Mulvey, Cathedral City, Calif. (44-071 Clinton St., Space G-5, Indio, Calif. 92207)
Filed Oct. 20, 1965, Ser. No. 498,396
3 Claims. (Cl. 34—225)



1. A hosiery dryer comprising:
(a) an outer housing, open at the top and provided with a closed bottom,
(b) a hollow core, open at the top and bottom, and disposed centrally in said housing,
(c) a perforated wall spaced above said housing bottom,
(d) a heater in the space between said bottom and wall,
(e) a top plate mounted on the core with its peripheral edge spaced from the housing to define an air-passing opening,
(f) said housing, core, perforated wall and top plate defining an annular receptacle for hosiery items,
(g) vanes provided on the inside of the outer housing and on the outside of the core to space items in the receptacle, in part, from said housing and core, and
(h) means to draw ambient air into the hollow of the core from above, through the bottom of the core, past and into contact with the heater, to be heated thereby, through the perforated wall, into the receptacle to dry the items therein, and outwardly through the mentioned air-passing opening.

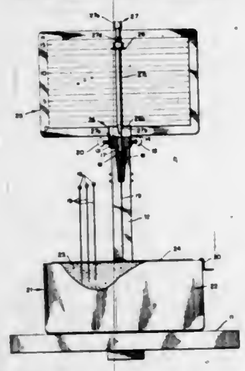
3,358,388
DRYING AND STORING FRAME FOR KNIT GOODS
Easter Weiss and Everitt E. Fairbanks, both % Sweater Maid Corp., 14547 Arminta St., Unit D, Pacoima, Calif. 91331
Filed June 24, 1965, Ser. No. 466,579
8 Claims. (Cl. 34—239)

7. A drying and storing device for knit goods, comprising:
(a) a rigid rectangular frame;
(b) a foraminous back membrane covering said frame;
(c) a blanket of flexible porous foamed elastomer secured by one margin to a side of said frame, said blanket being progressively rollable over a knitted garment placed on said back member and said blanket having a surface having a high coefficient of friction which superficially interlocks with fibers of the yarn comprising said garment, thereby to hold said garment in place on said back membrane;
(d) and means at the extended margin of said blanket



adapted for connection to said frame and for securing said blanket under tension, thereby to secure said garment in place and permit disposition of said frame in a vertical position.

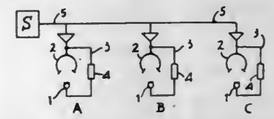
3,358,389
DISPLAY APPARATUS FOR VISUAL PRESENTATION OF QUANTITATIVE DATA
Martin Ruderfer, % Dimensions, Inc., 95 Madison Ave., Hempstead, N.Y. 11550
Filed Jan. 8, 1965, Ser. No. 424,419
21 Claims. (Cl. 35—24)



1. Display apparatus for visual representation of the relationship between variable quantities comprising a support; a plurality of elongated, independently positionable indicators, the indicators being adapted for insertion into the support; first coordinate reference means on the support for defining indicator locations along first and second coordinates; second coordinate reference means for defining indicator locations along a third coordinate; and a guide adjacent the support for positioning the indicators along the third coordinate, said guide comprises at least two members biased to form a passageway perpendicular to said first coordinate reference means for slidably and releasably retaining the indicators, the support and the guide being movable with respect to each other to locate the indicators along the first and second coordinates.

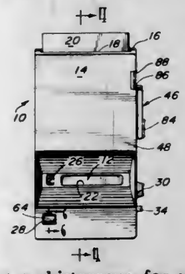
3,358,390
PROCESS AND APPARATUS FOR TEACHING INTENDED TO PERMIT OBJECTIVE HEARING OF ONE'S OWN WORDS
Tadeusz Korn, 58 Rue Mercells, Brussels, Belgium
Filed Oct. 13, 1964, Ser. No. 403,559
Claims priority, application Belgium, Oct. 14, 1963, 638,599
8 Claims. (Cl. 35—35)

1. A teaching aid, providing objective hearing of one's own voice, comprising, in combination, a sound input means for receiving a person's spoken sounds; a sound output means for delivering said spoken sounds to the same person's ear; sound transmission means interconnecting said input means and said output means; and a sound corrective device included in said transmission means and



transmitting high frequencies with substantially uniform gain above 1600 Hz. and progressively attenuating lower frequencies between 1600 and 300 Hz. to an extent sufficient to attain, below 300 Hz., a predetermined attenuation as compared with the level at higher frequencies.

3,358,391
NEAR-POINT TACHISTOSCOPE
Steven A. Warren, 480 Sanders Road, Lake Forest, Ill. 60045, and Gerald Zanck, Chicago, Ill.; said Zanck assignor to said Warren
Filed Aug. 19, 1965, Ser. No. 480,946
9 Claims. (Cl. 35—35)

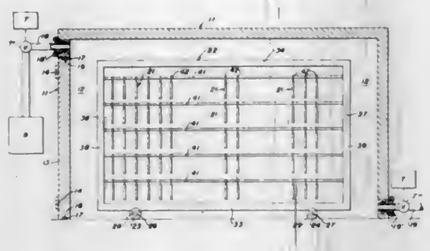


1. A near-point tachistoscope for use with a sheet of symbols to be recognized when momentarily exposed, which comprises: (a) an exposure control member formed of a unitary piece comprising a movable shield with an exposure slot therein; (b) bolt means integrally formed with said exposure control member; (c) a finger tab integrally formed with said exposure control member; (d) two mating container members, said two members defining a single chamber for said sheet of symbols and said exposure control member, one of said container members having an aperture through which the user of the tachistoscope may view symbols on said sheet when a portion of the sheet is exposed through the slot in said exposure control member; said finger tab extending outside said chamber to an exposed position to permit the user of the tachistoscope to move said exposure control member and its bolt means into cocked position; (e) trigger means to cooperate with said bolt means to permit the exposure control member to be selectively cocked and released by the user of the tachistoscope; and (f) tension means for urging said exposure control member, upon being triggered, from said cocked condition to a discharge position, so that said exposure slot passes momentarily over a symbol on said sheet and exposes it to the user of the tachistoscope.

3,358,392
APPARATUS FOR STABILIZING FABRICS AGAINST SHRINKAGE
John R. Foster, Daly City, Calif., assignor, by mesne assignments, to Koratron Company, Inc., San Francisco, Calif., a corporation of California
Filed May 2, 1966, Ser. No. 546,797
5 Claims. (Cl. 34—218)

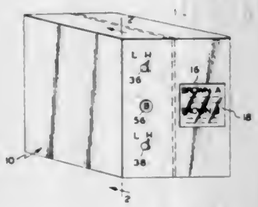
1. Equipment for stabilizing unsensitized cloth against shrinkage; said equipment comprising an autoclave de-

fining a relatively large chamber, an openable door for gaining access to said chamber and for hermetically sealing the same, a steam boiler, a valve-controlled steam pipe establishing communication between an outlet of said boiler and said chamber for conducting steam thereinto, a steam vent pipe communicating with said chamber and the atmosphere for discharging steam from said chamber, a timer for controlling the valves in said steam pipe and said vent pipe upon the expiration of predetermined time



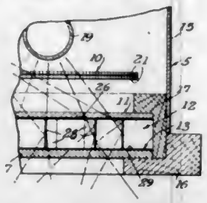
intervals, and means for supporting a multiplicity of slide fastener tapes of unsensitized cloth within said chamber for a predetermined time interval for full exposure to saturated steam maintained in said chamber for said time interval; said means comprising a rack consisting of a frame, a series of longitudinally extending rods on said frame arranged in vertically spaced relationship thereon and from which said multiplicity of slide fastener tapes are individually and movably suspended.

3,358,393
MOTORIZED TELEPHONE DIRECTORY
Earl C. Lewis, Box 1446, Midland, Tex. 79701
Filed Apr. 12, 1965, Ser. No. 447,490
7 Claims. (Cl. 40—31)



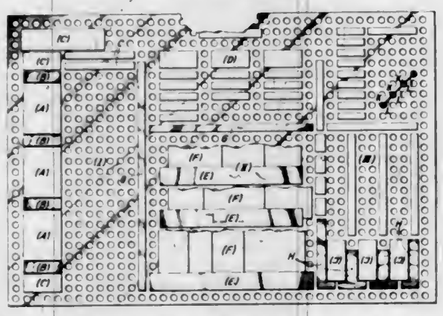
1. A telephone index directory system comprising a box having a film storage reel and a film take-up reel mounted for rotation and positioned near the rear portion of the box, a motor drive means for driving each reel in a film take-up direction, a film disposed between the reels and having the portion intermediate the reels fed across a front aperture of said box, said film capable of having disposed thereon a series of index tabs for connotating particular indexed portions of a given alphabetical significance, a dial mounted behind the front of said box having a portion thereof in alignment with a second aperture and having indicia thereon relative to said given alphabetical significance, an intermediate mechanical coupling for driving said dial in response to momentary actuation of said index tabs traversing said intermediate mechanical coupling so that the dial displays through the second aperture in the front of said box that portion of the film of relative alphabetical significance.

3,358,394
ILLUMINATED ADVERTISING SIGN
Jerold A. Braude, 117 N. Robertson Blvd., Los Angeles, Calif. 90048
Filed Mar. 18, 1965, Ser. No. 440,765
4 Claims. (Cl. 40—34)



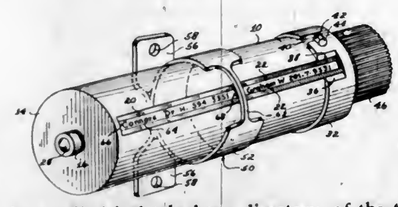
1. An illuminated advertising sign comprising:
(a) a housing having a front window,
(b) means providing a source of light within said housing the illumination of which is visible through said window,
(c) a flat rotatable member having its surface provided with a multiplicity of colored and interspersed transparent areas, said member being disposed between the light source and the window to render the areas thereof visible through said window,
(d) a mask comprising a plurality of opaque stripes intercepting the light of the illuminated areas while the flat member is rotating, and
(e) a honeycomb core disposed between said mask and said window and having reflective surfaces transverse to the plane of the core and along which reflections of said colored and transparent areas move in directions that are opposite to their movement with the moving member.

3,358,395
UNIVERSAL MULTI-PURPOSE DISPLAY DEVICE
Dragoljub Simonović, Saarbrucken, Germany, assignor to Firma GTV Gesellschaft fur Transport und Verkehrswesen m.b.H., Saarbrucken, Germany
Filed May 24, 1965, Ser. No. 458,347
Claims priority, application Germany, June 25, 1964, G 40,674
1 Claim. (Cl. 40—63)



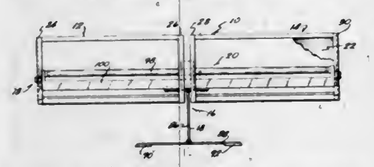
A universal multi-purpose display device for planning, statistical and other purposes, comprising a carrying plate having a plurality of holes therein arranged in rows with the holes equally spaced from each other as to the rows, and a plurality of indicating and holding elements with means on each element to be inserted and held in the respective holes, the elements being in the form of strips and each strip in cross-section having a swallow-tail configuration, and the indicating elements having a swallow-tail cross-section to cooperate with the swallow-tail strips, the swallow-tail configuration on the holding elements being inverted with respect to the swallow-tail configuration on the indicating elements.

3,358,396
CYLINDRICAL TELEPHONE DIRECTORY
Andrew J. Prince, Trenton, N.J.
(47 Stamford Road, Mercerville, N.J. 08619)
Filed Feb. 18, 1966, Ser. No. 528,587
10 Claims. (Cl. 40—68)



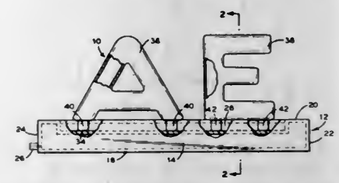
1. In a cylindrical telephone directory, of the type including a cylindrical casing having, therein, a lonigtudinal slot, and having means for supporting it on a stationary surface, and a cylinder, rotatably mounted within said casing and having thereon, a sheet of paper, bearing annularly spaced rows of names, and associated telephone numbers to be selectively rotated into view through a longitudinal slot in said casing, by means outside of said casing; each of said rows on the sheet containing two longitudinally aligned groups of names and telephone numbers; the means for supporting the directory on a stationary surface including a band, surrounding said casing, and provided with a set screw for clamping engagement with said casing, to permit angular adjustment of said casing within said band in relation to said longitudinal slot, and also having a reduced width linear portion, extending transversely across said longitudinal slot, between the ends of the aligned groups of names and numbers, to provide means of visually separating said two groups of names and numbers, the length of said linear portion being substantially longer than the width of said longitudinal slot to permit said angular adjustment.

3,358,397
DISPLAY DEVICE
Roger F. Rex, Hales Corners, Wis., assignor to Display Corporation, Milwaukee, Wis., a corporation of Wisconsin
Filed Nov. 12, 1965, Ser. No. 507,340
10 Claims. (Cl. 40—77)



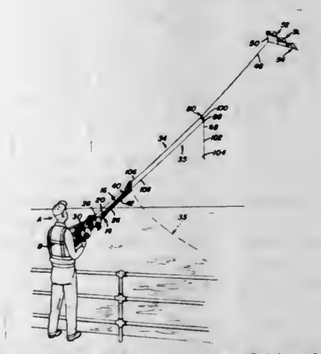
9. A display device comprising, in combination,
a plurality of elongated display panel holders arranged end-to-end,
each of said panel holders including plate means spaced longitudinally in said panel holders and extending transversely of the longitudinal axis of said panel holders, each of said plate means having a radial extension terminating in wall means defining an inner opening, said inner opening walls providing first bearing means for said panel holders,
a plurality of display panel receiving means on each of said plate means and relatively spaced circumferentially with respect to said first bearing means openings,
a support frame for said panel holders including panel holder engaging means extending longitudinally of said panel holders and including means defining longitudinally spaced second bearing means disposed in said plate means openings and engaging the walls thereof, engagement between said second bearing means and said walls providing rotational support for said panel holders,
and means extending between and connecting the plate means of each holder for joint rotation so that the plate means of each panel holder are jointly rotatable and said panel holders are rotatable independently of each other.

3,358,398
THREE-DIMENSIONAL SIGN
William L. Chalfin, 1435 E. 101st St., Brooklyn, N.Y. 11209
Filed Oct. 8, 1965, Ser. No. 494,129
4 Claims. (Cl. 40—125)



1. A three-dimensional sign including a base, a plurality of hollow inflatable indicia having predetermined three-dimensional configurations when inflated, valve means communicating with the interior of said hollow indicia for controlling the passage of a gas therethrough to inflate and deflate said indicia and complementary formed means on said base and said indicia interengageable with each other for removably mounting said indicia on said base, said base including a top wall and said complementary formed means comprising a channel in the top surface of said base having a bottom wall and upstanding side walls connected to the top wall of the base, and at least one inflatable member depending from each of the indicia adapted to be received in said channel, the width of said members being slightly in excess of the width of said channel so that said members engage opposed side walls of the channel in tight frictional engagement when the members are inflated to maintain the indicia on the base.

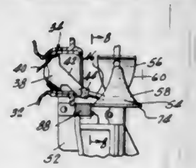
3,358,399
KITE WITH ROD AND TACKLE COMBINATION
Fred A. Waldmann, Rte. 2, Box 166, Olive Street Road, Chesterfield, Mo. 63017
Filed Jan. 22, 1965, Ser. No. 427,337
7 Claims. (Cl. 43—4)



5. For use by a fisherman when fishing from the shore, pier or the like, fishing tackle comprising: a fishing rod having handle means at its inner end provided with first and second deep sea reels and provided at its outer end

with a kite line guide oriented and coordinated with the first reel and a fish line guide oriented and coordinated with the second reel; a kite line reeled at its inward end on said first reel and passing outwardly through said kite line guide and provided at its outward end with a glider-type kite, a fish line reeled at its inward end on said second reel and having an outward portion slidingly threaded through and extending beyond said fish line guide and baited at its free terminal end, a vertically elongated hanger stick having an upper end detachably and adjustably connected to a predetermined portion of said kite line, the lower end of said stick having pull responsive clamp means separably connecting a forward end of the fishing line thereto and permitting the fishing line to be tautened by winding the fishing line in on the second reel in a manner to be forcibly and bodily detached from the lower end of the stick and to automatically gravitate to a selected fishing spot in the water being fished.

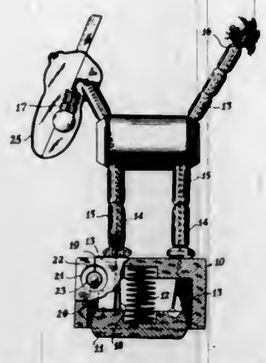
3,358,400
MOVING EYE MECHANISM
Abraham M. Katz and Kenneth W. Lindsay, Great Neck, N.Y., assignors to Ideal Toy Corporation, Hollis, N.Y.
Filed Dec. 22, 1964, Ser. No. 420,262
5 Claims. (Cl. 46—135)



1. In an animated doll having rotating drive means including a shaft and a pair of pendulum eyes mounted within the eye sockets of the doll for movement between an opened position when the doll is tilted rearwardly and a closed position, a cam member mounted within the head of the doll for rotational movement about its central axis and connected to said rotating drive means, said cam member having a first cam surface means at a first location on said shaft and a second cam surface means at a second location on said shaft, said cam surface means spaced from each other along the vertical extent of said shaft, and cam follower means connected to said eyes and operatively engaged with said cam member, said cam surface means periodically closing and periodically opening the doll's eyes upon rotation of said cam member when said doll is in an upright position and a reclined position, respectively.

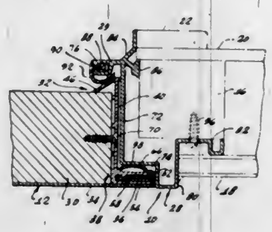
3,358,401
ELECTRICALLY ILLUMINATED ANIMATED TOY
John A. Graf, 72—36 112th St., Forest Hills, N.Y. 11375
Filed Sept. 20, 1965, Ser. No. 489,100
7 Claims. (Cl. 46—228)

1. A toy in the form of an articulated simulacrum comprising a base member, a body member supported thereby and formed of a plurality of apertured abutting sections, certain of said sections functioning as supporting members for the sections situated superior thereto, elongated thread-like connecting members upon which said sections are strung adjacent to one another, means for limiting longitudinal movement of said connecting members within said sections, including knots formed at the uppermost end of each connecting member, and push button means to which the bottom extremity of each connecting member is fastened, a compression type spring normally keeping said push button in expanded position, each of said connection members being held substantially taut when said button is in said expanded position, whereby said body articulations are held in close proximity to one another, and said body member assumes a substantially erect position, and whereby pressure upon said push button causes compression of said spring, loosening of said connecting members, and at least partial collapse of said body member, a source of electrical energy positioned within said base member, an electrically actuated lamp positioned upon some portion of said body member where



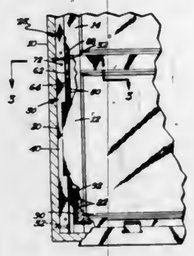
it will be capable of emitting light externally of the toy, conductors extending from said electrical source to said electric lamp, and ancillary contact making members within said base member and arranged to be actuated by the depression of said push button, whereby pressure upon said button simultaneously causes at least partial collapse of said body member and lighting of said electric lamp.

3,358,402
WEATHER SEALED DOOR-FRAME CONSTRUCTION AND METHOD OF FABRICATION
Roland R. Sahm, Palos Verdes Estates, Calif., assignor to Broadway Metals & Fabricators, Inc., Gardena, Calif., a corporation of California
Filed Mar. 3, 1966, Ser. No. 531,517
12 Claims. (Cl. 49—401)



1. A door for use in a cooperating frame establishing a weather sealed closure of a frame opening, comprising:
a flat and generally rectangular core having interior and exterior sides and top and bottom and side edges at its perimeter;
an elongated framework element of substantially uniform cross-section secured to said core adjacent its perimeter along at least one of said edges, said element including a generally planar edge plate mounted with its inner side in covering relationship with the associated core edge, retainer flange means projecting outwardly from said edge plate at the end thereof adjacent the exterior side of said core and having its exterior surface aligned substantially flush with said last-mentioned side, and sealing means carried by said retainer flange means with a base portion thereof in interlocked relationship with said flange means; and
a facing covering the exterior side of said core and having its marginal edge portion in interlocked relationship with said flange means.

3,358,403
HEAVY WINDOW BALANCE ASSEMBLY
Dawson J. Dinsmore, Sioux Falls, S. Dak., assignor to D. J. Dinsmore Co., Sioux Falls, S. Dak., a corporation of South Dakota
Filed Jan. 28, 1966, Ser. No. 523,660
9 Claims. (Cl. 49—445)



1. A heavy balance assembly comprising: a pair of spring operated balance units each having a channel unit with a single coil spring positioned therein and anchored at one extremity to one end of the channel unit, a floating anchor connected to the other extremity of the coil spring and having a plural groove roller unit journalled therein, a fixed anchor positioned at the other extremity of the channel unit and connected thereto with a second plural grooved roller unit journalled therein and at least one grooved non-rotatable cylindrical guide positioned thereon, a balance cord connected to the floating anchor and wound alternately around the journalled roller units of the floating and fixed anchors in the grooves therein with the free extremity of the cord being directed over the non-rotatable guide to slide in the groove therein and through an aperture in the channel unit opposite the open surface thereof; catch means secured to the free extremity of the balance cord and adapted to be connected to a foot member secured to the bottom side of the window sash, said pair of balance units being adapted to be mounted on one side jamb of a window casing in an end to end relationship with the extremities of the balance units having the non-rotatable guides with the cords directed over the same and the apertures in the channel units being positioned in abutting relationship.

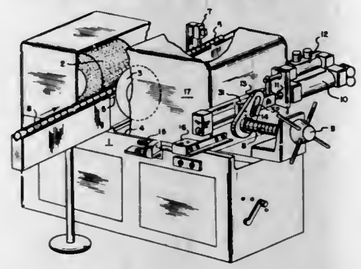
3,358,404
READILY REMOVABLE DOUBLE HUNG WINDOW
Dawson J. Dinsmore, Sioux Falls, S. Dak., assignor to D. J. Dinsmore Co., Sioux Falls, S. Dak., a corporation of South Dakota
Filed Jan. 28, 1966, Ser. No. 523,784
9 Claims. (Cl. 49—446)

1. A readily removable double hung window with balance assembly comprising: a window casing having a pair of jamb channels along the sides of the same extending the height of the casing, a pair of sash slidably mounted in the jamb channels, each of said sash having grooved side edges with flange means at one end of the same, a balance unit for each of said sash members adapted to be positioned between the sash and the jamb channels for the window casing, each of said balance units being comprised of an elongated channel member having a bias means mounted therein and a sash cord connected thereto and biased by the bias means with the free extremity of the sash cord extending through the open face of the channel and terminating in a hook, said balance units being respectively positioned in the side jambs of the channels in the window casing such that the grooved side edges of the sash fit around the respective balance unit and such that the hook of the sash cords of the balance units are connected into slots in the side jamb and said balance units are movable with the sashes as they slide in the jamb channel through engagement of one extremity of the



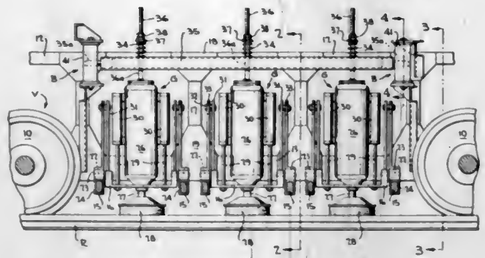
respective balance unit with the flange means on the sash, and releasable stop means included in each of the side jamb channels near the upper extremity of the height of the casing, said releasable stop means being adapted in one position to engage the respective balance units as they move with the sash to move beyond the stop means to free the balance unit from the sash such that thereafter the sash can be moved translationally in the jamb channel to remove the same from the window casing.

3,358,405
GRINDING MACHINE CONTROL
Martin Ruderfer, Hempstead, and Philip Ohringer, Commack, N.Y. (both of 95 Madison Ave., Hempstead, N.Y. 11550)
Filed Dec. 18, 1964, Ser. No. 419,534
2 Claims. (Cl. 51—103)



1. Throughfeed control apparatus for a grinding machine having a regulating wheel movable to bring a moving series of workpieces and a grinding wheel into grinding contact, and driving means for moving said regulating wheel, comprising adjustable switch actuating means and switch means for producing signals to control said driving means, means for retracting the regulating wheel away from the series of workpieces and a first grinding position, means for advancing the regulating wheel automatically back toward the series of workpieces, means for halting the regulating wheel at a second grinding position determined by the adjustment of the switch actuating means, and means for halting the movement of the series of workpieces while the regulating wheel is retracted away from said workpieces.

3,358,406
RAIL GRINDER
Frank Speno, Jr., Summit, N.J., and Romolo Panetti, Geneva, Switzerland, assignors to Frank Speno Railroad Ballast Cleaning Company, Inc., Ithaca, N.Y., a corporation of New York
Filed Oct. 14, 1965, Ser. No. 495,965
11 Claims. (Cl. 51—178)



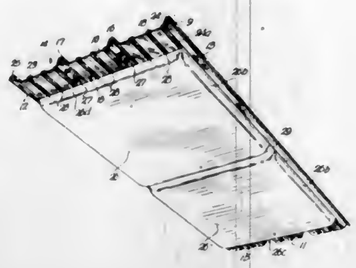
5. A rail grinder comprising: a vehicle adapted for lengthwise movement along a rail; a gang of grinder heads carried by said vehicle for vertical movement relative to the vehicle and to each other; said grinder heads respectively including grinding wheels normally positioned for operation in a substantially common horizontal plane and electric motors for driving the respective grinding wheels; constant rate counterbalancing means for supporting a predetermined portion only of the weight of each said grinder head, and variable rate counterbalancing means for opposing with progressively increasing force the downward movement of any of said grinding wheels below a position of horizontal alignment with the other said grinding wheels.

3,358,407
BUILDING HAVING A CENTRAL STAIR AND/OR LIFT SHAFT
Bruno König, Waiblingen, Germany, assignor to Bruno König, Waiblingen (Rems), and Franz J. Schmidt, Constance (Bodensee), Germany
Filed Nov. 3, 1964, Ser. No. 408,573
11 Claims. (Cl. 52—79)



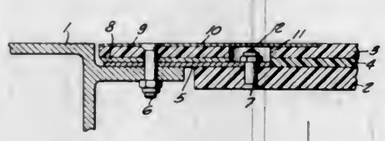
1. A building comprising a structure constituted by an assembly of a plurality of load bearing partition walls arranged in a radiating manner and cooperatively defining a central opening adapted for accommodating a stairway and/or an elevator, said load bearing partition walls extending in intersecting angular succession with the inner end portions projecting equal amounts beyond the intersection with the preceding load bearing partition wall and forming the boundary of said central opening, said load bearing partition walls further defining an outer periphery of the building and sector shaped rooms extending from said central opening to said outer periphery of the building, and a ceiling at each story of the building connected to the load bearing partition walls, said ceiling being a rigid slab furnishing transverse rigidity for said assembly.

3,358,408
INSULATED LIGHT TRANSMITTING PANEL
Merle D. Cooper, Jr., Leavenworth, Kans., and Kenneth M. Blom, Kansas City, Mo., assignors to Butler Manufacturing Company, Kansas City, Mo., a corporation of Missouri
Filed Aug. 25, 1965, Ser. No. 482,397
3 Claims. (Cl. 52—202)



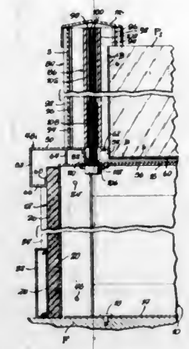
1. A light transmitting heat insulating panel construction for use in buildings comprising a first outer light transmitting plastic sheet, said outer sheet substantially rectangular in shape with elongate parallel side edges and parallel end edges extending normal thereto, the side edges of the said outer sheet having partial major corrugations therein and therealong whereby to permit side edge end engagement of said sheet with the side and end edges of building panel sheets of like configuration, the said outer sheet partial edge corrugations each having an inner, stepped, base portion, and an inner second light transmitting plastic sheet also substantially rectangular in shape, said second sheet of both lesser length and width than said first sheet and having upwardly dished side and end edges thereon, the upper extremities of said side and end edges of said second sheet bonded to the undersurface of said first sheet in substantially continuous manner, the longitudinal side edges of said inner sheet integrally bonded to the inner, stepped base portion of the said outer sheet partial edge corrugations, and the end edges of the second sheet inwardly spaced from the end edges of the first sheet whereby to permit end edge overlap engagement with like outer sheets.

3,358,409
HIGH TEMPERATURE PLASTIC EDGE ATTACHMENT
Richard B. MacKay, Gardena, Calif., assignor to Swedlow, Inc., Garden Grove, Calif., a corporation of California
Filed Oct. 20, 1965, Ser. No. 498,985
11 Claims. (Cl. 52—208)



1. A high temperature edge attachment for aircraft comprising a plastic window sheet and a connecting strap mechanically secured to said window sheet and having means for mechanically securing said connecting strap to an aircraft frame, said window sheet being protected by a heat shield comprising a sheet of temperature resistant plastic material bonded to the window and said strap protected from high temperatures by a heat shield bonded to said strap and overlying the window heat shield and being bonded thereto.

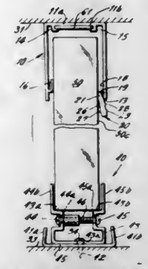
3,358,410
GLAZING POST, CORNICE AND RAIL CAP AND ASSEMBLY THEREOF
Jack A. Dawdy, John J. Di Cesare, Jr., and Edward J. Rutkowski, Kenmore, N.Y., assignors to National Gypsum Company, Buffalo, N.Y., a corporation of Delaware
Filed Dec. 24, 1964, Ser. No. 420,995
6 Claims. (Cl. 52—238)



1. An assembly of a cornice and rail cap and a glazing post, for removably supporting a wall panel, such as a glass panel, endwise on an end connecting opposite sides of a wall, said cap comprising in generally channel-shaped cross-section, a base adapted to extend over said wall end and connecting two side flanges extending outwardly from one side of said base and adapted to extend over said opposite wall sides, said base including means forming the shorter side walls and bottom wall of a channel recessed below and opening in the other side of said base, for receiving one end of said panel, each of said side walls having a recess opposing the other recess, for receiving an insert strip, and said bottom wall being adapted to engage said wall end, said post being supported endwise on said other side of said base and comprising in cross-section, a hub connecting at least two outwardly diverging legs, each of said legs having an outer distal flange portion opposing the outer distal flange portion of the adjacent leg and terminating in an enlarged, generally U-shaped lug portion having a pair of substantially coplanar surfaces spaced from and substantially parallel to those of the adjacent lug portion and alined with said side walls, for receiving another end of said panel, and an intermediate recess opposing that in the adjacent lug portion, for receiving an insert strip.

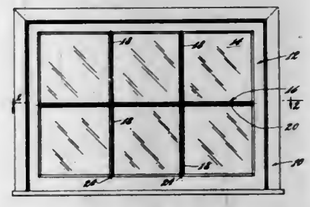
3,358,411
CEILING CHANNEL ASSEMBLY FOR MOVABLE PARTITIONS
Herbert L. Birum, Jr., Titusville, N.J., assignor to HLB Corporation, Lambertville, N.J., a corporation of New Jersey
Filed June 3, 1965, Ser. No. 460,964
7 Claims. (Cl. 52—241)

7. A ceiling channel assembly for interior partition structures employing partition panels said assembly comprising:
- an elongated unitary substantially U-shaped channel member having a central portion and first and second substantially straight arms depending therefrom;
- said central portion having means for securing said channel member to a ceiling;
- said arms both extending in a first direction for embracing a partition panel therebetween;
- the interior surface of said first arm having an elongated projection extending generally inwardly toward the opposite arm;
- an elongated substantially rigid rod means positioned along the interior of said second arm; and having means for mating with said groove;
- first and second means provided along engaging surface of the inner surface of said second arm and one surface of said rigid rod means respectively;
- said first and second means mating with one another



to cause said first and second arms to rigidly secure said rod means and said panel in position;
- said first means being positioned a spaced distance above the lower edge of said second arm; the lower end of said elongated rod means being a spaced distance above the lower edge of said second arm when said mating means engages said groove so as to be substantially out of sight.

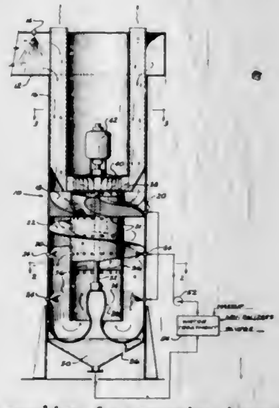
3,358,412
WINDOW BAR ASSEMBLY
Robert I. Martin, Mount Joy, Pa. (R.D. 1, Pequea, Pa. 17565)
Filed July 28, 1966, Ser. No. 568,482
3 Claims. (Cl. 52—456)



1. A removable window bar assembly in combination with a window constructed of a single pane of glass retained within a peripheral wooden frame, said window bar assembly comprising
- (A) a plurality of resilient, vertical members, each having one connected end and one free end,
  - (1) said members comprising a plurality of upper members and a plurality of lower members,
  - (2) each said member having a longitudinal, concentric bore, and
  - (3) said upper and lower members being arranged in a plurality of vertically juxtaposed pairs;
- (B) a resilient horizontal rod interconnected between the said vertical members, and having two free ends,
  - (1) the said ends being provided with a concentric, axially extending bore,
  - (2) said upper and lower members being positioned respectively above and below the said rod,
  - (3) the said connected end of each vertical member being in contact with the said horizontal rod; and
  - (4) said horizontal rod being provided with transverse, axially located holes at each place of contact;
- (C) pin means connecting the said upper and lower members

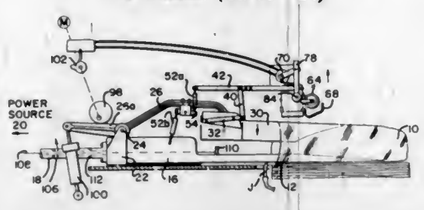
(1) a portion of said pin means penetrating the said horizontal rod through the said holes,
(2) and portions of the said pin means being insertable into the said bores of the said vertical members at the connected ends thereof;
(D) and a plurality of affixed stationary collar pins spaced about the said wooden frame,
(1) each said pin having a pointed insertion end and a blunt connection end, extending respectively from the ends of a cylindrical body,
(a) said pointed end being driven into the said frame, and
(b) said connection end extending above the frame,
(2) certain of said pins being positioned to receive the free ends of the said vertical members,
(3) other said pins being positioned to receive opposite ends of the said horizontal members,
(4) the connection end of said pins receiving and engaging the said horizontal and vertical members, in the said respective bores thereof, whereby the window bar assembly may be removed from the said window frame without moving the collar pins.

3,358,413
WET SCRUBBER FOR DIRTY GASES
Peter W. Kalika, Simsbury, Conn., assignor to Combustion Engineering, Inc., Windsor, Conn., a corportion of Delaware
Filed Dec. 28, 1966, Ser. No. 605,406
6 Claims. (Cl. 55—230)



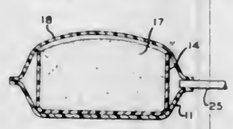
1. In a wet scrubber for removing impurities from dirty gases, an upright, cylindrical housing, a rotatable cylinder mounted in concentric relationship within the housing, thus forming an annular flow passage between the housing and cylinder, inlet means in the upper portion of the housing through which dirty gases enter, venturi means in the upper portion of the annular flow passage, the openings in the venturi means being located so as to cause the dirty gases flowing therethrough to move in a spiral direction down through the annular flow passage, first spray means for spraying a liquid into the openings in the venturi means, second spray means for spraying a liquid into the annular flow passage beneath the venturi means, flow directing means positioned in the lower portion of the housing for causing the downwardly flowing gases to reverse their direction and enter the space within the rotatable cylinder, vortex means positioned centrally within the rotatable cylinder, said vortex means having an upper bulb-shaped portion, and outlet means in the upper portion of the rotatable cylinder through which clean gases are discharged.

3,358,414
IMPRINTING DEVICE FOR BAG FILLING APPARATUS
Lawrence S. Hersh, 483 S. 21st St., Easton, Pa. 18042, and Leslie A. Fish, 180 Bowers Ave., Phillipsburg, N.J. 08865
Filed May 6, 1966, Ser. No. 548,236
10 Claims. (Cl. 53—14)



8. A method for filling flexible bags arranged in a stack comprising the steps of inflating the topmost bag, inserting a scoop means in the opened bag, depositing a material article in said scoop means, holding said article in a stationary position, moving said scoop means to move said bag over said article, and printing indicia on said bag while said scoop means is moving.

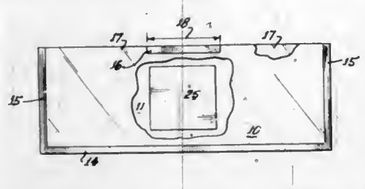
3,358,415
PREVENTING DEFORMATION OF VACUUM FORMED CONTAINERS
William F. Kurfirst, Deerfield, Ill., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Nov. 9, 1964, Ser. No. 409,630
5 Claims. (Cl. 53—22)



1. A method of vacuum packing a semirigid formed container without incurring deformation of the formed container, the walls of said container being sufficiently flexible that deformation thereof normally would occur if the container were employed in vacuum packing, which method comprises overfilling said formed container with the material to be packaged, the volume of material so employed being greater than the volume of said formed container by an amount such that the outward pressure of said material in the final package substantially balances the inward pressure of the atmosphere, covering the thus overfilled formed container with a pliable film to form a package, subjecting the interior of said package to the desired vacuum conditions, and sealing said package.

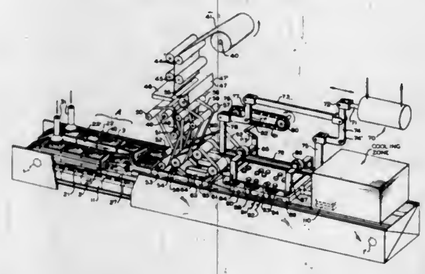
3,358,416
METHOD OF MAKING MULTIPLE COMPARTMENT PACKAGE
William S. Schneider, Glendale, and Arthur P. Corella, North Hollywood, Calif., assignors of ten percent to V. Wayne Rodgers, South Pasadena, Calif.
Original application Apr. 13, 1965, Ser. No. 449,685, now Patent No. 3,272,324, dated Sept. 13, 1966. Divided and this application Oct. 21, 1965, Ser. No. 499,969
7 Claims. (Cl. 53—29)

1. The method of making a multiple compartment package from two outer walls having thermoplastic characteristics, that includes the steps of:
joining together two opposed outer walls at marginal areas including areas at two opposite margins in a centrally located zone while leaving openings providing access to the interior of the package at each side of said central zone;
folding the package transversely of the package in said central zone to divide the interior of the package into two separate compartments;
forming a self-sustaining fold in the package walls by



applying pressure to the fold and heating and cooling the fold while under pressure;
and filling said compartments individually through said openings while keeping the openings uppermost and joining the walls together at said openings to close said compartments.

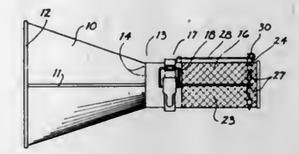
3,358,417
TAMPING
Andrew J. Gass, Summit, N.J., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Feb. 25, 1965, Ser. No. 435,275
3 Claims. (Cl. 53—124)



2. In a high-speed packaging machine comprising a conveying means for consecutively moving at least parallel and transversely spaced-apart pocket means for supporting containers therein past a container filling means, a cover material application means, and a sealing means, and wherein said machine includes means for transversely forcing the parallel pockets together prior to passing of same past said cover material application means, a cam means having at least two consecutive spaced-apart cam surfaces, support means reciprocably mounted for movement toward and away from said cam means and resiliently biased toward said cam means, a cam follower carried on said support means, a tamping foot resiliently carried on said support means opposite said cam follower and biased away from said support means, means for moving said cam follower into engagement with and along the cam surfaces of said cam means, and means for moving said cam means away from said cam follower so that engagement thereof is prevented.

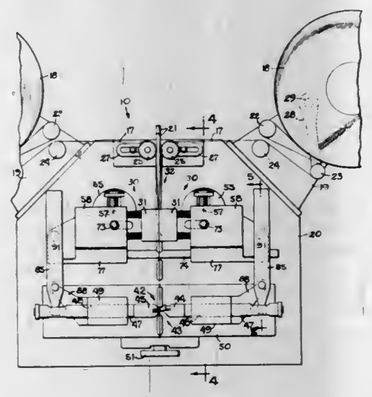
3,358,418
PACKAGING MACHINE
Sam Manetta, Box 10, Pontypool, Ontario, Canada
Filed Apr. 7, 1965, Ser. No. 446,235
3 Claims. (Cl. 53—124)

1. A tree packaging device comprising a cone shaped member, a short tubular member secured to the small extremity of said cone, the outer extremity of said cone and the free extremity of said small tubular member being reinforced by means of a rod rolled around said ends, a long tubular member having both extremities formed with a reinforcing rod adapted to hold a supply of resilient mesh material thereon, a U-shaped locking



ring to secure said long tubular member to said short tubular member, and a spring steel ring surrounding said long tubular member having a plurality of rollers mounted thereon in spaced apart relation adapted to retard the flow of said material over the tree when the tree is drawn through said long tubular member.

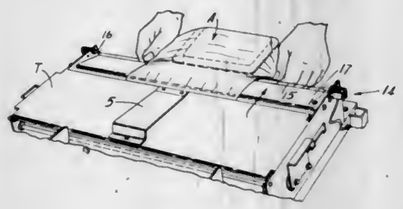
3,358,419
PACKAGING MACHINE
Elliott L. Bjork and Cleon F. Kern, Dexter, Mich., assignors to Bartelt Engineering Company, Inc., Rockford, Ill., a corporation of Delaware
Filed Apr. 15, 1964, Ser. No. 359,830
2 Claims. (Cl. 53—180)



2. In a machine for forming and filling packages, the combination of, a base, a filling spout having an open end for dispensing the product to be packaged, means for guiding two elongated webs of heat sealable material longitudinally along opposite sides of said spout and in opposed face-to-face relation past said open end, two sealing units disposed on opposite sides of said webs and each having carrier and a sealing bar projecting from said carrier toward said webs and opposing the bar on the other unit, said bars being mounted on said carriers for back and forth motion relative thereto between extended and retracted positions and having opposed sealing faces shaped to fit together around said spout and across said open end to seal the webs together between said faces and form an open-ended pocket in the webs, mechanism for imparting

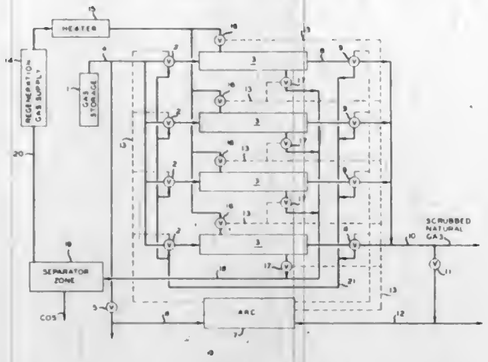
orbital motions to said carriers and thereby moving said bars toward each other and against said webs to form a first pocket around said spout, then longitudinally of the webs away from said spout to draw the pocket away from the spout while drawing fresh lengths of the webs over the spout, and then away from the webs and back to their original positions preparatory to another orbit and the formation of a second pocket longitudinally spaced from said first pocket, means on said sealing faces for closing and sealing the open end of said first pocket as the units form said second pocket, a cut-off device mounted on said base and including two members disposed on opposite sides of said webs and engageable with the webs between successive pockets to sever the webs, at least one of said members being supported for back and forth reciprocation toward and away from the webs, and means for transmitting the back and forth motion of one of said carriers to said one member to reciprocate the latter back and forth in timed relation with said sealing units.

3,358,420
APPARATUS FOR WRAPPING WITH FLEXIBLE HEAT SEALABLE MATERIAL
Phillip J. Fellner and Edward S. Mickiewicz, Racine, Wis., assignors to Sturtevant Industries, Inc., Sturtevant, Wis., a corporation of Wisconsin
Filed May 25, 1967, Ser. No. 641,232
5 Claims. (Cl. 53—390)



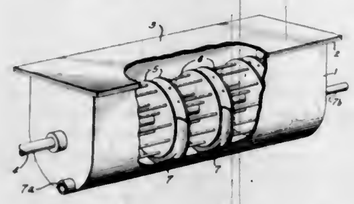
1. Hand wrapping apparatus for wrapping an article with flexible, soft and thermoplastic wrapping material, said apparatus comprising, a frame having an upper end located at a height convenient for an operator standing at a rear side thereof; a first support adjacent said upper end and at a front side thereof which is opposite to that rear side at which said operator stands, said first support adapted to support an article while being overwrapped, a second support adjacent said upper end of said frame and located adjacent the rear side thereof, a heated severing device extending laterally across said upper end of said frame and located between said supports for severing said wrapping material on contact therewith, and passage means extending laterally across said upper end of said frame and located between said first support and said severing means whereby a leading edge of said wrapping material may be drawn by said operator upwardly through said passage means from said frame and overwrapping the article on said first support, said severing means adapted to sever material moved thereagainst after the overwrapped article is underwrapped by being moved over said severing means towards said second support, said second support being of a lateral width less than said passage means and less than that of the article to be wrapped and mounted to provide clearance under the laterally opposite sides of an article resting thereon.

3,358,421
REMOVAL OF CARBONYL SULFIDES FROM HYDROCARBON FLUIDS
Edward E. Huxley and Earl M. Meyer, Pasadena, Tex., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed Oct. 29, 1964, Ser. No. 407,473
11 Claims. (Cl. 55—19)



1. A process for the removal of carbonyl sulfide from natural gas comprising passing the natural gas through a molecular sieve having an average pore diameter of about 3 Angstrom units to adsorb said carbonyl sulfide.

3,358,422
METHOD AND APPARATUS FOR DEGASSING A VISCOUS LIQUID
Bernard L. A. van der Schee, Arnhem, Netherlands, assignor to N.V. Onderzoekingstituut Research, Arnhem, Netherlands, a corporation of the Netherlands
Filed Sept. 7, 1965, Ser. No. 485,508
Claims priority, application Netherlands, Sept. 9, 1964, 64—10,463
20 Claims. (Cl. 55—52)



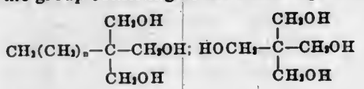
1. In the intermediate stages of a poly-condensation process wherein the polymer reaction mass has a viscosity in the range of 30 to 500 poises and wherein it is desired to effect degassing of said mass, comprising the steps of:
(a) providing a chamber partially filled with a liquid reaction mass;
(b) lifting a quantity of the liquid along a longitudinal extent of the surface thereof in a continuous movement substantially perpendicular away from said surface;
(c) permitting the lifted quantity of liquid to distend itself to the maximum extent possible in a continuous, unbroken film back towards the main body of liquid in the bottom of said chamber in a manner whereby both faces of said film are fully exposed from the furthest point of lifting to the surface of the main body of liquid and whereby entrained gases may escape from both said both faces;
(d) framing the film along its radially extending edges from both axial ends of said member and up to the axis about which said member moves to thereby

limit the extent to which said film may distend itself in a longitudinal direction;
(e) interposing no means to deliberately break the liquid film; and,
(f) evacuating the liberated gases from said chamber.

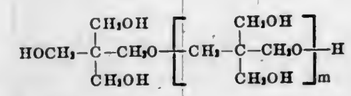
3,358,423
SUBSTRATES FOR GAS CHROMATOGRAPHY
Emanuel M. Amir, Baytown, Tex., assignor to Esso Research and Engineering Company
Filed Sept. 20, 1965, Ser. No. 488,635
5 Claims. (Cl. 55—67)



1. An improved method for separating hydrocarbon mixtures by gas chromatography which comprises utilizing as the solvent an oleic acid ester of an alcohol selected from the group consisting of the following formulae:



and



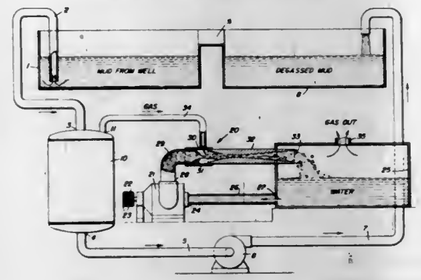
where:
n is 0 to 6, and
m is 1 or 2.

3,358,424
GAS-OIL SEPARATOR
Vincent G. Magorien, Reseda, Calif., assignor to Seaton-Wilson Manufacturing Co., Burbank, Calif., a corporation of California
Filed July 23, 1965, Ser. No. 474,269
5 Claims. (Cl. 55—168)



1. A separator for removing gas from a liquid comprising: means providing a degassing chamber; means providing a liquid inlet and a liquid outlet for said chamber; means for subjecting said chamber to a reduced pressure through said liquid outlet; a gas vent adjacent the top of said chamber; an automatic check valve for said gas vent opening outwardly only; a valve for said liquid outlet; an operating rod connected to said valve and extending vertically through said chamber; a float in said chamber and surrounding said rod for loose, sliding motion thereon; upper and lower abutments engaged by said float in upper and lower positions for moving said valve respectively to open and closed positions; and resilient means for impeding the lowermost movement of the float until the float weight increases to a value to overcome the impeding means and thereafter move downwardly substantially unimpeded to effect positive quick closing of the outlet valve.

3,358,425
DEGASSING APPARATUS
Gerald E. Burnham, Sr., 2000 W. St. Mary Blvd., Lafayette, La. 70501
Filed June 14, 1966, Ser. No. 557,449
11 Claims. (Cl. 55—193)



1. In a system for the degassification of drilling muds, the combination comprising:
a vacuum tank having a vertical axis;
means connected to said tank for drawing a vacuum from said tank to effect separation of entrapped gas from the drilling mud;
baffle means mounted in said tank, said baffle means comprising a plurality of radially disposed baffle plates mounted in said tank, said plates being inclined relative to the horizontal to define upper and lower edges and surfaces, said plates having their respective lower edges circumferentially spaced from each other, each plate having its upper edge vertically spaced from and overlapping the lower edge of its adjacent plate;
means mounted in said tank for depositing said mud onto the upper surfaces of said plates so that said mud to be degassed flows by gravity down said upper surfaces and falls as a plurality of thin generally radial curtains of mud from the lower edges of said plates.

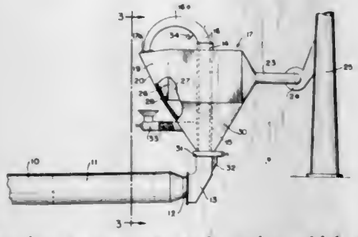
ERRATUM

For Class 85—230 see:
Patent No. 3,358,413

3,358,426
PREHEATING APPARATUS FOR CEMENT RAW MEAL
Johannes Petersen Husbjerg, Copenhagen-Valby, Denmark, assignor to F. L. Smidth & Co., New York, N.Y., a corporation of Delaware
Filed Mar. 16, 1966, Ser. 542,985
3 Claims. (Cl. 55—267)

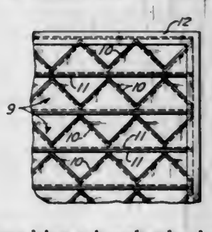
1. Preheating apparatus for transferring heat between gases and particles of cement raw meal and separating the heated particles of raw meal from the gas after heat transfer which comprises a casing having a top and bottom and containing within its walls a separating

chamber, a collecting chamber and a dust collector, the separating chamber defined in part by a sloping wall along a first side portion of the casing wall and adjacent to the top of the casing, and inlet opening for the particle laden gas in the top of the casing adjacent the sloping wall, a gas outlet opening for the cleaned gas in a second side portion of the casing opposite to the sloping wall, a dust collector spaced from the sloping wall and positioned between the inlet opening and the outlet opening, the collecting chamber underlying the sloping wall and the dust collector for receiving heated raw meal particles therefrom, the collecting chamber having downwardly sloping convergent walls, a rotary kiln having a common end for discharging hot waste gases and for receiving heated raw meal from the collecting chamber for burning to cement clinker, a vertical riser pipe having a lower end portion connected to the outlet of said rotary kiln and extending substantially upright and continuously without interruption or substantial variation



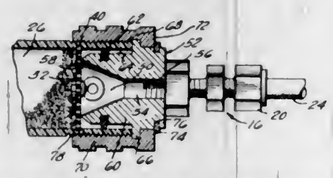
in cross-section to an upper end portion which extends vertically beyond the top of the casing, means at the lower end portion of the vertical pipe for introducing raw meal into the pipe for entrainment in the waste gases flowing upwardly through the pipe, the upper end portion of the pipe being curved through about 180° from an upward direction to a downward direction and in a general direction from a position adjacent the second side portion of the casing toward the sloping wall side portion of the casing where its upper end is connected to the inlet opening whereby coarse heated raw meal particles are thrown by centrifugal force against the outer wall of the curved pipe and land on the sloping wall and slide down beyond the dust collector into the collecting chamber, fan means connected to the gas outlet to draw the gas stream from the casing through the dust collecting means, and means for receiving particles from the bottom of the collecting chamber and feeding them into the end of the rotary kiln.

3,358,427
FILTER CONTAINING TUBULAR FILTER CELLS
Robert A. Bub, Gibsonia, Pa., assignor to MSA Research Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 19, 1965, Ser. No. 497,989
2 Claims. (Cl. 55—350)



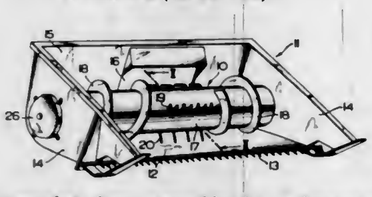
1. A filter comprising a housing having open ends, and a plurality of flat-sided tubular filter cells in side-to-side engagement filling said housing, each of the cells having at least three flat outer side surfaces, the cells being formed from sheets of filtering material and each of said cells being closed at only one end, the planes of the sheet material forming the flat sides of the cells being parallel to the longitudinal axes of the cells, all sides and the closed ends of the cells being made of filtering material, all of the cells having the same shape and being the same size from end to end, the cells being arranged in parallel rows with the ends of the cells located at said open ends of the housing and with the outer surfaces of the sides of each cell in coextensive engagement with the outer surfaces of the sides of the adjoining cells to form double walls between the cells, alternate cells in each row having their open ends at one end of the housing and the remaining cells in the same row having their open ends at the opposite end of the housing, and the open ends of the cells in each row being disposed beside the closed ends of the cells in the adjoining rows.

3,358,428
GAS DRYER
Morley Mann, Villa Park, Ill.
(202 W. Fay Ave., Addison, Ill. 60101)
Filed Apr. 16, 1965, Ser. No. 448,766
6 Claims. (Cl. 55—387)



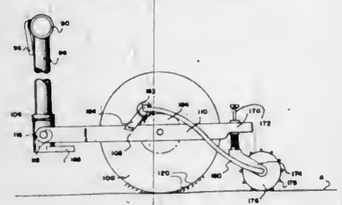
1. A gas dryer comprising an elongated tube for containing a mass of granulated desiccant material, first and second perforated retainers respectively removably disposed within opposite end portions of said tube for retaining the desiccant material, first and second end fitting means removably connected with opposite ends of said tube being connectable in a gas line, said tube including first and second internal annular notch means adjacent opposite ends thereof and said retainers comprising thin flexible polygonal elements having corner portions adapted to be snapped into said notch means, and axially projecting gripping elements connected to said flexible elements for enabling said flexible elements to be manually snapped into and out of groove means.

3,358,429
CONVEYING DRUM FOR STRAW, GRAIN, GRASS OR LIKE AGRICULTURAL CROPS
Günther Claas, 1 Am Rovekamp, Harsewinkel, Westphalia, Germany
Filed Jan. 26, 1965, Ser. No. 428,101
Claims priority, application Germany, Jan. 28, 1964, C 31,990
9 Claims. (Cl. 56—21)



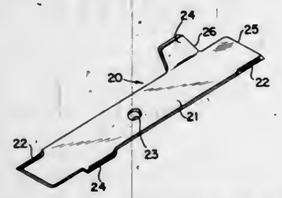
1. A conveying drum assembly for a harvester for straw, grain, grass or like agricultural crops, said assembly including a hollow apertured rotary drum which comprises a plurality of longitudinally extending shafts mounted therein for oscillatory movement, a plurality of fingers mounted on each of said shafts and extending through the apertures in said drum and crank means on each of said shafts, said assembly also comprising a mounting for said drum which mounting includes a cam surface with which said crank means on said shafts engage to pivot said fingers with respect to the surface of said drum during rotation of said drum, and said drum also comprising a journal carried on each of said shafts, a roller carried on each of said journals and rotatable about an axis which extends longitudinally of said drum but which is displaced from the longitudinal axis of the respective shaft and a closed loop of rubber-like elastic material passing over a plurality of said rollers to maintain the crank means of the corresponding shafts in engagement with said cam surface.

3,358,430
COTTON HARVESTER
Henry W. Attebery, Phoenix, Ariz.
Filed Oct. 23, 1964, Ser. No. 405,911
10 Claims. (Cl. 56—28)



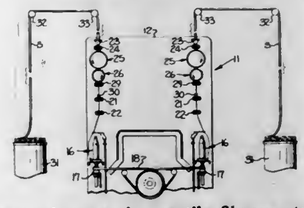
1. In a cotton harvester the combination of: a roller adapted to roll adjacent the surface of the ground and between rows of cotton plants; cotton impaling elements secured to peripheral portions of said roller and disposed at an angle to a radial direction on the periphery of said roller; a vehicle frame; a roller support on which said roller is rotatably mounted; said roller support vertically movably mounted relative to said vehicle frame; and first means disposed and tending partially to bear the weight of said roller and roller support, whereby the periphery of said roller may bear lightly on the surface of the earth and on soft cotton bolls thereon; second means having a drive rotor engageable with the ground; and third means coupled with said drive rotor and said roller, whereby said roller may be driven rotatably by said drive rotor.

3,358,431
BLADE FOR LAWN EDGER
Millard C. Fitzgerald, Jr., Baltimore County, Md., assignor to The Black and Decker Manufacturing Company, Towson, Md., a corporation of Maryland
Filed Feb. 25, 1965, Ser. No. 435,143
1 Claim. (Cl. 56—295)



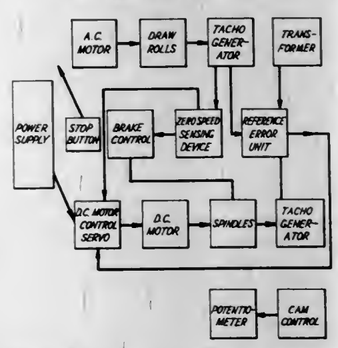
In a lawn edger of the type including a housing supported for movement over the ground, shaft means carried by said housing, and an edger blade supported upon said shaft; the improvement wherein said blade comprises a flat, generally rectangular bar having longitudinal side edges joined by respective ends and supported by said shaft for rotation about an axis which extends generally perpendicular to the plane of the bar and centrally thereof and generally parallel to the ground, whereby each of said longitudinal side edges has a leading edge and a trailing edge, a cutting edge formed on each of the leading edges of the bar, each said cuttting edge beginning at a respective end of the bar and extending radially inwardly thereof to define an annular cutting swath, a scoop on each of the trailing edges of said bar and positioned radially inwardly of said cutting swath, said scoops each extending rearwardly from respective trailing edges of said bar and defining an obtuse, dihedral angle with said bar.

3,358,432
SPINNING APPARATUS AND METHOD UTILIZING MINIATURE CARDING ROLLS
William B. Croxton, 2617 Edgewood Ave., Burlington, N.C. 27215
Filed June 28, 1966, Ser. No. 561,186
11 Claims. (Cl. 57—50)



1. A method of processing textile fibrous strand material to form packages of yarn therefrom comprising continuously feeding a bank of textile strands in sliver form and in side-by-side spaced relation through a curvilinear path of travel of less than two feet in successive surface engagement with serially arranged card-clothing-covered rotating rolls while imparting draft to the strands, removing the drafted strands from the last roll in the series, condensing the drafted strands to compact the same, and imparting a predetermined amount of twist to the compact strands while winding the strands onto respective bobbins to form packages of yarn therefrom.

3,358,433
COLLECTION OF SYNTHETIC POLYMERIC YARNS OR FILAMENTS
Harold E. Curtis, Cwmbran, and Bryan Kingsley Johnson and John P. Russell, Abergavenny, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
Filed Sept. 26, 1966, Ser. No. 581,864
Claims priority, application Great Britain, Oct. 1, 1965, 41,758/65
6 Claims. (Cl. 57—93)



1. A method of winding a yarn package on over-end winding apparatus in a manner to minimize slow-down breakages and loops, comprising the steps of:

(a) positively forwarding yarn by draw rolls to a

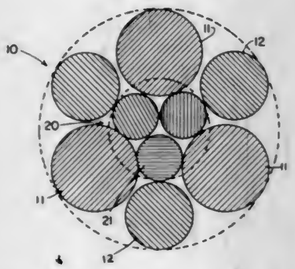
rotating spindle for winding thereon in the form of a yarn package,
(b) stopping said draw rolls independently of said spindle when a full yarn package has been wound,
(c) programming the slow-down period of the full package winding cycle in such manner that the spindle speed is positively controlled in a predetermined relationship to the draw rolls speed during the first part of said period until the draw rolls become stationary, and
(d) bringing said spindle to rest after the draw rolls have become stationary.

3,358,434
LOW ELONGATION SYNTHETIC ROPE
Frank C. McCann, Orange, Calif., assignor to Tubbs Cordage Company, San Francisco, Calif.
Filed July 16, 1965, Ser. No. 472,574
9 Claims. (Cl. 57—144)



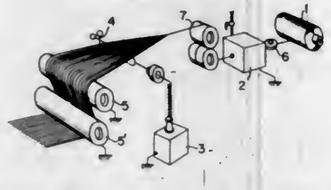
1. An improved synthetic polyolefin rope characterized by low elongation properties comprising: at least one strand formed from a plurality of twisted polyolefin yarns and a central core for said strand of pre-stretched polyester thread in an amount sufficient to significantly decrease the elongation of said polyolefin yarns.

3,358,435
CORD COMPOSED OF FILAMENTS OR STRANDS OF DIFFERENT DIAMETERS
Guido Peene, Zwevegem, Belgium, assignor to Trefileries Leon Bekaert, SpRL, Zwevegem, Belgium
Filed Apr. 16, 1965, Ser. No. 448,662
Claims priority, application Belgium, Nov. 12, 1964, 655,593
4 Claims. (Cl. 57—145)



1. Cord for reinforcing articles made of rubber, plastic or the like materials, comprising a center core composed of three monofilaments having the same diameters, said monofilaments twisted to a strand, and an outer jacket surrounding said cord, said jacket being composed of six elements, first three of said elements having the equal diameters fitting respectively tangentially in contacting engagement with two adjacent monofilaments of said core, said first three elements having a diameter of substantially 1.85 times the diameter of one of said monofilaments of said core, and the remaining three of said elements having equal diameters but differing in diameter size from the first three elements, said three remaining elements having a diameter of substantially 1.5 times the diameter of one of said monofilaments of said core and fitting respectively in the spaces between said first three elements, said six elements being twisted around said core.

3,358,436
PROCESS FOR SPREADING OR DIVIDING TEXTILE MATERIALS
Gentaro Niina, Yoshiyuki Sasaki, and Masayuki Takahashi, Iwakuni-shi, Yamaguchi-ken, Japan, assignors to Teijin Limited, Osaka, Japan
Filed Oct. 19, 1964, Ser. No. 404,602
Claims priority, application Japan, Nov. 5, 1963, 39/17,789
9 Claims. (Cl. 57—162)



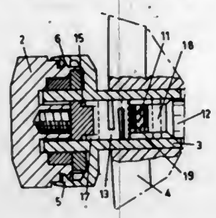
1. Process for spreading one-dimensional solid textile materials each consisting of a number of continuous filaments, which comprises imparting electric conductivity to said material by applying an electrically conductive liquid thereto, and then applying thereto an electric current of at least 5000 volts, thereby spreading the materials into individual filaments.

3,358,437
PUSH BUTTON TIME ZONE WATCH
Fred G. Burg, 2222 Ave. of the Stars, Los Angeles, Calif. 90067
Filed May 23, 1966, Ser. No. 552,156
7 Claims. (Cl. 58—43)



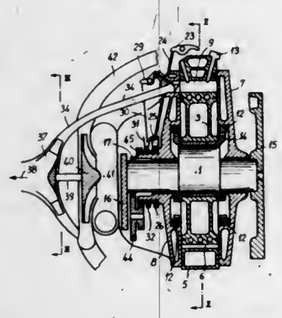
1. In a watch mechanism or the like having a synchronous hour hand shaft; an hour hand; a rotary member secured to the hour hand; a coupling between the hour hand shaft and said rotary member whereby the rotary member is capable of overrunning movement with respect to said hour hand shaft; auxiliary rotary driving means connected to said rotary member for imparting such overrunning movement; the combination therewith of; companion indicating means directly carried by the hour hand shaft and the hour hand respectively for displaying the relative position therebetween corresponding to the time zone setting of said hour hand, comprising first, a plate secured to the hour hand shaft for movement therewith and underlying said hour hand, and provided with legends 1, 2, 3 . . . 12 for denoting time zone, and second, a circular central part of the hour hand having an opening through which is visible the legend registering with said opening, said hour hand extending radially beyond said circular central part.

3,358,438
JOINTED WINDING STEM WITH SCREWED-ON BUTTON
John Simon, 2720 Tramelan, Switzerland
Filed Apr. 11, 1967, Ser. No. 629,947
Claims priority, application Switzerland, Apr. 22, 1966, 5,897/66
3 Claims. (Cl. 58—90)



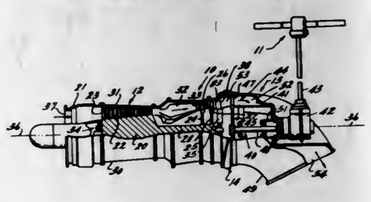
1. A jointed winding stem assembly having a button adapted to be screwed on a timepiece case, said stem comprising an outer part secured to said button, said outer part having first and second spaced diametrical openings, said openings being connected by a diametrical slot to form a housing; said first opening being directed towards the inside of said case and terminating in a pair of elastic jaws delimiting a second diametrical slot, said second opening being directed toward the outside of said case and terminating in a third diametrical slot; said stem including also an inner part rotatably and axially driven by movements imparted to said outer part by said button, said inner part having a head fitting in said first opening; a spring fitting inside said outer part of said stem near said second opening and bearing against the extremity of said head whereby said outer part of said stem effects an axial movement against said spring independently of said inner part during screwing of said button on said case.

3,358,439
ROTARY DIESEL ENGINES EQUIPPED WITH A TURBO-SUPERCHARGER
Gaëtan de Coye de Castelet, Billancourt, France, assignor to Regie Nationale des Usines Renault, Billancourt, France, a French works under the control and the authority of the French Government
Filed May 21, 1965, Ser. No. 457,726
Claims priority, application France, May 30, 1964, 976,558, Patent 1,418,849
5 Claims. (Cl. 60—13)



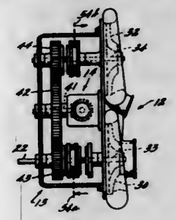
1. A rotary diesel engine of the type comprising a stator having $n+1$ lobes, a drive shaft, an epicycloidal rotor having n lobes and being eccentrically and rotatably mounted on said drive shaft within said stator, said rotor and said stator forming therebetween $n+1$ working chambers each having a cylindrical combustion chamber of a length equal to that of the rotor, said stator comprising an annular portion and a lateral cover on each side thereof; a coaxial turbo compressor having exhaust blowoff and an action type turbine provided with feed channels respectively connected to each of the combustion chambers, a valve at the chamber outlet end of each said channel, said valves being positioned at the end of the combustion chambers in one of said side covers, inlet and exhaust valves in each said working chamber, cam means associated with the drive shaft to operate said valves, said cam means having an auxiliary boss adjacent to and preceding the main boss to obtain a slight lifting of the intake valves during the principal portion of the exhaust phase.

3,358,440
FLEXIBLE SUPPORT MEANS FOR GAS TURBINE POWERPLANTS
Wilbert Bernard Freid, Swampscott, Mass., assignor to General Electric Company, a corporation of New York
Filed Dec. 6, 1965, Ser. No. 511,698
9 Claims. (Cl. 60—39.16)



1. A gas turbine powerplant assembly comprising:
a gas generating unit including a first rigid stator structure and a first rotor supported by said stator structure for rotation about a first axis of rotation,
a power unit including a second rigid stator structure and a second rotor supported by said second stator structure for rotation about a second axis of rotation,
said gas generating unit and said power unit being in spaced relationship,
and means flexibly interconnecting said first and second rigid stator structures,
said flexible means transmitting forces between said gas generating unit and said power unit,
said first and second axes of rotation are coaxial and said gas generating unit and said power unit are axially spaced relative to said axes of rotation, said flexible means transmitting axial and shear forces between said gas generating unit and said power unit.

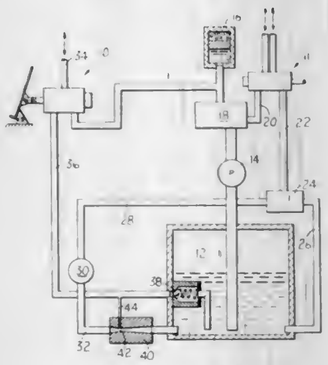
3,358,441
EFFICIENT PART POWER GAS TURBINE POWERPLANT
William Bruce Gist, Jr., Lynnfield, Mass., assignor to General Electric Company, a corporation of New York
Filed July 11, 1966, Ser. No. 564,362
9 Claims. (Cl. 60—39.15)



1. A gas turbine powerplant comprising:
primary gas turbine means including a primary power turbine,
secondary gas turbine means including a secondary compressor, a secondary combustor, and a second-

ary power turbine serially arranged in fluid flow relationship,
power output means,
and power transmission means having first and second modes of operation,
said power transmission means in said first mode of operation interconnecting said primary power turbine and said power output means to transmit power from said primary gas turbine means to said power output means,
and said power transmission means in said second mode of operation interconnecting said primary power turbine and said secondary compressor to drive said secondary compressor and interconnecting said secondary power turbine and said power output means to transmit power from said secondary gas turbine means to said power output means.

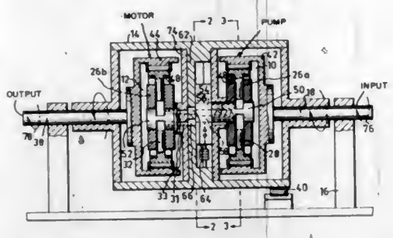
3,358,442
BRAKE HYDRAULIC CIRCUIT
John R. Cryder, Joliet, Ill., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed July 13, 1966, Ser. No. 564,954
3 Claims. (Cl. 60—52)



1. In a hydraulic circuit for serving multiple components of a vehicle in which at least one component is of the brake type in which brake release is accomplished by return flow of fluid from the brake to a tank and in which pump pressure is normally returned to the tank to maintain positive pressure in the tank, a brake return line, a pump pressure return line, and syphon means between said lines to insure delivery of fluid from the brake line to the tank.

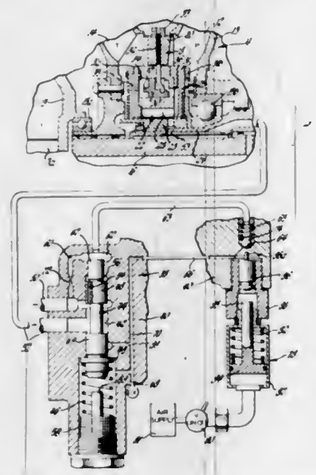
3,358,443
HYDROSTATIC TRANSMISSION
Gustaf Erik Björklund, Stockholm, Sweden, assignor to Rederi AB Soya, Hagersten, Sweden
Filed Mar. 14, 1966, Ser. No. 534,030
Claims priority, application Sweden, Mar. 15, 1965, 3,331/65
3 Claims. (Cl. 60—53)

1. A hydrostatic transmission comprising a pump of the radial piston type and having its shaft arranged as an input shaft of the transmission, a hydrostatic motor having its shaft arranged as an output shaft of the transmission, a bearing member carried by said shafts and rotatable thereon, and a locking device for the bearing member, said locking device being adapted to prevent said bearing member from rotation and to take the existing reaction torque as long as the input torque on the pump shaft differs from the output torque on the motor shaft but to rotate together with said shafts as said torques have become equal, said pump including a pintle mounted in said bearing member, a rotor on said pintle including



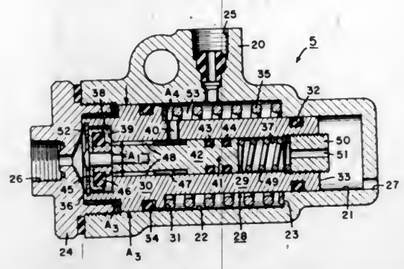
cylinder spaces for the radial pistons, and means to displace said pintle and rotor for varying the stroke volume of the pump.

3,358,444
POWER TRANSMISSION
Robert M. Tuck, Indianapolis, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed July 16, 1965, Ser. No. 472,483
44 Claims. (Cl. 60—54)



1. In a power transmission, input power means and a plurality of output means, a variable capacity torque converter driven by said input means and drivingly connected to a first of said output means, means operatively coupling said input power means and a second of said output means, said converter including a rotor having a plurality of bladed members shiftable between high and low angle positions with respect to the center line of said converter for controlling the capacity of said converter, fluid actuated motor means within the confines of said torque converter and interior of said bladed members having one side open to converter pressure for shifting said bladed members to a low blade angle position to provide a high capacity converter for absorbing a high percentage of input power and driving the first of said output means, said motor means being operative to shift said bladed members to a high blade angle position for decreasing the capacity of said converter and to thereby divert an increased portion of output power from said converter to the second of said output means, and valve means for controlling fluid pressure to said motor means to control the position thereof and the angular position of said bladed members.

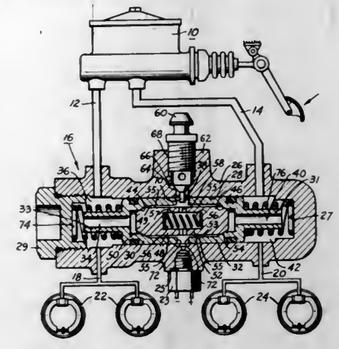
3,358,445
CONTROL VALVE
Eugene E. Wallace, Kirkwood, Mo., assignor, by mesne assignments, to Tung-Sol Electric Inc., Newark, N.J., a corporation of Delaware
Filed Sept. 28, 1965, Ser. No. 490,983
7 Claims. (Cl. 60—54.5)



3. A control valve comprising a housing having a pair of ports therein, stepped piston means including a larger portion movable in said housing between said ports, opposed differential areas on said larger portion respectively subjected to fluid pressure at said ports, and a smaller portion movable in said housing extending from said larger portion and having a free end defining with said housing an atmospheric chamber, resilient means urging said piston means toward one of said ports, other means movable in said stepped piston means for controlling pressure fluid communication between said ports, other resilient means normally urging said other means toward said one port and toward a position establishing pressure fluid communication between said ports, and opposed effective areas on said other means respectively subjected to fluid pressure at said one port and to the atmosphere in said atmospheric chamber, said stepped piston means being movable toward the other of said ports against said first named resilient means to store the energy thereof in response to fluid pressure less than a predetermined value at said ports respectively acting on said opposed differential areas, said other means being movable against said other resilient means and the atmospheric pressure in said atmospheric chamber acting on one of said opposed effective areas toward said other port and a position interrupting pressure fluid communication between said ports when the fluid pressure at said one port acting on the other of said opposed effective areas attains the predetermined value, and said stepped piston means and other means being thereafter further movable toward said one port in response to further increases in the fluid pressure at said other port in excess of the predetermined value acting on one of said opposed differential areas and assisted by the stored energy of said first named resilient means to effect an increase in the fluid pressure at said one port in excess of the predetermined value acting on the other of said opposed differential areas and said other opposed effective area in a predetermined ratio with the increased fluid pressure in excess of the predetermined value at said other port.

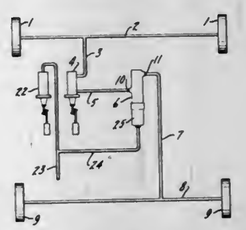
3,358,446
BRAKE WARNING DEVICE
Harvey E. Wortz, St. Joseph, Mich., assignor to The Bendix Corporation, a corporation of Delaware
Filed Oct. 22, 1965, Ser. No. 500,702
5 Claims. (Cl. 60—54.5)

1. A split brake system comprising: a split system master cylinder having first and second actuating chambers therein; first and second brake assembly means; a valve having a first fluid chamber, a second fluid chamber and a third fluid chamber; a pressure responsive member communicated to said third chamber; first conduit means communicating said first actuating chamber, said first fluid chamber and said first brake assembly means with each other; second conduit means communicating said second actuating chamber, said second fluid chamber and said second brake assembly means with each other; said valve further comprising means for normally maintaining said first, second and third chambers cut off from each other, for communicating said third fluid chamber with



said first fluid chamber upon failure of fluid pressure in said second fluid chamber when said first fluid chamber is pressurized and for communicating said third fluid chamber with said second fluid chamber upon failure of fluid pressure in said first chamber when said second fluid chamber is pressurized, and thereafter trapping fluid in said third chamber under sufficient pressure to maintain said pressure responsive member activated.

3,358,447
HYDRAULIC BRAKE SYSTEM
Henry E. Branson, Chicago, Ill., assignor to Stromberg Hydraulic Brake & Coupling Company, Chicago, Ill., a corporation of Illinois
Filed Mar. 7, 1966, Ser. No. 532,332
6 Claims. (Cl. 60—54.5)

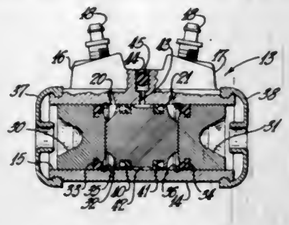


1. In combination, a dual brake system for an automotive vehicle tractor including a dual tractor master cylinder assembly, hydraulic ducts leading separately therefrom to separate tractor wheel brakes, a trailer brake system including a trailer master cylinder on the tractor. a hydraulic connection between the trailer master cylinder and the trailer brakes and a means operatively connecting the trailer master cylinder and some of the tractor wheel brakes.

3,358,448
BRAKE MOTOR
Herman M. Huffman, Corunna, Mich., assignor to Midland-Ross Corporation, Cleveland, Ohio, a corporation of Ohio
Filed June 27, 1966, Ser. No. 560,728
5 Claims. (Cl. 60—54.5)

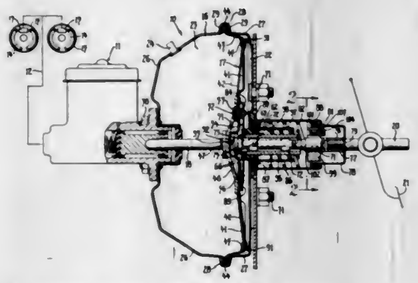
1. In a brake motor operable by either or both of two independent fluid-pressure systems and including a cylinder having two power pistons and a floating piston there-

between, the floating piston having annular end seals to contain fluid under pressure at opposite ends thereof; the improvement which comprises means defining an annular



space between said floating piston and said cylinder and between said end seals, and a vent communicating with said space whereby, when one of said end seals fails, fluid entering said space will be vented from said cylinder.

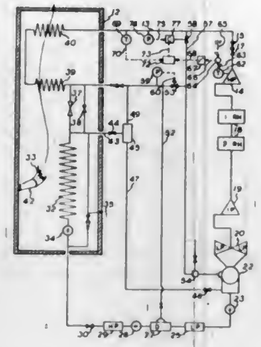
3,358,449
POSITION CONTROL POWER BRAKE
Curtis L. Brown, Owosso, Mich., assignor to Midland-Ross Corporation, Cleveland, Ohio, a corporation of Ohio
Continuation of application Ser. No. 391,538, Aug. 24, 1964. This application Nov. 18, 1966, Ser. No. 596,722
11 Claims. (Cl. 60—54.6)



1. A power brake mechanism comprising a housing and a pressure responsive wall forming therewith chambers at opposite sides of said wall, valve means having a normal position balancing pressures in said chambers and having a connection with a source of pressure to vary the pressure in one of said chambers to move said wall in a predetermined range upon movement of said valve means from said normal position, actuating means for moving said valve means from said normal position in response to manual effort and being movable in a predetermined range during movement of said wall in its predetermined range independently of reaction forces resulting from movement of said wall, and reaction means operatively disposed between said actuating means and said housing and acting independently of said wall to resiliently resist movement of said actuating means in one direction in a substantially direct ratio to the force developed by said wall.

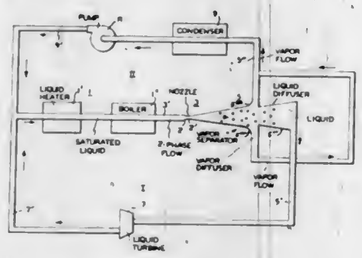
3,358,450
METHOD AND APPARATUS FOR STEAM TURBINE STARTUP
Willburt W. Schroedter, West Hartford, and Wolfram G. Schuetzenduebel, Avon, Conn., assignors to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware
Filed Dec. 21, 1965, Ser. No. 515,385
10 Claims. (Cl. 60—105)

1. In a power plant having a steam generator including a radiantly heated water heating portion and a convectively heated steam superheating portion, a steam turbine, and conveying means supplying steam to said turbine from said steam generator including variable throttling means, an apparatus to facilitate startup operation of said steam turbine comprising: means for determining the required steam temperature at the turbine inlet; means for determining the required enthalpy corresponding to the required temperature; means for determining the



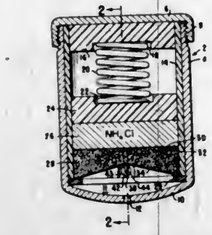
actual steam temperature of the steam leaving said steam superheating portion; means for determining the required steam pressure corresponding to the required enthalpy and the actual steam temperature; and means for regulating the pressure of the steam in the steam superheating portion to that value determined as the required steam pressure.

3,358,451
HEAT ENGINE APPARATUS AND METHOD
Charles L. Feldman, Framingham, and George F. Harper, Wayland, Mass., assignors to Joseph Kaye & Company, Inc., Cambridge, Mass., a corporation of Massachusetts
Filed Apr. 29, 1965, Ser. No. 451,818
18 Claims. (Cl. 60—108)



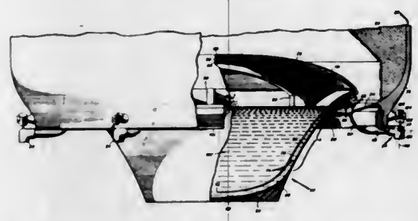
1. A method of the character described, that comprises, heating a fluid to a predetermined temperature, accelerating the heated fluid to obtain a high-velocity two-phase stream of lower temperature, separating the lower-temperature two-phase high-velocity stream into liquid and vapor portions, passing the high-velocity liquid portion along a predetermined path, converting the kinetic energy of the passing liquid portion along the said predetermined path into power, passing the high-velocity vapor portion along a different predetermined path, condensing the vapor portion along the said different predetermined path, and feeding both the condensate and the passed liquid portion back at susbtantially the same pressure for reheating.

3,358,452
VALVELESS ROCKET MOTOR USING SUBLIMING SOLIDS
John R. Ehrenfeld, South Acton, Sidney H. Krimsky, Cambridge, and Charles L. Rosen, North Reading, Mass., assignors to GCA Corporation, Bedford, Mass., a corporation of Delaware
Filed Oct. 21, 1965, Ser. No. 499,452
3 Claims. (Cl. 60—200)



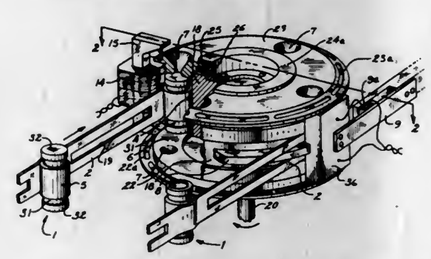
1. A propulsion device comprising a casing; a solid propellant grain positioned in said casing and movable therein, said grain being capable of subliming when heated; a heating plate extending across said casing and in contact with said grain, means in said casing for urging said grain against said heating plate whereby to heat a face of said grain by said heating plate; said casing having an orifice in a wall thereof for the escape of gas, the orifice being located in the casing on the wall thereof on the other side of the heating plate from said grain; and said heating plate having leads attached to opposite sides thereof for the passage of electrical current therethrough, said heating plate being so configured in cross-section as to be uniformly heated by said electrical current.

3,358,453
PLUG NOZZLE ROCKET
Charles J. Swet, Silver Spring, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed May 26, 1961, Ser. No. 113,045
7 Claims. (Cl. 60—225)



1. A reaction motor including a casing having an opening therein, means disposed within said casing for generating reaction gases, an annular member secured within said opening and having a plurality of fluid expulsion nozzles, a hollow plug member positioned concentrically withih said annular member in spaced relationship thereto and together with said annular member defining a plug nozzle, and a plurality of struts connected to and extending between said annular member and said plug member, the interior of said plug member being in communication through a port therein with the interior of said casing and containing a substance that is fluid at least during operation of the reaction motor, said annular member, said plug member, and said struts having interconnected passageways which are in communication with the interior of said plug member and with said fluid expulsion nozzles, whereby a portion of the gases produced by said reaction gas generating means will flow through said port into the interior of said plug member and will force said fluid to flow through said interconnected passageway means and thence from said fluid expulsion nozzles, said passageways being so positioned that the flow of said fluid therethrough will cool the external surface of said annular member, said plug member, and said struts.

3,358,454
SEQUENTIALLY OPERATED BIDIRECTIONAL ROCKET MOTORS FOR THRUST DIRECTION MODIFICATION
John G. Snyder, Fairfax County, Va., assignor to Atlantic Research Corporation, Fairfax, Va., a corporation of Virginia
Filed Oct. 22, 1965, Ser. No. 501,698
8 Claims. (Cl. 60—229)



1. A multidirectional pulse rocket motor system comprising

(a) a plurality of gas generating cartridges, each of said cartridges including
  (i) a casing having a plurality of openings facing in different directions,
  (ii) a solid propellant grain mounted within said casing,
  (iii) ignition means to initiate burning of said grain, and
  (iv) a cap sealingly mounted at each opening of said casing forming, together with said casing, an enclosure for said grain,

(b) a support means having said cartridges mounted thereon in series, spaced-apart relationship,

(c) transport means to move said cartridges sequentially into an ignition position, said transport means having a plurality of cartridge-receiving means spaced peripherally thereabout, the spacing of said receiving means corresponding to the spacing of said cartridges on said support means,

(d) drive means to move said transport means through a predetermined distance upon receipt of a demand signal,

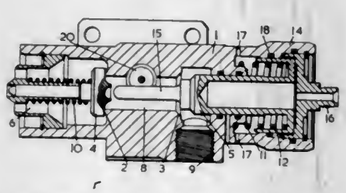
(e) a plurality of thrust direction control means oriented in different directions relative to each other, each of said thrust direction control means comprising
  (i) an exhaust nozzle extending longitudinally therethrough, and
  (ii) a backing plate shaped to abut firmly against said caps,
the nozzle of one of said thrust direction control means being longitudinally aligned with one of the caps on a cartridge in said ignition position and the backing plate of the other thrust direction control means being aligned with the other caps,

(f) actuating means operatively associated with said thrust direction control means to effect relative motion between said transport means and said thrust direction control means upon receipt by said actuating means of a signal indicating a change in thrust direction is desired, said relative motion causing longi-

tudinal alingment of the nozzle of one of said other thrust direction control means and the backing plate of said one of said thrust direction control means with the caps of one of said cartridges, and

(g) means to energize said ignition means of the cartridge which is in said ignition position to initiate burning of said grain to produce gaseous combustion products, said products effecting rupture of the cap adjacent to the nozzle which is aligned with said cartridge, said products then exhausting through the nozzle.

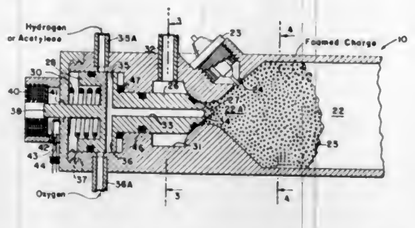
3,358,455
PROPELLENT SHUT-OFF VALVE FOR A ROCKET ENGINE
Michael S. Hunt, Coventry, England, assignor to Bristol Siddeley Engines Limited, Bristol, England
Filed Aug. 14, 1964, Ser. No. 389,693
Claims priority, application Great Britain, Aug. 16, 1963, 32,479/63
3 Claims. (Cl. 60—243)



1. A shut-off valve, for location between a propellent pump and a burner assembly in a rocket engine, said shut-off valve comprising a housing, having therein a pair of spaced valve seats; a pair of co-axial valve members, each co-operable with a respective seat, one of the valve members being operable to control the flow of propellent from the propellent pump, through the housing to the burner assembly and the other valve member being operable to control a vent communicating with the space in the housing between the two seats, whereby any propellent in the space when the propellent-controlling valve member is closed will be drained from the housing, spring means arranged to bias the valve members to positions in which the propellent-controlling valve member is closed and the vent-controlling valve member is open, a piston responsive to a pressure produced during the operation of the engine and movable thereby against the bias of the spring means into the position in which the propellent-controlling valve member is open and the vent-controlling valve member is closed, an inlet in said housing to be connected to a source of nitrogen to purge the burner assembly, when the propellent-controlling valve member is in the closed position, and a non-return valve member, positioned downstream of the propellent-controlling valve member and arranged to isolate the space between said seats from the burner assembly and to be opened by the flow of propellent through the propellent-controlling valve member.

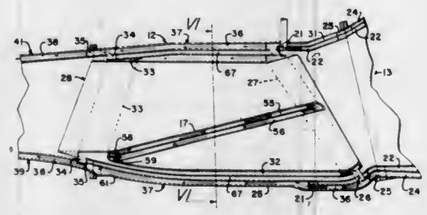
3,358,456
PULSED ROCKET ENGINE
Stanley Lehrer, Pompton Lakes, N.J., assignor to Astrosystems International Inc.
Filed Nov. 13, 1964, Ser. No. 411,022
8 Claims. (Cl. 60—258)

1. A pulsed rocket engine comprising; an explosion chamber where an explosive charge can be exploded to provide a thrust; an ignition means secured to one side of the explosion chamber for providing an electrical discharge which ignites the charge; a first conduit for conducting a monopropellant containing a foaming agent to the explosion chamber; a poppet valve positioned in a wall of the explosion chamber for admitting the monopropellant containing a foaming agent each time the valve opens; a second conduit for conducting gaseous fuel to the explosion chamber; a third conduit for conducting gaseous oxidizer to the explosion chamber; said second



and third conduits terminating in orifices in the explosion end of the valve; and a resilient means secured to the poppet valve for closing the valve after an explosive charge has been admitted to the explosion chamber.

3,358,457
ENGINE COOLING SYSTEM
Ronald T. Caldwell, Phoenix, and Selden B. Spangler, Jr., Scottsdale, Ariz., assignors to The Garrett Corporation, Los Angeles, Calif., a corporation of California
Filed Feb. 27, 1961, Ser. No. 91,949
8 Claims. (Cl. 60—266)

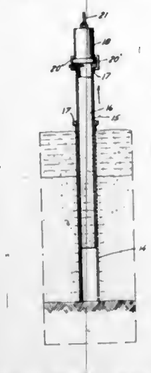


1. In an engine of the type having a duct with a diffuser inlet section, a restricted throat section, and a diverging exhaust nozzle section, said inlet section being so shaped that when the duct is moved at a predetermined range of speeds through the atmosphere a shock wave of sufficient strength to increase the temperature and pressure of a suitable fuel and air mixture to the detonation condition thereof will be created at said throat section, a cooling system comprising: superposed passage means formed in the walls of said duct, each passage means having a plurality of layers of material separated by at least one layer shaped to provide extended heat transfer surfaces; means for admitting a fluid cooling medium to predetermined passage means; and means for directing boundary layer air from within predetermined portions of said duct through other passage means.

3,358,458
METHODS FOR INSTALLING NONDISPLACEMENT SAND DRAINS
Lindsey J. Phares, Butler, N.J., assignor to Raymond International Inc., New York, N.Y., a corporation of New Jersey
Filed Jan. 8, 1964, Ser. No. 336,504
5 Claims. (Cl. 61—10)

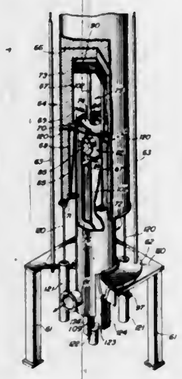
1. Method for installing sand drains in water-bearing earth which comprises: lowering into such earth an outer shell surrounding an inner shell while allowing a plug of the water-bearing earth freely to enter up into the inner shell through the lower ends of the shells; then withdrawing the inner shell containing said plug removing said plug from the withdrawn inner shell and reinserting the

inner shell into the outer shell; thereafter introducing sand into space within the outer shell; and finally withdraw-



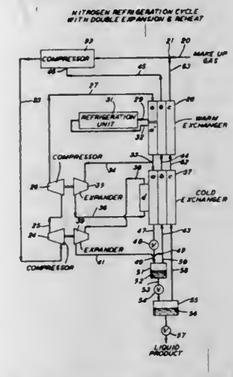
ing the assembled shells while, leaving said sand to provide the desired sand drain.

3,358,459
REFRIGERATING MACHINE
William A. Tam, Westmont, Ill., assignor to Chicago Bridge & Iron Company, Oak Brook, Ill., a corporation of Illinois
Filed Feb. 23, 1966, Ser. No. 529,457
16 Claims. (Cl. 62—6)



1. A refrigerating machine having a piston and cylinder which reciprocate relative to each other,
said piston and cylinder defining an enclosed gas-retaining chamber having a gas-permeable regenerator therein,
the chamber being of variable volume from a minimum volume to a maximum volume,
means comprising an inlet port to supply gas under pressure to said chamber to expand the chamber from minimum volume to maximum volume by effecting relative displacement of the piston to the cylinder by said gas,
means to move the regenerator with movement of the piston and cylinder relative to each other to position the regenerator near one end of said chamber at maximum volume,
means to move the regenerator from said one end of the chamber toward the other end of the chamber without substantial relative movement of the piston and cylinder while the chamber contains said gas under pressure,
means closing the inlet port when the regenerator is at said other end,
means comprising an outlet port downstream of the regenerator which opens when said regenerator is at said other end of the chamber to release the gas in said chamber through the outlet port to a lower pressure thereby cooling the regenerator as the expanding gas rushes through it and out the outlet port,
means for displacing the piston relative to the cylinder, without substantial movement of the regenerator, to reduce the chamber to minimum volume and expel residual cool gas through the regenerator and out the outlet port, and
means closing the outlet port and opening the inlet port to supply gas to the chamber to expand it from minimum to maximum volume followed by repetition of the operating cycles.

3,358,460
NITROGEN LIQUEFACTION WITH PLURAL WORK EXPANSION OF FEED AS REFRIGERANT
Donald L. Smith, Berkeley Heights, and John L. Ferrell, North Plainfield, N.J., assignors to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York
Filed Oct. 8, 1965, Ser. No. 494,177
11 Claims. (Cl. 62—9)



1. In a cycle for the liquefaction of low boiling gas which comprises the steps of:
compressing a primary stream including the feed stream of said gas to a head pressure not exceeding about two and one-half times the critical pressure of said gas,
cooling said compressed primary stream through a first cooling step in a first heat exchanger,
further cooling at least a portion of said compressed primary stream through a second cooling step in a second heat exchanger, without substantial liquefaction thereof,
isenthalpically expanding said compressed portion after said second cooling step to a low pressure to form a liquid fraction and a remaining vapor fraction, and
returning the remaining low pressure vapor fraction of said portion at said low pressure for recompression and recycling through a path including said heat exchangers in countercurrent with streams being cooled including said compressed portion;
the improvement which comprises:
separating said compressed primary stream before said second cooling step into a major portion and a minor portion, whereby the compressed portion further cooled in said second heat exchanger is said minor portion,
withdrawing and expanding said major portion through a plurality of work expansion steps wherein said major portion is cooled and ex-

panded to a medium-low pressure without liquefaction,

each of said work expansion steps being separated by an intervening reheat step wherein the stream comprising said major portion is warmed up in said second heat exchanger in countercurrent with streams being cooled including said compressed minor portion,

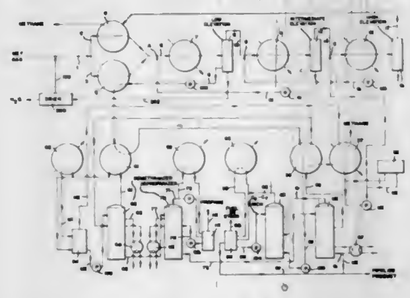
and after said final work expansion step, returning said major portion at a medium-low pressure without liquefaction through said heat exchangers in countercurrent with streams being cooled including said compressed minor portion, for recompression and recycling.

3,358,461

COMMINGLING SEPARATED LIQUIDS WITH A GASEOUS FEED MIXTURE RESOLVED BY LIQUEFACTION

Lloyd T. Hendrix, Santa Ana, Calif., assignor to Atlantic Richfield Company, Philadelphia, Pa., a corporation of Pennsylvania

Filed Apr. 17, 1967, Ser. No. 634,026
27 Claims. (Cl. 62—17)



1. A method for separating higher boiling constituents from a feed stream of a mixture of gaseous components which comprises:

(a) in a first stage treating zone, under temperature and pressure conditions which effect a liquefaction of at least a portion of said higher boiling constituents, commingling said gaseous feed mixture with a liquid capable of absorbing at least a portion of said higher boiling constituents therefrom,

(b) cooling the gas-liquid mixture resulting from said first stage commingling step to remove heat evolved in the absorption by said commingle liquid of constituents from said gaseous feed mixture to provide a first stage gaseous effluent having a reduced content of said higher boiling constituents and a first stage liquid effluent enriched with said higher boiling constituents,

(c) separating said first stage gaseous effluent and said first stage liquid effluent,

(d) in a second stage treating zone, under temperature and pressure conditions which effect a liquefaction of at least a portion of the remaining said higher boiling constituents, commingling said first stage gaseous effluent with a liquid capable of absorbing at least a portion of the remaining higher boiling constituents therefrom,

(e) cooling the gas-liquid mixture resulting from said second stage commingling step to remove heat evolved in the absorption by said liquid employed in said second stage commingling step of constituents from said first stage gaseous effluent to provide a second stage gaseous effluent having a further reduced content of said higher boiling constituents and a second stage liquid effluent enriched with said higher boiling constituents,

(f) separating said second stage gaseous effluent and said second stage liquid effluent, and

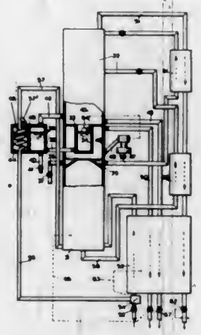
(g) passing said second stage liquid effluent to said first stage treating zone and commingling same in said first stage commingling step with said gaseous feed mixture.

3,358,462

HEAT EXCHANGE OF BYPASS AIR FEED WITH LIQUID PRODUCT

Jan H. Minkhorst, Meander 1035, Amstelveen, Netherlands, and Herman F. Maris, Turfpoorstraat 39, Naarden, Netherlands

Filed Oct. 29, 1964, Ser. No. 407,409
9 Claims. (Cl. 62—37)



1. Apparatus for the separation of air into nitrogen and oxygen components comprising, in combination,

an oxygen rectifying column and a nitrogen rectifying colum, each having a gaseous component outlet, and said columns being in thermal contact,

a heat exchanger,

means for passing all the gaseous components of said rectifying columns through said heat exchanger,

supply means for supplying a constant mass of air to be rectified which is equal to that amount capable of being cooled to condensation temperature in said heat exchanger when the outputs of said columns are solely gaseous, said supply means being connected to said columns through said heat exchanger and having a controllable by-pass in parallel with said heat exchanger,

means for selectively withdrawing an amount p_1 kmol/hr. of liquid component from one of said columns so that the gaseous component output from said one column is thereby reduced by p_1 kmol/hr.,

means responsive to withdrawal of said amount of liquid component for adjusting said by-pass to maintain the air passing from said heat exchanger at said condensation temperature,

means for cooling the by-pass air to condensation temperture before separation in said columns by thermal contact with one liquid component of said columns,

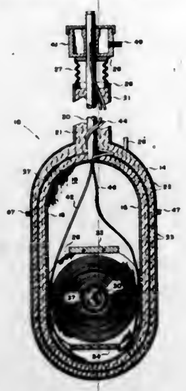
and cold-gas refrigerator means responsive to said withdrawal of liquid component for withdrawing heat from one of said columns equal to that required to be withdrawn from said by-pass air in bringing it to said condensation temperature.

3,358,463

INTEGRATED SUPERCONDUCTING MAGNET-CRYOSTAT SYSTEM

Samuel R. Hawkins and James H. Harshman, Cupertino, Calif., assignors to Lockheed Aircraft Corporation, Burbank, Calif.

Filed July 15, 1966, Ser. No. 565,458
6 Claims. (Cl. 62—45)



1. An integrated superconducting magnet-cryostat apparatus including:

an inner vacuum tight shell defining a low temperature coolant reservoir;

an outer vacuum tight shell surrounding and spaced from said inner shell;

a coolant fill tube extending through said outer shell and into said inner shell;

a neck assembly mounted on said outer shell and surrounding and spaced from said fill tube;

the space between said outer shell and neck assembly defining with said inner shell and fill tube a vacuum space;

support means connected between said neck assembly and said fill tube for supporting said inner shell within said outer shell in a spaced relation;

a superconducting device including a magnetic field suspended within said coolant reservoir between the walls of said inner shell;

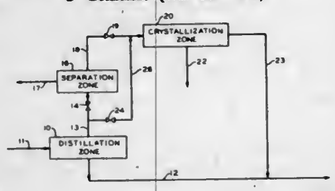
and optical access means provided in each of said outer and inner shells to permit optical access through the magnetic field of said superconducting device.

3,358,464

CONCENTRATION OF AQUEOUS SOLUTIONS

Emil A. Malick and Glenn H. Dale, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

Filed Apr. 30, 1962, Ser. No. 191,133
3 Claims. (Cl. 62—58)



1. A process for concentrating an aqueous material selected from the group consisting of foods and beverages, which aqueous material contains at least water, a first constitutent having a boiling point higher than the boiling point of water and a second constituent having a boiling point lower than the boiling point of said first constituent, which process comprises:

distilling in a distillation zone said aqueous material to produce a first aqueous bottoms product having a greater concentration of said first constituent than does said aqueous material and a second vaporous overhead product having a smaller concentration of said first constitutent than does said aqueous material and a higher concentration of said second constituent, and cooling said vaporous overhead product to form an aqueous distillate product,

passing said distillate product to a crystallization zone to crystallize water contained therein, and separating the remaining mother liquor from the ice crystals so produced; and

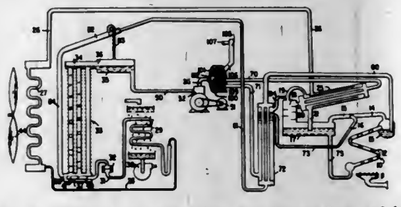
withdrawing said aqueous bottoms product from said distillation zone, and then combining said separated mother liquor with said withdrawn bottoms product to form a concentrated product.

3,358,465

ABSORPTION REFRIGERATION SYSTEMS

Jack E. Russell, Indianapolis, Ind., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware

Filed July 15, 1966, Ser. No. 565,588
12 Claims. (Cl. 62—101)



12. A method of operating an absorption refrigeration system having a low pressure side and a high pressure side, of the type which employs a solution pump to pass absorbent solution from the low pressure side to the high pressure side of the system, said method comprising the steps of

(A) pumping a mixture of absorbent solution and noncondensible gas from the low pressure side of said system to the high pressure side of said system by operating said pump;

(B) separating noncondensible gas from absorbent solution discharged from said pump; and

(C) collecting the separated noncondensible gas in a gas storage zone in communication with absorbent solution discharged from said pump, and employing the collected noncondensible gas as a vapor cushion to smooth the pulsations in the solution discharged from said pump to quiet the operation of said system.

3,358,466

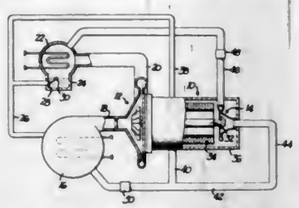
AUXILIARY COMPRESSOR IN MOTOR CASING FOR CONTROLLING PRESSURE THEREIN

Peter A. Weller, Farmington, and Hollis C. Grubb, Southfield, Mich., assignors to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware

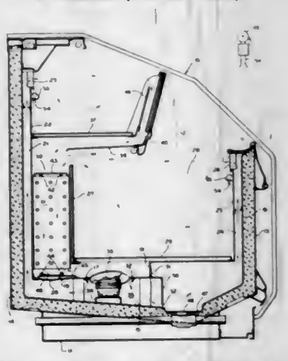
Filed Apr. 25, 1966, Ser. No. 544,919
6 Claims. (Cl. 62—115)

1. A method of cooling hermetic dynamoelectric machines by vaporizing liquid refrigerant brought into contact with hot machine surfaces, comprising the steps of providing a source of liquid refrigerant, connecting the source to the casing interior for fluid flow from the source into the casing, maintaining said source of liquid refrigerant under pressure normally sufficient to cause flow of liquid therefrom into the casing without resorting to re-

duction of pressure within the casing, reducing the pressure within the casing below the pressure source to draw liquid refrigerant from the source into the casing at such times when the pressure of the source of liquid refrigerant is insufficient to cause fluid flow from the source to the casing, and contacting the interior surfaces of the machine with the refrigerant for cooling by evaporation of liquid.



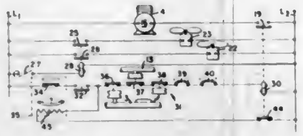
3,358,467
REFRIGERATED CASE DRAIN BLOCKAGE WARNING STRUCTURE
Lester E. Hickox and Arthur Perez, Niles, Mich., assignors to Clark Equipment Company, a corporation of Michigan
Filed July 16, 1965, Ser. No. 472,438
8 Claims. (Cl. 62—128)



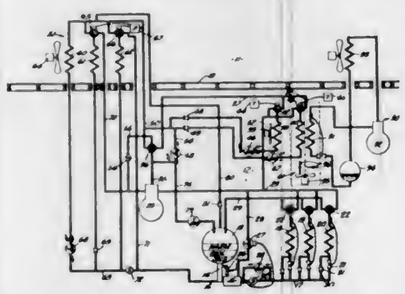
1. In a refrigerated case having a drain for conducting water therefrom to prevent ice formation therein, means for providing refrigerating air therefor, and means for circulating refrigerating air therein in a volume sufficient for maintaining a predetermined low temperature, said circulating means including a generally horizontal passage from the bottom of which said drain opens, the improvement comprising baffle means extending partially across said passage toward the bottom thereof adjacent said drain and defining with said passage bottom an aperture of area substantially only sufficient for circulation of air in said sufficient volume, said aperture upon blockage of the drain being rapidly restricted by resultant freezing of undrained water to prevent circulation of said sufficient volume and cause nonmaintenance of said predetermined temperature, whereby to give an indication of ice formation before great accumulation thereof, means responsive to said nonmaintenance of temperature for giving additional indication thereof.

3,358,468
CONTROL APPARATUS FOR REFRIGERATION COMPRESSOR
David N. Shaw, Liverpool, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed Aug. 3, 1965, Ser. No. 476,859
10 Claims. (Cl. 62—158)

1. In a refrigeration system including a compressor, the combination of an energizing circuit for said compressor, condition sensing means operable at the occurrence of a predetermined malfunction to interrupt said compressor energizing circuit and stop said compressor, and means for limiting the number of compressor start-stop cycles including a control means effective when at a predetermined energy level to interrupt said compressor energizing circuit and prevent restarting of said compressor, and means for increasing the energy level of said control means in proportion to the length of time said compressor is stopped by said condition sensing means, said energy increasing means being adapted to establish said predetermined energy level following uninterrupted stopping of said compressor by said condition sensing means for a preset timed interval.



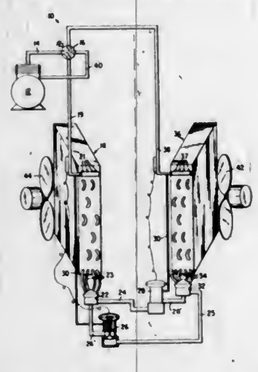
3,358,469
REFRIGERATION SYSTEM CONDENSER ARRANGEMENT
Lester K. Quick, 600 Howard St., Eugene, Oreg. 97402
Filed Aug. 24, 1965, Ser. No. 482,142
16 Claims. (Cl. 62—196)



1. A condenser arrangement for a closed cycle refrigeration system of the type having a compressor, condenser and evaporator, comprising, first condenser means associated with a space to be heated, second condenser means adapted for dissipating heat from the system, conduit means connecting said first and second condenser means in series and between the compressor and the evaporator, said second condenser means being of a sufficient capacity to condense the entire gaseous refrigerant output of the compressor, said second condenser means having plural condenser coils normally connected in parallel relationship, and valve means for successively disconnecting all but one of said condenser coils from the compressor in response to declining compressor head pressure for successively reducing the condensing capacity and maintaining a desired minimum compressor head pressure.

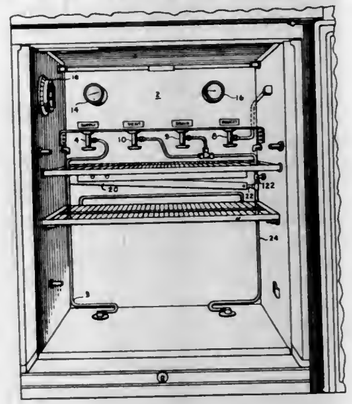
3,358,470
HEATING AND COOLING APPARATUS
James F. Frediani, Covina, Calif., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed May 19, 1966, Ser. No. 551,431
1 Claim. (Cl. 62—196)

A refrigeration system operable under the reverse cycle principle to provide either heating or cooling including a refrigerant flow circuit comprising first and second heat transfer members, said first and second heat transfer members acting to absorb and reject heat respectively; a compressor interposed between the outlet of said first heat transfer member and the inlet of said second heat transfer member for withdrawing refrigerant fluid from said first heat transfer member and delivering it to said second heat transfer member; means for passing a heat transfer medium of at least one of said heat transfer members to effect the desired transfer of heat between the medium and the refrigerant fluid flowing within said heat transfer member; means for interchanging the heat transfer functions of said first and second heat transfer members so that the first heat transfer member will reject heat and the second heat transfer member will absorb heat; first and second liquid refrigerant distributors for selectively delivering liquid refrigerant to the heat transfer members at a plurality of locations throughout the member; first and second refrigerant flow control members for regulating refrigerant flow to the first and second liquid refrigerant distributors respectively, each of the refrigerant flow control members being provided with an external equalizer line enabling flow of high pressure refrigerant to the member when its associated heat transfer member functions as a condenser; a first conduit connecting the first refrigerant distributor directly with the second refrigerant flow control member so that liquid refrigerant formed in the heat transfer member associated with said first liquid refrigerant distributor may flow via the distributor to the second refrigerant flow control member for passage to said second liquid refrigerant distributor through a first path of flow; and a second conduit directly connecting the second liquid refrigerant distributor to the first refrigerant flow control member so that liquid refrigerant formed in the heat transfer member in communication with said second liquid refrigerant distributor may flow directly to the second liquid refrigerant flow control member through a second path of flow independent of first path of flow.

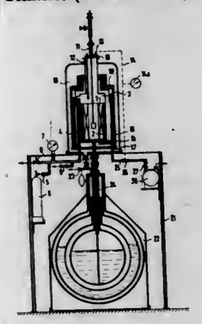


3,358,471
REFRIGERATING SYSTEM
Troy Butcher, Waveland, Miss. 39576, Alvin Edward Moore, 916 Beach Blvd., Waveland, Miss. 39576, and Joe Barlow Burrow, Sr., 214 2nd St., Bay St. Louis, Miss. 39520
Filed Aug. 15, 1966, Ser. No. 572,492
21 Claims. (Cl. 62—339)

1. Structure of the character described comprising:
a refrigerator having an insulated shell; within it a refrigerating chamber for the storage of goods in ambient air that is below the temperature of the air outside the refrigerator but is mostly above the freezing point of water; and coils having a freezing temperature for cooling said compartment and chamber;
a tank for holding and cooling at least a quart of water, supported by said shell with a wall portion, of substantial surface area, in such close juxtaposition to at least a portion of said coils, that a thin sheet of ice forms in the part of the water in the tank that is adjacent to said wall portion, said tank having sufficient volume, sufficient distance of the center of its volume from said coils and sufficient minimum width between said wall portion and an opposite wall portion to prevent wall-damaging, solid freezing of the water between said wall portions;
means to supply water under substantially constant pressure above that of the atmosphere from outside said refrigerator to said tank;
faucet means and pipe means connecting said faucet means to said tank;
means in said chamber for collecting water that condenses from said coils while they are defrosted;
conduit means, connected to said tank for the occasional draining of fluid from said tank;
drainage means, supported by said refrigerator, flow-connected to said condensed-water-collecting means and to said conduit means; and
means, outside said refrigerator, flow-connected to said drainage means, for conveying drainage water from the refrigerator.



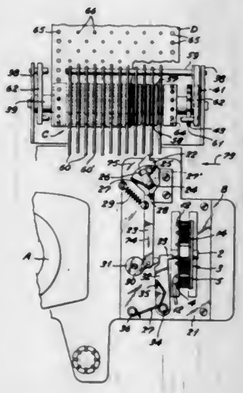
3,358,472
METHOD AND DEVICE FOR COOLING SUPERCONDUCTING COILS
Gustav Klipping, Berlin, Germany, assignor to Max-Planck Gesellschaft zur Forderung der Wissenschaften e.V., Gottingen, Germany, a registered association.
Filed Jan. 21, 1966, Ser. No. 522,313
14 Claims. (Cl. 62—514)



1. With a superconducting magnet coil, in combination, a cryostat device for cooling the coil to a temperature below the critical value by evaporation of cryogenic

medium, comprising an evacuable housing, an evacuable container enclosing said magnet coil, said container being inserted in said housing and forming therewith an annular interspace, an evaporator structure mounted in said container, and surrounding said magnet coil, supply means for gaseous heat exchange medium connected with said container for filling and replenishing it with said heat exchange medium, a cryogenic circulation system including said evaporator structure for evaporating cryogenic medium in said evaporator structure to cool said heat exchange medium in said container, said cryogenic medium in said evaporator structure being separated from the gaseous heat exchange medium in said container.

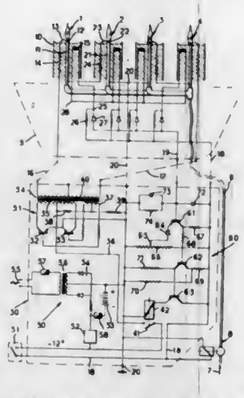
3,358,473
NEEDLE SELECTOR FOR A HAND KNITTING MACHINE
Motoyoshi Suzuki, Tokyo, Japan, assignor of one-third to Aisin Seiki Co., Ltd., and one-third to Silver Knitting Machine Co., Ltd., both of Tokyo, Japan
Filed July 23, 1965, Ser. No. 474,390
Claims priority, application Japan, Nov. 5, 1964, 39/62,310
8 Claims. (Cl. 66—60)



1. In a needle selecting and memorizing means for a hand knitting machine: a carriage supported for reciprocal movement between end of stroke positions, said carriage having opposite ends which are alternately leading and trailing ends, needle selector means at each of the ends of the carriage for cooperating with a respective needle array at opposite ends of the stroke of the carriage to select the needles for a knitting operation, and control means between the ends of stroke of the carriage and positioned to engage the needle selector means to preset the same individually as they travel in the direction towards their respective needle arrays while permitting them to pass without pre-setting in the opposite direction.

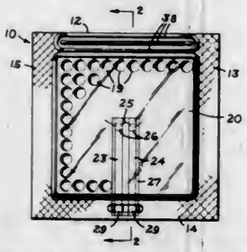
3,358,474
SPACE LIGHTING FITTINGS
Maurice Etienne Liesse, 2 Rue Diderot, Hauts-de-Seine, Champigny, France
Filed Mar. 16, 1966, Ser. No. 534,867
Claims priority, application France, Mar. 18, 1965, 9,684; Mar. 11, 1966, 53,042
3 Claims. (Cl. 67—14)

1. A space lighting fitting comprising at least one gas lighting burner, an electric spark ignition device associated with said burner, a gas supply pipe connected to said burner, a gas cock in said pipe, an electric ignition circuit mounted in combination with said cock, an ignition voltage generator in the form of a low-voltage electric supply circuit electrically connected to said first circuit and co-operating with a flame detector, and an over-all switch operable to actuate simultaneously the said low-voltage supply circuit and said cock, said flame detector emitting a signal in the absence of flame which is blocked in the presence of flame and is applied to an ignition relay preceded by a control amplifier comprising an input stage



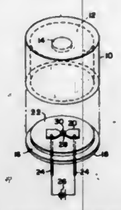
of variable threshold, the detection circuit associated with each said burner comprising a diode having one of its terminals connected through an element sensitive to said burner flame to a reference potential and through a constant resistance to a specific potential, its other terminal being connected to the input of said control amplifier.

3,358,475
PHOTOFLASH LAMP
Paul J. Bockenstedt, P.O. Box 175, North Dayton Station, Dayton, Ohio 45424
Filed Aug. 10, 1965, Ser. No. 478,629
19 Claims. (Cl. 67—31)



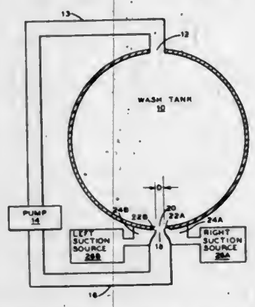
1. A container for confining the products of a brief duration, light producing exothermic reaction comprising a flexible hermetically sealed container having a front wall at least a portion of which is transparent, and a rear wall, and formed to contain the reaction products, means forming a reflective surface positioned between the reaction products and said container rear wall, a transparent protective material positioned between said reaction products and said container front wall, both said reflective surface and said transparent material protecting the container from perforation by impact of the material reaction products and from destruction by the heat produced by the reaction to preserve the hermetic seal during and after the reaction, a plurality of indentations of parabolic cross section formed in said reflective surface, the locus of the foci of said parabolic indentations forming a plane which falls within said container, and planar positioned light producing means within said container having the median thereof coinciding with said plane to cause the light produced during the reaction to be projected in a preferred direction.

3,358,476
PHOTOFLASH LAMP IGNITION SYSTEM
Bruce T. Buzalski, Caldwell, N.J., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 20, 1966, Ser. No. 566,570
10 Claims. (Cl. 67—31)



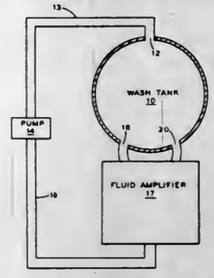
1. A photoflash lamp comprising:
(a) a sealed light transmitting enclosure having a flash producing material disposed therein;
(b) a pair of spaced energy transmitting means extending into said enclosure;
(c) a layer of electrically conductive material adhered on an insulating substrate within said enclosure, said pair of energy transmitting means electrically connected to spaced locations on said layer of conductive material, said layer of conductive material having a constricted area intermediate the connections thereto to provide for an increase in density of any current passing therethrough; and
(d) a primer charge adhered to the constricted area of said layer of conductive material and adapted to ignite in response to electrical energy of predetermined magnitude passing through said constricted area to thereby actuate said flash producing material.

3,358,477
JET AGITATION IN A WASHING MACHINE
Gunnar Heskestad, Piscataway, N.J., assignor to American Standard Inc., New York, N.Y., a corporation of Delaware
Filed Feb. 25, 1966, Ser. No. 529,985
7 Claims. (Cl. 68—184)



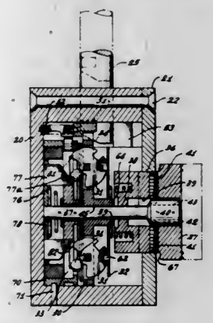
1. In a washing machine which includes a cylindrical wash tank having a wash solution outlet, a return line connection to said wash solution outlet, a feed line and a pump connecting said return line to said feed line, the improvement comprising apparatus for delivering a movable jet of wash solution to said wash tank comprising a slot-like inlet in said wash tank, an orifice disposed in said inlet and spaced from each side of its long dimension edges to provide a pair of gaps, said orifice being connected to said feed line, a first chamber opening on one of said gaps, a second chamber opening on the other of said gaps, and means for applying suction to said chambers.

3,358,478
MULTI-JET AGITATION OF WASH SOLUTION IN A WASHING MACHINE
Gunnar Heskestad, Piscataway, N.J., assignor to American Standard Inc., New York, N.Y., a corporation of Delaware
Filed Feb. 25, 1966, Ser. No. 530,181
7 Claims. (Cl. 68—184)



1. In a washing machine which includes a cylindrical wash tank having a wash solution outlet, a return line connected to said wash solution outlet, a feed line and a pump connecting said return line to said feed line, the improvement comprising apparatus for controllably delivering two jets of wash solution to said wash tank comprising first and second wash solution inlets circumferentially displaced in said wash tank and a fluid amplifier comprising input conduit means connected to said feed line, first and second outlet conduits connected respectively to said first and second wash solution inlets and control means for controlling the flow of wash solution from said input conduit means to said first and second outlet conduits.

3,358,479
COMBINATION LOCK
Landis H. Perry, 213 41st St., Newport Beach, Calif. 92660
Filed Sept. 28, 1965, Ser. No. 490,989
17 Claims. (Cl. 70—25)



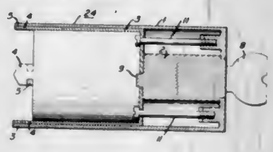
1. A combination lock comprising:
a rotatable support means;
a plurality of blocking elements mounted on said support means in angularly spaced apart relationship around the axis of said support means,
said blocking elements being individually shiftable radially of said support means between inner and outer positions;
a second support means coaxially arranged with and coaxially spaced apart from said first mentioned support means,
said first and second support means being adapted for opposed relative axial movement and for co-rotation;
a plurality of camming elements rigidly mounted on said second support means in angularly spaced apart

relationship around the axis of said second support means,

said camming elements projecting toward said blocking elements and each of said camming elements being in registration with one of said inner positions of one of said blocking elements on said first support means;

and cooperating surfaces formed on said camming elements and blocking elements for translating contact therebetween into radially outward shifting of said blocking elements to said outer positions in response to opposed relative axial movement of said first and second support means.

3,358,480
CONTROL LOCK
William M. Leslie, 5623 Stresemann St., San Diego, Calif. 92122
Filed July 29, 1965, Ser. No. 475,665
9 Claims. (Cl. 70—207)



1. A locking device for restricting access to a knob included in a panel, which device comprises in combination:

(A) a first latching element supported from the panel and including a rearwardly facing latching surface,

(B) a housing that is adapted to extend over the knob, which housing includes:

(1) an outer frame;

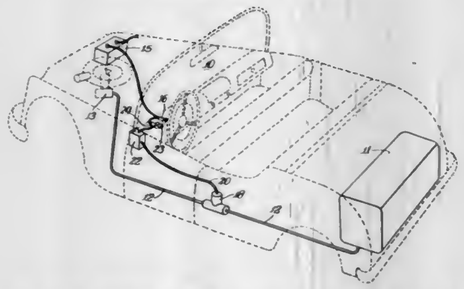
(2) an inner frame supported in the outer frame, said frames being movable relative to one another;

(3) a second latching element including a forwardly facing latching surface on one of said frames;

(4) means for moving said one frame with respect to the other frame;

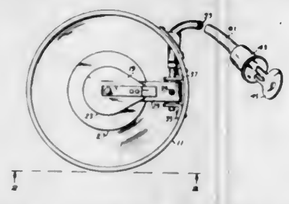
(5) means on said other frame engaging said first latching element (A) and causing said forwardly facing latching surface to engage behind said rearwardly facing latching surface upon the relative movement in one direction of said one frame to lock the housing into position extending over the knob.

3,358,481
PROTECTION SYSTEM
Gregory J. Roszkowski, 1301 N. Harlem Ave., Oak Park, Ill. 60305
Filed May 3, 1965, Ser. No. 452,814
7 Claims. (Cl. 70—243)



1. In a system having a source of energy of a first character and a source of fluid coupled through a fluid path to fluid utilization means, a protection system for blocking the flow of fluid through said fluid path, comprising in combination: valve means closed when unenergized, connected in series in said path to prevent fluid flow therein, said valve means being opened to permit fluid flow only when energized by an energy of a second character different from said energy of a first character; convertor means coupled to said source of energy for changing said energy of a first character to said energy of a second character only when said convertor means is activated, said convertor means being composed of a first and a second circuit means, both of said circuit means being essential to activate said convertor means; means coupling said convertor means to said valve means; means connecting said first circuit means with said system; receiver means coupled to said first circuit means; and movable base means mounting said second circuit means, said base means being insertable in said receiver means to couple said second circuit means to said first circuit means, thereby activating said convertor means, causing said valve means to open.

3,358,482
ROTOR LOCK OUT
Edward L. Parr, El Cajon, Calif., assignor to Wendell L. Thompson, Burbank, Calif.
Filed Oct. 18, 1965, Ser. No. 497,065
2 Claims. (Cl. 70—255)



1. A device for rendering the ignition system of an internal combustion engine inoperative, which ignition system includes a distributor housing, a rotor within the housing, and a vertically extending engine drive shaft for driving the rotor, said shaft having a flat surface on the periphery thereof, said flat surface extending longitudinally to the upper end thereof, the device comprising in combination:

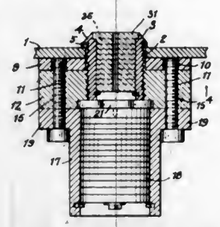
(A) a shaft for rotating said rotor, said shaft being supported on the upper end of the engine drive shaft and having a flat surface like that on the engine drive shaft and aligned with the flat surface on the engine drive shaft;

(B) a collar surrounding both shafts, said collar having an interior flat surface complementing the flat surfaces on the shafts, said flat surface on the collar providing the driving connection between the engine drive shaft and the shaft for rotating the rotor;

(C) and means for shifting the collar axially to and from driving connection with the shafts.

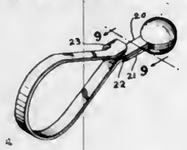
3,358,483
LOCKS AND MOUNTINGS THEREFOR
John F. Wellekens, New York, N.Y., assignor to Hotel Security Systems Corporation, New York, N.Y., a corporation of New York
Filed Oct. 5, 1965, Ser. No. 493,195
10 Claims. (Cl. 70—370)

9. A lock having a bushing mounted non-rotatively in a mounting base, a collar fitted around the bushing and clamped against the back of the base, a nut arranged on the bushing for clamping the collar, a lock housing mounted behind the nut, fastening means entering the nut and attaching the lock housing thereto, said fastening means engaging and securing the collar at selected points to position the lock, a rotatable latch plate confined be-



tween the lock housing and nut, said latch plate being coupled to lock mechanism contained within the lock housing.

3,358,484
KEY RETAINING LOOP
Gerard T. Le Page, Waterbury, Conn., assignor to Scovill Manufacturing Company, Waterbury, Conn., a corporation of Connecticut
Filed Feb. 18, 1966, Ser. No. 528,500
1 Claim. (Cl. 70—458)



A key retaining loop comprising a strip of flat spring material having two arms connected by a U-bend and providing

(a) a saddle portion;

(b) end portions inclined outwardly relative to the sides of the saddle portion; the center lines of said saddle portion and said end portions being in a common plane;

(c) said end portions terminating in head portions having matching surfaces adapted to be brought together so that said head portions form a single ball-shaped head;

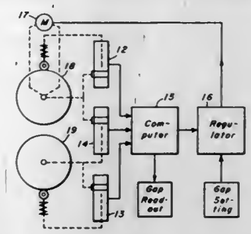
(d) said end portions being spaced from each other and said matching surfaces being on the remote sides of said head portions when the strip is in unstressed condition;

(e) the springy character of said saddle portion permitting said end portions to be twisted around each other to a closed loop position wherein one of said arms crosses the other adjacent the junctions of said end portions with the sides of said saddle portion and wherein said matching surfaces are held together by the spring tension of said strip; and

(f) wherein one of said arms has a relatively deep laterally open notch to receive the other of said arms where said arms cross to prevent opening of said loop except after a deliberate lateral shifting of one of said arms relative to the other, said other of said arms having uninterrupted side edges.

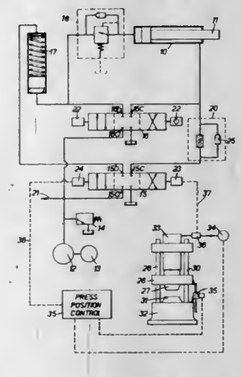
3,358,485
MEASURING AND CONTROLLING GAP BETWEEN ROLLS
Samuel A. De Caro, Berwyn, and Harold G. Frostick, Oak Lawn, Ill., assignors to United States Steel Corporation, a corporation of Delaware
Filed Feb. 15, 1965, Ser. No. 432,616
10 Claims. (Cl. 72—21)

1. A system for measuring the gap between the work rolls of a rolling mill having upper and lower roll assemblies comprising means for obtaining a signal proportional to the distance between a point on the upper roll assembly and a point on the lower roll assembly, means for obtaining a signal proportional to the distance between the bottom of the upper roll assembly and the said point on the upper roll assembly, means for obtaining a signal pro-



portional to the distance between the top of the lower roll assembly and the said point on the lower roll assembly, and means for subtracting the last two signals from the first signal to obtain a signal proportional to the roll gap.

3,358,486
FORGING METHOD AND APPARATUS
Jack Herbert Beard, Sheffield, England, assignor to Davy and United Engineering Company, Limited, Sheffield, England
Filed May 3, 1965, Ser. No. 452,536
Claims priority, application Great Britain, May 6, 1964, 18,728/64
12 Claims. (Cl. 72—24)

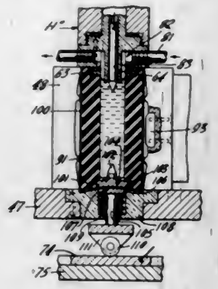


1. A method of forging a workpiece comprising the steps of placing a workpiece between a fixed and a movable press tool, and during the penetration stroke of the press moving the workpiece parallel to the moving tool at substantially half the speed thereof.

3,358,487
ELECTRO-HYDRAULIC FORMING APPARATUS
Robert John Brejcha, Westchester, Seymour Bazell, Chicago, and Joseph L. Radnik, Berwyn, Ill., assignors, by mesne assignments, to American Can Company, New York, N.Y., a corporation of New Jersey
Original application Dec. 28, 1961, Ser. No. 162,790. Divided and this application Aug. 16, 1965, Ser. No. 494,998
2 Claims. (Cl. 72—56)

1. A forming head mechanism for electro-hydraulically shaping a drawn cup-shaped container body in a forming die comprising a support, a tubular impermeable rubber diaphragm secured at one end to said support in fluid tight engagement, said diaphragm having exterior geometry substantially the same as the interior of said body and being insertible therein, a pair of electrodes tightly in-

serted within the opposite ends of said diaphragm with their tips projecting inwardly of said ends in predetermined spaced alignment, one of said electrodes extending through said support and the other being secured in fluid tight engagement to the opposite end of said diaphragm, said other electrode having an exterior contacting face contoured to conform substantially to the closed end of said cup-shaped body when said diaphragm is inserted therein to make electrical contact through said end panel with the conductor of an electrical power source adapted



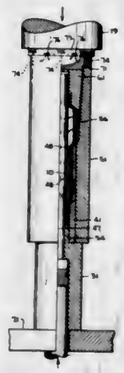
to be contacted with the exterior surface of said end panel, a hydraulic fluid contained within said diaphragm immersing said electrode tips, and a conductor leading from said one electrode externally of said diaphragm adapted to be connected to said power source to complete an electrical circuit through said electrodes for discharging electrical energy across said electrode tips whereby shock waves are created within said fluid which propagate outwardly and expand said diaphragm to shape said body to the contour of said die.

3,358,488

METHOD AND APPARATUS FOR INCREASING THE DUCTILITY OF AN ARTICLE DURING A FORMING OPERATION

Francis J. Fuchs, Jr., Princeton Junction, N.J., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed June 3, 1965, Ser. No. 461,121
17 Claims. (Cl. 72—62)



15. A method of expanding a hollow tube to an enlarged diameter, comprising:

applying fluid pressure to the interior and exterior of the tube of magnitudes sufficient to render the tube more ductile; and

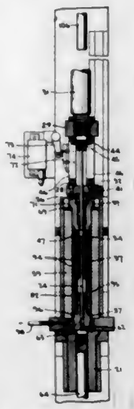
increasing the fluid pressure applied to the interior of the tube over the fluid pressure applied to the exterior of the tube by an amount sufficient to expand the more ductile tube to the enlarged diameter.

3,358,489

APPARATUS FOR FORMING BULBOUS ARTICLES

Erle M. Hutchins, Winston-Salem, N.C., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed Aug. 13, 1965, Ser. No. 479,538
8 Claims. (Cl. 72—62)



1. In an apparatus for expanding a tubular blank,

a pair of dies mounted in telescoping relationship, each of said dies having a die cavity formed therein movable into communication with each other,

a mandrel slidably mounted in a first one of said dies for supporting said tubular blank, said mandrel having communicating axial and radial passageways,

means for imparting relative movement to said dies to move said mandrel supported tubular blank into engagement with said other die whereupon said mandrel slides within said first die,

means for limiting said sliding movement of said mandrel to force said tubular blank against said other die, and

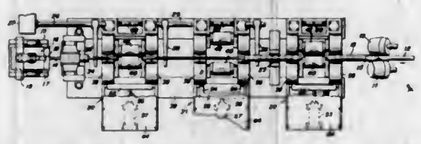
means responsive to said relative movement of said dies and rendered effective upon operation of said limiting means for applying pressurized fluid through said axial and radial passageways to expand said tubular blank on said mandrel.

3,358,490

STEADIER FOR MANDREL BAR AND TUBE SHELL

Christian H. Heine, Jr., Pittsburgh, Pa., assignor to United States Steel Corporation, a corporation of Delaware

Filed Dec. 11, 1964, Ser. No. 417,753
3 Claims. (Cl. 72—209)



1. A steadier for a seamless-tube mill having a mandrel bar adapted to support tube shells as they move in an axial path, comprising a frame, a rack mounted on said frame and means guiding reciprocating movement thereof transversely of said path, first and second shafts journaled in said frame essentially parallel to and equally spaced respectively from and on either side of said path, a third shaft journaled in said frame essentially parallel to and equally spaced on the same side of said path as said first shaft, first and second pinions secured

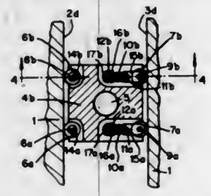
respectively to said first and second shafts and meshing with said rack, a third pinion secured to said third shaft and meshing with said first pinion, a pair of spaced rocker arms secured at one end to each of said shafts, a guide roll journaled in the opposite ends of each of said pairs of arms parallel to each shaft, whereby when said rack is reciprocated said arms turn to move said rolls equiangularly in unison toward and away from said path, the rolls of the rocker arms on the first and third shafts moving in opposite angular directions.

3,358,491

ARRANGEMENTS FOR GUIDING THE CHOCKS OF ROLLING-MILLS

Lucien Diolot, Neuilly, France, assignor to Societe Nouvelle Spidem, Paris, France, a corporation of France

Filed Sept. 8, 1964, Ser. No. 396,798
7 Claims. (Cl. 72—237)



1. In a rolling mill of the type including a pair of spaced standards disposed face-to-face, at least two vertically spaced parallel rolls extending between said standards, both ends of each roll journaling in a chock, at least two chocks being vertically displaceably disposed in an opening of said standards, said opening defining vertically extending opposed inner faces each being adjacent to opposed side faces of said chocks, the improvement comprising,

(A) at least two vertically extending roller track means laterally flanking said chocks and carried by one of said faces at either side of said chocks,

(B) first roller means affixed adjacent to one of said side faces of each said displaceable chocks and rollingly engaging at least one of said roller track means,

(C) adjusting means associated with said first roller means to laterally move said first roller means toward or away from said roller track means at will and secure said first roller means in a selected lateral position with respect to said roller track means,

(D) second roller means affixed adjacent to the other of said side faces of each said displaceable chocks and rollingly engaging at least one of said roller track means, said second roller means being freely movable in a direction substantially normal to said roller track means during operation, and

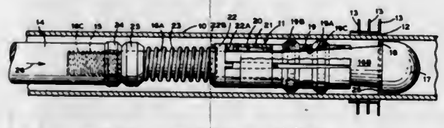
(E) spring means resiliently urging said second roller means into contact with said roller track means.

3,358,492

MANDREL CONSTRUCTION

Walter Richter, Syosset, N.Y., assignor to Embassy Industries, Inc., Farmingdale, N.Y., a corporation of New York

Filed Sept. 8, 1965, Ser. No. 485,881
11 Claims. (Cl. 72—393)



1. An expandable mandril comprising:

(a) a shank having a shaft portion and a connected tapered end portion which can be readily passed through the bore of a tube in either direction,

(b) said taper end portion diverging outwardly from the connected shaft portion of said shank,

(c) a plurality of jaw means slidably mounted on said shank for movement toward and away from said tapered end portion to effect automatic expansion and contractions of said jaw means accordingly as said mandrel is moved through the tube in one direction or the other,

(d) means for retaining said jaw means on said shank in a manner to permit limited longitudinal movement thereof relative to said shank, between expanded and contracted positions,

(e) means for maintaining the spacing of said jaw means about said shank, and

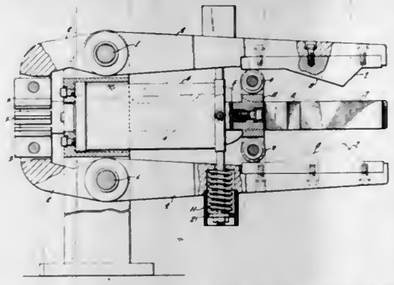
(f) spring means for exerting a bias on said jaw means whereby said jaw means are displaced to a contracted position against the bias of the spring as the mandrel is passed through the tube in one direction and whereby said jaws being automatically displaced to an expanded position when said mandrel is moved through the tube in the opposite direction.

3,358,493

HYDRAULIC PRESS

Erich Ribback, Unterm Bocksberg, Wasserbillig, Luxembourg

Filed Sept. 10, 1964, Ser. No. 395,516
5 Claims. (Cl. 72—407)



1. An hydraulic press comprising a press frame, a pair of double-armed levers pivoted to the press frame for pairwise movement toward and away from each other, said levers comprising adjacent long press-actuating arms extending in like direction and adjacent short arms, extending in opposite direction from said long arms, an hydraulic driving mechanism positioned between said pair of levers adapted to engage and separate said long arms, and having a cylinder therein, a radially-extending yoke fixed to the outer end of the piston rod of the hydraulic driving mechanism for axial movement therewith in pressure contact with the pair of long arms to separate said arms, a counter-support mounted on the cylinder of said hydraulic driving mechanism, and spring return means to draw the pair of long arms toward one another carried by said counter-support.

3,358,494

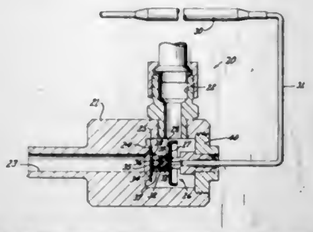
CALIBRATED CONTROL DEVICE AND METHOD

Hugh J. Tyler, Jeannette, and Denis G. Wolfe, Youngwood, Pa., assignors to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware

Filed Oct. 12, 1964, Ser. No. 403,040
33 Claims. (Cl. 73—1)

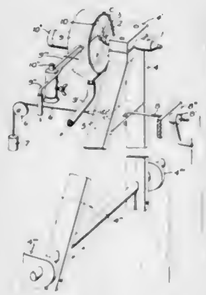
1. In combination, a housing means having stop means, a condition responsive means carried by said housing means and controlling movement of a movable portion, an operating element having a portion disposed adjacent

said movable portion for initial relative positioning movement between said portions, and adhesive means for securing said portion of said operating element to said movable portion after said condition responsive means has sensed a predetermined condition and has moved said movable portion to a particular position relative to said



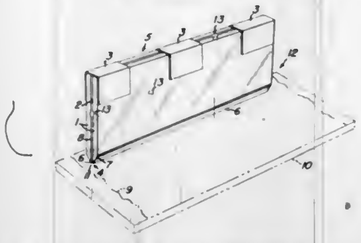
portion of said operating element while said operating element is disposed against said stop means so that said operating element will thereafter always be disposed against said stop means when said movable portion is moved to a predetermined position by said condition responsive means sensing said predetermined condition.

3,358,495
APPARATUS FOR MEASURING THE WEAR ON SURFACES SUBJECT TO FRICTION
Walter Baist, Rheine, Germany, assignor to Wintershall Aktiengesellschaft, Kassel, Germany
Filed Dec. 21, 1964, Ser. No. 420,069
Claims priority, application Germany, Jan. 18, 1964, W 34,220
6 Claims. (Cl. 73—7)



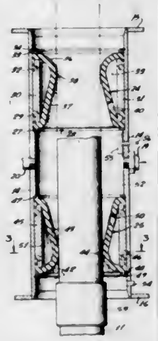
1. An apparatus for the measurement of wear and friction effects between rubbing surfaces comprising; a disc member driven in rotation on a predetermined axis and having a rubbing surface in a plane normal to said axis, a frame adjacent said disc member and tiltable toward and away from said disc member, a flat ended cylindrical pin carried by the frame adapted for being brought into endwise engagement with said surface of said disc member by tilting of the frame, means biasing the frame toward said disc member, means for supplying lubricant to the region of engagement of the flat end of said pin with said surface of said disc member, said pin and disc being formed of electrically conductive materials whereby upon the development of a reaction layer on at least one of said pin and the surface of the disc member in the region of engagement therebetween, a thermoelectric voltage will be developed at said region when the disc member rotates, and means having electrical connections to said disc member and said pin and operable for measuring the electrical resistance of the region of engagement therebetween and also the thermoelectric voltage developed across said region.

3,358,496
CHROMATOGRAPHIC APPLICATOR
Larry B. Farmer, 107 Duval Drive, Spartanburg, S.C. 29302
Filed Aug. 3, 1965, Ser. No. 477,051
4 Claims. (Cl. 73—61.1)



1. In a chromatographic applicator, the improvement in combination therewith comprising a specimen holder for receiving a test solution the combination of a pair of parallel rectangular plates, separator means positioned lengthwise between said plates at the upper edge thereof, said plates having slanting surfaces along their corresponding long dimension, remote from the separator beveled to a sharp edge, clamping means secured to said plates to both sides of said separator, said pair of plates extending downwardly beyond the terminus of said separator plate and along the entire width of said separator in a spaced relationship equal to the thickness of said separator, the spaced relationship of said beveled edges providing a uniform wedge aperture for the reception of said test solution.

3,358,497
ARRANGEMENT FOR INSPECTING OR TREATING TUBULAR MEMBERS
Ernest D. Hauk, 1315 E. 23rd St., Signal Hill, Calif. 90806
Filed Jan. 10, 1966, Ser. No. 519,624
6 Claims. (Cl. 73—49.1)



3. A device for applying fluid to the exterior of a tubular member comprising

a substantially cylindrical member adapted to receive a tubular member therein in a spaced relationship therewith,

a duality of annular sealing members,

said annular sealing members being disposed in the interior of said cylindrical member adjacent the opposite ends thereof,

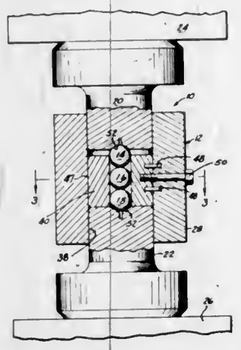
each of said sealing members including a flexible wall convergent inwardly from either end thereof to a throat portion of substantially smaller diameter than that of said cylindrical member,

each of said sealing members having a hollow interior portion permitting deflection of said sealing members upon changes in diameter of a tubular member extending therethrough,

each of said sealing members having an opening therethrough providing communication between the hollow interior thereof and the interior of said cylindrical member intermediate the throats of said sealing members, and

means for introducing fluid into the interior of said cylindrical member intermediate said throats of said sealing members.

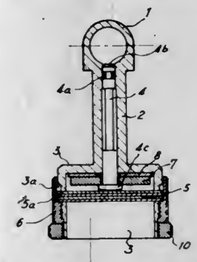
3,358,498
APPARATUS FOR TESTING THE COMPRESSIVE STRENGTH OF BALLS
Frank L. Wright, Middletown, Ohio, assignor to Hoover Ball and Bearing Company, Saline, Mich., a corporation of Michigan
Filed Dec. 9, 1964, Ser. No. 417,176
2 Claims. (Cl. 73—103)



1. Apparatus for testing the compressive strength of rigid balls of a predetermined diameter comprising a longitudinally separable fixture assembly, said assembly including a body having a longitudinally extending bore and a ball alignment block disposed between the ends of said bore and having a longitudinally extending opening therethrough axially aligned with said bore, said opening being of a diameter to support said balls against movement in a direction transversely of said opening, said block opening being of a length to accommodate a stack of said balls disposed therein in a coaxial relation therewith such that said stack extends from opposite ends of said opening so that said stack can be subjected to compressive forces extending along the axis thereof by inserting compressing members in opposite ends of said bore into engagement with opposite ends of said stack.

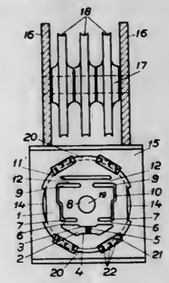
3,358,499
APPARATUS FOR THE CHECKING OF A DIESEL ENGINE
Gérard Henri Augustin Fourtané, Asnieres, Seine, France, assignor to Societe d'Etude et de Fabrication de Material Electronique (SEFME) S.A.R.L.
Filed Sept. 29, 1964, Ser. No. 399,971
4 Claims. (Cl. 73—119)

1. A device for sensing duration of injection of a fuel injection system particularly a diesel engine fuel system having injectors comprising a tubular member having a first end with means for connecting this end to a fuel line to be measured and for establishing communication of the interior of said tubular member with the fuel line, said tubular member having a second opposite end with a head portion, an electrical contact disposed adjacent the juncture of said tubular member and said head portion, a piston having a first end subjected to the fuel pressure in said fuel line and being movable in said tubular member in response to a predetermined pressure in said fuel line, said piston having a bearing head adjacent its opposite end engageable with said contact and being movable away from said contact only upon the occurrence of a predetermined pressure in the fuel line, spring means biasing the piston to maintain the head portion in engagement with said contact, adjustable setting means carried by said tubular member acting on said spring means to maintain its biasing force on said piston to an amount preventing the movement of said piston head portion



away from and out of contact with said electrical contact except upon the attainment in the fuel line and said tubular member of a predetermined setting pressure comparable to the theoretical opening pressure of the injector associated with the fuel line, and electrical sensing means connected to said contact for sensing when said piston member is engaged and when it is disengaged from said contact, said spring means comprising a spring beam, means in said head portion for holding each end of said spring beam adjacent said piston head portion, said adjustable setting means including an adjusting member carried by said head portion and being movable in respect thereto against said spring beam adjacent each end thereof for varying the biasing pressure of said spring means against said piston and thus the pressure of the fuel at which the piston will move.

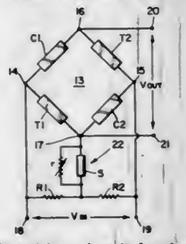
3,358,500
SUPPORTING MEANS FOR A MEASURING DEVICE FOR MECHANICAL FORCES
Rune Flinth, Vasteras, Sweden, assignor to Allmänna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a corporation of Sweden
Filed May 24, 1965, Ser. No. 458,167
Claims priority, application Sweden, June 17, 1964, 7,369/64
1 Claim. (Cl. 73—141)



In lifting equipment, a first force transmitting part having a substantially circular opening therein and attached at one side to said lifting equipment, a holder having a

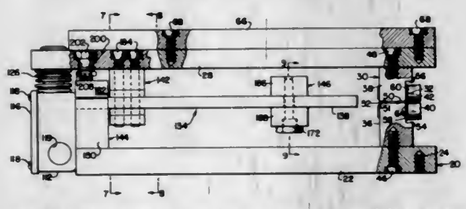
substantially circular outline positioned in said opening and supported at several points spaced around its periphery by said first force-transmitting part, said holder having a second force transmitting part in its center and said holder having an opening therein on one side of said second force transmitting part opposite said point of attachment of said first force transmitting part to said lifting equipment and an outer part on the other side of the opening which is in force-transferring relation with the first transmitting part and at least one pressure sensitive measuring device in said opening in said holder, said device transmitting pressure between said force transmitting parts.

3,358,501
LINEARIZATION OF OUTPUT SIGNALS FROM LOAD CELL BRIDGE CIRCUITS
Alfred N. Ormond, 11969 Rivera Road, Santa Fe Springs, Calif. 90670
Filed May 5, 1965, Ser. No. 453,389
6 Claims. (Cl. 73—141)



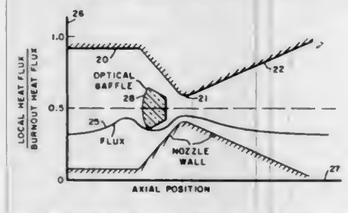
1. In a load cell bridge circuit having first and second diagonally opposite input junction points and third and fourth diagonally opposite output junction points, the arms of said bridge connecting to said junction points including resistance means, at least one of said resistance means comprising strain gauge means secured to a load cell and responsive to a deforming force applied to said cell to change its resistance value and thereby provide an output signal at said output junction points, means for linearizing said output signal with respect to said force including: a T network comprised of first and second elements defining the arms of said T and a third element defining the leg of said T, said arms being connected across two diagonally opposite junction points of said bridge and the end of said leg being connected to a junction point between said two diagonally opposite junction points, at least one of said elements having a resistance proportional to strain and which is secured to said load cell to provide a resistance value in response to said force resulting in a modification of said output signal in a direction to render it substantially linear with respect to said force.

3,358,502
FORCE MEASURING INSTRUMENT
Clarence Johnson, 31649 Trillium Trail, Pepper Pike, Cleveland, Ohio 44124
Filed July 19, 1965, Ser. No. 472,978
15 Claims. (Cl. 73—141)



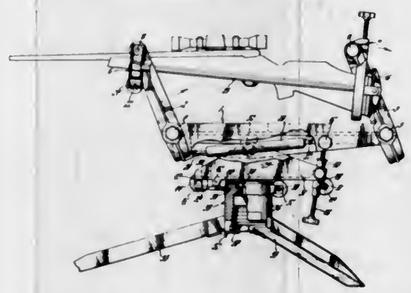
12. A force measuring instrument comprising a support base, a platform for receiving a force to be measured, flexure plate means mounting one end of said platform on said base for bodily swinging movement about a pivot axis extending between said base and said platform, and a spring assembly for yieldably resisting swinging movement of said platform by a load applied thereto, said spring assembly comprising a first flexure spring cantilever mounted on said base, a second flexure spring cantilever mounted on said platform, the longitudinal axes of said springs being contained in a plane normally intersecting said pivot axis, and means fixing the free ends of said springs only to each other to transmit flexing forces only serially through said first and second springs, said last named means comprising clamping means for maintaining the fixed regions of said spring in parallel relation and for selectively adjusting the effective lengths of said springs.

3,358,503
OPTICALLY BAFFLED THROATED NOZZLE
Joel B. Hammer, Pittsburgh, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 8, 1964, Ser. No. 373,148
6 Claims. (Cl. 73—147)



1. Nozzle apparatus for use in arc heaters and plasma generators having a chamber containing incandescent gas comprising, in combination, an exhaust nozzle for the chamber having a throat portion of restricted diameter at a predetermined position along the longitudinal axis of the nozzle, and an optical baffle composed of a highly heat resistive material mounted in the nozzle upstream of the throat portion, the optical baffle being constructed and arranged to prevent substantially any radiation from the incandescent gases in the chamber from falling on the inner wall of the nozzle over a predetermined portion thereof including the throat portion to thereby reduce the heat flux at the throat portion.

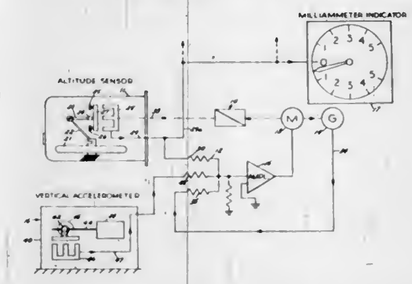
3,358,504
SIGHTING APPARATUS
Samuel Russell Freebairn, 4181 Jupiter Drive, Salt Lake City, Utah 84117
Filed Oct. 1, 1965, Ser. No. 492,132
10 Claims. (Cl. 73—167)



1. A sighting apparatus for firearms, comprising, front and rear clamp assemblies for supporting the forestock and buttstock of a firearm respectively, front and rear

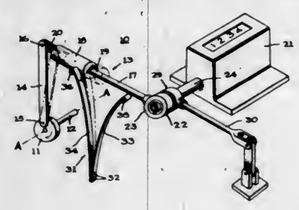
frame members including means pivotally suspending said front and rear clamp assemblies therein, body means having means pivotally mounting said front and rear frame members thereon in spaced apart relationship, means interconnecting said front and rear clamp assemblies and maintaining same in parallel relationship as said frame members pivot about said body means during recoil of said firearm following firing thereof, and arrestor means between one of said frame members and said body means partially absorbing the force of the recoil and returning the pivotally mounted frame member to an at-rest position.

3,358,505
ALTITUDE RATE INDICATING SYSTEM
John H. Andresen, Jr., Hewitt, N.J., assignor to Intercontinental Dynamics Corporation, Englewood, N.J.
Filed May 18, 1965, Ser. No. 456,617
2 Claims. (Cl. 73—179)



1. In an altitude rate indicating system, an altitude sensor signal generator element including aneroid means responsive to changes in atmospheric pressure, signal generating means responsive to changes in said aneroid means, motor means connected to said signal generating means to drive the same to null thereby causing the motor means to turn proportionally with altitude, a rate generator means driven by said motor means, a summing network summing the output of said altitude sensor signal generator element and said rate generator, an amplifier receiving the output of said summing network, the output of said amplifier driving said motor means, and an electrical meter directly receiving and displaying the output of said altitude sensor signal generator element.

3,358,506
TEMPERATURE COMPENSATING DEVICE FOR FLUID METERS
Willis E. Rose, Connersville, Ind., assignor to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
Filed Aug. 6, 1964, Ser. No. 387,842
8 Claims. (Cl. 73—233)



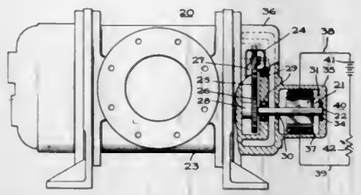
1. A temperature compensating device for fluid meters of the fixed displacement type comprising, in combination with a rotatable index counter having an operating shaft, a fixed throw eccentric mechanism adapted to be driven by the meter, a link arm operatively connected at one end to said eccentric mechanism, a variable length lever mounted at one end on the counter operating shaft for oscillatory movement about the axis of said shaft, said lever having its other end pivotally connected to the other end of said link arm for oscillation thereby through a stroke of constant length, an over-riding one-way clutch interposed between said one end of said lever and said counter operating shaft whereby oscillation of said lever intermittently rotates said operating shaft in one direction only, and temperature-responsive means exposed to the temperature of the metered gas for varying the length of said lever and thereby varying the angular extent of the oscillation thereof in response to variations in the temperature of the metered fluid.

3,358,507
SEPTIC TANK SLUDGE INDICATOR
William V. Montgomery, Box 15A, Star Route, Three Springs, Pa. 17264
Filed Apr. 4, 1966, Ser. No. 539,811
5 Claims. (Cl. 73—290)



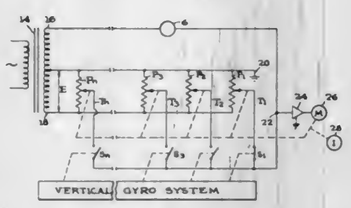
1. A septic tank sludge indicator comprising, in combination, an outer tube, an inner tube within said outer tube, a plurality of selenium cells connected in parallel to each other, said cells being secured and positioned within said inner tube, an elongated cylindrical casing for an electric light source in spaced parallel from said outer tube, top and bottom support discs for providing securing means to the top and bottom portions of said outer tube and said elongated casing, a pair of elongated braces secured between said support discs, a substantially semi-spherical top cover member having a pair of holes therein said member secured to said top support disc, a substantially semi-spherical bottom cover member secured to said bottom support disc, an electric wire connected to said selenium cells, said wire extending outwardly from said one hole of said top cover member, an elongated non-conductive flexible shield secured between said discs and positioned adjacent said elongated casing, a pair of electric wires extending from said light source, said pair of wires being positioned within said shield, said wires adapted to extend outwardly from said other hole of said top cover member, said indicator removably secured within said septic tank, an electrical measuring means for measuring flow of electric current emitted from said selenium cells, said measuring means connected to said electric wire, and said means being capable of visually indicating the ratio of density and the thickness of sludge above the clean water level within said tank when said sludge communicates with said outer tube of said indicator thereby preventing the affected selenium cells from generating the electric current.

3,358,508
PRIMARY METERING DEVICE
David H. Silvern, Olean, N.Y., assignor to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
Filed July 1, 1965, Ser. No. 468,862
5 Claims. (Cl. 73—261)



1. A primary metering device comprising
a casing having an inlet and an outlet; at least one rotatable element in said casing adapted to be rotated by the flow of fluid therethrough from said inlet to said outlet;
an electric motor connected to said element in driving relation; said motor having a constant torque output over its operating speed range;
and manually controllable means for adjusting the power supplied to said motor whereby, with no flow through said metering device, the motor just starts to turn said rotatable element and continues to drive said rotatable element at a constant low speed of rotation to overcome the frictional resistance to rotation of said element.

3,358,509
HYDROSTATIC LIQUID QUANTITY GAUGE WITH ATTITUDE CORRECTION
Harrison F. Edwards, Pleasantville, and Alfred D. Gronner, White Plains N.Y., assignors to Simmonds Precision Products, Inc., Tarrytown, N.Y., a corporation of New York
Filed Apr. 5, 1965, Ser. No. 445,647
4 Claims. (Cl. 73—301)



1. In an apparatus for measuring the weight of fluid in a container having a differential pressure transducer therein, a bridge circuit having one arm connected to said pressure transducer and the other arm connected to a plurality of rebalancing potentiometers connected in parallel, means coupling said bridge circuit to an alternating voltage supply, means connecting said rebalancing potentiometers to an output point of said bridge circuit, phase detecting means connected to said output point, means responsive to said phase detecting means for adjusting said potentiometers in a direction to rebalance said bridge circuit, and means responsive to the adjustment of said potentiometers for indicating the weight of fluid in said container, each of said potentiometers having characteristics such that its mechanical output is related to its electrical output through at least the major portion of its entire range of operation by the relation $[\alpha\beta(h\gamma)]$, where α represents the roll of said container, β represents the pitch of said container and $h\gamma$ represents the weight of fluid in said container.

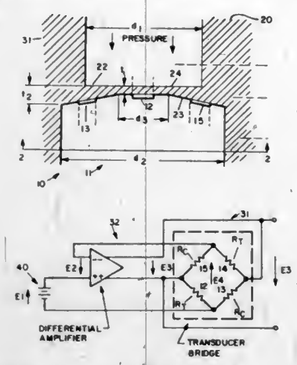
3,358,510
LIQUID LEVEL GAUGE AND METHOD OF MAKING A GAUGE ENCLOSURE
Ralph M. Hoffmann, Manitowoc, and Donald G. Gruett, Green Bay, Wis., assignors to Oil-Rite Corporation, Manitowoc, Wis., a corporation of Wisconsin
Filed Nov. 18, 1964, Ser. No. 412,201
10 Claims. (Cl. 73—329)



1. A liquid level gauge comprising a gauge body having a passage extending longitudinally therein, said passage communicating with longitudinally spaced and aligned window-forming front slots and an intermediate longitudinal rear slot, said gauge body having a bridge connection between the adjacent ends of said front slots, and said rear slot being disposed behind said bridge connection and being wider than said front slots, a tubular sight glass extending longitudinally in said passage and formed of a plurality of axially aligned communicating sections, a coupling sleeve surrounding the adjacent ends of said sight glass sections and having a medial inwardly projecting annular flange, compressible sealing rings interposed between said flange and the adjacent ends of said sight glass sections, and means for holding said sight glass sections under axial compression, said coupling sleeve being disposed behind said bridge connection and confined in said rear slot.

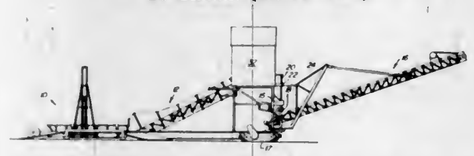
3,358,511
COMPUTING TRANSDUCER SYSTEM
David W. Bargen, Pasadena, Calif., assignor to Electro-Optical Systems, Inc., Pasadena, Calif., a corporation of California
Filed Oct. 5, 1965, Ser. No. 493,049
6 Claims. (Cl. 73—398)

1. A transducer adapted to provide a voltage which is accurately and inversely proportional to a selected variable comprising the following components:
(a) at least two strain gage bodies, (I) the first of said bodies being subjected to a first strain corresponding to the value of the selected variable being measured, and (II) the second of said bodies being subjected to a second substantially different strain corresponding to the value of a selected variable being measured;
(b) a carrier structure supporting said bodies and adapted to translate the effect of said selected variable into strain on said bodies; and
(c) an electrical circuit including a bridge circuit having each of said bodies connected in a leg of said circuit and a high gain differential amplifier whose output is connected to the input of said bridge circuit



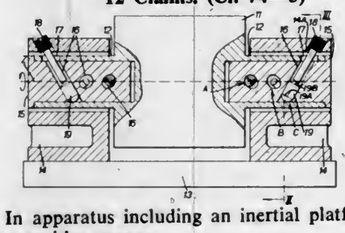
and whose input is connected to the output of said bridge circuit so that a large negative feedback is achieved.

3,358,512
TARE BUCKET HANDLING APPARATUS AND TARE BUCKET THEREFOR
James Watson Silver, Joseph M. Silver, and Harry Lane, Ogden, Utah, assignors to Ogden Iron Works Company, Ogden, Utah, a corporation of Utah
Filed Jan. 14, 1965, Ser. No. 425,416
14 Claims. (Cl. 73—424)



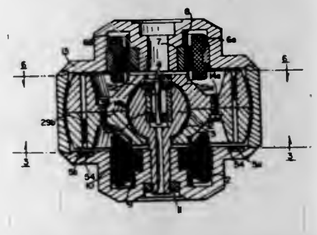
1. Tare bucket handling apparatus for beet pilers, comprising a sampling mechanism for removably receiving a tare bucket and for moving it transversely through a flowing stream of beets, whereby a sample of the beets is obtained in the bucket; and lift means movable independently of said sampling mechanism and said bucket and adapted to pick up and remove said bucket from said sampling mechanism and to elevate it to a remote upper location and to return it to the sampling mechanism, said bucket being removable from said lift means while in said upper location for dumping the beets therefrom.

3,358,513
BEARINGS
Stafford Malcolm Ellis, London, England, assignor to Elliott Brothers (London) Limited, London, England, a British company
Filed Oct. 8, 1965, Ser. No. 494,208
Claims priority, application Great Britain, Oct. 15, 1964, 42,048/64
12 Claims. (Cl. 74—5)



8. In apparatus including an inertial platform and attitude sensitive means,
a shaft forming part of the attitude sensitive means,
a stator assembly,
and bearing means supporting the shaft for limited rotation relative to the stator assembly, the bearing means comprising
means defining three spaced first apertures in the shaft near one end of the shaft, each intersected by the axis of the shaft,
means defining three spaced second apertures in the shaft near the opposite end of the shaft each intersected by the said axis,
three first bearing parts respectively located in the three first apertures and having first bearing surfaces intersected by the said axis with the normals to the said surfaces at the points where they are respectively intersected by the axis lying in respective axial planes which are mutually inclined about the axis with the angle between the adjacent planes being less than 180°,
three further first bearing parts respectively located in the three second apertures and having further first bearing surfaces intersected by the said axis with the normals to the said further surface at the points where they are respectively intersected by the axis lying in respective axial planes which are mutually inclined about the axis with the angle between adjacent planes being less than 180°,
six second bearing parts each having a second bearing surface,
means supporting the second bearing parts on the said stator assembly so that they respectively project into the said apertures with the said second bearing surface respectively making point contact with the said first bearing surfaces at the points of intersection by the said axis,
one surface of each pair of point-contacting surfaces in each aperture being raised surface and the other surface of the pair being a non-raised surface,
each non-raised surface lying oblique to the said axis, and the non-raised surfaces in the apertures near the said one end of the shaft all partially facing along the said axis towards the non-raised surfaces in the apertures near the said one opposite end of the shaft.

3,358,514
GYROSCOPE
Frederick W. Hauf, Santa Ana, and Donald W. Holmes, La Mirada, Calif., assignors to North American Aviation, Inc.
Filed Mar. 19, 1965, Ser. No. 442,234
1 Claim. (Cl. 74—5.7)



A gyroscope for use in a low gravitational environment comprising in combination:
a rotor;
support means for said rotor, at least a portion of said support means comprising a spherical member to which said rotor is externally concentric, said rotor having a spherical surface adjacent to said spherical support member so that a spherical gas bearing to support said rotor is formed between said rotor's spherical surface and said spherical support member,

said supporting layer of gas being automatically generated by the shearing action which takes place in the gap by virtue of the relative speed of rotation between said rotor's spherical surface and said spherical member of said support means;

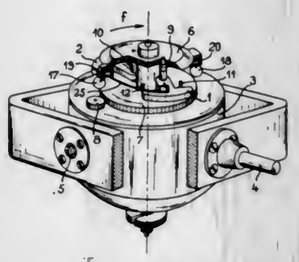
means for rotating said rotor at a given speed within a range of from 10 to 40 cycles per second.

3,358,515

DEVICE FOR REDUCING THE ACTION OF UNSTABLE PENDULUM ERECTORS ON VERTICAL GYROSCOPES

Pierre André Chombard, Boulogne-sur-Seine, France, assignor to Societe Francaise d'Equipements Pour la Navigation Aerienne, Neuilly-sur-Seine, France, a joint-stock company of France

Filed Aug. 10, 1965, Ser. No. 478,704
Claims priority, application France, Oct. 12, 1964, 991,165
3 Claims. (Cl. 74—5.44)



1. In an erector of the unstable-pendulum type for vertical gyroscopes, said unstable pendulums being supported by a moving system rotating at low speed about an axis parallel to the spin axis of the gyroscope rotor and said rotating system comprising one push-rod for actuating each unstable pendulum and one stop for each unstable pendulum so as to limit the natural oscillation of said pendulum; a device for reducing the effective action of said erector, said device comprising a plurality of detectors for sensing accelerations parallel to the mean common plane of oscillation of said unstable pendulums, each of said dectectors being associated with one of said unstable pendulums, and combined means in each assembly comprised by a said detector and its associated unstable pendulum for reducing the erecting action of said device by reducing the movement of each said unstable pendulum about its axis, at and from the moment when the acceleration detected by the corresponding detector attains a pre-determined value.

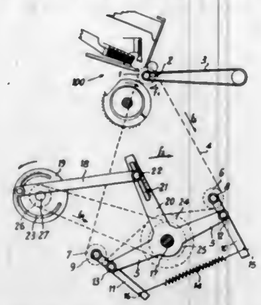
3,358,516

RECTILINEAR COMBER

Jean Frederic Herubel, Guebwiller, France, assignor to N. Schlumberger & Cie, Guebwiller, Haut-Rhin, France, a French societe a responsabilite limitee

Filed Oct. 14, 1965, Ser. No. 495,913
Claims priority, application France, Oct. 23, 1965, 992,501
9 Claims. (Cl. 74—82)

1. A drive system producing reciprocating rotation of a carriage mounted detaching roller of a rectilinear comber comprising a first chain wheel coupled to the roller, an endless chain drive element constantly engaging said first chain wheel; first drive means comprising chain guide wheel means, pivotally mounted beams rotatably carrying said guide wheel means and beam pivoting means for reciprocally pivoting said beam means, said chain guide wheel means constantly engaging said endless chain drive element; second drive means comprising second chain drive wheel means and second chain drive wheel driving means driving said second chain drive wheel means at a constant speed in one direction of rotation,



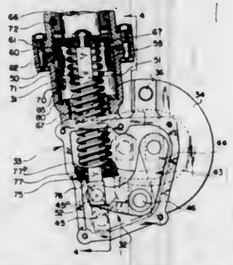
and phase adjusting means operative on said beam pivoting means.

3,358,517

AIR SHIFT FOR TWO-SPEED AXLE

Robert K. Nelson, Shaker Heights, and George L. Moldovan, Willowick, Ohio, assignors to Eaton Yale & Towne Inc., a corporation of Ohio

Filed Mar. 3, 1965, Ser. No. 436,887
9 Claims. (Cl. 74—110)



1. In a mechanism having a power transmitting gear element shiftable between power transmitting positions wherein gear teeth thereof mesh with teeth on different cooperating members and the meshing engagement of the teeth resists shifting of the gear element, a lever member operatively connected at one end to said power transmitting gear element to effect movement of the gear element upon movement of the one end of said lever, linkage means connected to the other end of said lever to effect movement of the lever upon actuation thereof, and a piston mechanism for actuating said linkage means against the resistance of said meshing engagement and including a piston member and a piston rod operatively connected at one end to said linkage means and at the other end to said piston member, said linkage means including a pivotal bell crank having first and second arms, said first arm being connected to the other end of said lever to effect movement of the lever upon pivoting movement thereof, and said piston rod operatively connected at one end to said second arm of said bell crank.

3,358,518

INTERMITTENT DRIVE MECHANISM

Roger W. Patterson, Washington, D.C., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

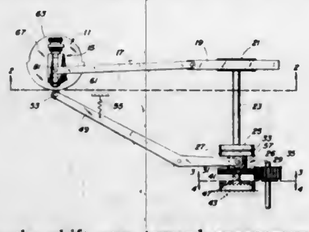
Filed Aug. 2, 1965, Ser. No. 476,450
9 Claims. (Cl. 74—125.5)

1. In a device having a rotatable input member, a rotatable shaft and an output member mounted on said shaft, the combination comprising:

(a) means interconnecting said input member and said shaft for converting continuous unidirectional rotation of said input member to an oscillating rotary motion imparted to said shaft;

(b) means fixed on said shaft for engaging said output member;

(c) control means operatively associated with said input member for cyclically moving said output member into engagement with said engaging member, said control means including a cam surface on said input member, a pivotally mounted shift arm having one end which follows said cam surface and another end which is operatively associated with said output member to move the same axially along said shaft relative to said drive member, and means for resiliently



urging the shift arm toward engagement with said cam surface;

(d) a toothed indexing plate mounted in a fixed position opposite said output member and coaxially disposed relative thereto; and

(e) tapered dog means located on the output member facing the indexing plate for engaging the teeth of said indexing plate to position the output member in a predetermined angular relation to the indexing plate,

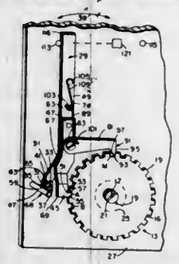
whereby the movement imparted to said output member by said shift arm alternately engages the output member with said engaging means and said indexing plate through said dog means so as to cyclically correct angular position error in the output member.

3,358,519

RATCHET DRIVE

Carl A. Christianson, Southold, N.Y., assignor to the United States of America as represented by the United States Atomic Energy Commission

Filed Oct. 23, 1965, Ser. No. 504,275
5 Claims. (Cl. 74—142)



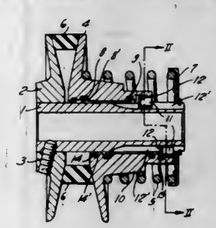
1. A ratchet wheel drive comprising a ratchet wheel having circumferential teeth forming depressions therebetween, locking link means tangent to the circumference of said wheel and having pivoted thereon around a first axis a stub means insertable in the depressions between said teeth, pawl means tangent to the circumference of said wheel and separately pivoted on said stub means around a second axis having a pointed end insertable in said depressions between said teeth, single spring means mounted between said locking link means and said pawl means for maintaining both said stub means and said pawl means always in contact with the outside of said wheel forming said teeth, and actuating means for rotating said pawl means to advance said wheel a distance equal to one tooth width, said stub preventing the rotation of said wheel when said stub is inserted in the bottom of one of said depressions and said actuating means being operable to cause said pawl means to move said stub from said depressions whereby said actuating means can move said pawl means to rotate said wheel one tooth width while said rotation of said wheel advances said stub from one depression to the next adjacent depression in the direction opposite to the direction of rotation of said wheel.

3,358,520

ADJUSTABLE SHEAVE

Kurt Heydlauf, Stuttgart-Zuffenhausen and Herbert Braun, Bissingen (Enz), Germany, assignors to Ernst Heinkel Aktiengesellschaft, Stuttgart-Zuffenhausen, Germany

Filed Dec. 20, 1965, Ser. No. 515,518
Claims priority, application Germany, Dec. 24, 1964, H 54,689
11 Claims. (Cl. 74—230.17)



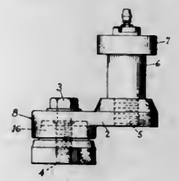
1. An adjustable sheave, comprising a shaft member; a flange mounted on said shaft member; a movable flange member arranged on said shaft member with freedom of axial movement relative thereto and provided with a hub surrounding a portion of said shaft member coaxially therewith; and coupling means, including a plurality of motion-transmitting members at least partially received and longitudinal slidable in axially extending complementary grooves provided in the outer surface of said shaft member and the inner surface of said hub to couple said movable flange member to said shaft member with freedom of axial movement relative thereto while preventing relative rotation of said members in response to transmission of torque from one to the other thereof.

3,358,521

ADJUSTABLE TIGHTENER

Laurance L. Browning, Jr., Maysville, Ky., assignor to Browning Manufacturing Company, Maysville, Ky., a corporation of Kentucky

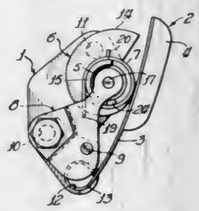
Filed Oct. 21, 1965, Ser. No. 500,072
3 Claims. (Cl. 74—242.1)



1. A tightening device comprising a base and an arm, said base having an annular seat thereon having a tapered annular wall surface, a threaded center bore in said seat, said arm having a depending annular flange defining a socket, a bore extending through said arm centrally disposed with respect to said socket, said socket having

an annular wall surface of a size to mate with the tapered annular wall surface of said seat, the cross-sectional dimensions of said socket and seat being so related that when said socket is placed over said seat and said arm drawn toward said base, the annular wall of said socket will enter into wedge-locking engagement with the annular wall of said seat, and a pivot bolt for drawing said arm toward said base, said pivot bolt having a head overlying said arm, a non-threaded portion extending through the bore in said arm, a shoulder underlying said arm and a threaded portion extending beyond said shoulder engaging the threaded bore in said seat, a snap ring engaging said shoulder and coacting with the head of said bolt to mount said bolt against axial displacement relative to said arm while permitting rotation thereof, whereby when said bolt is tightened, the arm will be moved toward said base and the annular wall surface of said socket drawn into wedge-locking engagement with the annular wall surface of said seat and when said bolt is loosened, said arm will be moved away from said base and said socket lifted out of engagement with said seat so that the arm may be freely rotated relative to said base to any desired position.

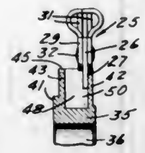
3,358,522
CAM CHAIN TENSIONER
John Poyser, Letchworth, and Edward C. Turner, Hitchin, England, assignors to Morse Chain Company, a corporation of New York
Filed Aug. 16, 1965, Ser. No. 480,023
4 Claims. (Cl. 74—242.11)



1. A chain tensioning device comprising a mounting plate, a snail cam having an increasing radius and an extension portion rotatably mounted on the mounting plate, a shoe assembly carrying a chain contacting member adapted in use of the device to be held by the snail cam against a chain to be tensioned, means torsionally urging the cam in the direction of increasing radius, and a one way friction brake having a helical spring secured at one end to the mounting plate and surrounding the extension portion of the snail cam whereby rotation of the snail cam in this direction of increasing radius tends to unwind the helical spring while contra-rotation of the snail cam tends to tighten the helical spring to grip the extension portion for restricting contra-rotation of the cam and in use of the device thus maintaining the shoe in its position held against the chain to be tensioned.

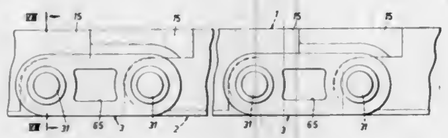
3,358,523
SPROCKET FOR SAW CHAINS
Jack W. Ehlen, Torrance, Calif., assignor to McCulloch Corporation, Los Angeles, Calif., a corporation of Wisconsin
Filed Aug. 12, 1965, Ser. No. 479,158
3 Claims. (Cl. 74—243)

1. In a sprocket for saw chains, said chains including side links:
(A) a central portion;
(B) side walls for said central portion,
(C) said side walls being axially spaced apart; and
(D) annularly spaced teeth between said side walls,
(E) said side walls having annularly spaced peripheral notches axially aligned with the spaces between said teeth,



(F) said peripheral notches being adapted to receive side link portions therein,
(G) said side plates having small teeth separating said notches and being axially aligned with the outer ends of the teeth between the side walls.

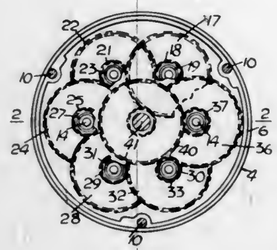
3,358,524
TRANSMISSION DEVICE
Theo Patrignani, Paris, France, assignor to Manurhin, Mulhouse-Bourtzwiller, Paris, France, a corporation of France
Filed July 6, 1966, Ser. No. 563,284
Claims priority, application France, July 20, 1965, 25,234
10 Claims. (Cl. 74—250)



9. A chain assembly, for transmitting loads either by pulling or pushing, comprising a pair of strands of interconnected links each of which is composed of a one-piece body of material having primary and secondary plate portions and formed with a pair of openings extending only through said primary plate portion of each link, only one of said openings passing through said secondary portion thereof and said secondary plate portion extending part of the way around the other of said openings of each link and having situated beyond said primary portion an elongated projection extending generally parallel to a plane which includes the axes of both the openings of each link, the primary plate portion of each link having at the other opening which passes only through said primary plate portion an annular projection forming an extension of said other opening and surrounding it in part while being spaced from said secondary plate portion to define with the latter an arcuate groove, while said secondary plate portion is formed with an annular recess at said one opening which passes through both of said plate portions and which has an inner periphery equal in diameter to the diameter of the outer periphery of said annular projection, so that the links of each strand can be interconnected with the annular projection of one link received in the recess of the next link while the successive links alternate with one link having its secondary plate portion on one side of its primary plate portion while the next link has its secondary plate portion on the other side of its primary plate portion, said strands being situated in substantially parallel planes which are spaced from each other, and a plurality of pins, the successive links being interconnected by said pins which pass through the openings

of the interconnected links, said pins respectively having intermediate portions situated in the space between the substantially parallel planes in which said strands are situated, and said pins carrying in the space between the latter planes guide rollers for guiding the chain along a given path, said guide rollers being made of a plastic material and having interior friction sleeves which directly surround said pins, respectively.

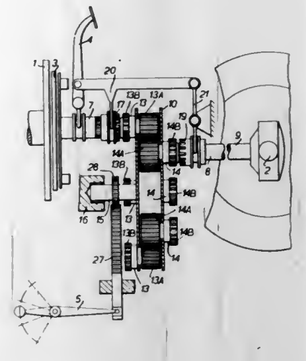
3,358,525
GEARBOXES
George Clarke, Birmingham, England, assignor to Olsen Clarke (Gears) Limited, Birmingham, England
Filed Mar. 30, 1965, Ser. No. 443,857
4 Claims. (Cl. 74—331)



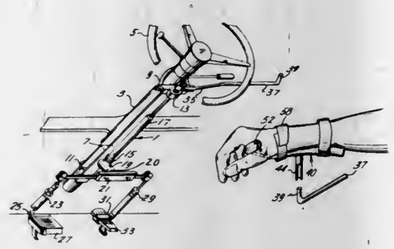
1. A gear box comprising a housing, a detachable cover secured to said housing, a rotatable input gear and a rotatable output gear which is co-axial with the input gear, a plurality of bearings equi-angularly spaced around the common axis of the input and output gears, the two bearings of each pair comprising a bearing on the housing and an aligned bearing on the cover, a plurality of lay shafts adapted at their ends to be rotatably supported by the pairs of bearings respectively, each lay shaft having an intermediate portion of constant non-circular cross-section, a plurality of separate pinions and a plurality of separate spur gears detachably and non-rotatably mounted on said lay shafts and positionable at any axial position thereon, and separate spacing means detachably mounted on said lay shafts for locating the pinions and spur gears at predetermined axial positions thereon, whereby various gear ratios between the input and output gears can be obtained by employing different combinations of intermeshing pinions and spur gears mounted on one or more of said lay shafts.

3,358,526
VARIABLE RATIO TRANSMISSION GEARING
Josef Ehrlich, London, England, assignor to Bristol Siddeley Ehrlich Engineering Limited, Bristol, England
Filed Aug. 6, 1965, Ser. No. 477,882
Claims priority, application Great Britain, Aug. 6, 1964, 32,076/64
13 Claims. (Cl. 74—352)

1. Variable ratio transmission gearing comprising main driving and driven shafts the axes of which are displaced from one another, movable carrier means, a series of separate transmission trains each mounted in said movable carrier means and each comprising a pair of shafts, constituting subsidiary driving and driven shafts, which are directly connected to one another by gearing providing a transmission ratio different from that provided by the gearing connecting the other pairs of subsidiary driving and driven shafts, and are rotatable independently of such other pairs of subsidiary driving and driven shafts, the axes of each pair of subsidiary driving and driven shafts being in the same positions relatively to one another as are the axes of the main driving and driven shafts, and the arrangement being such that the carrier means can be moved to bring the pairs of subsidiary driving and driven shafts selectively into an operative position in which the selected pair of subsidiary driving and driven shafts are coaxial respectively with the main driving and driven shafts, and clutch mechanism whereby such selected pair of subsidiary driving and driven shafts can then be connected respectively to the main driving and driven shafts.

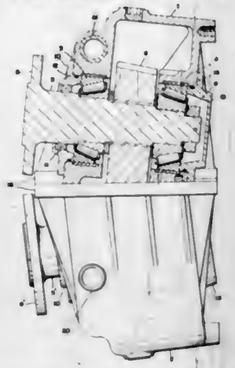


3,358,527
WRIST ATTACHMENT AND MANUAL CONTROL FOR MOTOR VEHICLES
Louise Lake, New York, N.Y., and George H. Mortimer, Upper Montclair, N.J., assignors, by direct and mesne assignments, to Louise Enterprises, Inc., Mount Kisko, N.Y., a corporation of New York
Filed Sept. 7, 1965, Ser. No. 485,413
12 Claims. (Cl. 74—484)



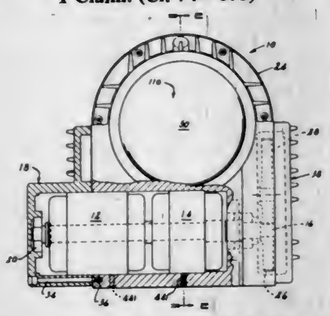
1. A manual control for a motor vehicle having a steering wheel comprising in combination:
(a) a manual control adapted to be secured to a motor vehicle having an operating lever movable generally parallel to and below the steering wheel, said lever having an upturned end movable adjacent to and beyond the periphery of said steering wheel,
(b) a wrist attachment adapted to be removably secured to the arm of an operator, and
(c) means to removably and operatively connect the wrist attachment to the upturned end of said operating lever.

3,358,528
MARINE V-DRIVE
William B. Herbert, 111 Yantacaw Brook Road, Upper Montclair, N.J. 07043
Filed Oct. 21, 1965, Ser. No. 499,798
6 Claims. (Cl. 74—606)



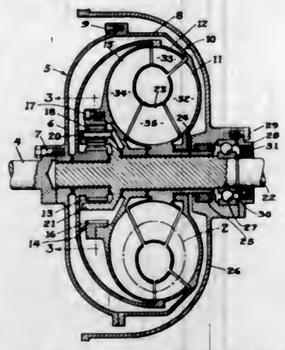
1. In a V-drive of the character described, a pair of housing parts of identical construction secured to each other along a common plane, shafts mounted in said housing parts at an angle to each other, and gears mounted on said shafts and in mesh with each other.

3,358,529
MACHINE TOOL
John van den Kieboom, Mount Clemens, Mich., assignor to La Salle Machine Tool, Inc., Warren, Mich.
Filed May 21, 1965, Ser. No. 457,599
1 Claim. (Cl. 74—675)



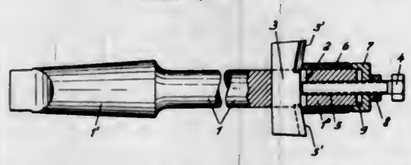
In a self-contained, mechanically driven machine tool, the combination of, a machine tool housing; a worm gear and worm wheel journaled in said machine tool housing; a plurality of reduction gears journaled on said worm wheel; a pair of parallel shafts in said housing; a pair of in-line electric motors of different sizes positioned about and selectively energizable to rotate one of said pair of shafts to provide a two speed driving means for said one shaft; the other one of said shafts being drivingly connected to said worm gear; change gears external of said housing and extending between said pair of shafts; a single speed driving means drivingly connected to said reduction gears; a friction brake cooperable with said single speed driving means and operable to discontinue the driving connection thereof to said reduction gears; and an output shaft drivingly connected to one of said reduction gears; so that selective energization of said motors will, along with rotation of said single speed driving means, rotate the output shaft at a high rate of speed, while de-energization of said single speed driving means and energization of the friction brake will cause said output shaft to rotate at a slower rate of speed determined by which one of said pair of motors is energized.

3,358,530
VARIABLE TORQUE MULTIPLYING DEVICES
Herbert K. Baker, Detroit, Mich. (24481 Republic, Oak Park, Mich. 48237)
Filed Aug. 10, 1964, Ser. No. 388,638
19 Claims. (Cl. 74—677)



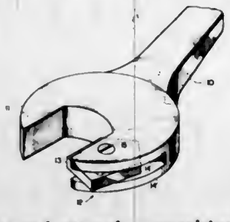
1. A torque multiplying device including a power input member, a planetary gear set of infinitely variable speed ratioing action and hydrodynamic means in coupled arrangement therewith, the planetary gear set including a driving member, a rotating regenerative gearing reaction member and an output member arranged to be actuated by differential ratio action of the other two said gear set members, said planetary gear means including drive means between the driving member and the reaction member including means to transfer rotative movement from the driving member to the reaction member in the same relative direction whenever said output member is rotating at a different rotative speed than said driving member, the hydrodynamic means containing a motive fluid and including first stage and second stage impeller rotors, a turbine together with a hydraulic reaction member, first means connecting the first stage impeller rotor to the power input member and second means connecting the second stage impeller rotor to the rotating regenerative gearing reaction member to enable each of said impeller rotors to transmit torque to the motive fluid, means connecting the turbine to the gear set driving member to receive the combined torque from the motive fluid, the hydraulic reaction member being arranged to assist said turbine to amplify the torque there received.

3,358,531
BORING BAR
Willi Schäffler, 49 Ulmenweg, 8400 Winterthur, Zurich, Switzerland
Filed Mar. 14, 1966, Ser. No. 534,056
Claims priority, application Switzerland, Apr. 8, 1965, 5,062/65
3 Claims. (Cl. 77—58)



1. A boring bar with exchangeable boring cutter for boring drilled holes, characterized in that in this bar the boring cutter passing through an axial slot of the boring bar can be drawn tight by a stop-screw introduced through an axial threaded hole in the boring bar, while a guide bush corresponding to the diameter of the drilled hole is carried on the part of the boring bar lying before the boring cutter, the latter having teeth ground-back obliquely inwards and describing a conical cutting surface projecting forwards over the rear end of the guide bush, so that guiding ensured by the guide bush continues to be maintained until the cutter has broken through the bore.

3,358,532
ADJUSTABLE OPEN-END WRENCH
Robert D. Allred, Toledo, Ohio, assignor of one-half to Nathan J. Schwartz, Toledo, Ohio
Filed Jan. 26, 1966, Ser. No. 523,067
5 Claims. (Cl. 81—111)



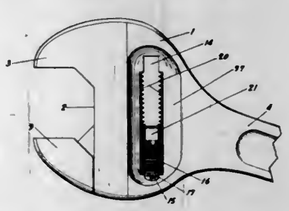
1. An open-end wrench comprising a shank which serves as a handle and which terminates at least at one of its ends in a pair of jaws for receiving a nut, one of the jaws being rigidly attached to the shank and having a planar edge or contacting a nut, characterized in that the second jaw comprises a plate in the shape of an irregular polygon having a plurality of planar edges, pivotally mounted on an axis which is perpendicular to the plate and parallel to the planar edge of the first jaw, the range of pivotal movement of the plate being sufficient to bring each of a plurality of planar edges of the plate selectively into a position parallel to the planar edge of the first jaw, and each of such planar edges of the plate being at a different distance from the axis of pivoting.

3,358,533
CAM ACTUATED SLIDING JAW WRENCH
Morris Lee Wren, Job Corps Center, Parker, Ariz. 85344
Filed Sept. 6, 1966, Ser. No. 577,383
2 Claims. (Cl. 81—128)



1. In an end wrench, an elongated tubular handle, a hollow funnel-shaped head at one end of the handle, a pair of opposed slidable and swingable jaw structures in the head, said head communication with the bore in the tubular handle, a pair of opposed slidable and swingable jaw structures in the head, a shaft slidably mounted in the bore of the handle, one end of the shaft extending into the hollow head and pivotally connected to the jaw structures, toggle plates interposed between said one end of the shaft and the jaw structure, a screw movable in the other end of the tubular handle and operatively connected to the shaft for moving said shaft up and down, means exteriorly of the handle for actuating said screw, said handle having a recess in the end thereof, an elongated cylindrical head on said screw in the recess in the handle, a washer slidably mounted on said cylindrical head, a compression spring sleeved around said cylindrical head, one end of the spring being seated on the end of the handle on the inside, the other end impinging against said slidable washer for moving said washer against the roof of the recess, for moving the shaft up through the bore of the handle.

3,358,534
CLUTCH-BAR MEANS FOR AN ADJUSTABLE WRENCH
Harry D. O'Quinn, 2846 Playa del Rey, Las Vegas, Nev. 89109
Filed Jan. 19, 1966, Ser. No. 523,840
5 Claims. (Cl. 81—145)

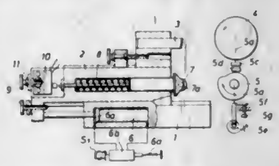


1. A wrench comprising in combination a body member having a fixed jaw at one end, rack teeth in a first and transverse opening adjacently spaced from the fixed jaw and a second opening defined by a separate slot joining with a slideway and a channel all aligned in said body member adjacent to and having the channel portion thereof opening to said transverse opening and adjacent the fixed jaw; a movable jaw adjustable toward and from the fixed jaw and having thereon a rib received in said channel and a guide bar attached to the rib received in said slideway of the body member and an aperture through the movable jaw in alignment with said transverse opening of the body member; a clutch-bar having rack teeth thereon slidably received in said aligned aperture of the movable jaw and the transverse opening in the body member, said clutch-bar being slidable so that its rack teeth are in and out of engagement with the rack teeth in the body member; and spring means having engagement with the movable jaw and said clutch-bar that in static position of the spring holds the clutch-bar with its rack teeth engaged with the rack teeth in the transverse opening of the main body member and the movable jaw is held in adjusted position with respect to the fixed jaw, said clutch-bar on being slid against the spring and disengaging its teeth from the teeth in the body member permitting the movable jaw to be adjusted in its position with respect to the fixed jaw and on release of the clutch-bar from its slide position, said spring sliding the clutch-bar so that its teeth are engaged with the teeth of the body member and said spring is again in static position.

3,358,535
ARRANGEMENTS FOR CONTROLLING THE TOOL SLIDE OF A TURNING MACHINE
Gunter Hirschfeld, Burscheid, and Herbert Schneider, Blecher, Germany, assignors to Goetzewerke Friedrich Goetze, A.-G., Burscheid, Dusseldorf, Germany
Filed Feb. 17, 1967, Ser. No. 616,978
Claims priority, application Germany, July 31, 1963, G 38,365
5 Claims. (Cl. 82—24)

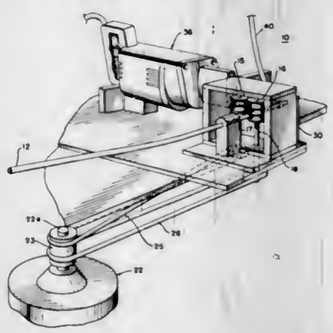
1. In a machine tool; a bed, a workpiece spindle rotatable on the bed, tool slide means reciprocable on the bed, hydraulic motor means operatively connected between the

bed and slide means to actuate the slide means to move a tool carried by the slide means toward and away from a workpiece on said spindle, and mechanical means for controlling the speed of movement of said slide means on the bed during feeding of the tool into the workpiece for a cutting operation, said mechanical means comprising cooperating elements of abutment means occupying predetermined positions on said slide means and bed respectively and adapted for abutting interengagement at a predetermined point during the advancing movement of said slide means, the one of said elements on the bed being movable thereon to permit further advance of said slide means on the bed after said elements engage each other, drive means extending from said spindle to said one element drivingly connecting said spindle with said one element for causing movement of said one element



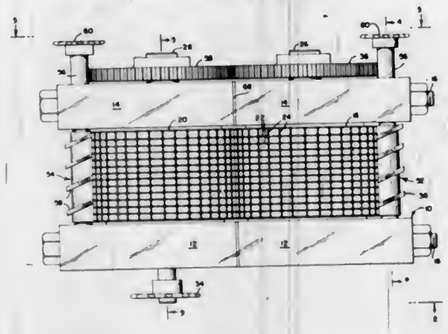
on said bed to permit said slide to advance at feed rate under the bias of said hydraulic motor means after said elements engage each other, said drive means being normally ineffective, means responsive to interengagement of said elements for making said drive means effective, means responsive to a predetermined advancing movement of said slide means after said elements have interengaged for reversing the direction of movement of said slide means and for making said drive means ineffective, resilient means acting on said one element for returning said one element to a said predetermined position on said bed after said drive means has been made ineffective, said one element on the bed comprising a spiral cam and the said element on the slide means comprising a roller which engages the cam periphery at said predetermined point in the travel of said slide means.

3,358,536
METHOD AND APPARATUS FOR CUTTING TUBING
John L. Yonkers, 2030 Sunset Ridge Road, Northbrook, Ill. 60062
Filed Oct. 20, 1965, Ser. No. 498,619
7 Claims. (Cl. 83—54)



7. A method of cutting short lengths of tubing from a stock supply of tubing comprising the steps of continuously biasing a section of tubing toward a stop; driving a blade across the tubing ahead of the stop to simultaneously cut the tubing and block the advance of the uncut portion; elastically storing energy from a prime mover for propelling said tubing; and retracting the blade to release the uncut tubing to permit rapid advancing of the uncut tubing against the stop before the subsequent cutting stroke of the blade under the combined force of the stored energy and the prime mover independently of the cutting thereof.

3,358,537
CUTTING APPARATUS
Murray E. Ball, Rockford, William L. McKown, Minneapolis, and Philip K. Zietlow, Northfield, Minn., assignors to General Mills, Inc., a corporation of Delaware
Filed Nov. 16, 1964, Ser. No. 411,430
12 Claims. (Cl. 83—101)

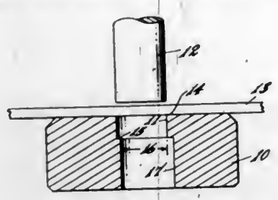


1. An apparatus to form a plurality of pieces from a material such as a pliable cooked dough, said apparatus comprising:
(a) a first and a second cutting member, said members being substantially identical with respect to each other,
(b) cutting edge means on each of said cutting members,
(c) portions of the cutting edge means of the first cutting member matching with corresponding portions of the cutting edge means of the second cutting member,
(d) proximate cutting edge portions of each one of said cutting members defining a respective recess therebetween which matches in size and shape with a corresponding recess on the other cutting member defined by corresponding edge portions of the other cutting member,
(e) said first and second cutting members being movable toward and away from one another in a cutting motion to cut material fed therebetween, and
(f) each recess having a defining surface portion which begins at one related cutting edge portion of such recess and extends therefrom toward another related cutting edge portion of such recess in a direction sloping away from a general plane defined approximately by said cutting edge portions, whereby when a portion of material being cut is lodge in such recess, the part of said material portion that is proximate said one related cutting edge portion is exposed to permit removal of said material portion from said related recess.

3,358,538
PUNCH DIE HAVING MEANS TO PREVENT RETURN OF SLUGS
Joseph G. Maceyka, West Chester, Pa., assignor to The Warner & Swasey Company, Cleveland, Ohio, a corporation of Ohio
Filed Jan. 13, 1966, Ser. No. 520,324
7 Claims. (Cl. 83—164)

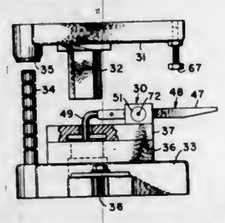
1. For use with a punch for punching a hole in a work piece, and thus creating a slug, the invention which

consists in a die having a series of openings extending therethrough, comprising a straight walled entrance aperture adapted to receive the punch, with clearance between the punch and the wall of the aperture, extending from one end of the die to a point within the die, a slug chute of larger cross section than the aperture, extending from a location near said point within the die at which the



aperture terminates to the other end of the die, and being misaligned with respect to the aperture, and an offset extending inwardly from the side of the aperture but from less than all of the sides of the aperture, fixed in the wall of the die between the aperture and the slug chute, the cross section of the opening through the die opposite the offset being smaller than the cross section of the aperture.

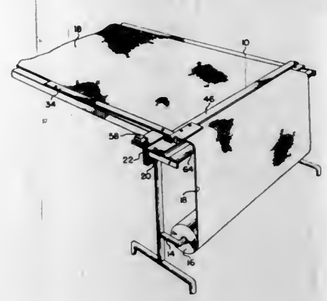
3,358,539
RETRACTING STOP FOR POSITIONING STRIP MATERIAL IN A BLANKING DIE
Leonard E. Marszal, 1820 Markwood, NW., Grand Rapids, Mich. 49504
Filed Oct. 22, 1965, Ser. No. 501,310
8 Claims. (Cl. 83—391)



1. A stop device for installation in conjunction with a reciprocating blanking die, said device comprising:
a base having spaced flanges and aligned holes in said flanges, said holes being defined by the envelope of a cylindrical surface having the axis thereof moved through a predetermined sector about an axis perpendicular to the axis of said cylinder;
a fulcrum pin having end portions rotatably received in said holes, whereby said fulcrum pin is provided with a limited freedom of displacement of its axis in substantially one plane only, said fulcrum pin having a central portion provided with a transverse opening normally disposed between the said flanges, said central portion being axially receivable in at least one of said holes;
a stop arm received in said fulcrum pin opening;
means securing said arm with respect to said fulcrum pin; and
biasing means urging said arm rotatively about both of said axes.

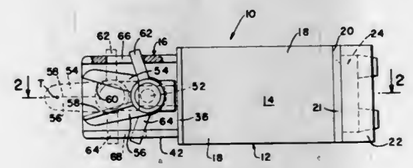
3,358,540
VINYL WALL COVERING CUTTER
John R. Hall, 607 Ave. L, Lubbock, Tex. 79401
Filed Feb. 23, 1966, Ser. No. 529,299
7 Claims. (Cl. 83—455)

1. In a paste table for vinyl wall covering having
(a) a flat table surface, and
(b) legs supporting the table surface,
(c) the improvement comprising in combination with the above:
(d) a lower member attached along one end of the table,
(e) a slot in the lower member along the end of the



table, extending substantially the width of the table,
(f) a pair of pegs on the lower member, and
(g) a straightedge strip with the straightedge aligned with said slot and the other edge abutting said pegs,
(h) so that a blade may be extended into said slot and guided by said straightedge to cut the vinyl.

3,358,541
SHEAR-TYPE CUTTER ASSEMBLY
Karl Frei, Onstmettingen, near Balingen, Germany, assignor to Gebruder Frei, Onstmettingen, Germany, a corporation of Germany
Filed Jan. 21, 1966, Ser. No. 522,133
Claims priority, application Germany, June 25, 1965, F 28,317
4 Claims. (Cl. 83—554)

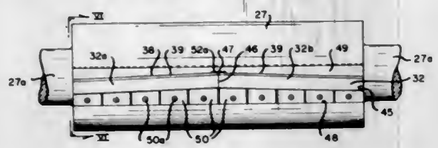


1. A cutter assembly comprising
a body member including power means operatively connected to a reciprocable blade support;
a cutter blade assembly mounted on said support for movement therewith from a normal position to an extended position;
and cutter blade assembly including a pair of blades journaled on said support and including means for permitting said blades to have an intersecting shear action;
said blades including operating lever means;
a housing on said body member disposed at least partially about said cutter blade assembly for normally protecting the same when the blades are in the normal position;
said housing including abutment portions engageable with said lever means for engaging the same in response to reciprocation of said blade support for causing an intersecting shear action when the blade assembly is extended to the cutting position.

3,358,542
ROTARY CROP SHEAR KNIVES AND THE LIKE

Charles Wesley Murray, Franklin Park, Pa., assignor to Heppenstall Company, Pittsburgh, Pa., a corporation of Pennsylvania

Original application Oct. 23, 1964, Ser. No. 406,112, now Patent No. 3,322,012, dated May 30, 1967. Divided and this application May 27, 1966, Ser. No. 553,404
9 Claims. (Cl. 83—673)

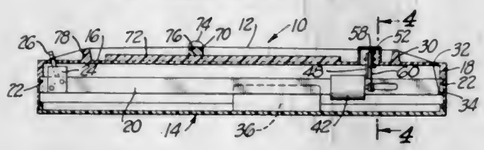


1. A rotary crop shear knife and the like for hot metal work for insertion in a groove having parallel sides in a rotatable drum, comprising, in combination, two straight knife sections of right and left hand together forming a chevron in plan when the inner ends of said sections engage one another over their entire surfaces, each of said sections having transverse planar faces and transverse straight edges, each section having a generally vertical operative face forming one side, a straight cutting edge comprising the outer transverse edge of said operative face, an opposite support face tapering upwardly from the bottom generally toward said operative face, the height of said operative face being greater than the height of said support face, a compound bevel face extending downwardly from said cutting edge in a direction away from said operative face to the top edge of said support face, a bottom face extending between the bottom edges of said operative and support faces, the inner end of each section being planar and at an angle to said operative face equal to one-half the included angle of said chevron, a liner member having a straight planar face and a spaced chevron face against which the operative faces of the sections bear and a plurality of wedge members adapted to bear on the support face and one side of the groove.

3,358,543
MUSICAL INSTRUMENTS

Clair Omar Musser, 12997 Blairwood Drive, Studio City, Calif. 91604

Filed Nov. 17, 1966, Ser. No. 595,144
8 Claims. (Cl. 84—173)

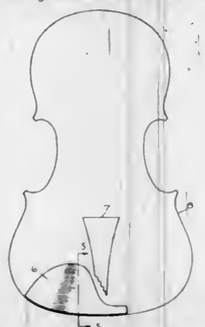


1. A stringed musical instrument which includes:
a housing having a top surface;
bridge means on said housing for supporting a string, a string positioned so that said string extends along said top surface of said housing between the ends thereof;
means for securing said string to said housing so that said string extends between said bridge means;
lever means having an end, said lever means being pivotally mounted within said housing, said end of said lever means being located adjacent to said string between said fixed bridge means and adjacent to one of said fixed bridge means;
a pulley rotatably mounted on said end of said lever means adjacent to said string;
at least one metal ring rotatably mounted on said pulley so as to extend from said pulley as said pulley is rotated, said ring, said pulley, and said lever means being located so that said ring is capable of being brought into engagement with said string during rotation of said pulley by rotation of said lever means; and
means for rotating said lever means so as to cause said ring to engage said string during rotation of said pulley.

3,358,544
CHINREST

Jerome Clark, 8008 Lake Ave., Cleveland, Ohio 44102

Filed Oct. 22, 1965, Ser. No. 501,444
1 Claim. (Cl. 84—279)

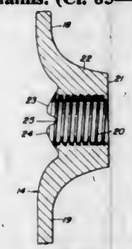


A violin chinrest precisely positioned on the instrument by the right end portion straddling the tailpiece, comprising a body member the top surface of which is flat, and consists of a forward slope descending at a specific predetermined angle constantly parallel to the long axis of the violin, and a side slope descending at a specific predetermined angle constantly at right angles to the long axis of the violin, and terminating at the far right end of the body member.

3,358,545
CLAMPING NUT

Chester I. Williams, 347 Greenbriar SE., Grand Rapids, Mich. 49506

Filed Aug. 18, 1965, Ser. No. 480,689
3 Claims. (Cl. 85—32)

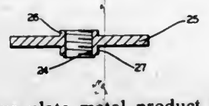


1. A clamping nut for engaging a projecting threaded end of a bolt of a form-securing system, said nut comprising:
a body portion having a threaded inside surface, and a transverse bearing surface at one end of said body portion, the opposite end thereof having at least one portion having a face intersecting said threaded surface and extending between adjacent threads to form a cleaning surface extending into the space between adjacent thread portions on said bolt, said face forming an acute angle within the material of said nut, with the adjacent portion of said threaded inside surface pointing in the direction of movement of said nut at said face corresponding to loosening the same, whereby foreign material is cleared from the thread end of said bolt as said nut is unscrewed.

3,358,546
PLATE METAL PRODUCTS WITH TWO-WAY EXTRUDED NUTS

Don C. Price, Canton, Ohio, assignor to The Monarch Rubber Company, Hartville, Ohio, a corporation of Ohio

Filed Jan. 4, 1966, Ser. No. 518,633
6 Claims. (Cl. 85—32)

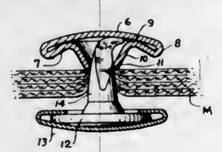


1. In a one-piece plate metal product having an integral sleeve formed from the material of said plate, the product including a plate metal wall having substantially parallel upper and lower surfaces, a tubular sleeve having an inner surface forming a sleeve opening of substantially uniform diameter, said inner sleeve surface being threaded throughout its length, the sleeve having upper and lower sleeve portions projecting axially beyond and being joined to said upper and lower wall surfaces respectively, the length of said sleeve opening being equal to at least twice the thickness of the plate metal wall, and the sleeve portions having outer surfaces concentric with the inner sleeve opening surface.

3,358,547
CLOSED TYPE BURR

Philip B. Jensen, Naugatuck, Conn., assignor to Scovill Manufacturing Company, Waterbury, Conn., a corporation of Connecticut

Filed Nov. 23, 1965, Ser. No. 509,300
3 Claims. (Cl. 85—37)



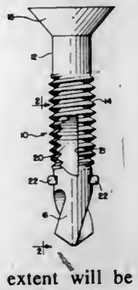
1. A closed type burr of one-piece sheet metal construction comprising
(a) a front wall with a continuous single-domed outer surface;
(b) an annular backwall joined to outer edge of the front wall by a reverse bend so as to provide a hollow rim section whereby the back wall engages the under surface of said domed outer wall along a circumferential line radially inward of said reverse bend; and
(c) a solid walled tapered hub extending from said backwall inner portion and having an end opening for guiding a tack into the burr, said hub providing a chamber for receiving the upset end of such a tack.

3,358,548
DRILL SCREW

Robert H. Dyslin, Morton Grove, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware

Filed Apr. 14, 1966, Ser. No. 542,535
7 Claims. (Cl. 85—47)

1. A screw adapted to fasten two or more juxtaposed work members including a drilling tip, a threaded shank and a head, said shank being threaded for a substantial portion of its length adjacent said head, material removing means located on and extending radially outwardly from said shank between said threads and said tip and adapted to provide a clearance hole in at least the first one of said work members contacted by said screw but not in another of said work members which is of harder material than said first work member whereby when said material removing means contacts said harder material

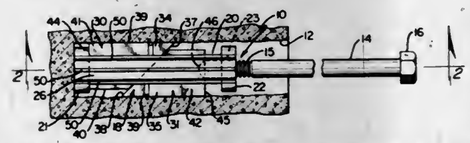


its effective radial extent will be reduced so that said threaded shank will effectively engage only said other work member of harder material.

3,358,549
ROCK BOLT

Lester Lerich, Lakewood, Colo., and Daniel P. Roesler, Rapid City, S. Dak., assignors to Wej-It Expansion Products, Inc., Broomfield, Colo., a corporation of Delaware

Filed Feb. 21, 1966, Ser. No. 529,104
8 Claims. (Cl. 85—66)



1. An anchor bolt comprising in combination a bolt member having an inner threaded end portion, an anchor member including an outer, hollow support defined by axially spaced end portions and spaced sidewall portions of limited circumferential extent interconnecting said end portions to form an open space between said end and sidewall portions, and a pair of wedge members disposed in end-to-end relation between said end portions within the space and terminating in complementary inclined wedging surface portions disposed in abutting relation to one another, said bolt member threadedly engaging a bore in one of the end portions of said support and passing therethrough into engagement with one of said wedge members, said wedging surface portions being slidable in opposite directions in response to inward axial advancement of said bolt member through the end of said support and against said one of said wedge members to undergo outward radial movement in opposite directions from the space.

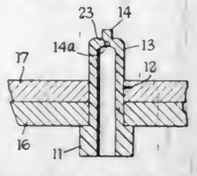
3,358,550
PLASTIC RIVET WITH INTEGRAL LOCKING PIN

George Noel Crowther, Stoke Poges, and William Richard Harris, Yiewsley, England, assignors to United-Carr Incorporated, Boston, Mass., a corporation of Delaware

Filed Oct. 8, 1965, Ser. No. 494,179
Claims priority, application Great Britain, Oct. 12, 1964, 41,543/64
1 Claim. (Cl. 85—70)

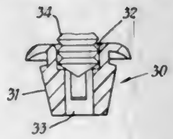
A synthetic plastic rivet for securing two apertured members together comprising a circumferentially continuous, hollow head and a hollow shank, the end of said shank remote from said head being closed and having a tail portion, said tail portion having an integral locking pin extending outwardly thereof in a direction opposite to and away from said head, said locking pin being at least approximately coaxial with the remainder of

said shank, whereby upon passage of said shank through the apertured members and the application of compressive force to said head and said shank, said head and said tail portion are axially and radially deformed against the remote surfaces of the members and said pin is axially depressed into a portion of said shank remote from



said head, the strength of the material joining said pin to said tail portion being such that the wall of said tail portion adjacent said pin is drawn down into said shank to surround said pin and engage the internal wall of said shank and jam said pin permanently in said shank thereby retaining the remainder of said tail portion in a radially deformed condition.

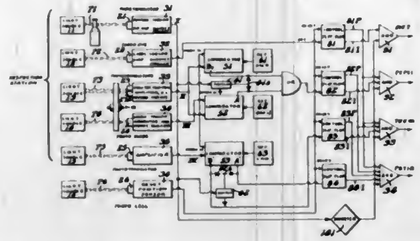
3,358,551
FASTENERS
Clifford Alexander Seckerson, Iver Heath, Buckinghamshire, England, assignor to United-Carr Incorporated, Boston, Mass., a corporation of Delaware
Filed Aug. 27, 1965, Ser. No. 483,069
Claims priority, application Great Britain, Sept. 9, 1964, 36,925/64
1 Claim. (Cl. 85—80)



A resilient fastener for holding a threaded member in a panel formed with a part circular aperture having oppositely extending recesses, the fastener comprising a tubular shank formed with two external lengthwise extending ribs which are locatable within the recesses in the aperture in the panel to prevent rotation of the fastener relative to the panel and internal grooves extending into the ribs and allowing the shank to collapse in a radial sense, a flange at one end of the shank having a dished undersurface adapted to press resiliently against a surface of the panel and an external part circumferential groove in the shank adjacent the flange, the groove forming a part annular shoulder facing the flange and adapted to cooperate with the flange in clamping the rim of the apertured panel, the shank being internally plain-walled prior to insertion of the threaded member into thread cutting engagement in the shank and the flange being sufficiently dished and resilient to allow substantial angular movement of the threaded member away from the vertical relative to the panel.

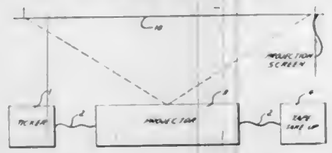
3,358,552
BOTTLE RECOGNITION APPARATUS
Paul J. Schneider, 18 9th Ave., Haddon Heights, N.J. 08035
Filed Oct. 23, 1963, Ser. No. 318,217
4 Claims. (Cl. 88—14)

1. Apparatus for recognizing and distinguishing between light transmissive unit articles according to whether the article has a smooth clear surface or a pattern surface, said apparatus comprising an inspection station having: means for generating a light beam; a pair of photosensitive devices spaced apart by a distance which is related to the pattern surface to be recognized but positioned sufficiently close together to receive light from said beam and to generate electrical signals in response thereto; means for moving unit articles to be recognized one by one transversely through said light beam at a relatively constant speed to modify the light received by said pair of photosensitive devices; and electrical means, including first and second comparitors having equal reference



values but of opposite sign, coupled to the outputs of said photosensitive devices for developing a recognition signal only when the electrical signals generated by either one of said photosensitive devices is substantially larger than the signals developed by the other of said photosensitive devices, said recognition signal, when developed, indicating that a bottle having a pattern surface has been recognized.

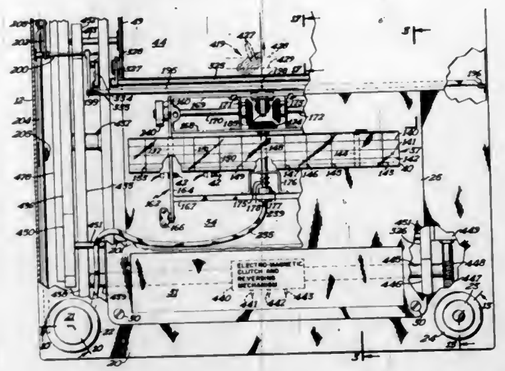
3,358,553
OPTICAL SYSTEM FOR TAPE PROJECTORS
William B. Elmer, Grafton County, N.H., assignor to Trans-Lux Corporation, New York, N.Y., a corporation of Delaware
Filed Feb. 11, 1965, Ser. No. 431,886
13 Claims. (Cl. 88—24)



1. An apparatus for producing a light image of indicia imprinted upon a movable tape of the stock ticker type, said apparatus being adapted for projection of the image thereof upon a screen for viewing purposes, an objective lens directed toward the same, means providing a projecting station, an elongated source of light with its long dimension extending substantially parallel to the direction of light throw from the apparatus, a condenser lens interposed between such source and station, a reflector to the rear of such light source, said reflector having curved surface areas of different configurations in planes at right angles to one another, and said areas and condenser lens confinig the effective rays emanating from said light source to a path defining substantially a ribbon of light at said station.

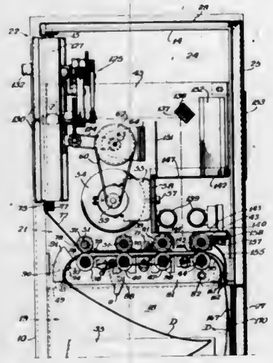
3,358,554
FEEDING APPARATUS FOR SHEET MATERIAL
John G. Benjamin, Minneapolis, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed May 28, 1965, Ser. No. 459,695
24 Claims. (Cl. 88—24)

1. Apparatus for feeding sheet material having at least one row of indicia thereon, comprising
a passageway for passage of said sheet material,
and an elongated magnifying lens element disposed adjacent said passageway with one optical surface thereof directed towards said passageway so as to be exposed to the indicia on any such sheet material in said passageway and a second optical surface thereof disposed so that a selected row of indicia can be readily viewed therethrough,



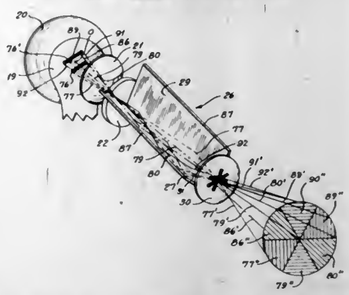
said second surface of said lens element having a guide line thereon for indicating whether the sheet material is so disposed that the selected row of indicia is parallel to the longitudinal axis of said lens element.

3,358,555
MACHINE FOR MICROFILMING FAN-FOLDED DOCUMENTS
Daniel D. Call, Elk Grove, Ill., assignor to Bell & Howell Company, Chicago, Ill., a corporation of Illinois
Original application Oct. 10, 1962, Ser. No. 229,540, now Patent No. 3,255,662, dated June 14, 1966. Divided and this application Oct. 8, 1965, Ser. No. 494,087
11 Claims. (Cl. 88—24)



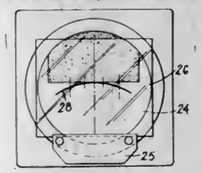
1. In a photographing machine including an exposure zone for documents to be photographed,
a feeding assembly for transporting a document to be photographed through said zone including:
a series of successive frictional feed rolls,
means for driving said feed rolls in unison,
said feed rolls travelling at successively greater peripheral speed,
and respective idler rolls pressing a document in direct frictional feeding relation against said feed rolls,
whereby a document engaged by the feed rolls is placed under wrinkle-free tension.

3,358,556
KALEIDOSCOPE PROJECTOR
John W. Brown, % Brown Manufacturing Company, P.O. Box 201, New Hope, Pa. 18938
Filed Oct. 5, 1966, Ser. No. 584,411
13 Claims. (Cl. 88—24)



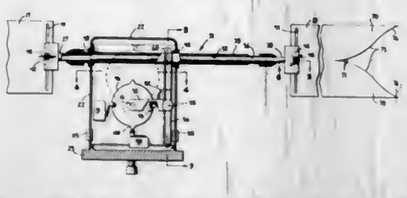
1. A kaleidoscope projector apparatus having a kaleidoscope eyetem including a horizontal kaleidoscope tube, a projection lens at the forward end of the tube, and means rearwardly of the tube for projecting an image thereinto, said last named means comprising a light source, and an image forming means arranged so that light from the light source passes through the image forming means and into the rear end of the kaleidoscope tube, the light source having means providing first and second elongated luminous zones along vertically spaced generally parallel generally horizontal lines passing through the central longitudinal vertical plane through the kaleidoscope tube, one of such luminous zones being spaced a short distance vertically from the central longitudinal optical axis of the kaleidoscope system, rays passing from said first and second luminous zones through the kaleidoscope tube and substantially uniformly illuminating the entire area of the multiple image projected by the apparatus.

3,358,557
OPTICAL CHART AND METHOD
Philip N. Welch, Chester, Vt., assignor to Textron, Inc., Providence, R.I., a corporation of Rhode Island
Filed Oct. 28, 1965, Ser. No. 505,529
9 Claims. (Cl. 88—24)



1. An apparatus for the inspection and measurement of structural parts, comprising a translucent screen, means for supporting a part to be inspected, means for projecting an image indicative of the shape of the part on the translucent screen, and a translucent chart positioned in front of the screen, said translucent chart having at least one visible curved geometric two-dimensional open figure on a surface thereof and a pair of geometric figure limit markings positioned on a surface of the chart and intersecting the open figure, said limit markings being straight lines and being at an angle of substantially 90° with respect to an imaginary straight line passing between the intersection of the limit markings and the geometric figure, whereby conformance and non-conformance of the image of the part with respect to the geometric figure is visibly indicated and wherein close tolerances of the image of the part with respect to the open geometric figure are indicated by the intersections of the image of part with the curved geometric surface and the limit markings.

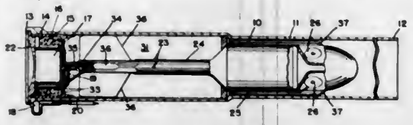
3,358,558
DISSOLVING DEVICE FOR MULTIPLE PROJECTORS
Paul E. Bradley, 3721 N. LaSalle St., Indianapolis, Ind. 46218
Filed July 26, 1965, Ser. No. 474,554
3 Claims. (Cl. 88—28)



1. An optical image projector device for use with a pair of projectors which comprises blind means, each of said projectors being adapted to project a beam of projection light and each including automatic slide changing mechanism, a housing having said blind means mounted thereon, a motor mounted on said housing and coupled to said blind means for moving it into a first position wherein said blind means interrupts the projection light of one of said projectors and for moving it into a second position wherein said blind means interrupts the projection light of the other of said projectors, control means for said motor including circuit means arranged to alternately actuate said projectors to change a slide after the beam of each of them is blocked by said blind means, said control means including a cam wheel mounted on the drive shaft of said motor, three limit switches mounted on said housing, a first of said three limit switches being spring biased to a normally open position, a two pronged electrical plug connected across said first limit switch and engageable with a first of said pair of projectors for actuating the automatic slide changing mechanism thereof, a second of said three limit switches being spring biased to a normally open position, a two pronged electrical plug connected across said second limit switch and engageable with a second of said pair of projectors for actuating the automatic slide changing mechanism thereof, a third of said three limit switches being spring biased to a normally closed position, said third limit switch being connected in series with said motor and controlling the operation thereof, a push button connected across said third limit switch for shorting out said third limit switch and starting said motor in operation, a pair of cams arranged at 180° on said cam wheel and positioned to actuate said third limit switch twice for every single revolution of the cam wheel, and a further cam positioned to actuate each of said first and second switches once for every single revolution of said cam wheel and to actuate and release said first switch just prior to one of said pair of cams actuating said third switch and to actuate and release said second switch just prior to the other of said pair of cams actuating said third switch.

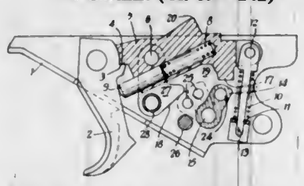
3,358,559
WIRE-GUIDED PROJECTILE PROPELLING SYSTEM
Andrew J. Grandy, North Hills, Pa., assignor to the United States of America as represented by the Secretary of the Army
Filed Dec. 9, 1965, Ser. No. 512,832
7 Claims. (Cl. 89—1.818)

1. In a guided projectile system, the combination of
an elongated cylindrical projectile adapted to be initially launched into relatively short-range ballistic flight by propellant forces externally applied thereto,
a cartridge having a combustible propellant charge,
rocket engine means connected with and carried by said projectile for applying a forward axial thrust thereto and extending the flight range thereof beyond an initial range, means for delaying the ignition of said last-named means for a predetermined time interval wherein said interval begins after said initial launch,
directional guidance means for said projectile in flight having remote-control elements carried thereby and selectively responsive to applied electric control currents,



operating current supply means including a thermal battery positioned to be energized in response to the heat of combustion of said cartridge during launching and to the heat of combustion of said rocket engine propelling said projectile in flight, and
mean including a flexible multi-conductor electric cable connected as a guide wire to transmit control currents from said battery to said projectile for selectively operating said guidance means.

3,358,560
TRIGGER MECHANISM FOR USE WITH AUTOMATIC FIREARMS
Leslie Ernest Ruffell, Dagenham, England, assignor to Sterling Engineering Company, Limited, Dagenham, England
Filed Apr. 29, 1966, Ser. No. 546,221
Claims priority, application Great Britain, May 7, 1965, 19,383/65
4 Claims. (Cl. 89—142)

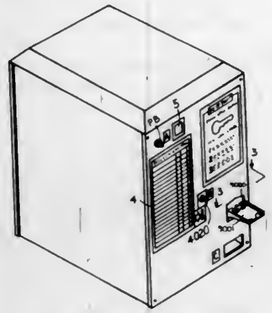


1. A trigger mechanism for an automatic firearm, comprising a frame structure for mounting the mechanism on said firearm, a spring loaded trigger, means mounting the trigger for operating movement in the frame structure, a sear, a link member, means mounting the sear for pivotal movement at a first position on said link member, sear actuating means for causing pivotal movement of the sear upon operation of the trigger, and means at a second position on the link and mounting the link for pivotal movement in the frame structure to constrain the sear into a path extending substantially longitudinally of the firearm and into and out of engagement with the sear actuating means.

3,358,561
AUTOMATIC PATTERN CUTTING AND VENDING MACHINE
Dale F. Roxburgh, and Lee A. Utiger, Omaha, Nebr., assignors, by mesne assignments, to Coin-A-Key, Inc., Omaha, Nebr., a corporation of Nebraska
Filed Oct. 21, 1965, Ser. No. 499,327
14 Claims. (Cl. 90—13.05)

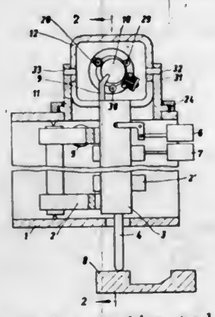
1. A machine for pattern duplication comprising
(a) a pattern receiving and clamping means for receiving and clamping a pattern of which a duplicate is to be made;
(b) workpiece storing means for storing the work from which duplicates are to be made;

(c) means movable between said clamping and receiving means and said storing means for engaging and sensing said pattern, said means comprising a sensing finger at one end and a second clamping means adjacent the other end for receiving a workpiece from said storing means and for clamping same;
(d) pattern cutting means fixed adjacent said workpiece clamp;



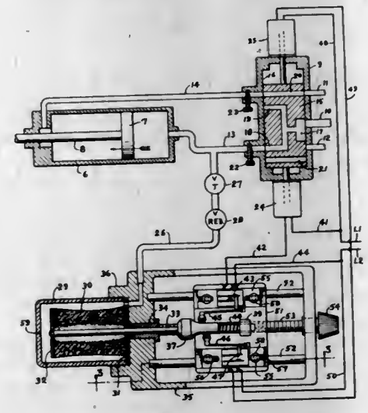
(e) means for delivering a workpiece from said storing means to said second clamping means on said movable means, said movable means enabling relative motion to take place between said sensing finger and pattern receiving means on the one hand, and effecting identical motion between said work clamping means and said pattern cutting means on the other hand; and
(f) automatic means for operating said clamping means, delivery means, cutter means and movable means after a pattern has been received in said key receiving means to cause said movable means carrying said sensing finger and workpiece clamp to engage respectively with said pattern and cutter to follow the contour of said pattern and to cut an identical contour in said workpiece clamped in said workpiece clamp.

3,358,562
TRACING MECHANISM FOR DUPLICATING MILLING MACHINES
Georg Schlapp and Paul Kohl, Langen, near Frankfurt am Main, Germany, assignors to Nassovia Werkzeugmaschinenfabrik G.m.b.H., Langen, near Frankfurt am Main, Germany
Filed Nov. 7, 1966, Ser. No. 592,354
16 Claims. (Cl. 90—62)



1. In a duplicating machine tool having a tracer adapted to follow a pattern, a measuring element mounted on said tracer, an advance control mechanism having a measuring head rotatably engageable with said element for forcing said tracer in constant engagement with the pattern and automatically determining the advance direction as a function of the contact tangent between the tracer and pattern, electrical switch means in said measuring head for transmitting pulses to an electronic control for rotating said head clockwise or counterclockwise as soon as the pattern contour deviates from the contact tangent and for stopping rotation when the contact tangent corresponds with the pattern contour, pressure element means in said head and bearing on said measuring element for producing the advance force by activating said switch means for rotating said head in either direction or in a neutral position for stopping the rotation, and support member means on each side of said switch means to restrict movement of said measuring element and for placing said switch means in neutral position when either support member means engages said measuring element.

3,358,563
AIR CYLINDER CYCLING APPARATUS
Selden T. Williams, Middlebury, Conn., assignor to Scovill Manufacturing Company, Waterbury, Conn., a corporation of Connecticut
Filed July 9, 1965, Ser. No. 470,697
1 Claim. (Cl. 91—246)



In combination with an air cylinder, a piston in the cylinder having an operating rod extending through one end of the cylinder;
(a) a valve casing having separate connections to opposite ends of said cylinder;
(b) a valve in said casing movable between a first position which admits air to one end of the cylinder while opening the other end to exhaust, and a second position to admit air to said other end while exhausting the first end of said cylinder;
(c) means for shifting said valve from the first position to the second position;
(d) a pneumatically controlled device supplied by air from said valve in said first position for activating said shifting means;
(e) additional means for regulating the flow of air to said pneumatically controlled device, said pneumatically controlled device comprising a compartment in communication with said valve, a pressure responsive element in said compartment, a switch actuator connected to said element, a switch actuated thereby and a solenoid connected to said valve and whose energizing circuit is controlled by said switch;
(f) means for manually adjusting the position of said switch relative to said actuator to vary the time of cycling by said valve;
(g) a second solenoid connected to the valve for returning it from its second position to its first position,

and a second switch controlled by said switch actuator, said second switch being in the energizing circuit of said second solenoid; and

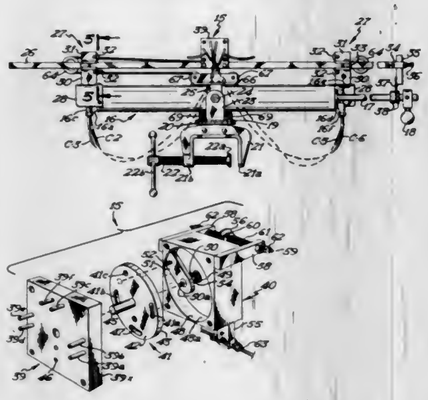
(h) means for manually adjusting the position of one of said switches relative to the other.

3,358,564

FLUID PRESSURE SYSTEM FOR USE IN CONTROLLING STEERING OF OUTBOARD MOTORS AND THE LIKE

Harry L. Peterson, % William & Palmatier, 480 Phillsburg Bldg., Minneapolis, Minn. 55402

Filed Mar. 2, 1964, Ser. No. 348,686
7 Claims. (Cl. 91—375)



1. A fluid actuated control system for selectively power shifting an outboard motor mounted on a boat and in which the motor is shifted during the steering operation in response to movement of a control device such as a steering wheel, said system comprising

a source of gaseous medium such as air under pressure,

a fluid-responsive actuator including a cylinder unit and a piston mounted therein, a piston rod unit extending through one end of said cylinder unit and having sealed relation with said cylinder unit, one of said units being interconnected with said outboard motor for shifting the same,

opposite end portions of said cylinder having intake passages therein for transmitting fluid pressure to opposite sides of said piston, said cylinder also having decompression passages at opposite end portions thereof,

a carriage member connected to one of said cylinder piston rod units for movement therewith,

a valve mechanism interconnected with one of said cylinder and piston rod units and being movable therewith, said valve mechanism having a plurality of interconnectible fluid passages therein and having a shiftable valving element shiftable in opposite directions for simultaneously interconnecting certain of said fluid passages and disconnecting certain of said fluid passages relative to the intake of the fluid passages in said cylinder unit,

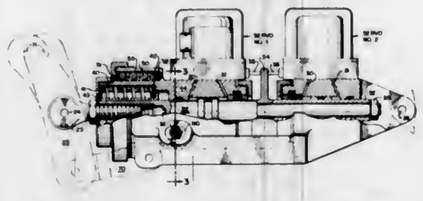
and a control mechanism including a control actuating member mounted for shifting movement in opposite directions from neutral position and being interconnected with said shiftable valving element to cause shifting thereof, means for interconnecting said control element with the steering wheel of the boat whereby movement to said control member in one direction in response to movement of the steering wheel cause corresponding shifting movement of the valving element to thereby interconnect fluid pressure to cause relative shifting movement between said piston rod and cylinder units in one direction while shifting of said control element in the opposite direction in response to movement of the steering wheel will interconnect fluid pressure to the cylinder unit to cause relative shifting movement between said piston rod and cylinder units in the opposite direction.

3,358,565

REDUNDANT ACTUATOR

Richard E. Townsend, Huntington, N.Y., assignor to Fairchild Hiller Corporation, a corporation of Maryland

Filed Mar. 8, 1966, Ser. No. 532,760
10 Claims. (Cl. 91—411)



1. An actuator comprising in combination:

a first power cylinder,

a second power cylinder,

a cylinder aligning means for positioning said cylinders relative to each other,

piston means movably positioned within said power cylinders for tandem actuation by said cylinders,

a first connection point connected to said first power cylinder,

a second connection point connected to said piston means,

first power supply means for actuating said first power cylinder to move said piston means relative to said cylinder,

second power supply means for actuating said second power cylinder to move said piston means relative to said cylinder,

position indicator means for sensing the position of each of said cylinders relative to said piston means, and

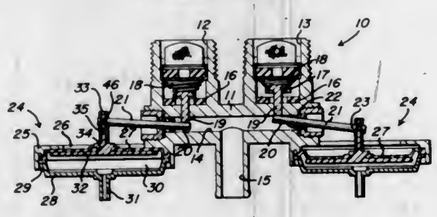
activating means responsive to said indicator means to activate and de-activate each of said power supply means dependent on said relative positions of the corresponding cylinder to said piston means.

3,358,566

PNEUMATIC ACTUATOR AND PARTS THEREFOR OR THE LIKE

Reed A. Palmer, Los Alamitos, Calif., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware

Filed Feb. 23, 1965, Ser. No. 434,208
4 Claims. (Cl. 92—99)



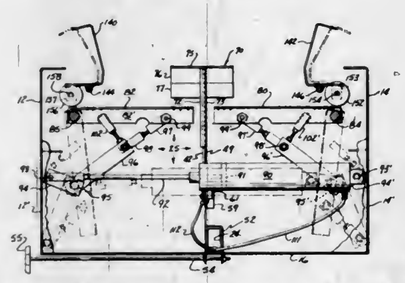
1. In combination, a housing means, a flexible diaphragm carried by said housing means to define a chamber therewith, said diaphragm having a thick central portion provided with an aperture passing therethrough, said aperture defining an outwardly facing beveled surface adjacent the outside of said thick central portion and a cylindrical surface adjacent the inside thereof, and a flat plate disposed in said chamber and having an integral actuating post passing through said aperture whereby one side of said plate is adapted to be disposed against the inside surface of said diaphragm, said post having an annular recess therein adjacent said plate and snap-fittingly receiving said thick central portion of said diaphragm, said annular recess defining a beveled surface on said post mating with said beveled surface of said diaphragm and facing toward said plate and defining a cylindrical portion intermediate said plate and said beveled surface to face said cylindrical surface of said diaphragm whereby said diaphragm is pulled against said plate to provide a fluid seal around said aperture when a vacuum source is interconnected to said chamber.

3,358,567

CARTON FOLDING OR SEALING APPARATUS

Richard W. Tucker, Bettendorf, and Lewis M. Shuh, Davenport, Iowa, assignors to Compacker, Inc., a corporation of Iowa

Filed Apr. 15, 1965, Ser. No. 448,348
20 Claims. (Cl. 93—49)



1. In a carton folding or sealing machine, the combination of a frame generally defining a cavity for receiving a tubed carton having bottom side and end flaps, a pair of folding arms each pivotally mounted adjacent a respective end of the cavity for folding the bottom end flaps toward a folded position, a pair of folding members each mounted for movement between a lowered position adjacent the respective side of said cavity and a raised position for folding the bottom side flaps to a substantially horizontal position against the bottom end flaps, a pair of side guide means mounted adjacent the sides of the cavity for guiding the sides of the tubed carton into the cavity in one position, and means on at least one of the side guide means for engaging a respective folding member when in raised position for moving the side guide means to a second position inwardly against the carton for holding the carton in position with its bottom flaps folded.

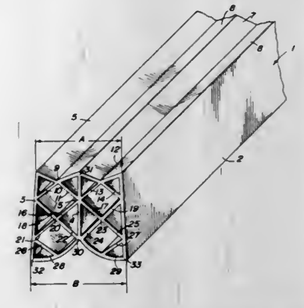
3,358,568

ELASTOMER SEAL STRIPS FOR MOVING JOINTS

Howard R. Brown, Bowling Green, Ohio, assignor to The D. S. Brown Company, North Baltimore, Ohio, a corporation of Ohio

Filed May 28, 1964, Ser. No. 370,935
1 Claim. (Cl. 94—18)

A seal strip for expansion and bridge joints comprising an elongated, elastomer strip having an upper wall composed of two, side-by-side, elastomer, symmetric, shallow V-sections, a pair of spaced, elastomer, downwardly diverging side walls, said side walls diverging at a divergence of one unit measurement of change in transverse distance between outer surfaces of said side walls per 6–10 unit measurement of the vertical height of said side walls, an elastomer, vertical mid-wall extending downwardly from the juncture of said V-sections approximately midway between said side walls, a bottom wall composed of a pair of oppositely and downwardly, convexly curved, elastomer walls extending from the bottom edge of said mid-wall to the bottom of said side walls, and a network of diagonal, elastomer web members including webs extending downwardly and outwardly from the respective bottoms of said V-sections to the upper portions of respective side walls, a first set of additional webs extending



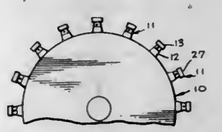
downwardly and inwardly from said respective bottoms of said V-sections, intersecting said mid-wall at a common juncture and continuing across said mid-wall to the lower portion of the opposite side wall, a second set of additional webs extending diagonally downwardly from said upper portions of side walls to the bottom edge of said mid-wall and crossing said first set of webs approximately midway between said mid-wall and the respective side walls, and a web extending downwardly and diagonally from said lower portion of said side walls to the respective convexly curved walls of said bottom wall.

3,358,569

SHEEP FOOT TAMPER

Thomas P. Averette, Los Angeles, Calif., assignor of one-third to James R. Tweedy, Encino, and one-third to Stanley Z. Daniels, Granada Hills, Calif.

Filed July 30, 1965, Ser. No. 475,913
4 Claims. (Cl. 94—50)



1. A sheep foot tamper comprising:

a metal shank having a transverse bore formed therein;

the opposite ends of such shank bore being counterbored;

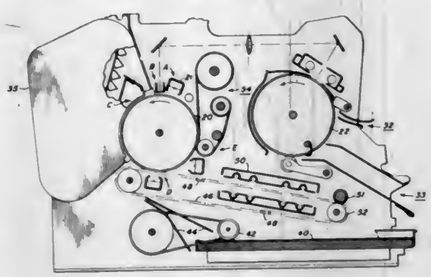
a tamper element having a skirt adapted to be disposed over said shank;

said skirt having a transverse bore co-axial with said shank bore when said skirt is disposed on said shank and being formed with counter-bores opposite said shank bore counter bores;

an expandable split spring washer captured in each of said counter-bores and being co-axial with said transverse bores; and

a tapered pin insertable with said co-axial transverse bores and being adapted to expand said washers in a tension gripping relationship therewith to retain said tamper element on said shank.

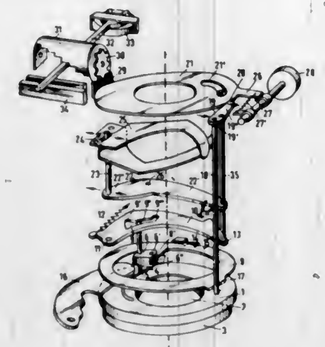
3,358,570
COPY COUNTING SYSTEM
Richard W. Morrill, Webster, and Richard H. Nagel, Fairport, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Nov. 17, 1965, Ser. No. 508,227
4 Claims. (Cl. 95—1.7)



1. A xerographic reproducing machine having a xerographic drum journaled for rotation,
drive means connected to said xerographic drum to rotate said xerographic drum at a constant speed,
a control circuit connected to said drive means for effecting a reproducing cycle during at least one revolution thereof,
said control circuit having a copy counting means for registering the number of copies produced by the machine during successive reproducing runs,
said copy counting means including a first counter for registering cumulatively upon each actuation thereof, each copy of a first predetermined series of copies during a reproducing run,
a second counter for registering cumulatively upon each actuation thereof each copy of a second predetermined series of copies in said reproducing run,
and switching means in said control circuit for producing actuation of said first counter upon the production of each of the first predetermined series of copies and for producing actuation of said second counter upon production of each copy of the second predetermined series of copies,
said switching means being arranged to prevent actuation of said first counter during the reproduction of said first series of copies for at least one cycle in order to allow the machine to complete at least one time-out cycle.

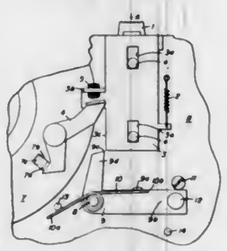
3,358,571
PHOTOGRAPHIC CAMERAS WITH AUTOMATIC AND FLASHLIGHT EXPOSURE CONTROL
Karl Heinz Lange, Bunde-Enniglob, Westphalia, Germany, assignor to Balda-Kamerawerk Rudolf Gruter, Kommanditgesellschaft, Bunde, Westphalia, Germany, a company of Germany
Filed Mar. 24, 1965, Ser. No. 445,840
Claims priority, application Germany, June 2, 1964, B 77,028
8 Claims. (Cl. 95—10)

1. A photographic camera including:
adjustable aperture means; a changeover ring;
a focussing ring;
a control lever for adjusting said aperture means;
a first cam in said focussing ring;
a second cam in said control lever and having first, second and third zones; and
a transmission pin carried by said changeover ring and engaging said cams;
said changeover ring being movable to a first position for daylight photography, a second position for direct flashlight photography and a third position for bounced flashlight photography where said transmission pin lies within a respective one of said zones of said second cam, said first zone being so shaped as to accommodate free movement of said transmission pin and thereby allow adjustment of said aperture



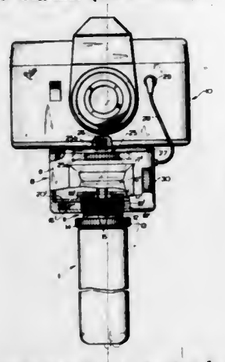
means independently of said focussing ring, and said second and third zones being so shaped as to transmit movement of said transmission pin to said control lever and thereby adjust said aperture means in dependence on adjustment of the focussing ring.

3,358,572
LOCKING MEANS FOR THE RELEASE MECHANISM IN PHOTOGRAPHIC OR CINEMATOGRAPHIC CAMERAS
Kurt Steisslinger, Stuttgart-Hedelfingen, Germany, assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Jan. 22, 1965, Ser. No. 427,365
Claims priority, application Germany, June 4, 1964, K 53,127
9 Claims. (Cl. 95—11)



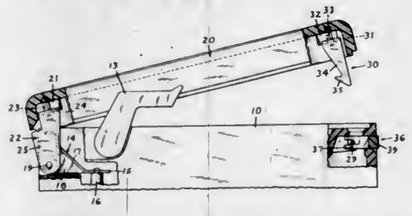
8. In a camera, the combination comprising:
an actuating mechanism for the camera having at least one movable member;
a locking member movable from an inactive to an active position in response to a shock to block said movable member and prevent inadvertent actuation thereof, said locking member having at least two intersecting integral arms and pivoted about the point of intersection of said arms, one of said arms being adapted to move into the path of said movable member upon movement of said locking member from said inactive to said active position, the other of said arms having a weight thereon; and
means for biasing said locking member to said inactive position thereof.

3,358,573
ELECTRONIC FLASH ASSEMBLIES FOR PHOTOGRAPHIC PURPOSES
Oskar Bihlmaier, Braunschweig, Germany, assignor to Voigtlander, A.G., Braunschweig, Germany, a corporation of Germany
Filed May 17, 1965, Ser. No. 456,067
Claims priority, application Germany, June 12, 1964, V 26,153
10 Claims. (Cl. 95—11)



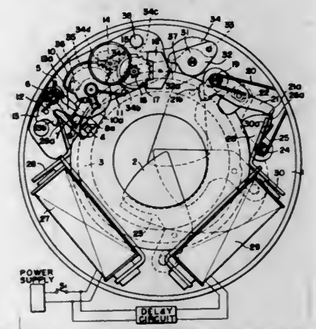
1. For use in photography, a camera having a built-in unit provided only with a plurality of components constituting part of an electronic flash device, a first housing being detachably connected to said camera and carrying the remainder of the components of the electronic flash device, said first housing when attached to said camera providing an operative connection between the components of said built-in unit and the components carried by said first housing so as to provide a first complete electronic flash device, and a second housing carrying only a plurality of components corresponding to those of said built-in unit and capable of being detachably connected with said first housing to form therewith a second complete electronic flash device when said first housing is not connected to said camera.

3,358,574
CAMERA LOCK MECHANISM
Dino A. Liverano, Brooklyn, N.Y., assignor to Whitehouse Products, Inc., Brooklyn, N.Y., a corporation of New York
Filed May 25, 1965, Ser. No. 458,706
5 Claims. (Cl. 95—11)



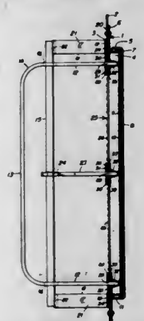
3. In a camera, the combination comprising a central housing; a front cover attached to said central housing and adapted to support light-admitting means; a hinge support mounted within said central housing and having parallel ears at each edge thereof, said ears including aligned trunnion means thereon; a back cover for said central housing; a hinge plate fixed to the inside of said back cover and including spaced ears that have aligned holes therein for receiving said trunnion means; a hooked lock fixed to said back cover; a reed-like spring mounted within said central housing and normally retained in a straight-line position, whereby said hooked lock displaces and latches onto said spring when said back cover is closed; and a release for said lock including a member having spaced parallel legs, each of said legs being bifurcated for receiving said reed spring at points on each side of said hooked lock, and a portion joining said legs that extends through the side wall of said central housing.

3,358,575
SHUTTER MECHANISM FOR CAMERAS
Kiyoshi Kitai, Shinjuku-ku, Tokyo-to, Japan, assignor to Kabushiki Kaisha Hattori Tokeiten, Tokyo-to, Japan, a joint-stock company of Japan
Filed Dec. 31, 1964, Ser. No. 422,592
Claims priority, application Japan, Jan. 9, 1964, 39/593
3 Claims. (Cl. 95—63)



1. In a shutter mechanism for a camera having opening blades normally closed operable from a closed state in an opening direction defining a diaphragm aperture, and closing blades normally open operable from an opened state in a closing direction, means for driving said opening blades and means for driving said closing blades at a speed faster than a speed at which said opening blades are driven, the improvement which comprises a programmable control device controlling opening of said opening blades in accordance with a predetermined relation between the lapse of time in the opening of said blades and the diameter of said diaphragm aperture, a control member in said programmable control device cooperative with said means for driving said opening blades, and variably operable delay means controlling closing of said closing blades operable to vary after the opening blades start to open the starting time of the closing blades, thereby to determine the exposure value.

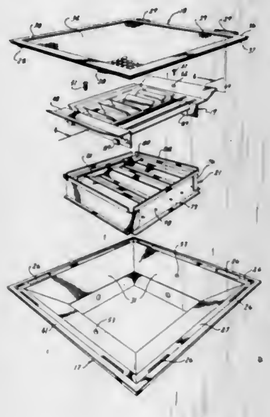
3,358,576
VENTILATOR FOR OPENING IN A WALL
Daniel Allcott Kelly, 312 Broad St., and Timothy A. Kelly, 423 Market St., both of Salem, Va. 24153
Filed Oct. 22, 1965, Ser. No. 501,204
8 Claims. (Cl. 98—2)



1. A hingeless ventilator for ventilating a compartment through an opening in a wall thereof, comprising a clo-

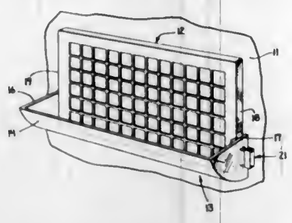
sure member swingable against a side of said wall for opening and closing said opening, spaced guide means fixed to and instanding from an opposite side of said wall, rod means carried by said closure member and spring-urged into engagement with said guide means for urging said closure member against said wall and positioning said member relative to said opening, spaced means rigid with said closure member and extending through said opening for guiding said rod means along said guide means and enabling said closure member to be swung against said wall, screen means substantially covering said opening and having slots for accommodating movements of said spaced means, and resilient means mounted in and having overlappable flaps closing said slots.

3,358,577
AIR DIFFUSING REGISTER
Quentin R. Thomson, Tucson, Ariz., assignor to Krueger Manufacturing Company
Filed Aug. 16, 1965, Ser. No. 479,937
4 Claims. (Cl. 98—40)



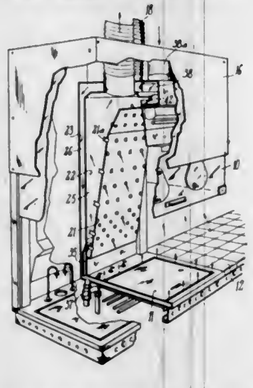
1. In an air diffusing register for the purpose and of the character described, the combination of
(a) a casing having a generally rectangular peripheral portion adapted to be supported approximately flush with a room wall,
(b) a diffusion plate releasably supported within said peripheral portion and generally coplanar therewith,
(c) a reduced area portion of said casing adapted to be connected to a duct of an air conditioning system,
(d) a portion of said casing connecting said peripheral portion and reduced area portion so that all air entering said reduced area portion will pass through said diffusion plate,
(e) an opposed blade damper subassembly supported in said reduced area portion, and
(f) an air deflector unit supported in said reduced area portion but spaced from said opposed blade damper unit to form a relatively small plenum chamber,
(g) said air deflector unit including a plurality of mutually aligned pivoted arcuate louvers positioned within said casing to permit air to pass over both sides of each of said louvers and with unpivoted edges lying in close proximity to the said diffusion plate, said pivoted louvers each pivotally mounted on a frame secured to said casing.

3,358,578
AIR DEFLECTOR WITH ENCLOSED MAGNET MOUNTS
Christoph P. Meyer, 2901 E. 46th St., Indianapolis, Ind. 46225
Filed Feb. 9, 1966, Ser. No. 526,175
9 Claims. (Cl. 98—103)



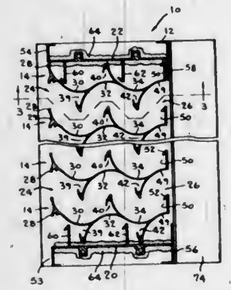
1. A mounting combination comprising; a mounting edge having a detent thereon:
a magnet having first and second pole means therein, said pole means having spaced faces magnetized to opposite polarities by said magnet;
a housing having said magnet therein and an adapter face with said pole means proximate thereto,
said housing having end walls, a first end wall having a first groove therein, said grooved end wall being thereby arranged for reception on said mounting edge,
and said housing having a latch, said latch projecting into the groove and being mounted to resiliently resist movement out of the groove, and thereby snap out into the groove after passing said detent on said mounting edge during installation, said latch having an abutment to interlock with the detent and prevent removal of the housing from the mounting edge.

3,358,579
FUME-CHAMBER VENTILATING DEVICE
Francois Hauville, Boulogne-sur-Seine, France, assignor to Teclab, Ruell, Hauts-de-Seine, France
Filed Mar. 9, 1966, Ser. No. 532,984
Claims priority, application France, Mar. 12, 1965, 8,994, Patent 1,438,343
10 Claims. (Cl. 98—115)



1. A fume hood particularly for laboratory tables to separate the solid residues and the gaseous residues from the fumes and evacuate them separately comprising a casing, a partition in said casing dividing said casing into a working chamber and an evacuation chamber having an internal wall communicating with one another, evacuation means for the solid residues at the lower portion of said casing, means for ejecting the gaseous residues to the atmosphere at the upper portion of said casing, suction means for establishing a circulation of air between said chambers, a plurality of vents in the form of conduits formed by convergent tubes in said partition projecting into said evacuation chamber and directed towards said internal wall so that air charged with said residues in said working chamber flows at greater speed into said evacuation chamber, said vents strongly projecting the solid residues upon said internal wall, means for projecting a current of descending fluid upon said internal wall to trap and dilute said solid residues and carry them towards said evacuation means while the gaseous residues are ejected to the atmosphere.

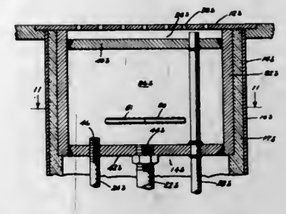
3,358,580
LOUVER ASSEMBLY INCLUDING SEPARATING TRAPS
Frank A. Freese and Edgar L. Westbury, Madison, Wis., assignors to Wehr Corporation, Milwaukee, Wis., a corporation of Wisconsin
Filed Aug. 27, 1965, Ser. No. 483,199
11 Claims. (Cl. 98—121)



4. A louver assembly comprising, in combination,
a frame defining relatively spaced inlet and outlet,
a plurality of louver blades supported in said frame and relatively spaced in a direction transverse to the direction between said inlet and outlet to permit flow from said inlet to said outlet, each of said louver blades including a plurality of generally arcuate concave-convex segments arranged serially in the direction of flow between said inlet and outlet,
the concave face of the arcuate segments of each of said louver blades being directed toward the convex face of an adjacent louver blade to thereby define an undulating flow path having a plurality of changes in direction between said inlet and outlet,
and trap portions connected to said louver blades at the convex faces thereof and at said changes in direction and projecting outwardly of said convex faces into the flow path between adjacent louver blades, said trap portions being directed toward said inlet.

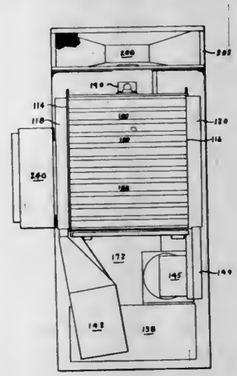
3,358,581
FOOD WARMING APPARATUS
Charles Harris, Jr., Peru, Ind., assignor to The Dewey-Shepard Boiler Co., Inc., Peru, Ind.
Filed June 21, 1961, Ser. No. 118,575
3 Claims. (Cl. 99—234)

1. A steaming head assembly for warming food products comprising a vertically disposed tubular casing member having open upper and lower ends, an apertured plate member extending across said upper end of said casing member, a first plate member extending across said casing member spaced from said apertured plate member and defining a dry steam chamber therewith, another plate member extending across said casing member spaced from said first plate member and defining a steam storage chamber therewith, a raw steam inlet conduit extending through said other plate member for introducing steam to said storage chamber from a source of steam supply, a steam outlet conduit extending through and above said other plate member and spaced from said raw steam inlet passage, a dry steam inlet conduit extending through both of said plate members and spaced from said raw steam inlet conduit for introducing dry steam into said dry steam chamber, a control valve disposed on the side of said other plate member remote from said steam storage chamber and connecting said steam outlet conduit



to said dry steam inlet conduit for selectively admitting steam from said steam storage chamber to said dry steam chamber, and a generally horizontally disposed baffle plate member in said steam storage chamber having an edge secured to said tubular member, said baffle member being spaced from said other plate member and extending over said raw steam inlet conduit for deflecting steam injected thereby into said storage chamber and circulating the steam therein, said baffle member being generally triangular with the apex thereof extending over said raw steam inlet conduit to the exclusion of said outlet conduit.

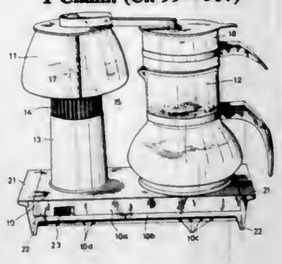
3,358,582
CEREAL PROCESSING MACHINE
George O. Graves, 802 S. Carlisle, South Bend, Ind. 46619, and Edwin F. Kelley, Dallas, Tex.; said Kelley assignor to said Graves
Filed Mar. 7, 1966, Ser. No. 532,214
11 Claims. (Cl. 99—238)



1. A machine for extruding and puffing cereal, comprising an extruding mechanism having a housing with a bore, a screw in said bore, a head plate across the end of said bore containing an extrusion hole communicating with said bore, said bore having an inlet passage, a channel means for supplying cereal to the inlet passage of said extruding mechanism, said channel means having a gravity feed portion, and means in the gravity feed portion of said channel means forming two sets of flow passages through one of which the cooling fluid flows and through the other of which the cereal flows for cooling the cereal before it enters said inlet passage.

3,358,583
HOUSEHOLD APPLIANCE FOR PRODUCING EXTRACTS OF COFFEE, TEA AND THE LIKE

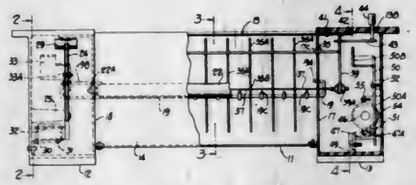
Louis L. Lepoix, Quettigstrasse 10A, Baden-Baden, Germany, and Alfred Plechinger, Hohentwietstrasse 6, Schwenningen (Neckar), Germany
Filed July 30, 1964, Ser. No. 386,191
Claims priority, application Germany, Aug. 2, 1963, W 30,922
1 Claim. (Cl. 99—307)



Electric household appliance for producing extracts of coffee, tea and the like, comprising an enclosed plastic tray-like base plate having air inlet apertures therein, a column projecting upwardly from one end of the base plate and having a peripheral apertured section in communication with said air inlet apertures in the base plate, a cold water container provided on the apertured section of the column, said apertured section of the column being clamped between the cold water container and a lower part of the column, a riser tube connected to the bottom of the container and extending down into the column and back up through the container and finally leading to a hot water receiving vessel, and an electric heater around the tube and in the column to heat the water in the portion of the tube which extends back up to the container.

3,358,584
FOOD COOKING DEVICE

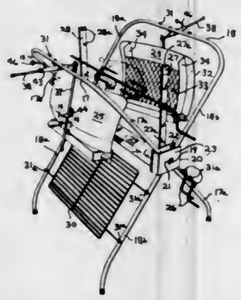
Earl E. Sutton and Terry M. Brain, Mansfield, Ohio, assignors to Dominion Electric Corporation, a corporation of Ohio
Filed Jan. 26, 1966, Ser. No. 523,221
40 Claims. (Cl. 99—329)



1. A toaster for bread and the like comprising the combination of a supporting structure adapted to accommodate a piece of bread or the like to be toasted, a rack member carried by the supporting structure and guided thereby to be moved between toasting position and non-toasting position, said rack member being adapted to support a said piece of bread or the like and to carry it between said toasting and non-toasting positions, electrical resistance heating means carried by the supporting structure in juxtaposition to said toasting position for toasting said piece of bread or the like supported on the rack member in said toasting position, said rack member being biased toward said non-toasting position, an armature piece carried by said rack member and movable therewith, a magnet carried by said supporting structure in position to face said armature piece and magnetically oriented to magnetically attract and retain said armature thereto upon the rack member being moved to toasting position and thereby retain the rack member against the bias thereof in toasting position, first electrical coil means disposed in juxtaposition to said magnet to oppose, upon electrical energization of the coil, the magnetic attraction of said magnet for said armature and the retention thereof and thereby permit the rack member carrying said armature to move toward non-toasting position, sensing means carried by said supporting structure in juxtaposition to said rack member in toasting position to sense the temperature of a said piece of bread or the like being toasted in said toasting position by said electrical resistance heating means, a switch mechanism biased toward one of two alternate positions, second electrical coil means disposed in juxtaposition to said switch mechanism to oppose the bias thereof and to operate the same to the other of said alternate positions upon energization of the second electrical coil means, said second electrical coil means being positioned to be subjected substantially less than said sensing means to the temperature of a said piece of bread or the like in said toasting position, said second electrical coil means having a substantially greater electrical resistance than the electrical resistance of the said sensing means at non-toasting temperature ranges, said second electrical coil means having a substantially lesser electrical resistance than the electrical resistance of the said sensing means at toasting temperature ranges, and electrical circuit means carried by the said supporting structure adapted to be connected to a source of electrical energy, said circuit means interconnecting said switch mechanism and said first electrical coil means to cause energization of the same upon operation of the said switch mechanism to said other alternate position of the switch mechanism, said circuit means interconnecting said sensing means and said second electrical coil means to cause energization of said second coil means upon energization of the second electrical coil means upon increase of the electrical resistance of the sensing means relative to the electrical resistance of the second coil means by an increase in the temperature of the sensing means sufficient to reverse the ratio of the relative resistances of the sensing means and the second coil means, said circuit means being connected to said electrical resistance means for the energization of the same.

3,358,585
GRILL ASSEMBLY

Arnold M. Scherer, 8660 Crabb Road, Temperance, Mich. 48182
Filed Feb. 1, 1966, Ser. No. 524,327
26 Claims. (Cl. 99—340)



1. A portable and collapsible grill assembly comprising, in combination:

a pair of oppositely facing inverted U-shaped support members each having a pair of generally parallel leg segments and an upper end interconnecting said pair of leg segments, one pair of said leg segments being medially and pivotally interconnected with the other pair of said leg segments to thereby accommodate relative scissor-like pivotal movement of said support members between alternative erected and collapsed positions, said support members in said erected position being pivotally deployed to attain oppositely disposed oblique upstanding positions and in said collapsed position being pivotally deployed to attain generally parallel relationship;

a heating and cooking region defined intermediate the upper portions of said support members when deployed in said upstanding positions;

food supporting means including a grilling rack, a spit, means for seating said grilling rack upon said upper ends of said support members in bridging relationship with said heating and cooking region and with said support members being arranged in erected position, means for supporting a spit across the heating and cooking region of said grill assembly in underlying relationship with the aforementioned seated position of said grilling rack, said last-mentioned means also being arranged to accommodate free removability and rotatability of said spit;

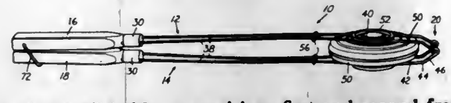
a pair of heating units, each of said heating units comprising an imperforate back section of lightweight and heat-resistant material, an open front section arranged in spaced and generally parallel relationship with said back section, a reflective surface interposed between said back section and said front section, and a heating chamber defined between said reflective surface and said front section;

adjustable means separately suspending one each of said heating units in depending relationship with said upper end of one each of said support members, said adjustable means comprising a pair of separately adjustable means, each of said pair of adjustable means including a first supporting arm and a second supporting arm pivotally interconnected with said first supporting arm and carrying one of said heating units in depending relationship with said first supporting arm, one each of said first supporting arms being slidably interconnected with one each of said upper ends of said support members to accommodate selective adjustable movements thereof together and as a unit with one of said second supporting arms and one of said heating units relative to said support members in a horizontal path leading alternatively towards and away from said heating and cooking region, said first and second supporting arms of each pair of adjustable means having a horizontal axis of pivotal interconnection disposed normal to said horizontal path of adjustable movement to thereby accommodate selective pivotally adjustable movement relative to said heating and cooking region of each of said second supporting arms together as a unit with one of said heating units, said second supporting arms including means for accommodating axially slidable and rotatable adjustable movements of said heating units along the length of said second supporting arms, one each of said pair of adjustable means together with one of said heating units being arranged to travel with one each of said support members between said alternative erected and collapsed positions;

means for releasably locking each of said first supporting arms in alternative horizontally adjusted positions relative to said support members, means for releasably locking each of said heating units in alternative slidably and rotatably adjusted positions on said second supporting arms, and means for releasably locking each pair of pivotally interconnected first and second supporting arms in alternative pivotally adjusted positions.

3,358,586
UTENSIL HOLDER

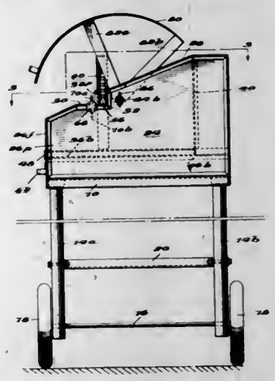
Walter A. Thorngren, Sr., 1572 Blackhawk Road, Moline, Ill. 61265
Filed Apr. 20, 1966, Ser. No. 543,852
9 Claims. (Cl. 99—402)



1. A utensil holder comprising: first and second frame members, handle means at one end of said frame members, hinge means interconnecting the other end of said first and second frame members, each of said frame members having a pair of opposed utensil engaging means, said opposed engaging means of each pair normally being movable apart whereby a utensil may be received between them, and holding means operable to hold said engaging means from outward movement to secure the utensil therebetween.

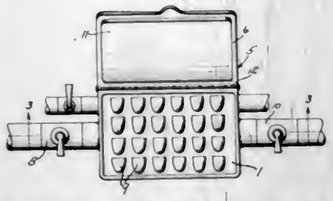
3,358,587
FOOD COOKERS

Delvin M. Hunt, 27 Rio Vista Drive 40207, and William R. Clark, Jr., 1874 Trevilian Way 40205, both of Louisville, Ky.
Filed Jan. 24, 1966, Ser. No. 522,495
8 Claims. (Cl. 99—421)



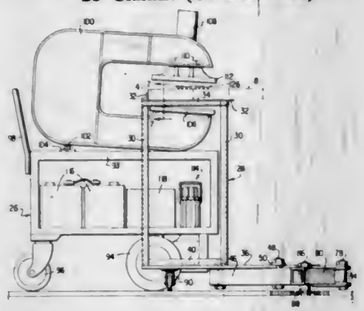
1. A charcoal grill comprising, in combination: support means providing a horizontal supporting surface; spaced-apart upright side members affixed to said supporting surface and forming with said supporting surface a partial enclosure which is open on top and on its front and rear sides; a horizontal trackway extending in front-to-rear direction through said partial enclosure and at a level above that of said supporting surface; a fire-box and slide frame assembly supported on said trackway for movement therealong and being bodily removable and remountable through either the open front or rear side of said partial enclosure, said assembly comprising a vertically disposed fire-box disposed to extend transversely of said space and a horizontal slide frame having its rearward end rigidly affixed to the lower portion of said fire-box and extending forwardly therefrom, the forward end of said slide frame incorporating handle means for manually adjusting the front-to-rear position of the fire-box along the trackway; means on said upright side members for mounting the holding means for the meat, fowl or the like being cooked forwardly of said fire-box; and a drawer serving as a catch pan supported on said supporting surface in the space between said side members and below the trackway and being also bodily removable and remountable through either the open front or rear side of said partial enclosure.

3,358,588
APPARATUS FOR SHAPING AND COOKING FOOD
Michael Rossnan, 11724 Lovejoy St., Silver Spring, Md. 20902
Filed Oct. 7, 1965, Ser. No. 493,664
1 Claim. (Cl. 99—426)



A food shaping and cooking device including an integral base jacketed rectangular member having valved inlet and outlet connections to the jacket for steam and cold water, respectively, and provided with a plurality of open transverse rounded bottom cavities open at the top of the member, and a hinged lid connected to the jacketed rectangular member adapted to seal thereagainst, whereby the food contained in the base member is shaped, cooked and cooled.

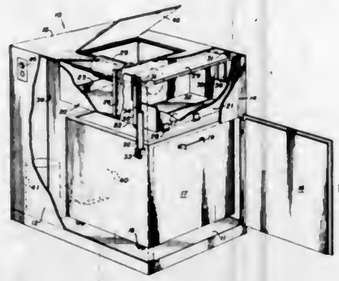
3,358,589
WOOD ROOF TRUSS FABRICATION APPARATUS
Walter G. Hentzschel, Bethesda, Md., assignor to Timber Engineering Company, Washington, D.C., a corporation of Delaware
Filed Dec. 20, 1965, Ser. No. 520,823
23 Claims. (Cl. 100—100)



12. In combination, apparatus for assembling wood roof trusses of the type having pressed in truss plates comprising a plurality of individual stands, each of said stands having an open frame at the top thereof for supporting a truss member, said stands each having a pair of shelves on opposite sides of the stand, a plate extending between said pair of shelves, and a wheeled cart having a press thereon, said press having a fixed platen and a movable platen mounted in opposed relation on a press frame, said frame being hingedly mounted on said cart, and said stands each having an opening in one side for receiving said press, whereby the platens are positioned on opposite sides of the plate for pressing truss plates into wood members.

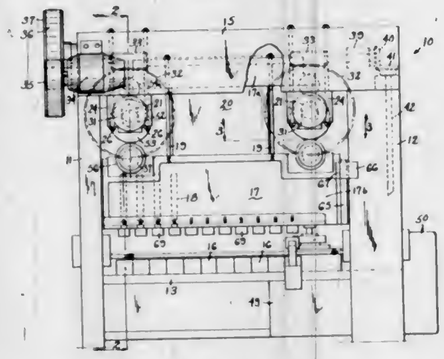
3,358,590
WASTE COMPRESSOR
Billy G. Howard, Arlington, Tex., assignor of one-half to Clyde R. Ashworth, Arlington, Tex.
Filed Aug. 18, 1966, Ser. No. 573,245
3 Claims. (Cl. 100—218)

1. A waste compressor comprised of a cabinet having a door in the top thereof, a container removably received in said cabinet, a rectangular compression chamber in said cabinet beneath said door and above said container, a vertical pusher blade transversely mounted in said compression chamber, means horizontally reciprocating said vertical pusher blade between a front and a back wall of said chamber, a trap door in the bottom of said compres-



sion chamber adjacent the front wall thereof, means opening and closing said trap door, said last named means including a horizontal blade above said trap door, and means vertically moving said horizontal blade.

3,358,591
PRESS
Charles Robert Bradlee, Cheshire, Conn., assignor to Textron Inc., Providence, R.I., a corporation of Rhode Island
Filed Oct. 23, 1965, Ser. No. 503,199
21 Claims. (Cl. 100—257)



2. A press comprising a frame, a ram slidable upon said frame, a plurality of aligned plungers slidably carried in said ram, means for vertically reciprocating said ram between predetermined upper and lower positions, each of said plungers having a tool holder thereon, and means interposed between each of said tool holders and said ram for predetermining the position of said plungers with respect to said ram when said ram is in a forming position.

3,358,592
ELECTROGRAPHIC PRINTING
Daniel J. Nesin, Arcadia, and Leland D. Green, Sierra Madre, Calif., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Mar. 17, 1966, Ser. No. 535,074
11 Claims. (Cl. 101—45)

1. An apparatus for forming a latent electrostatic image on a charge-retaining recording web comprising at least one shaped electrode on a first side of said recording web, a flat-surfaced backing electrode on the other side of said recording web opposite said shaped electrode, said electrodes being spaced apart a distance greater than the thickness of said recording web so that

said web may freely move in the gap formed by said electrodes, web feeding means to intermittently advance said recording web through said open gap, means to bring said electrodes sufficiently close together to press against opposite sides of said recording web to thereby close said gap after web advance, means for applying an electrical recording pulse across said electrodes while said recording web is stationary to form an electrostatic

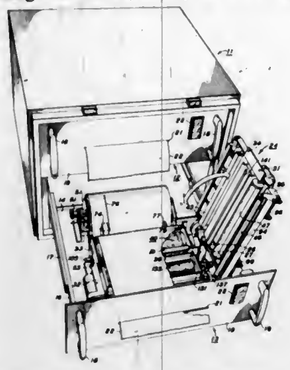
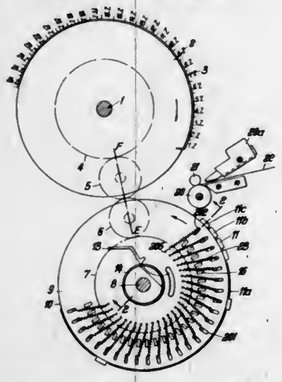


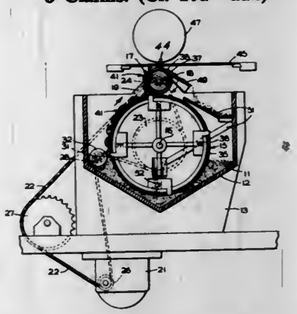
image of said shaped electrode on said recording web, control means to actuate said pulsing means after said electrodes have been brought together to press against opposite sides of said recording web, means to reopen said gap after duration of said pulse whereby said web feeding means can advance said recording web at least one line through said reopened gap to position said recording web for recording another line of output.

3,358,593
APPARATUS FOR PRINTING SELECTED SECTIONS OF A PRINTING FORM
Wilhelm Ritzerfeld, Schorlemer Allee 14, Berlin-Dahlem, Germany, and Gerhard Ritzerfeld, Franzensbader Strasse 21, Berlin-Grunewald, Germany
Filed Jan. 27, 1959, Ser. No. 789,426
Claims priority, application Germany, Jan. 31, 1958, R 22,593; July 2, 1958, R 22,641
12 Claims. (Cl. 101—91)



1. In a printing machine, in combination, printing roller means having an axis of rotation and including means for holding a printing form having sections for columns or lines of characters extending parallel to said axis and disposed around the periphery of said printing roller means, said printing roller means having a peripheral circular surface portion for supporting the printing form and extending over a circumferential arc of predetermined circumferential length correlated with the circumferential extension of the printing form; counter pressure roller means having an axis of rotation parallel to said axis of rotation of said printing roller means and having a peripheral surface whose circumference is at least equal to said predetermined circumferential length, said peripheral surface defining with said printing roller means a printing plane passing through said axes of said roller means; a plurality of printing members having a number corresponding to the greatest number of sections to be printed, being elongated in axial direction, disposed about the periphery, and mounted on said peripheral surface of said counterpressure roller means along a circumferential arc having substantially said predetermined length movable in radial direction between a retracted inoperative position and an advanced printing position, said pressure faces being narrow and elongated, extending in axial direction of said printing roller means and defining in said advanced printing positions of the respective printing members a printing line with the peripheral surface of said printing roller means when passing through said printing plane whereby copy sheets supplied to the bight between a printing form on said printing roller means and said counter pressure roller means and passing through said printing line are imprinted only by sections of said printing form located between the respective corresponding pressure faces of said printing members in said printing position and the peripheral surface of said printing roller means; and control means for selectively moving each of said printing members to and from said printing position thereof for selecting desired sections of said printing form for printing.

3,358,594
ELECTROSTATIC PRINTING WITH A MAGNETIC BRUSH FEED
William James Thompson, Trenton, N.J., assignor to American Can Company, New York, N.Y., a corporation of New Jersey
Filed Jan. 17, 1966, Ser. No. 521,144
8 Claims. (Cl. 101—114)



1. An electrostatic printing apparatus, comprising:
a source of a mixture of magnetic particles and chargeable printing particles;
magnetic roller conveyor means having a surface layer of magnetic rubber of predetermined thickness for feeding said mixture of said magnetic particles and chargeable printing particles from said source to the surface of a movable applicator roller, the lower portion of said conveyor means being immersed in said mixture;
said movable applicator roller having a surface carrying a multipole magnetization, said multipole magnetization extending across the roller in a fixed linear relationship;
said multipole magnetization on said applicator surface having a magnetic field strength greater than the magnetic field strength of said magnetic conveyor means;
means for creating an electrostatic field across a gap

between said applicator means and an article to be printed upon, whereby said magnetic particles and chargeable particles are built up in a brush-like layer across the surface of said roller applicator means and said chargeable printing particles are transferred across a gap from said mixture on the applicator means to said articles;

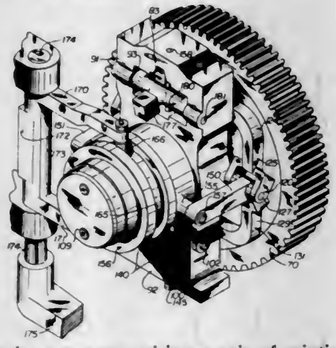
and means for receiving, agitating and returning any excess mixture to said source, through said conveyor means.

3,358,595

ROTARY PRINTING PRESS REGISTER CLUTCH

Robert E. Lindemann, Medina, Ohio, assignor to Harris-Intertype Corporation, Cleveland, Ohio, a corporation of Delaware

Filed Jan. 18, 1965, Ser. No. 426,142
18 Claims. (Cl. 101—183)



1. A printing press comprising a pair of printing units; each of said printing units including an impression cylinder having gripper means thereon for advancing sheetlike material through its printing unit; a chain transfer mechanism having gripper means for receiving the material from the gripper means on the impression cylinder of one unit and for transferring the material to the gripper means on the impression cylinder of the other printing unit; common drive means for said printing units including a clutch means for disconnecting the printing units from each other so that each of said printing units may be driven independently of the other; a drive for said chain transfer mechanism from at least one of said printing units and including a printing unit drive gear driven from said common drive means, a chain transfer drive gear driven from said printing unit drive gear, a drive shaft for driving said chain transfer mechanism, a drive member drivingly connected with said drive shaft to effect rotation thereof upon rotation of said drive member, said drive member and said chain transfer drive gear each having a driving slot therein in which slots have an aligned position, a driving key member movable into said slots and providing a drive connection between said drive member and said chain transfer drive gear and movable from said slots to break the drive connection therebetween; and means separate from said drive member for moving said key into and from said slots whereby all the rotational force for driving said chain transfer drive shaft is transmitted through said driving key member and said drive member.

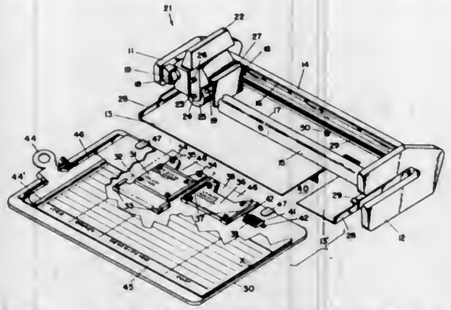
3,358,596

PRINTING INSTRUMENT

Robert L. Davis, Alexandria, Va., assignor to Farrington Business Machines Corporation, Springfield, Va., a corporation of Massachusetts

Filed Feb. 19, 1965, Ser. No. 433,913
6 Claims. (Cl. 101—269)

1. In the art of printing machines of the type adapted to use portable printing plates a machine comprising a base, a pair of spaced guide rails defining a path, a platen head assembly adapted for rockable motion into and out of printing position, bearing means for reciprocally moving the platen head assembly by way of said path over the base, a portable tray defining a printing bed removably seated on the base so a part of the tray completely underlies the path traversed by the platen head assembly, said tray of rigid one piece sheet material and affording a generally rectangular planar printing bed adapted to support a printing plate for having an imprint made



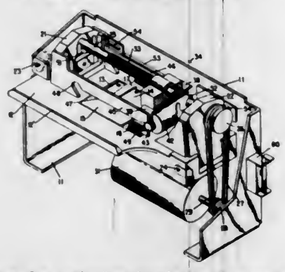
therefrom, a spring biased clip attached to the tray for fastening a document thereto to overlie the printing plate support area, guide means for locating a document on the tray, rim means integral with said base for receiving and positioning the tray, said rim means overlapping the tray at two opposite sides thereof for holding the tray within a fixed plane, means on the tray for temporarily securing the printing plate thereto, the document being fastened by the spring biased clip to the tray in such a manner to prevent the document from bellowing when a printing operation is taking place.

3,358,597

TRAVELING CYLINDER PRINTING DEVICE

William Plumb Barbour, Fairfax County, and Yow-Jiun Hu, Alexandria, Va., assignors to Farrington Business Machines Corporation, Springfield, Va., a corporation of Massachusetts

Filed Aug. 13, 1965, Ser. No. 479,469
6 Claims. (Cl. 101—269)



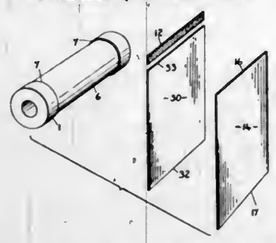
1. Apparatus for printing business forms and the like comprising a base member adapted to support a printing means, a partially threaded shaft mounted to lie parallel to said base member and upwardly spaced in relation with said printing means support area, a carriage having a threaded female portion to receive the threaded part of said shaft for movement relative thereto, a roller platen, means for mounting said roller platen on said carriage for movement therewith, automatic means for rotating said shaft, said shaft being threaded so at least to engage the carriage assembly in screw-like fashion while the carriage traverses the area to be occupied by the printing means, resilient means for biasing said carriage assembly back so its female threaded portion will abut the threaded part of the shaft when driven therefrom.

3,358,598

METHOD OF MOUNTING PLATES TO PRINTING MACHINE CYLINDERS

John O'Brien Middleton, 1303 Lewisham Drive, Clarkson, Ontario, Canada

Filed Jan. 27, 1966, Ser. No. 523,437
4 Claims. (Cl. 101—378)



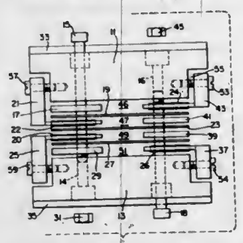
3. In a printing cylinder and backing sheet assembly; a cylinder having a backing sheet receiving surface, a raised shoulder at at least one end thereof; a strip of adhesive extending longitudinally of the backing sheet receiving surface, and first index means on the cylinder; a non-deformably flexible backing sheet carrying selectively aligned printing plates thereon and mounted on the said receiving surface with a side edge of said backing sheet abutting the first raised shoulder of the cylinder; second index means on said backing sheet for registration with said first index means, said backing sheet being tightly wrapped about said receiving surface with longitudinal opposite ends thereof in substantially edge-abutting relationship overlapping the aforementioned adhesive strip, said strip being interposed between the cylinder and the underside of the backing sheet to releasably adhere said backing sheet to the cylinder such that the backing sheet assembly can be repeatedly removed and remounted on the cylinder in proper registration; said assembly being further provided with a flexible, non-deformable base sheet adhered about the receiving surface and interposed between said receiving surface and said backing sheet with longitudinal edges thereof substantially spaced apart and with the said strip of adhesive on the receiving surface therebetween, said receiving surface being substantially evenly built up by the thickness of the base sheet and the adhesive strip.

3,358,599

PRINTING TYPE HOLDER

Walter H. Douglass, Sr., Oreland, Pa., assignor to American Components Inc., Conshohocken, Pa., a corporation of Pennsylvania

Filed Apr. 1, 1965, Ser. No. 444,725
4 Claims. (Cl. 101—394)



1. A type holder assembly comprising in combination:

(a) first and second end pieces;

(b) a plurality of L-shaped clamp pieces disposed to have the long sections thereof lying parallel with said end pieces so that each top edge of the "L" comes in contact with associated type placed in said holder and disposed to have the short sections of each "L" overlap said end pieces;

(c) a plurality of spacers, each of which is associated with a different one of said L-shaped clamp pieces, each of said spacers being as wide as its associated L-shaped clamp;

(d) bolting means mounted with said first and second end pieces to hold each of said L-shaped clamp pieces with its associated spacer in between said first and second end pieces so that an aperture between each L-shaped clamp and its associated spacer is defined wherein type is held;

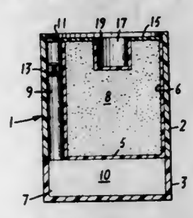
(e) fastening means mounted through said short sections of said L-shaped clamp pieces into said end pieces to hold said L-shaped clamp pieces against said type such that each of said L-shaped clamp pieces exerts a pressure against the type in the aperture it defines with its associated spacer, thereby holding said type securely in said housing.

3,358,600

SELF-DESTROYING EXPLOSIVE CARTRIDGE FOR UNDERWATER SEISMIC EXPLORATION

George L. Griffith, Coopersburg, and William L. K. Schwoyer and Stephen L. Mayer, Allentown, Pa., assignors to Trojan Powder Company, Allentown, Pa., a corporation of New York

Filed Jan. 13, 1966, Ser. No. 520,330
14 Claims. (Cl. 102—24)



1. An explosive container that, after immersion in water, exposes an explosive charge contained therein to water in a manner to distribute the explosive therein, comprising a container having a first compartment for an explosive charge and a second compartment for a water-expandible material, a passage leading from outside the cartridge container into the second compartment for flow of water thereinto when the cartridge is immersed in water, but capable of substantially containing an increase of volume of material in the second compartment, and means to expose an explosive charge in the first compartment to water, operable under pressure arising from an increase in volume in the second compartment, including an inner receptacle for an explosive charge defining the first compartment and forming a barrier separating the first compartment from the second compartment, and adapted to be pushed out of the container under pressure arising from an increase in volume in the second compartment.

3,358,601

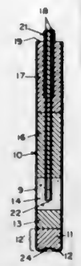
INITIATOR SYSTEMS

David J. Dittmann and Hiram E. Driscoll, Woodstock, and Donald P. Graham, Hurley, N.Y., assignors to Hercules Incorporated, Wilmington, Del., a corporation of Delaware

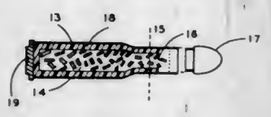
Filed June 29, 1966, Ser. No. 561,550
10 Claims. (Cl. 102—28)

1. An initiator system of the blasting cap and booster type, for initiating explosives in water-covered areas, which comprises an elongated closed shell, and a base explosive charge within said shell, as at least one live initiator component of said system, extending from the shell closure at one end of said shell toward the opposite end thereof; said shell containing a passageway in the said closure end adjacent said base charge to communi-

cate said base charge with the outside of said shell; the size of said passageway being correlated with at least one live component within said shell to convey flow of water from outside said shell to the shell interior to cause desensitization of the last said component after a predetermined period of time following emplacement of said system in said water-covered area; and when said initiator system is of the blasting cap type, said passageway being open and unobstructed so as to directly communicate the interior of said shell with the outside thereof.

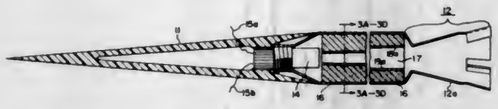


3,358,602
METHOD AND APPARATUS FOR DETECTING AND IDENTIFYING REMOTE OBJECTS
Henry R. Chope, Columbus, Ohio, assignor to Industrial Nucleonics Corporation, a corporation of Ohio
Filed June 25, 1964, Ser. No. 377,860
6 Claims. (Cl. 102—38)



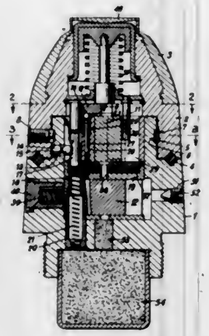
1. A cartridge for firing in a gun to permit the location of the gun firing the cartridge, said cartridge comprising:
a cartridge case and bullet,
said cartridge case having an explosive firing charge,
the improvement comprising a radioactive material mixed in with said charge that leaves residual radioactive material in the gun after said cartridge is fired to produce radiation detectable at a remote location.

3,358,603
ULTRA-SONIC SELF-PROPELLED PROJECTILE HAVING HIGH L/d RATIO
Werner W. Hohenner, Adelphi, Md., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 10, 1964, Ser. No. 417,322
4 Claims. (Cl. 102—49.3)



1. A self-propelled projectile comprising a cylindrical tubular element constituting a combustion chamber and generally determining the outer relative proportions of said projectiles, a solid fuel propellant grain in the form of a cylindrical annulus, the inner surface of which forms a central passage for the passage of combustion gases for producing thrust for said projectile, said chamber having a ratio of length to diameter greater than 20, said projectile having a mass ratio greater than 2.5 and means for controlling the combustion rate of said propellant grain so that the latter is burned at such a rate that combustion is completed in a time interval of 1.0 second or less to thereby keep the maximum pressure in said combustion chamber within tolerable limits of stress in the walls of said combustion chamber set by the mass ratio.

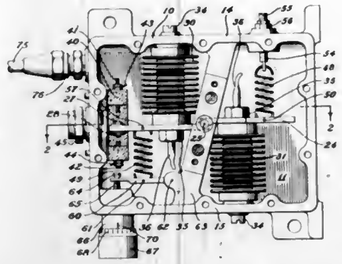
3,358,604
NON-GYRATING PROJECTILE FUSE
André Combourieux, Geneva, Switzerland, assignor to Industrial Holding Establishment, Vaduz, Liechtenstein
Filed Jan. 5, 1966, Ser. No. 518,889
Claims priority, application Switzerland, Jan. 8, 1965, 278/65
1 Claim. (Cl. 102—76)



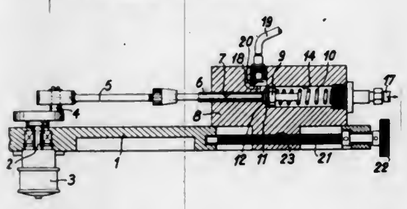
A non-gyrating impact projectile fuse comprising a body, a cover for said body, a trajectory safety means comprising a rack, an escapement cooperating with said rack, a rocker-arm, a spring cooperating with said rocker-arm for regulating the speed of radial movement of said rack controlled by said escapement, a hammer, a hammer bolt, a first locking means for said rocker-arm to prevent the operation of said rocker-arm before firing and the movement of said hammer bolt, a second locking means for said hammer bolt controlled by said rack to release completely said hammer after a predetermined movement of said rack, said first locking means comprising a rod movable axially in said body, said rod and said hammer bolt being accessible by dismounting said cover to bring said rod and bolt back to the initial position after an operation trial, said escapement being of the reversible type, said body having a radial orifice opposite said rack to permit acting on said rack from the exterior to return it to initial position after an operation trial, said second locking means returning to pretrial initial position by gravity when said hammer bolt has been brought back to initial position.

3,358,605
PRESSURE SENSITIVE SWITCH
Alan N. Ayers, Estancia, N. Mex., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Jan. 4, 1946, Ser. No. 639,139
2 Claims. (Cl. 102—81)

1. An atmospheric pressure actuated switch highly stable to vibration, comprising in combination, an outer enclosing case in communication with the atmosphere, pivot means within said case, an elongated balanced member rotatably mounted on said pivot means forming two lever arms, similar bellows means responsive to atmospheric pressure connected equidistant from the pivot on each of said arms but on opposite sides for cooperatively rotating said member in response to changes in atmospheric pressure and for operatively opposing each other in response to linear acceleration and vibrational forces, adjustable spring bias means mounted between said elongated member and the case for opposing the pressure response of said two similar pressure-operated means, an actuating electrical circuit including said elongated member whereby rotation of said member operates to open and close said actuating circuit, and means for adjusting the closing of the circuit for predetermined atmospheric pressures.



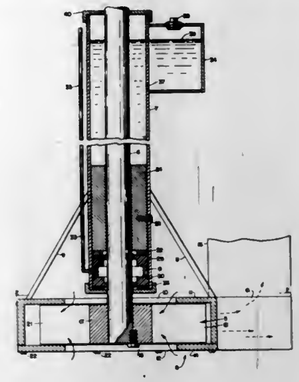
3,358,606
MICROPUMPS FOR DELIVERING ACCURATELY MEASURED AND ADJUSTABLE QUANTITIES OF LIQUID
Bernard Holliger, 11 Rue Charles Allemand, Audincourt, Doubs, France
Filed Apr. 13, 1967, Ser. No. 630,653
Claims priority, application France, Apr. 21, 1966, 58,490
2 Claims. (Cl. 103—37)



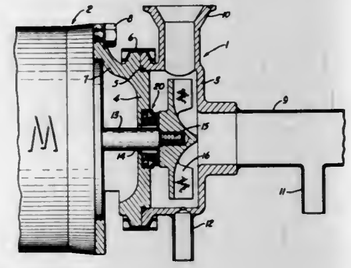
1. A micropump for delivering accurately metered quantities of liquid upon each pump impulse, which comprises a cylinder having a lateral valved inlet port for feeding thereto the liquid to be pumped and metered and an outlet port in its bottom, a piston adapted to slide with the minimum play in said cylinder and reciprocated to perform an invariable stroke therein, an extension of greater diameter of said cylinder, a valve member disposed in said extension and adapted to close said bottom port of said cylinder, spring means in said cylinder extension for constantly urging said valve member to its bottom port closing position after said piston, having completed its delivery stroke, has pushed said valve member into said extension, and means for causing said cylinder and said cylinder extension to slide in a direction parallel to their common axis for decreasing or increasing the length of the useful stroke portion of said piston in said cylinder, and therefore the pump output.

3,358,607
PUMP
Ralph F. Seamans, P.O. Box 352, Swink, Colo. 81077
Filed Oct. 5, 1965, Ser. No. 493,024
2 Claims. (Cl. 103—104)

1. In a pump for pumping fluids which may include debris, an elongated impeller shaft having an impeller adjacent the lower end thereof, an impeller housing enclosing said impeller and having an inlet and an outlet, an impeller shaft tube surrounding said impeller shaft and rigidly connected to said impeller housing, a resilient seal within said tube at the lower end portion thereof, an anti-friction bearing for said shaft adjoining and above said seal; means for supplying a rust preventative and waterproof grease between said seal and said bearing, and means for supplying a lubricating oil to said bearing and a lubricating oil reservoir affixed to said impeller shaft tube and having an outlet at its lower end connecting to the inside of said impeller shaft tube above said bearing whereby the level of lubricating oil in said tube will be the same as that in said reservoir.



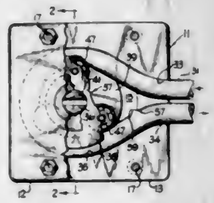
3,358,608
PUMP
Edward P. Chabica, Delavan, Wis., assignor, by mesne assignments, to Sta-Rite Industries, Inc., Delavan, Wis., a corporation of Wisconsin
Filed Aug. 10, 1965, Ser. No. 478,601
2 Claims. (Cl. 103—111)



1. A pump, comprising a pump housing including a body having a liquid inlet and a liquid outlet and including a back plate enclosing an open end of the body, an impeller located within the housing and having a planar back surface facing said back plate, said back surface having a threaded recess therein, a motor having a motor drive shaft extending within an opening in the back plate with the outer end of the shaft being threadedly received within said recess, said motor shaft having a radially extending shoulder disposed in bearing engagement with said back surface, said back plate having an internal recess bordering the opening therein, and a stationary sealing assembly located within the recess in the back plate and extending within the housing, said sealing

assembly including an annular seal having an axially extending inner section spaced from said shaft and a central section extending outward from said axial section, said seal also including an outer sealing section extending longitudinally from the outer end of said central section in the opposite direction from said inner section, said outer sealing section disposed at a location spaced radially outward of said shoulder, said sealing assembly also including resilient means disposed in engagement with said central section for urging said sealing section into engagement with the back surface of the impeller.

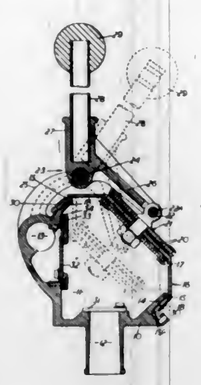
3,358,609
FLUID PUMP
Lewis R. Worth, Deerfield, and John C. Parmer, Winnetka, Ill., and Jerome F. Parmer, Westover, W. Va., assignors to Cole-Parmer Instrument & Equipment Co., Chicago, Ill., a corporation of Illinois
Filed Sept. 13, 1965, Ser. No. 486,756
8 Claims. (Cl. 103—149)



1. A peristaltic pump comprising a housing having bearing means supported therein, said housing having a groove therein extending around the inner surface thereof, a fluid conducting tube positioned in said groove in said housing forming a loop, a rotary structure including a pair of axially spaced support members positioned on opposite sides of said groove, each support member being supported for rotation on said bearing means in said housing, said rotary structure including a plurality of rollers extending between said support members and engageable with said tube to compress same and produce a peristaltic action therein in response to rotation of said support members, said support members having their outer peripheries adjacent the outer peripheries of said rollers, said groove being of sufficient width and depth to accommodate said tube upon compression thereof and being spaced from said support members an amount sufficient to prevent engagement of said support members with said tube upon compression thereof.

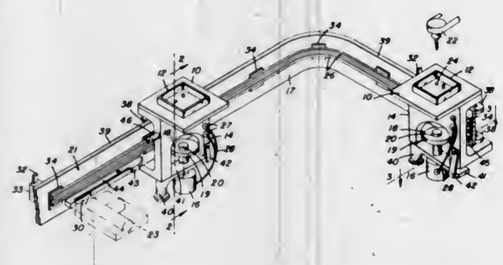
3,358,610
DIAPHRAGM PUMPS
William J. Brian, Ballywalter, Northern Ireland, assignor to Munster Simms Engineering Limited, Belfast, Northern Ireland, a British company
Filed Dec. 8, 1965, Ser. No. 512,408
Claims priority, application Great Britain, Dec. 8, 1964, 49,873/64
2 Claims. (Cl. 103—150)

1. A diaphragm pump one wall of which is formed by a dished casing and the other wall of which is formed by a flexible diaphragm, said casing having inlet and outlet valves whose axes are disposed at a substantial angle to each other, said casing having a rim over which the diaphragm engages, a clamping band releasably securing the diaphragm on said rim, the casing having an extension that extends only to one side of and is spaced from said rim, and lever means for moving the diaphragm, said diaphragm being movable under the influence of said lever means substantially along the bisector of said substantial angle, said lever means comprising a handle pivotally mounted on said extension and



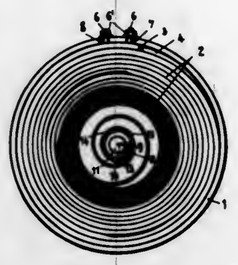
having a portion which extends over the diaphragm and is connected thereto.

3,358,611
MONORAIL ASSEMBLY SYSTEM
Robert Westfall and Clarence W. McVea, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Sept. 17, 1965, Ser. No. 492,979
7 Claims. (Cl. 104—120)



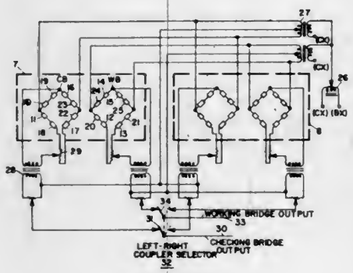
1. An assembly system suitable for transporting a plurality of self-driven pallet assemblies, comprising:
(a) a track provided with a drive surface thereon;
(b) a plurality of pallet assemblies moveably supported on said track;
(c) a driving motor supported on each of said pallet assemblies;
(d) a drive wheel having a large diameter drive surface, arranged to normally engage the drive surface of said track, and a smaller diameter drive surface, with said drive wheel being driveable by said driving motor;
(e) a first ramp secured to said track and having a surface at a location which will engage the small diameter drive surface during passage of said drive wheel thereby to disengage the large diameter drive surface from the track drive surface; and
(f) a lever having a work surface closely adjacent to said first ramp to be engaged by a first of said pallet assemblies for actuating a second ramp surface behind the first ramp surface to engage a next pallet assembly by means of its small diameter drive surface.

3,358,612
TOWING DEVICE
Hans Bleuer, Lyss, Switzerland, assignor to Willy Buehler A.G., Bern, Switzerland, a company of Switzerland
Filed Jan. 19, 1965, Ser. No. 426,486
Claims priority, application Switzerland, Jan. 22, 1964, 640/64
6 Claims. (Cl. 104—173)



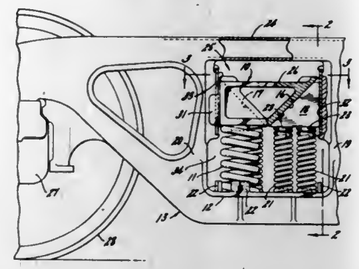
1. A towing device comprising a cable drum rotatable with a spindle supported for rotation by a spring casing, and a flat spirally wound spring located in said casing and having its outer end fixed to the casing and its inner end connected to said spindle whereby the spring is wound as a cable is unwound from the cable drum, said spring having a cross-section which increases stepwise from said inner end toward said outer end thereof whereby the spring is incrementally strengthened from the inner to the outer end thereof in a manner such that the spring force obtainable by completely unwinding the cable from the cable drum is greater than the normal maximum load applied to the towing cable.

3,358,613
VEHICLE CONTROL SYSTEM
Willis R. Smith, Clinton S. Wilcox, and John A. Snell, Rochester, N.Y., assignors to General Signal Corporation, Rochester, N.Y., a corporation of New York
Filed Oct. 23, 1965, Ser. No. 503,649
10 Claims. (Cl. 105—61)



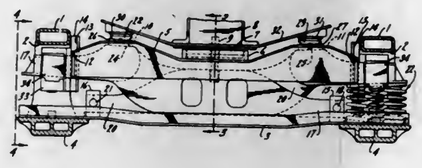
1. A system for controlling a locomotive in accordance with forces in a vehicle coupler comprising, first sensing means for generating a working signal characteristic of force in the coupler, second sensing means for generating a first checking signal characteristic of the force in the coupler, means for generating a fixed check signal, means for generating a signal characteristic of the actual speed of the locomotive, and computing means controlled by the working signal, the first checking signal, the fixed checking signal and the speed signal for alternately generating a signal characteristic of desired power for the locomotive and a test signal.

3,358,614
SNUBBED RAILROAD CAR TRUCK
Franklin D. Barber, Chicago, Ill., assignor to Standard Car Truck Company, Chicago, Ill., a corporation of Illinois
Filed Nov. 16, 1964, Ser. No. 411,391
1 Claim. (Cl. 105—197)



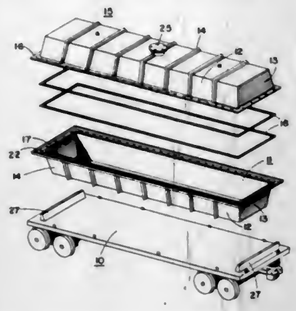
A stabilized car truck including a side frame having a bolster window therein, a bolster having a box end portion projecting into said window and formed with wedge receiving pockets opening through each side face of the bolster and formed with a rear wall provided with an upwardly and outwardly inclined face, load springs interposed between the bolster and a subjacent portion of the side frame to resiliently support the bolster with capacity for vertical movements relative to the side frame, means for damping vertical movements of the bolster comprising a wedge element positioned in each pocket for cooperating wedging engagement with the inclined face thereof, vertically disposed friction plates mounted on the side frame, each wedge having a vertically disposed friction surface in opposition to a plate on the side frame, wherein the maximum width of each wedge is substantially equal to the distance between the center of the bolster and the opposed vertical wear plate on the side frame and there are a plurality of wedge springs interposed between the side frame and the under face of each wedge, the springs being positioned along the longitudinal axis of the side frame.

3,358,615
EQUALIZING SPRING BOLSTER FOR RAILROAD CARS
Ray C. Williams, Chicago, Ill., assignor to Standard Car Truck Company, Chicago, Ill., a corporation of New Jersey
Filed July 28, 1965, Ser. No. 475,348
4 Claims. (Cl. 105—197)



1. A railroad car truck, having spaced, parallel side frames, a lever pivoted on each side frame, extending inwardly across the truck toward the other side frame, each lever being, free and independent of the other lever, to rotate about its own pivot axis, yielding load carrying means interposed between the free end of each lever and the adjacent side frame, load carrying assemblies on each lever adjacent the spring supported end thereof.

3,358,616
INTERCHANGEABLE AND NESTING COMMODITY CARRIER
Quita Brodhead, 211 Atlee Road, Wayne, Pa. 19087
Filed Oct. 21, 1965, Ser. No. 505,592
1 Claim. (Cl. 105—366)



A versatile commodity carrier system comprising in combination:

at least one wheeled vehicle having a substantially flat and rectangular upper portion thereof for receiving a load,

a plurality of identical open gondoles, each of which includes a rectangular base portion and opposed end walls and side walls inclined away from one another, respectively, and terminating by defining an open portion of said gondola of rectangular configuration parallel with said base portion, and of width and breadth substantially that of said flat and rectangular upper portion of said wheeled vehicle,

a mating flange secured to said sidewalls and endwalls circumferentially thereof at their point of termination at said open portion and extending outwardly thereof in a plane parallel to said base portion, and

a plurality of reinforcing and spacing members disposed on the outer surface of said sidewalls and said base portion, and extending away from said sidewalls and said base portion a distance less than that of said mating flange,

a discharge port in one sidewall of said commodity carrier,

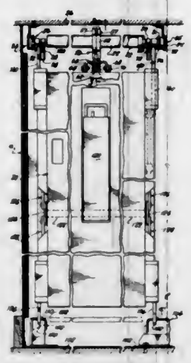
a gasket guard flange disposed around the periphery of said discharge port and extending outwardly of said sidewall,

a gasket disposed adjacent the outer circumference of said gasket guard flange,

a discharge door including an inturned flange on the circumference thereof of configuration commensurate with said gasket, said door at one end thereof being connected to said sidewall by hinge means and means for holding said door and said circumferential flange thereof in sealing engagement with said gasket means, and

said door extending away from said sidewall when in closed relationship a distance less than that of said spacing and reinforcing members whereby any one of said gondolas may be indiscriminately and interchangeably used with any other of said plurality of gondolas to form an enclosed commodity carrier when said gondolas are disposed on said wheeled vehicle in opposed relationship and, when an apposed relationship, a plurality of said gondolas may be nested one within another with said reinforcing and spacing ribs of one of said gondolas preventing wedging thereof within the gondola in which it is nested by engaging the inner surface thereof essentially in the line contact while maintaining the walls and base portions of each of said gondolas in predetermined spaced relationship one to another and in which said discharge door, when closed, will not interfere with nesting of said commodity carriers.

3,358,617
LOAD DIVIDER SUPPORT MECHANISM WITH RETAINER
John W. Erickson, Huntington Beach, Calif., assignor to Preco Incorporated, Los Angeles, Calif., a corporation of California
Original application Nov. 23, 1964, Ser. No. 412,911, now Patent No. 3,319,584, dated May 16, 1967. Divided and this application Oct. 25, 1966, Ser. No. 589,382
5 Claims. (Cl. 105—376)



1. In a movable load dividing structure for transport vehicles and the like, the combination of:

gate structure adapted to form a partition in a compartment,

longitudinal rail structure including at least one pair of opposite upper parallel longitudinal rails each having a horizontally projecting flange,

each said flange having a longitudinal series of spaced rack-like formations,

a transversely extending squaring shaft having at its ends respective sprockets engaging and riding said rack-like formations, said shaft carrying said gate structure,

said sprockets both being rotatively fixed on said squaring shaft, at least one of said sprockets being axially movable on said shaft, said sprockets riding the rack-like flange formations at one face of the flanges,

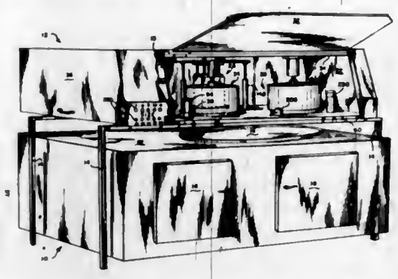
and means for holding said sprockets in engagement with the rack-line formations by engagement with the opposite faces of the flanges,

at least said means associated with the axially movable sprocket involving a member relatively rotatively connected to the sprocket for axial movement therewith,

said member overhanging an edge of the flange and being engageable with the flange face opposite to the face ridden by the sprocket.

3,358,618
DISPENSING DEVICE
Mario J. Vetta, 123 W. Broadway, Waukesha, Wis. 53186
Filed Feb. 19, 1965, Ser. No. 433,925
16 Claims. (Cl. 107—1)

1. An automatic pizza ingredient dispensing apparatus comprising, in combination, a frame, sauce dispensing means supported on said frame, cheese dispensing means supported on said frame, sausage dispensing means supported on said frame, means for conveying the dough for a pizza in a step by step manner from one dispensing means to the next, and control means for actuating said dispensing means in timed sequence to dispense sauce, cheese or sausage when the dough is beneath the corresponding dispensing means, each of the dispensing means



including sizing means for restricting the size and the amount of sauce, cheese or sausage which is dispensed to the size and amount required to cover the dough for the pizza which is to be made in the apparatus.

3,358,619
KITCHEN UTENSILS FOR HANDLING AND DISPENSING ICE CREAM AND THE LIKE
Herbert E. Pareira, 550 S. Barrington Ave., Los Angeles, Calif. 90049
Filed Aug. 18, 1964, Ser. No. 390,402
5 Claims. (Cl. 107—48)



1. An ice cream-handling utensil, comprising:

an ice cream scooping head having a cavity therein;

a flat button-like projection from the base of said cavity defining a shallow annular recess between the periphery of said projection and the surrounding inner surface of said cavity;

a handle extending from outside of said head;

and a coating of polytetrafluorethylene over and bonded to exposed surfaces of said head and said projection.

3,358,620
DRAWING BOARD OR WORK TABLE WITH RAISABLE AND INCLINABLE WORKING SURFACE
Paolo Parigi, Via Giotto Ulivi 24, Borgo San Lorenzo, Florence, Italy
Filed July 26, 1966, Ser. No. 568,038
Claims priority, application Italy, Aug. 24, 1965, 19,112/65
3 Claims. (Cl. 108—6)

1. A drawing board or work table comprising

a raisable and inclinable working surface,

an inclined supporting column attached near the center of the underside of said working surface and having an inner circular section member slidable in telescope fashion in an outer housing,

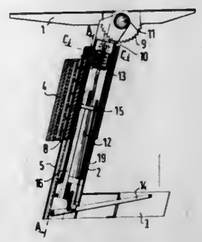
a horizontal base at the lower end of said supporting column,

a counterweight slidably mounted on the outer housing of said inclined supporting column on its side opposite an acute angle formed between said column and said base,

guide means for said counterweight on said side of the outer housing of said inclined supporting column to permit rolling movement of said counterweight in directions parallel to said supporting column and opposite to the up and down movement of said working surface,

a flexible transmission between the upper end of said counterweight and the lower end of said inner circular section member of said inclined supporting column,

a toothed quadrant firmly mounted on the lower side of said working surface and pivotally connected to



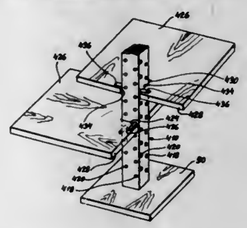
the upper end of said inner member of said inclined supporting column,

a pawl fixed to the upper end of said supporting column and engageable with said toothed segment for locking the same and thereby the working surface in an inclined position,

a pedal at the lower end of said supporting column adjacent said horizontal base, and

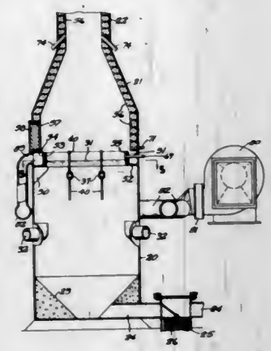
relatively shiftable connecting rod means between said pedal and said pawl for actuation of the latter independently of the adjusted height of said working surface.

3,358,621
SHELF SYSTEMS
Lajos Szacsko, 20 Brigadevej, Copenhagen, Denmark
Filed June 22, 1966, Ser. No. 559,483
Claims priority, application Denmark, June 22, 1965, 3,137/65
5 Claims. (Cl. 108—92)



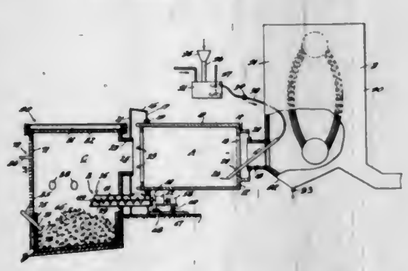
1. A shelf system, comprising, in combination: a supporting pole having four side faces, each pole side face having a front and rear longitudinal row of holes for receiving supporting pins, the holes of each front row being staggered relative to the holes of the corresponding rear row; at least one shelf having a notch in one side thereof for embracing two opposing side faces of said pole to be supported by pairs of supporting pins inserted in the holes thereof; each pair of supporting pins comprising a rear pin for insertion in a first hole of said rear row of holes in the corresponding pole side face and a front pin for insertion in a second hole of said front row of holes in said corresponding pole side face at a lower level than said rear pin; said shelf edge portions having upper and lower main faces; means on said upper main face of each of said shelf edge portions for engaging said rear pin; and means on said lower main face of each of said shelf edge portions for engaging said front pin to be supported thereby.

3,358,622
SCUM BURNER
Bernard E. Brennan, Mishawaka, Ind., assignor to Nichols Engineering & Research Corporation, New York, N.Y., a corporation of Delaware
Filed Oct. 14, 1965, Ser. No. 495,871
15 Claims. (Cl. 110—8)



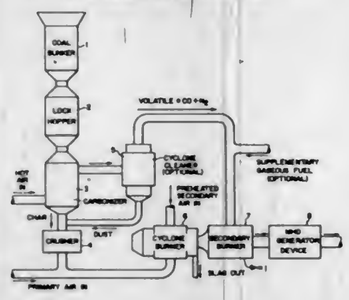
1. A scum burner comprising
a container having a lower liquid-containing portion, an upper combustion chamber having a discharge passage for products of combustion,
means to supply combustible scum-containing material to said lower portion for floatation of said combustible material in a layer on said liquid at a predetermined level in said lower portion,
means for introducing primary air into said combustion chamber under pressure in at least one jet slightly above the level of said layer of combustible material,
means for introducing secondary air at less pressure than said jet of primary air into said combustion chamber, and
means in said container for agitating said layer of combustible material.

3,358,623
METHOD AND APPARATUS FOR HEAT AND CHEMICAL RECOVERY FROM WASTE LIQUORS
Walter Lenz, Adalberto Tirado, and Rafael Gaytan, Mexico City, Mexico, assignors to Fabricas de Papel Loreto y Pena Pobre, S.A., Mexico City, Mexico, a corporation of Mexico
Filed June 24, 1965, Ser. No. 466,781
24 Claims. (Cl. 110—10)



11. Apparatus for the recovery of inorganic compounds and heat values of organic compounds contained in waste liquors, comprising the combination of a rotary dryer, means for delivering waste liquors to the dryer, a stationary smelting furnace having a combustion zone for burning said dried material discharged from said dryer and for forming a smelt of said inorganic compounds, said furnace having an outlet passageway for combustion gases, means for feeding said dried material from said dryer into the combustion zone of said furnace, said feeding means being provided with variable drive means arranged and operatable to form said dried material into lumps of predetermined size prior to discharging the same into said combustion zone, means for introducing primary combustion air into the combustion zone of said furnace, a steam generating unit spaced from said combustion zone, said dryer being connected to said outlet passageway for receiving said combustion gases and for enabling the same to pass through said dryer in a direction counter-current to the flow of said liquors therein, and said steam generating unit being connected to said dryer to receive, and utilize the heat of, said combustion gases after passage thereof through said dryer.

3,358,624
COAL BURNING ARRANGEMENT FOR MHD GENERATORS
Stewart Way, Goleta, Calif., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 7, 1965, Ser. No. 493,842
3 Claims. (Cl. 110—22)

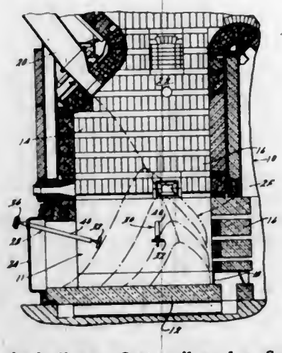


1. A combustion apparatus in combination with a magnetohydrodynamic generator, the apparatus comprising,
primary cyclone burner means for burning a solid fuel with excess air in the amount effective to produce an optimum temperature within the burner which is effective to allow slag content in the solid fuel to deposit and solidify to form a solid layer on the inside walls of the burner, and to allow further slag content to deposit on the solid layer in liquid form,
means for removing the liquid slag from the burner,
means for supplying the solid fuel to the cyclone burner means, the cyclone burner adapted to produce a hot gaseous medium,
a secondary burner means,
means for directing the hot gaseous medium with the excess air from the cyclone burner means to the secondary burner means for further heating of the gaseous medium,
means for directing a low ash content fuel to the secondary burner means for burning therein with the excess air, the secondary burner means adapted to produce a thermally ionized gas stream, and
means for directing the thermally ionized gas stream to the magnetohydrodynamic generator.

3,358,625
MOIST FUEL FURNACE
Robert W. Jones, Birmingham, Mich., assignor to Bigelow-Liptak Corporation, Detroit, Mich., a corporation of Michigan
Filed Oct. 20, 1965, Ser. No. 498,918
13 Claims. (Cl. 110—101)

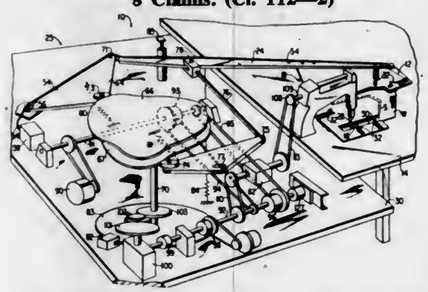
5. A moist fuel burning furnace having a hearth for supporting a fuel pile, a chute for supplying the fuel

to the hearth in a pile, a fuel gate for controlling the flow of fuel to the chute, and a fuel feeding control system comprising signal producing indicating means for sensing the size of the fuel pile, said indicating means having a reversing switch for producing a signal having a characteristic in accordance with the size of said pile, a reversible motor operatively connected to the fuel gate and responsive to the signal of said indicating means, and con-



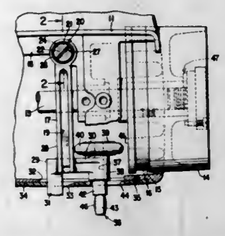
trol means including a first coil and a first set of contactors for energizing said motor in a forward direction and a second coil and a second set of contactors for energizing said motor in a reverse direction, said coils being selectively energized in accordance with said signal characteristic, said control means including disconnect means for disabling said control means for providing manual operation of said fuel gate.

3,358,626
AUTOMATIC SEWING MACHINE SYSTEM
Carney J. Bryan, Greensboro, N.C., assignor, by mesne assignments, to Ivanhoe Research Corporation, New York, N.Y., a corporation of Delaware
Filed Oct. 23, 1965, Ser. No. 502,970
8 Claims. (Cl. 112—2)



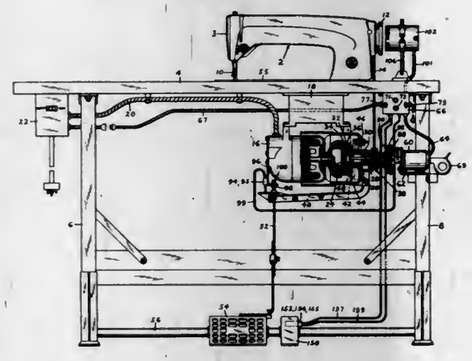
1. A sewing machine system for automatically sewing fabric work material along a stitching path extending in two dimensions comprising a sewing machine having needle means operating at a stitching station, a work table surrounding said stitching station and having an electrically conductive top surface upon which the work material is slidable, a movable clamp member engageable down upon the fabric work material, drive means for moving said clamp member, control means for said drive means, electrical contact sensing means extending down from said clamp member positioned to rest upon the edge regions of fabric work material properly positioned beneath the clamp member, and circuit means interconnecting said contact sensing means, said control means and said conductive top surface for stopping said drive means if the fabric workpiece shifts its position with respect to the clamp member to permit said sensing means to touch said conductive top surface.

3,358,627
BOBBIN WINDERS FOR SEWING MACHINES
Edward W. Bialy, Hillside, N.J., assignor to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed Mar. 29, 1966, Ser. No. 538,421
7 Claims. (Cl. 112—218)



1. A bobbin winder for a sewing machine which includes a hollow frame having a first hole and a second hole, said bobbin winder comprising a bracket housed inside the frame in proximity to said holes and having a bore therein, a bobbin-accommodating spindle journaled in said bore with the bobbin-accommodating end protruding through said first hole in the frame, means for rotating the spindle mounted inside the frame, an operator-accessible control knob on said bracket and protruding through said second hole in the frame, an elongated arm on the side of the bracket opposite from the control knob, pivot means inside said arm for pivotally mountng said elongated arm, said elongated arm having a long enough radius to permit swinging the spindle into and out of contact with said spindle rotating means while maintaining the distal end of said control knob substantially a uniform distance from the portion of the outer surface of the frame in the vicinity of said second hole in the frame, and means for selectively holding said spindle into and out of contact with said spindle rotating means.

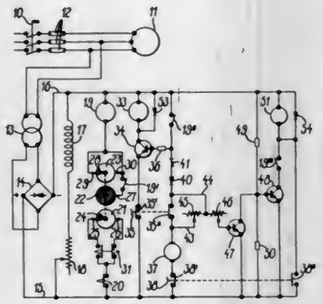
3,358,628
SEWING MACHINE CONTROL
Robert L. Kosrow, Elk Grove Village, and Arthur N. Hale, Park Ridge, Ill., assignors to Union Special Machine Company, Chicago, Ill., a corporation of Illinois
Filed July 26, 1965, Ser. No. 474,712
19 Claims. (Cl. 112—219)



1. A control mechanism for electrically driven sewing machines for driving said sewing machine at preselected speeds and for stopping said sewing machine in one of a plurality of predetermined positions of the needle comprising a needle, a main driving motor for driving said needle at a first speed, an auxiliary driving motor for driving said needle at a second speed, connecting means,

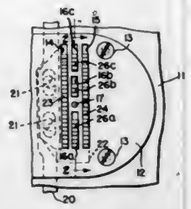
including clutch means, connecting said main driving motor and said auxiliary driving motor to each other and to said needle whereby, when connected, said main driving motor drives said auxiliary motor and said needle, said clutch means being selectively engageable to connect and disconnect said main driving motor with said auxiliary driving motor and said needle, means for engaging and disengaging said clutch means, means for energizing said auxiliary driving motor in a first direction when said clutch means is disengaged and for de-energizing said auxiliary driving motor when said clutch is engaged, and means on said connecting means for selectively de-energizing said auxiliary motor in said first direction and for energizing said auxiliary motor in the reverse direction to stop said needle in a predetermined position.

3,358,629
APPARATUS FOR STOPPING A SEWING MACHINE WITH ITS NEEDLE IN PRE-DETERMINED POSITION
Luigi Bono, Pavia, Italy, assignor to Necchi Società per Azioni, Pavia, Italy
Filed Oct. 18, 1965, Ser. No. 497,378
Claims priority, application Italy, Mar. 5, 1965, 748,086
9 Claims. (Cl. 112—219)



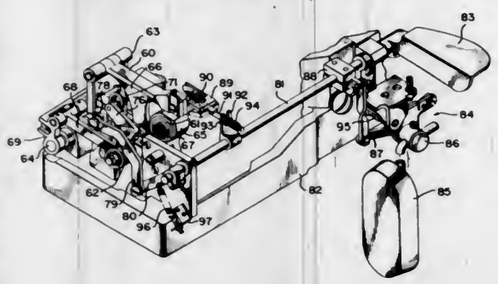
1. A sewing machine including a motor drive shaft, a driven shaft, and an electromagnetic clutch coupling the aforementioned shafts to each other, an axially reciprocable needle operatively associated with said driven shaft and reciprocatingly driven thereby between the top and bottom axial positions, an electromagnetic brake operable to exert a braking action upon said driven shaft, a generator drivingly connected to said driven shaft and providing a voltage output proportional to the speed of said driven shaft, a stopping means for stopping said driven shaft in correspondence to said needle being at one of various pre-established axial positions, said stopping means comprising respective energizing circuits for said brake and said clutch, said circuits including a Zener diode and the voltage output of said generator being impressable upon said brake circuit through said Zener diode, said generator providing a voltage output in opposition to the normal bias of said diode, and said generator output being impressable upon said clutch circuit with said Zener diode serving to limit the said voltage output to said clutch to a value no greater than the diode breakdown voltage, a follower means having respective positions corresponding to respective positions of said needle, and switch means operative to simultaneously excite and de-excite said brake and clutch, respectively, said switch means being operatively associated with said follower means, said follower means being correlated to actuate said switch means in correspondence to particular positions of said needle.

3,358,630
MEANS FOR SEVERING A THREAD CHAIN
Charles F. Maddi, 103 Yesu Drive, Scranton, Pa. 18505, and Louis N. Maddi, Scranton, Pa. (331 Cherry St. Dunmore, Pa. 18512)
Filed Sept. 10, 1965, Ser. No. 486,277
6 Claims. (Cl. 112—252)



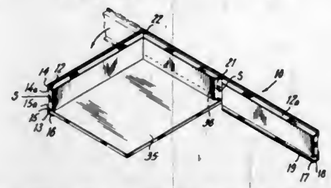
1. A feed dog adapted for severing a thread chain produced on a sewing machine of the type with a throat plate having a needle hole therein, a presser foot opposite said throat plate, and slots in said throat plate to receive said feed dog for advance of the article to be sewn, said feed dog having a needle opening therein, said opening being at least as long in the direction of advance as the longest stitch which may be produced, a row of upstanding teeth aligned with said needle opening, said row being comprised, with respect to the direction of advance, of a feeding section in front of said opening, a chaining section in back of said opening, and a cutting section in back of said chaining section, said cutting section being spaced from said chaining section and having a plurality of sharp cutting teeth and the remainder of the teeth of said row being blunt and non-cutting, and all of the teeth in said row having their upper edges lying substantially in the same plane.

3,358,631
PROJECTABLE AND RETRACTABLE STITCH TONGUE EQUIPPED, ZIG-ZAG SEWING MACHINE
James E. Sharp, Chicago, Ill., assignor to Union Special Machine Company, Chicago, Ill., a corporation of Illinois
Filed June 21, 1965, Ser. No. 465,314
30 Claims. (Cl. 112—260)



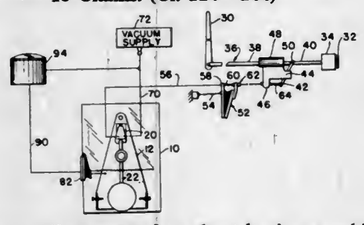
1. In a sewing machine, the combination of a throat plate having a needle hole therein, means for feeding material along a feed line generally centered on said needle hole, a stitch tongue guided for movement along said feed line, means for projecting said tongue into and retracting it from said needle hole during a sewing operation of the machine, and stitch forming means including a needle and means for reciprocating the needle for passage through the needle hole and alternately at opposite sides of said feed line thereby to lay stitches across the stitch tongue when said tongue is projected into the needle hole.

3,358,632
ENCLOSURE STRUCTURE AND METHOD OF MAKING THE SAME
Lee S. Nemlich, 50 Sunset Drive, Croton-on-Hudson, N.Y. 10520
Original application Nov. 10, 1964, Ser. No. 410,150. Divided and this application Dec. 7, 1966, Ser. No. 619,088
4 Claims. (Cl. 113—116)



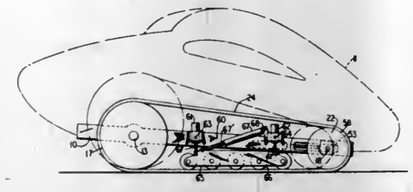
1. The method of forming an enclosure from an integral metallic perimeter member including a planar inner vertical web portion, upper and lower leg portions extending outwardly from an aligned normal to said web portion, a downwardly directed upper flange member depending from the outer extremity of said upper leg portion, an upwardly directed flange member at the outer extremity of said lower leg portion, said upper and lower members having their inner and outer surfaces in coplanar alignment, the inner surfaces of said flange members and leg portions and the outer surface of said web defining an outwardly facing channel, a lock ledge extending inwardly from the inner surface of said lower flange member in proximate spaced relation to and in parallelism with said lower leg, the inner end of said lock ledge not extending beyond a plane forming a downward continuation of the inner surface of said web portion, the upper and lower surfaces of said ledge and lower leg portion, respectively, and the inner surface of said lower flange defining an inwardly directed lock channel, comprising inserting a rigid, decorative strip into tight frictional engagement within said outwardly facing channel, cutting away portions of said perimeter member and strip while the strip is seated in said outer channel to define a plurality of transversely extending slots of triangular cross section, the apices of said slots being substantially coincident with the inner edges of said upper and lower flanges, and the bases of said slots being parallel with said flanges, bending said strip inwardly along bending lines defined by said apices until the opposed walls of said slots are brought into abutting relation, and inserting a rigid base member into said locking channel, with upper and lower portions of said base adjacent the side marginal edges thereof tightly frictionally engaging the upper and lower surfaces of said locking channel.

3,358,633
AUTO-PILOT
Richard B. Wallace, Bloomfield Hills, Mich., assignor to The Oakland Corporation, Troy, Mich., a corporation of Michigan.
Filed Feb. 21, 1966, Ser. No. 528,723
15 Claims. (Cl. 114—144)



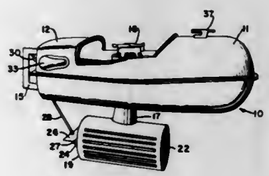
1. An auto-pilot system for a boat having a rudder including a power device for moving the rudder, means responsive to roll or movement of the boat about a longitudinal axis for operating the power device.

3,358,634
AMPHIBIOUS VEHICLE
Houston W. Pratt, 90 Duck Pond Road, Glen Cove, N.Y. 11542
Filed Jan. 27, 1966, Ser. No. 523,435
9 Claims. (Cl. 115—1)



1. A propelling device for an amphibious vehicle comprising drums rotatably mounted on said vehicle, an endless belt travelling over said drums about a closed path of travel, the drums being enclosed within said path, and means for changing the diameter of one of said drums to vary the contour of the closed path of travel thereby adapting the vehicle to different terrain and surface conditions.

3,358,635
SWIMMER'S TOWING DEVICE
Clarence E. McRee, P.O. Box 1406, Columbus, Ga. 31902
Filed May 9, 1966, Ser. No. 548,467
1 Claim. (Cl. 115—6.1)

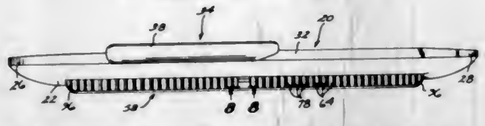


A swimmer's towing device comprising
(a) a buoyant body hydrodynamically faired to be propelled over the surface of a body of water,
(b) a motor carried within said buoyant body having a propulsion shaft and propeller extending through and beneath the body,
(c) swimmer's grasp handles at the stern of the buoyant body and a pivoted trigger on said handles connected to the motor speed control to regulate the speed of advance of the buoyant body through the water,
(d) a foraminous cylindrical cage about the propeller, said cage being screened at its intake and discharge,
(e) a weight compensating plane pivotally carried by said cylindrical cage at its rear and in the propulsive fluid stream from said propeller so that the buoyant body may be trimmed dependent upon the weight of the swimmer being towed and the speed of the craft through the water, and
(f) weight compensating plane regulating means, one end of which is accessible to the swimmer in the area of the grasp handles at the stern of the buoyant body.

3,358,636
SELF-PROPELLED WATER VEHICLE

Arthur J. Curtiss and Cleon V. Wilson, Long Beach, Calif. (both % P.O. Box 18948, Los Angeles, Calif. 90018)

Filed Mar. 21, 1966, Ser. No. 535,779
13 Claims. (Cl. 115—28)



1. A water vehicle that is propelled forwardly as a user mounted on the upper surface thereof alternately shifts his weight to impart a transversely directed rocking motion to said vehicle, including:

(a) an elongate, buoyant low-draft body having a longitudinally extending center line, and an upper surface of such configuration that said user can occupy a supported position on at least a portion thereof to impart said transverse rocking motion to said body;

(b) a plurality of spaced pins arranged in at least one longitudinally extending row under said body;

(c) first means for supporting said pins from the under portion of said body;

(d) a plurality of rigid vanes;

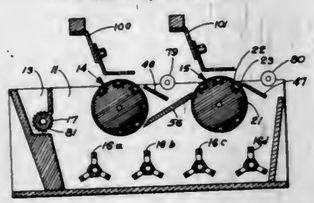
(e) second means for pivotally and freely supporting said vanes in rearwardly extending positions from said pins; and

(f) third means supported on said body for limiting the degree of oscillatory swing of said vanes on said pins to propel said body forwardly as said body is alternately rocked in opposing transverse directions by said user.

3,358,637
TONER UNIT FOR PHOTOELECTROSTATIC REPRODUCTION EQUIPMENT

Walter V. Shearer, Longmeadow, William R. Beck, Jr., Wilbraham, and Arnold M. Wheelock, Sr., Southwick, Mass., assignors to The Plastic Coating Corporation

Original application Apr. 24, 1962, Ser. No. 189,758, now Patent No. 3,180,239. Divided and this application Dec. 23, 1964, Ser. No. 420,514
11 Claims. (Cl. 118—7)



1. A toner unit adapted for the application of a powdered, solid resinous toner to an electrostatic image carried by a photoelectrostatic coating on a copy sheet which comprises in combination:

a stationary cylindrical core of a non-magnetic material having its axis in approximately a horizontal position, and a plurality of longitudinal grooves countersunk in its cylindrical surface at spaced intervals around at least a substantial part of its circumference;

an elongated, closely fitting strip of a permanently magnetic material positioned within each of the said grooves in the surface of the stationary core;

a means for adjusting the circumferential position of the said cylindrical core and for locking it in its adjusted position, whereby the positions of the said magnetic strips with respect to the upper horizontal tangent of the circumference of the said core can be accurately adjusted;

a rotatable, hollow cylindrical core of a non-magnetic material positioned around the stationary core and the longitudinal magnetic strips carried in its cylindrical surface;

a tray for retaining a body of a toner mix in contact with the lower part of the said rotatable cylinder;

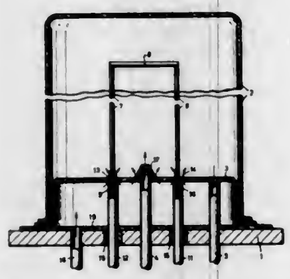
a means for rotating the said hollow cylinder around the said stationary core; and

a doctor blade adjacent the said rotatable, hollow cylinder, paralleling the length of the said cylinder, spaced away from its surface by a uniform distance along its length, and adjacent a location at which the surface of the cylinder is moved in an upwardly direction by the said means for rotating it around the stationary core.

3,358,638
APPARATUS FOR THE PYROLYTIC PRODUCTION OF ROD-SHAPED SEMICONDUCTOR BODIES

Theodor Rummel, Munich, Germany, assignor to Siemens & Halske Aktiengesellschaft, Berlin, Germany, a corporation of Germany

Filed Aug. 7, 1963, Ser. No. 300,586
Claims priority, application Germany, Aug. 22, 1962, S 81,031
6 Claims. (Cl. 118—49.5)



1. Apparatus for producing rod-shaped semiconductor bodies of high purity by pyrolytically dissociating and precipitating the semiconductor substance from a gaseous compound thereof upon a heated carrier of the same material, comprising a vessel having a metallic base plate, a partition of vitreous material subdividing the interior of said vessel into an upper reaction space and a lower antechamber adjacent to said base palte and of smaller height than said reaction space, a structure of inverted U-shape forming the carrier located in said reaction space and having its two ends pass through said partition, current-supplying holder means for said respective ends of said structure and gas-duct means for supplying and discharging gas to and from said reaction space, said holder means and said gas-duct means extending through said base plate and being substantially contained in said antechamber, and a liner plate of heat-insulating inorganic material disposed face-to-face upon said base plate and substantially entirely covering it with respect to said antechamber.

3,358,639
ELECTROSTATIC COATING APPARATUS FOR UNIFORMLY APPLYING PHOSPHOR POWDERS

Stanley A. Lopenski, Pompton Plains, and Ferdinand Rokosz, Clifton, N.J., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Oct. 1, 1965, Ser. No. 492,089
5 Claims. (Cl. 118—49.5)

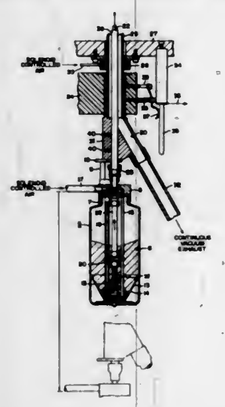
1. An electrostatic coating apparatus for coating finely divided phosphor onto the interior surface of an open-necked bulb, said apparatus comprising:

(a) means for retaining and rotating said bulb in coating position;

(b) heating means external to said bulb as retained in coating position for heating same;

(c) a phosphor smoke generator comprising a phosphor powder reservoir operable to hold phosphor material to be coated, smoke-forming means operable to form phosphor powder in said reservoir into a powder smoke at a controlled rate and non-conducting and non-abrading feed tube means connecting to said smoke-forming means to receive and convey the phosphor smoke formed by said smoke-forming means;

(d) probe means reciprocable into and out of said heated bulb when in coating position, said probe means comprising an extending metallic member which retains a non-conducting and non-abrading



target member, said feed tube means terminating in an outlet spaced from the non-conducting target member of said probe means with powder smoke conducted through said feed tube means impinging against said target member, and a metallic conduit member positioned about said feed tube means and electrically connected to said extending metallic member of said probe means;

(e) high voltage supply means connecting to said metallic conduit member and to said heating means to generate an electrostatic field between the surface of said heated bulb and the extending metallic member of said probe means, and

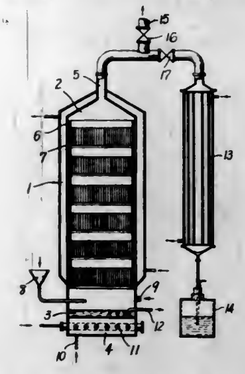
(f) an air nozzle positioned above the path of reciprocation of said probe means, said air nozzle operable to blow pressurized air over said probe means when said probe means is reciprocated from within said bulb.

3,358,640
DEVICE FOR TREATING CIGARETTE FILTER PLUGS

Shigehiko Kato, Saijo, Japan, assignor to Kurashiki Rayon Company Limited, Kurashiki, Japan, a corporation of Japan

Filed Apr. 2, 1964, Ser. No. 356,856
Claims priority, application Japan, Apr. 12, 1963, 38/19,178
2 Claims. (Cl. 118—61)

1. A device for treating cigarette filter plugs containing powder adhesive and wrapped with paper, comprising an enclosed chamber, means for stacking said filter plugs in said chamber, a solvent reservoir provided in the bottom of said chamber, an outlet through the top of said chamber, heating means in the bottom of said chamber for vaporizing said solvent so as to cause said vaporized solvent to pass from said reservoir to the outlet of said chamber through said filter plugs thereby dissolving the powder adhesive in said plugs, a temperature regulating means surrounding said chamber and

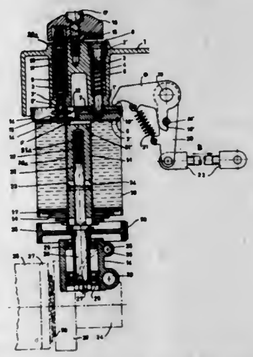


means located at the bottom of said chamber for blowing air into said chamber below said filter plugs to pass the vaporized solvent out of said chamber to said outlet and set said adhesive.

3,358,641
PARAFFINING APPARATUS FOR A WINDING MACHINE

Robert Gfeller, Horgen, Switzerland, assignor to Maschinenfabrik Schweiter AG., Horgen, Switzerland, a corporation of Switzerland

Filed Mar. 7, 1966, Ser. No. 532,400
Claims priority, application Switzerland, Mar. 19, 1965 3,844/65
11 Claims. (Cl. 118—78)

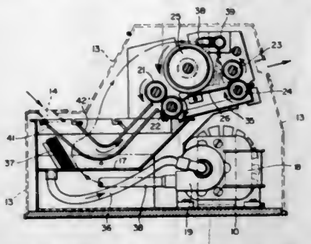


1. Paraffining apparatus for a winding machine comprising, in combination, a drive shaft, a paraffin mass floatingly mounted for axial displacement upon said drive shaft, said paraffin mass having a free frontal surface for contact with a yarn to which paraffin is to be applied, a counter-surface confronting said free frontal surface of said paraffin mass and over which the yarn passes, positioning spring means cooperating with said paraffin mass for displacing the latter against said counter-surface in accordance with the depletion of the paraffin mass, a holder, an impact surface provided at said holder confronting said free frontal surface of said paraffin mass and located externally of the path of travel of the yarn, a press-on body displaceably mounted at said holder for movement substantially parallel to said drive shaft, said press-on body providing said counter-surface, and a press-on spring for urging said press-on body in a direction towards said free frontal surface of said paraffin mass.

3,358,642
APPARATUS FOR PREWETTING PHOTOELECTROSTATIC OFFSET MASTERS

William R. Beck, Jr., Wilbraham, Mass., assignor to The Plastic Coating Corporation, Holyoke, Mass., a corporation of Massachusetts

Filed Mar. 17, 1966, Ser. No. 535,188
10 Claims. (Cl. 118—109)



1. Apparatus adapted for the application of a prewetting solution to an image-bearing surface of a photoelectrostatic master sheet, which comprises

first and second sheet transfer means spaced apart from each other and adapted to advance a photoelectrostatic master sheet from an input position through a treating station and to an exit position,

a guide and bearing plate disposed between said first and second sheet transfer means and adapted to guide said sheet from said first sheet transfer means to said second sheet transfer means,

scrubber means disposed adjacent said guide and bearing plate and adapted to contact the surface of a photoelectrostatic master sheet passing over the sheet guide and bearing plate with relative motion between the surface of said photoelectrostatic master sheet and said scrubber means,

a reservoir for containing a prewetting solution,

an elongate nozzle directed toward said guide and bearing plate between said scrubber means and said second sheet transfer means and adapted to spray aqueous prewetting solution onto a portion of the said photoelectrostatic master sheet issuing from between said scrubber means and said guide and bearing plate, and

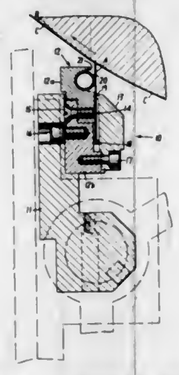
means for circulating aqueous prewetting solution from said reservoir and through said nozzle onto said photoelectrostatic master sheet and for returning said solution to said reservoir.

3,358,643
MEANS TO BIAS RESILIENT DOCTOR BLADE

Harry W. Faeber, Fort Lauderdale, Fla., assignor to Time, Incorporated, New York, N.Y., a corporation of New York

Continuation of application Ser. No. 336,528, Jan. 8, 1964. This application Aug. 10, 1965, Ser. No. 482,998
3 Claims. (Cl. 118—126)

1. A blade coating apparatus in which a resilient coating blade of uniform thickness is held in operative position in pressure engagement at an acute angle with the surface to be coated without ripple-producing clamping action on the blade along the region remote from the coating edge comprising a rotatable backup cylinder for guiding the web to be coated around the lower periphery thereof, a blade holder mounted below the rotatable cylinder for movement toward and away from the rotatable cylinder, means defining a slot in the blade holder which slot is wider than the thickness of the blade to be accommodated therein, the slot being upright so that the blade can be dropped rear-edge first into the slot and remain therein due to the force of gravity when the blade holder is in inoperative position relative to the rotatable cylinder and the blade is out of pressure engagement with the rotatable cylinder, blade registering means defining the bottom of the slot and registering the coating edge in parallel alignment with the rotatable cylinder, the depth of the slot being such that a substantial portion of the blade projects beyond the slot, the portion of the blade within the slot being unrestrained for uniform, ripple-free deflection to the extent permitted by the width of the slot and free of ripple-producing influences exerted on the blade, a rigid blade-engaging surface forming the upper end of the slot and adjacent the side of the blade which forms an acute angle with the surface to be coated, said rigid blade-engaging surface engaging a narrow band of the blade at a distance from and extending parallel to the coating edge of the blade, the blade engaging surface and the backup cylinder defining between them a span across which the blade is unsupported on one side, the width of the slot at the rigid blade-engaging surface being wider than the blade so that when the blade is in engagement with the said surface the side of the blade directly opposite the said



surface is unsupported by engagement with by the blade holder, and a fluid pressure-actuated element carried by the blade holder adjacent the opposite side of the blade intermediate and parallel to both the coating edge of the blade and the rigid blade-engaging surface and directly opposite an unsupported portion of the blade, the movement of the fluid pressure-actuated element against the portion of the blade outside the slot engaging a narrow band of the blade and urging the coating edge of the blade in pressure engagement with the rotatable cylinder and a narrow band more remote from the coating edge against the rigid blade-engaging surface when the blade holder is in operative position relative to the rotatable cylinder, the rotatable cylinder and the rigid blade-engaging surface engaging the blade along two spaced-apart, narrow bands on one side, and the fluid pressure-actuated element engaging the blade along a narrow band intermediate the other two on the other side and cooperating to deflect the blade and hold it firmly without any clamping action whatever on the portion of the blade within the slot.

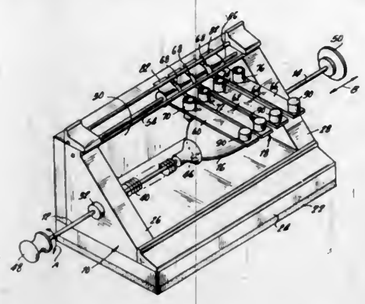
3,358,644
EGG COLORING DEVICE

Sanford Greene, 223 Duck Pond Drive S., Wantagh, N.Y. 11793

Filed Oct. 23, 1965, Ser. No. 503,805
2 Claims. (Cl. 118—219)

1. A toy comprising a frame, a pair of axially displaceable shafts spacedly aligned along a common longitudinal axis, journalling means mounting each of said shafts in said frame for axial and rotary motion relative to said frame, holding means on said shafts for supporting an object to be decorated between said shafts, decorating means hingedly mounted on said frame and swingable

toward and away from said axis for applying decorating material to said object, said decorating means including a first rod mounted in said frame parallel to said axis and a second cross rod mounted in said frame parallel to said first rod, a plurality of reservoir-supporting arms slidably and swingably mounted on said first rod, coloring liquid reservoirs carried by said arms, absorbent applicators within said reservoirs and extending outwardly therefrom,

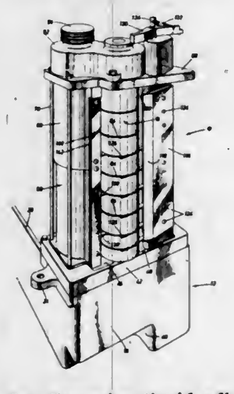


a plurality of leaf springs on said arms and resiliently slidably engaging said second rod for urging said arms away from said longitudinal axis, and selective manual means on each of said arms for causing manual pressure thereon to temporarily swing the respective arm against the force exerted by the respective leaf spring about said first rod toward said axis so as to touch a respective one of said applicators against the object to be decorated.

3,358,645
APPARATUS FOR DISPENSING LIQUID ADHESIVE

Donald Alexander Caulford and James Robert Phin, Toronto, Ontario, Canada, assignors to Canadian Stackpole Limited, Toronto, Ontario, Canada

Filed Jan. 17, 1966, Ser. No. 521,154
7 Claims. (Cl. 118—262)

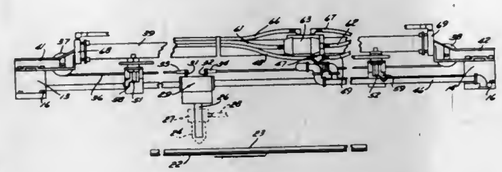


1. Apparatus for dispensing liquid adhesive comprising a receptacle for holding said adhesive, a substantially vertical applicator roll supported on said receptacle above said adhesive, a sleeve in close proximity to said roll and in substantial parallel relation thereto, said sleeve being supported by said receptacle, a spiral threaded member rotatable in said sleeve and means for supporting said spiral member, the lower end of said spiral member extending through said sleeve into said liquid adhesive and the upper end of said spiral member projecting from said sleeve to expel adhesive onto said applicator roll, said applicator roll located in a casing, said casing being positioned over one end of said receptacle, said casing having a vertical opening through which the surface of said applicator roll projects, said applicator roll being provided with horizontally disposed peripheral slits and a plurality of strips extending across said opening with a portion of each of said strips being located in a said respective slit, and means for cyclically reciprocally moving said strips inwards in said slits.

3,358,646
RECIPROCATING CARRIAGE FOR SPRAYING MEANS

Benno E. Libermann, Louisville, Ky., assignor, by mesne assignments, to Commercial Filters Corporation, Lebanon, Ind., a corporation of New York

Filed June 14, 1965, Ser. No. 463,752
2 Claims. (Cl. 118—323)

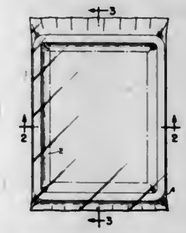


1. An apparatus for applying a liquid impregnant to a moving porous web which comprises conveyor means for supporting a web for travel along a predetermined plane, guide means extending transversely to the path of movement of said conveyor means and spaced therefrom, a carriage reciprocable on said guide means, a spray means carried by said carriage, cable and pulley means on said guide means, said cable being connected to said spray means to reciprocate said spray means transversely to the path of movement of said conveyor means, first pneumatic means connected to said cable to effect such reciprocation, adjustable switch means selectively positionable along said guide means, and second pneumatic means operable by actuation of said adjustable switch means in response to movement of said spray means to actuate said first pneumatic means and reverse the direction of travel of said spray means.

3,358,647
PET PAN

Henry A. Wilson, 1000 Eldorado Ave., Clearwater Beach, Fla. 33515

Filed Feb. 23, 1966, Ser. No. 529,285
9 Claims. (Cl. 119—1)



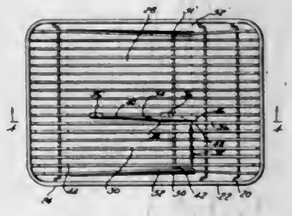
1. An animal toilet comprising a planar plural sided closed frame member and a liquid impervious bag loosely enclosing the frame and providing a dished pan having sides formed by said frame and an intermediate double thickness wall rested upon a supporting surface for the frame.

3,358,648
METHOD AND APPARATUS FOR CRYOGENIC BRANDING
Linus I. Berens, Rte. 7, Box 660, Tallahassee, Fla. 32301
Filed May 26, 1967, Ser. No. 641,641
7 Claims. (Cl. 119—1)



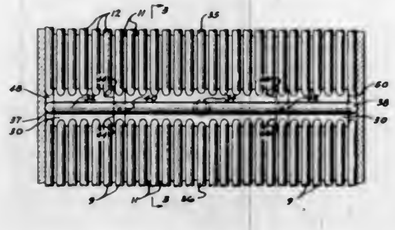
5. A method of branding animals which comprises providing shaped heat-conducting tubing having a portion formed to the shape of brand insignia to be applied to an animal, passing a cryogenic fluid through said tubing and controlling the admission of said fluid to and discharge of said fluid from said tubing to cool said tubing to a selected sub-freezing temperature and pressing said cooled-insignia shaped tubing portion firmly against the hide of an animal to be branded to effect local controlled freezing of areas corresponding to the shape of said insignia.

3,358,649
ANIMAL CAGE LID
George S. Gabriel, Westchester, and Douglas J. Anderson, Avondale, Pa., assignors to Lab Cages, Inc., Hackensack, N.J., a corporation of New York
Filed Aug. 8, 1966, Ser. No. 570,970
8 Claims. (Cl. 119—18)



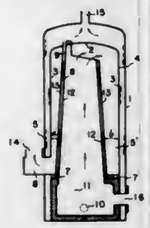
8. An animal cage lid comprising: a multiplicity of interconnected transverse bars and downwardly and upwardly sloping longitudinal bars defining a chamber including at least one intermediate bar interposed between two adjacent longitudinal bars on opposite sides thereof; collapsible means associated with said bars for selectively compartmentalizing said chamber including at least one divider panel; hinge means coupled to one edge of said panel, said hinge means pivotally mounted to said intermediate bar whereby said divider panel is adapted to pivot between an upright position projecting away from said bars at which position said divider compartmentalizes said chamber and a collapsed position at which said divider rests against the bars wherein said chamber is free from protrusions when said collapsible means assumes a collapsed position whereby said cage lid is adapted to receive another such lid in a stacked relationship; and, supporting means including at least one of said two adjacent bars cooperating with said intermediate bar in supporting said panel in an upright position.

3,358,650
WATER COOLED FURNACE JOINT FOR MIXING HEADER ARRANGEMENT
Robert L. Olson, Thompsonville, and Edward L. Kochey, Jr., Colebrook, Conn., assignors to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware
Filed Dec. 27, 1965, Ser. No. 516,566
7 Claims. (Cl. 122—6)



1. In a vapor generator, a furnace, a plurality of substantially vertical tubes lining at least one of the walls of said furnace, the wall so lined with tubes having a first lower portion and a second upper portion, each lower portion tube and each upper portion tube having an inlet end and an outlet end, a mixing header positioned outside of the furnace wall, the outlet end of each lower portion tube and the inlet end of each upper portion tube being bent outwardly from the furnace wall and fluidly connected to the mixing header, support means securing the bends of the upper portion tubes to the bends of the lower portion tubes, in such a manner that the lower portion tubes are supported by the upper portion tubes, said support means including flow means having an inlet means and an outlet means through which a cooling medium can flow, and the inlet means of the flow means is connected to a source of cooling medium which is at substantially the same temperature as the fluid flowing out of the mixing header.

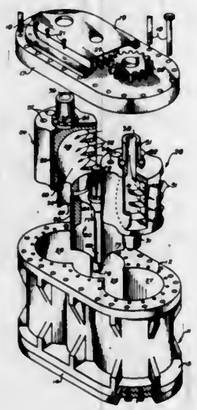
3,358,651
BOILER AND AN ORDINARY TYPE HOT WATER DEVICE IN ACCORDANCE WITH A COMBUSTION METHOD UTILIZING COOLING COMBUSTION METHOD OF COMBUSTION GAS IN ADDITION TO UNIFORM HEAT DISTRIBUTION METHOD
Noboru Maruyama, 187–1, Oaza-Nagisa, Matsumoto-shi, Nagano-ken, Japan
Filed May 16, 1966, Ser. No. 550,354
6 Claims. (Cl. 122—160)



1. A vapor generator comprising
a vertically oriented shell defining a hollow portion in the interior thereof,
a heat absorbing body having an inwardly depressed concave form disposed within and spaced from said shell defining a fluid region therebetween,
said fluid region including a peripheral fluid region portion about said heat absorbing body,

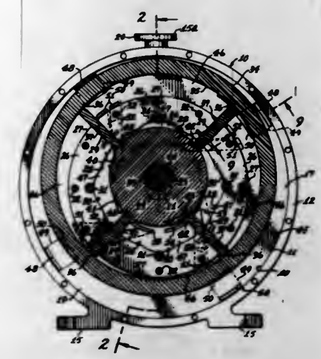
an inner body disposed within said heat absorbing body and defining an interior heating gas chamber therein, and defining thereabout a peripheral heating gas space between said inner cylinder and said heat absorbing body,
said inner body defining an opening at the top thereof communicating said interior heating gas chamber with said peripheral heating gas space,
said inner body including a conduit communicating with said fluid region,
means for passing a vaporizable fluid into said conduit,
means for providing a heating gas in said interior heating gas chamber at the bottom thereof,
flue gas exit means communicating with said peripheral fluid region portion for removing said heating gas from said peripheral fluid region portion at the bottom thereof, and
said inner body disposed within said heat absorbing body closer to said heat absorbing body adjacent said flue gas exit means than at portions remote from said flue gas exit means.

3,358,652
ROTARY ENGINE
John M. Lawrence, 11379–A3 Columbia Pike, Silver Spring, Md. 20904
Filed Sept. 7, 1965, Ser. No. 485,352
9 Claims. (Cl. 123—8)



1. A rotary internal combustion engine comprising: an engine casing; at least one work rotor means rotatably mounted within said casing; transfer rotor means rotatably mounted within said casing and adapted to intermesh with said work rotor to form compartments there between; fuel ignition means threaded into said engine casing intermediate said work rotor means and said transfer rotor means; said engine casing and work rotor means further shaped to form additional compartments therebetween; means for operatively connecting said work rotor means and said transfer rotor means together; fuel-air mixture intake means and exhaust gas means formed interiorly into said work rotor means and adapted to connect with said compartments; said work rotor means, transfer rotor means and engine casing so shaped as to cause said compartments to rotate circumferentially within said casing and to cyclically increase to a maximum volume, remain constant, then progressively decrease in volume to a minimum, as said work rotor means and transfer rotor means rotate; whereby fuel-air mixture entering said compartments is successively drawn into said compartment, compressed, ignited, and expanded as said rotor means rotate.

3,358,653
ROTARY INTERNAL COMBUSTION ENGINE
Clarence H. Grimm, 2734 E. Brill, Phoenix, Ariz. 85008
Filed July 18, 1966, Ser. No. 566,003
3 Claims. (Cl. 123—16)

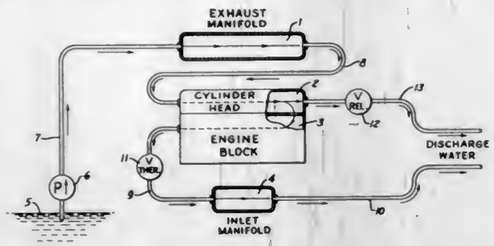


1. A rotary internal combustion engine comprising in combination:
(a) a housing including an inner and an outer concentric annular chamber,
(b) a compression control ring radially movable in said outer annular chamber forming an intake chamber on the outside of said ring and a compression chamber on the inside of ring,
(c) a crankshaft journaled in said housing having a crankpin movable in an orbital eccentirc path within said inner annular chamber,
(d) a plurality of circumferentially spaced radially disposed vanes slidably mounted in said housing between said inner and outer concentric annular chambers having their outer ends engaging the inside bore of said ring and their inner ends engaging said crankpin to form a plurality of related compression chambers and combustion chambers in said outer and inner annular chambers,
(e) ports and connecting passageway in said housing communicating between said intake, compression and combustion chambers,
(f) and means whereby the radial movement of said ring and said orbital movement of said crankpin relative to said housing opens and closes said ports in a timed sequence of operation of said engine.

3,358,654
ENGINE COOLING SYSTEM
Robert J. Shanahan, Neenah, and Max K. Winkler, Oshkosh, Wis., assignors to Kiekhaefer Corporation, Fond du Lac, Wis., a corporation of Delaware
Filed Feb. 23, 1965, Ser. No. 434,187
2 Claims. (Cl. 123—41.08)

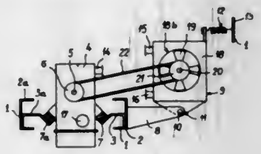
1. In an engine cooling system having separate heat exchange passages for the engine block, cylinder head, exhaust manifold and inlet manifold, means connecting said heat exchange passages serially with the exhaust manifold passage first the cylinder head passages second the engine block passages third and the inlet manifold passage last, means to supply a continuous flow of water through said serially connected passages, temperature responsive means regulating the flow of water from the engine block to the inlet manifold with a minimum of flow when the water is cold and a maximum of flow when the water reaches a predetermined temperature, and pressure relief means connected to the system between said cylinder head passages and said engine block

passages to discharge excess water from the system while providing flow of the entire water supply through the exhaust manifold passages and the cylinder head passages



at all times, said supply means having a capacity substantially greater than the maximum flow permitted by said temperature responsive means.

3,358,655
COOLING DEVICE FOR LIQUID-COOLED INTERNAL-COMBUSTION ENGINES
Francois Camps, Lyon, France, assignor to Automobiles M. Berliet, Lyon, France
Filed June 7, 1966, Ser. No. 555,874
Claims priority, application France, June 9, 1965, 20,111, Patent 1,448,129
8 Claims. (Cl. 123—41.15)

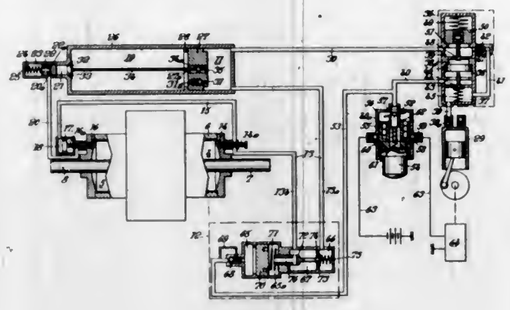


1. A cooling device for internal combustion engines or the like, cooled by means of a liquid circulating in a closed circuit, the said engine resting on a support which may be a fixed foundation base or a chassis of an automobile or like vehicle, the said cooling device being characterized in that it is constituted by a unit comprising a radiator coupled to the liquid circuit which serves to cool the engine, together with a fan fixed to the said radiator and comprising a fixed portion and a rotating portion mounted on a shaft provided with a wheel driven in rotation by a flexible transmission, the said unit being fixed to the engine support by means of a coupling device comprising a pivotal member having its shaft parallel to the shaft of the fan, and at least one elastic member adapted to restore the cooling unit to a position of equilibrium.

3,358,656
DEVICES FOR STARTING A DOUBLE ACTION FREE PISTON ENGINE HAVING A SINGLE CYLINDER
Paul Panhard, Paris, France, assignor to Societe Anonyme Andre Citroen, Paris, France, a society of France
Filed Mar. 17, 1966, Ser. No. 535,198
Claims priority, application France, Mar. 23, 1965, 10,410
12 Claims. (Cl. 123—46)

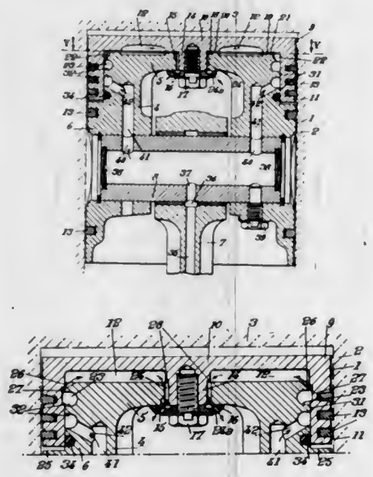
1. In an internal combustion engine including a cylinder, a single piston freely slidable in said cylinder dividing it into two variable volume combustion chambers, a first one and a second one, said cylinder being provided with discharge ports to be cleared by said piston when the volume of each of said combustion chambers is maximum, a starting device which comprises, in combination,

first means for feeding air under pressure into the first combustion chamber and for connecting the second combustion chamber with the atmosphere, whereby said piston is pushed in the direction from said first combustion chamber toward said second combustion chamber into the position thereof for which said first combustion chamber has its maximum volume, and



second means, responsive to a displacement of said piston in said direction clearing said discharge ports, for feeding air under high pressure into said second combustion chamber whereby said piston is made to perform a compression stroke with respect to said first chamber.

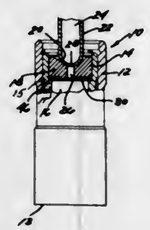
3,358,657
PISTONS OF INTERNAL COMBUSTION ENGINES
Rodolphe Herrmann, Yvelines, France, assignor to Societe d'Exploitation des Materiels Hispano-Suiza, Bois-Colombes, France
Filed Dec. 23, 1965, Ser. No. 516,069
Claims priority, application France, Dec. 29, 1964, 298
10 Claims. (Cl. 123—48)



1. An internal combustion engine having a pressurized oil lubricating system, which comprises, in combination,
a cylinder,
a piston cap element slidable axially in said cylinder,
a piston body element slidable axially in said cylinder,

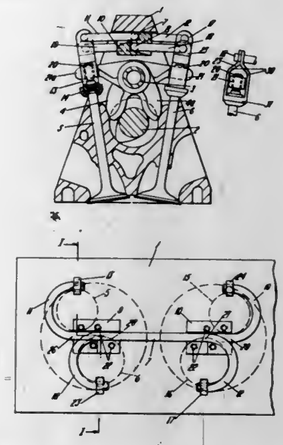
said piston elements having respective cooperating cylindrical side walls fitting slidably with respect to each other and being shaped to limit between their end walls a chamber of variable volume,
means for limiting the axial displacements of said piston cap element away from said piston body element,
a gudgeon pin carried by said piston body element, said gudgeon pin being provided with an inner recess,
a connecting rod pivotally connected with said gudgeon pin for reciprocating said piston body element in said cylinder, said connecting rod being provided with a lubricating oil inlet conduit opening into said gudgeon pin recess,
said piston body element being provided with lubricating oil distribution conduits in communication at one end with said gudgeon pin recess and opening at the other end into the cylindrical side wall of said piston body element that cooperates with said piston cap element cylindrical wall, lubricating oil inlet and outlet means for said chamber,
the respective cooperating walls of said piston elements being adapted on the one hand to close said inlet and outlet means and said chamber in a fluidtight manner when said piston cap element is brought into its position nearest to said piston body element by the pressure in said cylinder and on the other hand, when said piston cap element moves away from said piston body element assisted by the pressure of said lubricating oil, to open said inlet and outlet means and thereby connect a point of said chamber with the second mentioned ends of said oil distribution conduits and another point of said chamber with said lubricating oil outlet means.

3,358,658
LUBRICANT FLOW METERING MEANS FOR ENGINE ROCKER ARM LUBRICATION SYSTEM
Morris V. Dadd, Muskegon, Mich., assignor to Johnson Products, Inc., Muskegon, Mich., a corporation of Michigan
Filed Feb. 14, 1966, Ser. No. 527,211
6 Claims. (Cl. 123—90)



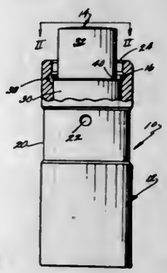
1. Oil flow regulating means for a valve tappet that includes a tappet body, a hollow plunger in said body, a push rod seat member supported in said plunger and having a configurated inner end, said push rod seat member having an oil flow passageway with a terminus at said inner end, and having an annular nose around said passageway terminus and an annular groove around said nose, a metering disc retained against said nose, with passage means from one side of said disc to the other to allow regulated lubricant flow between said passageway and said hollow plunger member interior; the improvement comprising: said annular nose having a radially extending slot means therein from said passageway to said groove, with opposite edges extending generally in the same direction, and said annular nose having land portions with land areas positioned directly opposite each other astraddle of said slot means in a manner forming slot-bridging support means engaging said disc.

3,358,659
INTERNAL COMBUSTION ENGINE VALVE GEAR
Udo Renger, Mainz, Germany, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed July 11, 1966, Ser. No. 564,119
Claims priority, application Germany, July 17, 1965, O 10,996
5 Claims. (Cl. 123—90)



3. Valve gear for an internal combustion engine, said valve gear comprising:
a torsion bar spring formed from a unitary rod and having a straight portion and an arcuate lever arm portion at one end of said straight portion and
a poppet valve having a stem,
said lever arm portion being connected with said valve stem and said spring being restrained so as to torsionally deform said straight portion and thereby bias said valve in a closing direction.

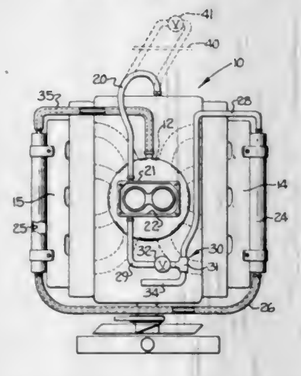
3,358,660
PULL-OUT RETAINER FOR HYDRAULIC LASH ADJUSTER
Richard D. Cornell, Muskegon, Mich., assignor to Johnson Products, Inc., Muskegon, Mich., a corporation of Michigan
Filed Apr. 27, 1967, Ser. No. 634,324
6 Claims. (Cl. 123—90)



1. A releasable retainer assembly in an hydraulic lash adjustor having a hollow body with an inner periphery and an open end, a plunger-pillar unit including plunger portion in said body and a support pillar portion projecting from said plunger portion out said open body end; said releasable retainer assembly having a retainer receiving groove in said body inner periphery and a radially collapsible retainer having an inherent radially outward bias

normally holding it in said groove; the improvement comprising: said plunger-pillar unit having a peripheral shoulder adjacent to and axially engageable with said retainer whereby said plunger portion of said unit is normally retained in said body by said retainer; and said shoulder, retainer, and groove being interfit and configurated in a manner that axial pulling force on said pillar portion, outwardly of said body, causes diametral collapse of said retainer by said shoulder and groove to release said plunger-pillar unit for removal from said body.

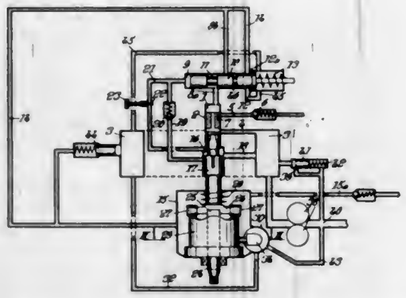
3,358,661
INTERNAL COMBUSTION ENGINE BY-PRODUCTS EMISSION CONTROL MEANS
William C. Garner, Rte. 2, Vass, N.C. 28394
Filed Oct. 14, 1965, Ser. No. 495,972
7 Claims. (Cl. 123—119)



1. In an internal combustion engine including a carburetor and intake manifold together defining a mixture passage for the flow of combustible mixture to the engine, an exhaust system for the flow of hot combustion products from the engine, and a crankcase, the combination therewith of means for reducing the emission of smog causing by-products from the engine comprising:
first heat exchanger means connected to the crankcase for receiving gases therefrom and positioned adjacent the mixture passage intermediate the carburetor and intake manifold for passing said gases in heat exchanging relation with the combustible mixture,
second heat exchanger means connected to said first heat exchanger means for receiving said gases therefrom and positioned adjacent the exhaust system for passing said gases in heat exchanging relation with the hot combustion products, and
mixing chamber means interposed in the mixture passage and connected to said second heat exchanger means for receiving said gases and mixing the same into the combustible mixture.

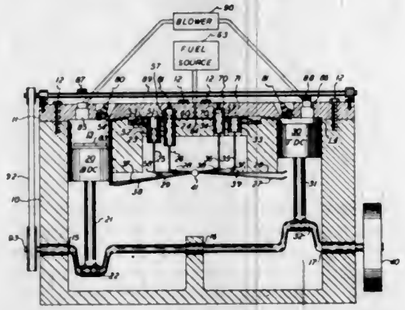
3,358,662
RECIPROCATING FUEL INJECTION PUMPS INCLUDING MEANS FOR VARYING THE ADVANCE OF INJECTION
Günther Kulke, Ville d'Avray, France, assignor to Robert Bosch G.m.b.H., Stuttgart, Germany, a society of Germany
Filed Feb. 23, 1965, Ser. No. 434,339
5 Claims. (Cl. 123—139)

1. For use in connection with an internal combustion engine, an improved fuel injection system comprising, in combination,
a fuel feed pump for injecting fuel into said internal combustion engine, mechanically driven by said internal combustion engine in synchronism therewith,
means for controlling the output of said pump per stroke thereof,
means responsive to variations of the pressure of a liquid for controlling the phase relation between the operation of said pump and that of said internal combustion engine so as to increase the advance of injection of fuel from said pump to said internal combustion engine as the number of revolutions per minute of said engine increases, and inversely,
a hydraulic circuit for feeding said liquid to said last mentioned means, and



pump means operative by said internal combustion engine for feeding to said hydraulic circuit liquid at a pressure in relation to the number of revolutions per minute of said engine,
wherein the improvement comprises,
liquid discharge means branching off from said hydraulic circuit and responsive to said pump output controlling means for producing a discharge of liquid from said hydraulic circuit the greater as said pump output controlling means produce a greater reduction of the output from said feed pump.

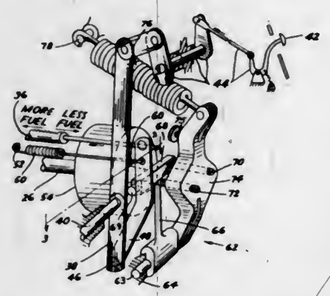
3,358,663
TWO-CYCLE INTERNAL COMBUSTION ENGINE
Walter Miclo, 2061 St. Raymond Ave., Bronx, N.Y. 10462
Filed May 18, 1967, Ser. No. 639,460
6 Claims. (Cl. 123—139)



1. In a multicylinder two stroke cycle internal combustion engine, at least one pair of cylinders with each cylinder of said pair located in parallel relation to each other, pistons in said cylinders operating 180° out of phase with respect to each other, a crankshaft having oppositely located crank bearings, piston rods connecting said pistons with each of said crank bearings respectively, valve and port means in said cylinders for scavenging exhaust gases from said cylinders, and nozzle means for injecting a charge of fuel in suspension into said cylinders, the improvement comprising;

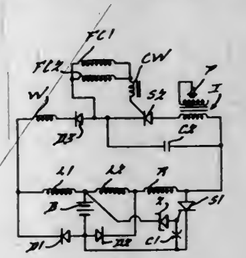
a source of fuel under substantially constant pressure,
means for metering a charge of fuel and for forcing the metered charge through said nozzle in timed relation with the reciprocation of said pistons,
passage means connecting said source with said metering means, said metering means including,
a first chamber coupled to said passage means,
a second chamber connected to said first chamber for extending said passage means,
first means movably positioned in said first chamber for isolating said second chamber from said passage means in response to actuation of the opposing piston by piston contact with an independent linkage connection,
means connecting said second chamber to said nozzle and
second means movably positioned in said second chamber for forcing fuel through said connecting means and said nozzle in response to actuation of said opposing piston by piston contact with an independent linkage connection after said second chamber is effectively isolated by said first means in said first chamber.

3,358,664
ENGINE CONTROL DEVICE
Lionel D Thompson, Bloomfield Hills, Mich., assignor to Holley Carburetor Company, Warren, Mich., a corporation of Michigan
Filed June 21, 1965, Ser. No. 465,422
10 Claims. (Cl. 123—140)



1. An engine fuel system, said system comprising a fuel injection pump having a maximum-minimum type governor operative to automatically control engine speed when the engine reaches maximum speed and when the engine is slowed to idle, a manually operated throttle connected by linkage to a fuel control element in said pump, said linkage including a pivotally mounted lever connected to said fuel control element and urged at all times by a first idle spring in the increasing fuel direction against the opposing force of a speed responsive assembly driven from said engine, a second maximum speed governor spring and a member urged thereby against a stop so that said maximum speed governor spring is preloaded and inoperative until maximum speed corresponding to said spring preload is reached and a torsion bar mounted at one end and having a cross bar at the other end thereof disposed between said assembly and said member, a portion of said cross bar cooperating with said lever so as to be capable of repositioning the same, said cross bar being held in continuous engagement with said assembly by said lever due to the force of said idle spring, a pair of spaced abutments between said member and said cross bar, said abutments having different heights so that engagement of said cross bar and said member first occurs at the higher of said abutments as said cross bar moves toward said member, increasing engine speed at any given fixed position of said manually operated throttle causing said assembly to move said cross bar toward said member and thereby reposition said lever, and said fuel control element in the decreasing fuel direction until said cross bar engages said member through one of said abutments, said cross bar thereafter pivoting about the axis of said torsion bar in a direction dependent upon which one of said pair of abutments is higher and thereby repositioning said lever in the increasing or the decreasing fuel directions until said cross bar engages said member at both of said abutments, any increase in speed thereafter causing the increasing assembly force to also oppose the force of said second maximum speed governor spring.

3,358,665
IGNITION SYSTEM
Thomas F. Carmichael, Drayton Plains, and Richard J. Maier, Pontiac, Mich., assignors, by mesne assignments, to Syncro Corporation, Oxford, Mich., a corporation of Michigan
Filed Oct. 23, 1965, Ser. No. 503,986
30 Claims. (Cl. 123—148)

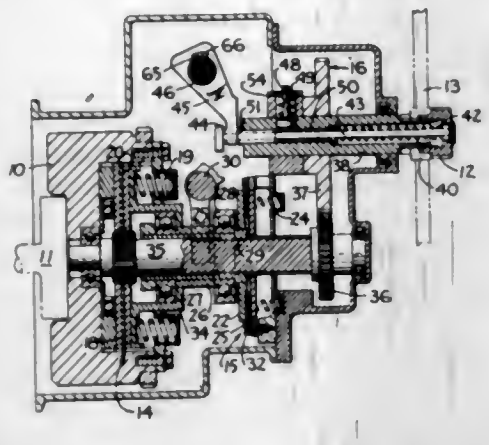


1. In combination with an electrical generating device for generating electrical power for an engine and having a rotor and a stator and adapted to be driven by the engine which has a spark ignition system, and with the device having first field means on one of the rotor and stator for providing a magnetic field thereabout and winding means on the other of the rotor and stator for generating an electrical potential from the magnetic field for use by the engine, the improvement comprising: energy storage means for storing electrical energy and for delivering pulses of electrical energy to the ignition system responsively to trigger signals, and trigger means responsive to the positional relationship between the rotor and stator for providing said trigger signals at selected positions as the rotor and stator are rotated relatively through said selected positions, said trigger means comprising second field means for providing with said first field means a total magnetic field distribution having areas of distortion corresponding to said selected positions and coil means responsive to said areas of distortion for providing said trigger signals.

3,358,666
STARTING ENGAGEMENT CONTROLS FOR STARTING ENGINES
Elwyn E. Stuber, Tremont, and Charles Simms, Jr., East Peoria, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Dec. 29, 1965, Ser. No. 517,242
2 Claims. (Cl. 123—179)

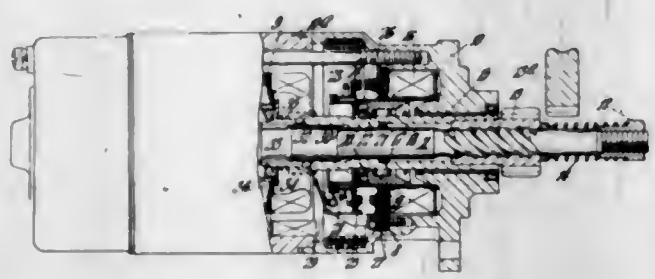
1. Starting engagement controls between a starting engine for driving a pinion and a main engine having a ring gear for engagement by the pinion comprising a clutch and a brake controlling transmission of power to the pinion, means to engage and disengage the pinion, a rockable control shaft, a cam on said shaft operable upon rocking movement in one direction to cause clutch disengagement and brake engagement, and a lever on said

shaft operable upon further rocking movement in the same direction to cause engagement of the pinion with



the ring gear, said clutch and brake being urged toward their engaged positions by springs.

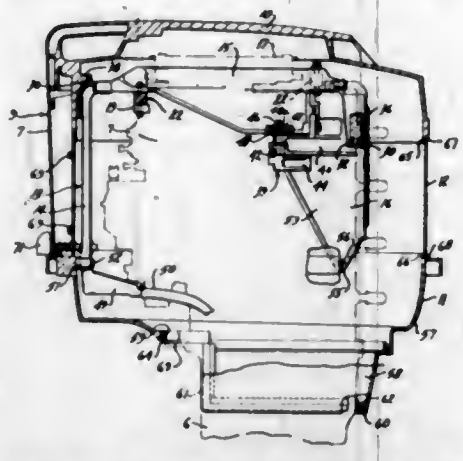
3,358,667
STARTING MECHANISM FOR INTERNAL COMBUSTION ENGINES
Kenneth Frederick Gubb, Greenford, and Alec Harry Seilly, North Wembley, England, assignors to C.A.V. Limited, London, England, a British company
Filed Aug. 30, 1966, Ser. No. 576,012
12 Claims. (Cl. 123—179)



1. A starting mechanism for an internal combustion engine and comprising in combination a shaft which is arranged to be driven when it is required to start the engine, an axially moveable pinion in driving engagement with said shaft, a first member axially moveable relative to the shaft and arranged when moved in one direction to move the pinion axially into engagement with a toothed wheel of the engine, locking means operable to lock said first member to the shaft when the pinion is engaged with the toothed wheel, an operator controlled second member arranged when operated, to engage with the first member to cause the latter to move the pinion axially, said second member being so arranged that at the limit of its travel under the control of the operator it will be disengaged from the first member, centrifugally operable means arranged to release said locking means when the shaft attains a predetermined speed of rotation, and means for moving the pinion axially out of engagement with the toothed wheel.

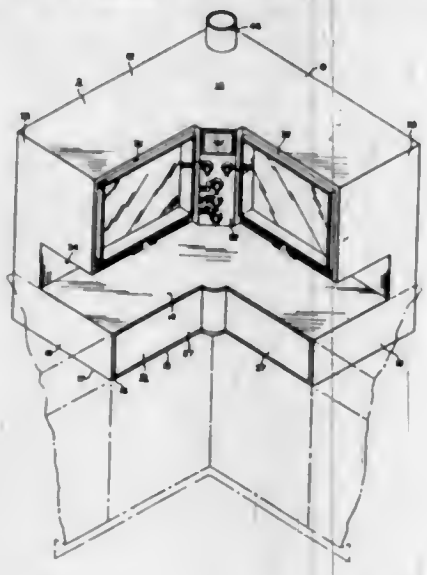
3,358,668
OUTBOARD MOTOR COWL MOUNTING
Lloyd P. Post, Fond du Lac, and Wilbur E. Witte, Oshkosh, Wis., assignor to Kiekhaefer Corporation, Fond du Lac, Wis., a corporation of Delaware
Filed Aug. 3, 1965, Ser. No. 476,817
15 Claims. (Cl. 123—198)

1. In an outboard motor having a power unit including an engine at the upper end of said unit, a cowl support frame assembly, resilient mounting means disposed on the power unit and supporting said frame assembly, and a cowl carried by the frame assembly and enclosing said engine, said frame assembly and cowl being spaced from



the power unit by said resilient mounting means to vibrationally isolate the cowl from the power unit.

3,358,669
COOKING RANGE
Raymond D. Schibley, Ashland, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 20, 1965, Ser. No. 481,213
9 Claims. (Cl. 126—37)

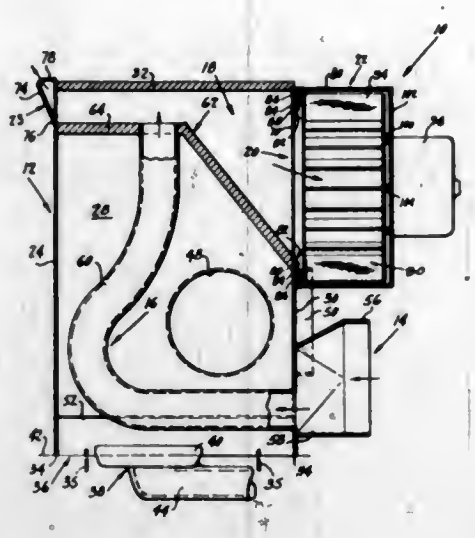


1. Cooking apparatus comprising, supporting cabinet structure having front edge portions lying in intersecting planes, a rotatable platform having a generally circular configuration with a cutout section having wall portions lying in intersecting planes, means for rotatably securing said platform to said cabinet structure such that in one rotated position of said platform the intersecting walls thereof are aligned with the intersecting front edge portions of said cabinet structure, said cabinet structure having a longitudinal top surface serving as one wall of a compartment wherein said platform is housed when in said one rotated position, a plurality of surface heaters supported by said platform and adapted to be carried thereby to a position intermediate said front edge portions of said cabinet structure.

3,358,670
AIR HEATER UTILIZING COOKING STOVE HEATING ELEMENTS
Charles D. Osborne, Bryte, Calif. (P.O. Box 46, Guinda, Calif. 95637)
Filed Oct. 20, 1965, Ser. No. 498,257
18 Claims. (Cl. 126—110)

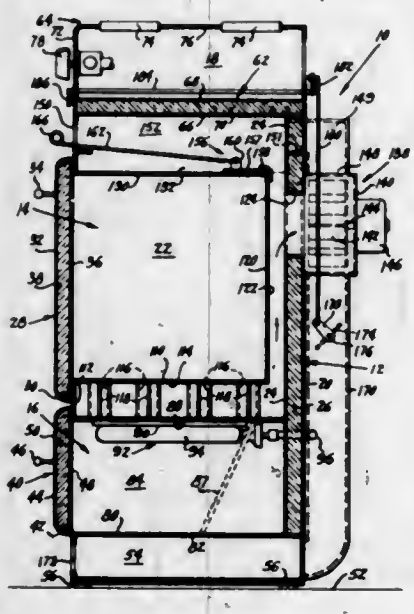
1. In combination, a kitchen stove providing a source of heat energy and a space heater having a frame including cool air inlet means, heated air outlet means, a plurality

of metallic conduits communicating between said cool air inlet means and said heated air outlet means, said source of heat energy being closely adjacent said metallic conduits, blower means mounted on said frame for forcibly ejecting heated air from said heater, said blower means



being in open communication with said heated air outlet means and being supported for rotation about said heated air outlet means, and an air discharge nozzle rigid with said blower means and movable therewith to a preselected position.

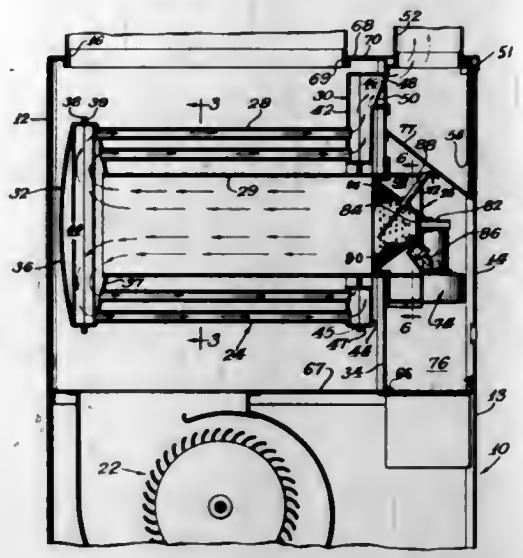
3,358,671
SPACE HEATER AND COOKER
Charles D. Osborne, Bryte, Calif. (P.O. Box 46, Guinda, Calif. 95637)
Filed Oct. 21, 1965, Ser. No. 499,507
14 Claims. (Cl. 126—110)



1. A combination heating and cooking stove comprising a frame housing an oven and a broiler positioned beneath said oven forming a passageway between and in heat exchanging relation with said oven and said broiler, a heat source in said broiler, said frame forming at least one cool air inlet and conduit in communication with said passageway and at least one warm air outlet and conduit providing communication between said passageway and the exterior of said stove.

14. The structure of claim 1 including a blower means in communication with said warm air outlet for forcibly expelling a stream of warm air from said stove.

3,358,672
GAS-FIRED FURNACE
William R. Dirk and Clifford D. Peterson, Marshalltown, Iowa, assignors to Lennox Industries Inc., a corporation of Iowa
Filed Mar. 15, 1966, Ser. No. 534,499
2 Claims. (Cl. 126—110)

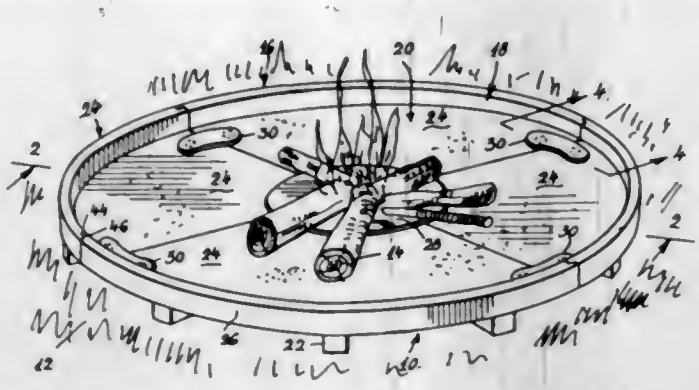


1. In a gas-fired furnace comprising cabinet means having an air inlet and an air outlet and blower means for moving air through the cabinet means, an upright vestibule panel disposed in the cabinet means, the vestibule panel having a flue opening therethrough and a burner opening for receiving burner means, a heat exchanger disposed in the air flow path through said cabinet means, burner means associated with said heat exchanger for supplying heated gas thereto and flue means associated with said heat exchanger for receiving heated gas and passing same from said cabinet means, the improvement comprising said heat exchanger being constructed from a burner tube of relatively large cross-sectional area and a plurality of smaller tubes of relatively small cross-sectional area, the smaller tubes being secured at their ends to front and rear breechings, the front breeching having a flue outlet, the front breeching being secured to the vestibule panel with the flue outlet in the breeching being aligned with the flue opening in the vestibule panel, the axes of said smaller tubes being disposed generally parallel to one another and to the axis of the burner tube, said burner tube being centrally oriented and said smaller tubes being disposed about said burner tube, said burner tube being connected to said rear breeching and extending through a central opening in said front breeching and being adapted to receive heated gas from said burner means, the gas passing through the burner tube to the rear breeching and back to the front breeching which communicates with the flue means for discharging gas from the cabinet means, with air passing over the heat exchanger being in heat exchange relationship with the burner tube, the smaller tubes, and the breechings, the axes of the burner tube and the smaller tubes being generally at right angles to the plane of the vestibule panel, said rear breeching being connected to said front breeching only by said smaller tubes and being free to expand and contract longitudinally of the smaller tubes.

3,358,673
PORTABLE CAMPFIRE PAD
Richard A. Rocke, 503 Crestwood Drive, Eureka, Ill. 61530
Filed Feb. 2, 1966, Ser. No. 524,397
5 Claims. (Cl. 126—152)

1. An outdoor portable campfire pad comprising a circular shallow fireplace of fireproof and insulating material having an upstanding peripheral rim and means for supporting the fireplace closely spaced from the ground,

said fireplace being composed of pie-shaped segments having curved outer ends and pointed apical ends and overlapping side connections, means at the center of the fireplace for joining the apical ends of the segments, and means at the outer curved ends of the segments for joining the curved ends of the segments, said segments being



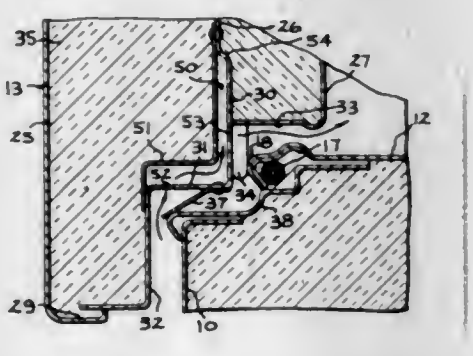
multisided and constituting an assembly, said peripheral rim being constituted by the outside edges of the segments forming the outside edge of the assembly, the overlapping side connections between the segments being constituted by interlocking tongues and grooves formed on the sides of the segments.

3,358,674

AIR INLET MEANS FOR SELF-CLEANING OVEN

Roy D. Chisholm, Louisville, Ky., assignor to General Electric Company, a corporation of New York

Filed Mar. 21, 1966, Ser. No. 535,882
7 Claims. (Cl. 126—193)



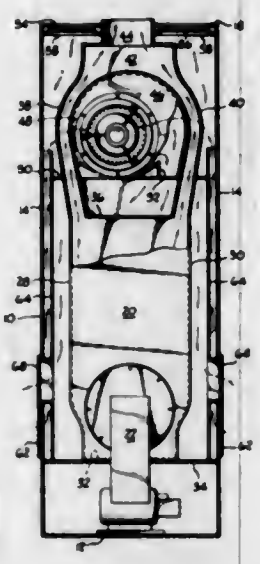
1. A door construction for a domestic oven having an insulated oven cavity formed by a box-like oven liner with an access opening formed in one end thereof; said door including an outer panel and an inner door liner joined to said panel to form a space therebetween, said space being substantially filled with thermal insulation; said door being mounted for pivotal movement between a door open and a door closed position; said door liner extending across the opening of the cavity and being slightly spaced from the oven liner when said door is in its closed position; a strip of thermal gasket material attached to said door to seal the space between the oven liner and said door liner; said strip being discontinuous along a portion of the lower side of said door liner closest to the pivotal mount of said door; a flexible strip of material extending along said portion of said door liner and adapted substantially to complete the seal between said door and oven liner; said portion of said door liner being spaced from the insulation to provide a passage bypassing said flexible strip of material; and a plate member assembled within the inner door liner along the lower edge of the door structure to form an air inlet duct therewith, said duct having a first narrow elongated opening in the lower portion of the inner door liner outside the strip of thermal gasket material and a second narrow elongated opening in the inner door liner in the space where the strip of thermal gasket material is discontinuous whereby substantially all air entering the oven cavity is metered through the said air inlet duct.

3,358,675

WALL FURNACE

William Robert Voges, Centralia, Ill., assignor to Lear Siegler, Inc., Centralia, Ill., a corporation of Delaware

Filed Feb. 4, 1966, Ser. No. 536,934
2 Claims. (Cl. 126—110)



1. A wall furnace comprising a cabinet having a base, a top and front, rear and side walls, ports in the cabinet to admit and emit air, a combustion chamber within the cabinet and spaced from the cabinet walls to provide flow passages between the cabinet and the combustion chamber, heating means within said combustion chamber, a substantially flat plate forming the top of said combustion chamber with two flues extending upwardly from the top plate and joining to form a chamber therebetween, said chamber being in flow communication with the flow passages, and a blower including its motor positioned in said chamber to draw air into said cabinet and force such air downwardly against the top plate of the combustion chamber and through the flow passages in heat exchange relationship with the combustion chamber.

3,358,676

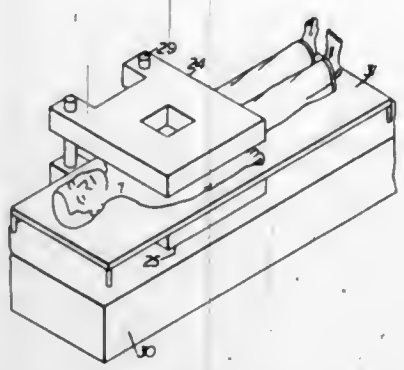
MAGNETIC PROPULSION OF DIAGNOSTIC OR THERAPEUTIC ELEMENTS THROUGH THE BODY DUCTS OF ANIMAL OR HUMAN PATIENTS

Ephraim Heinrich Frei, Rehovoth, and Saul Leibinzohn, Rishon-Lezion, Israel, assignors to Yeda Research and Development Co., Ltd., Rehovoth, Israel, a company of Israel

Filed Nov. 15, 1963, Ser. No. 324,088
Claims priority, application Great Britain, Nov. 30, 1962, 45,437/62
12 Claims. (Cl. 128—1.3)

1. Diagnostic and/or therapeutic apparatus for the detection and longitudinal propulsion of an elongated, radially asymmetric element through the ducts of an animal or human patient, said ducts exhibiting a frictional resistance to longitudinal movement of the element therethrough, which comprises the asymmetric element having no center of symmetry, a magnetic element constituting at least a portion of said element, magnetic field means for producing a varying magnetic field imparting a vibrational or rotational motion to said element,

and actuating means on said element which, upon vibration or rotation of the asymmetric element, coacts with the frictional retarding force imparted to the element by



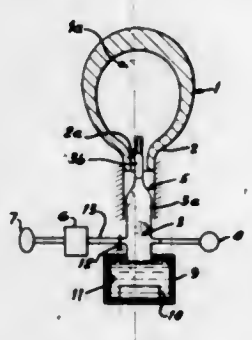
said ducts to produce longitudinal movement of the element through the ducts in opposition to said retarding force.

3,358,677

SUPERSONIC THERAPEUTIC DEVICE WITH MEANS FOR INTRODUCING FLUID INTO A BODY CAVITY

Edward Emanuel Sheldon, 30 E. 40th St., New York, N.Y. 10016

Filed Oct. 23, 1964, Ser. No. 405,967
11 Claims. (Cl. 128—24)



5. A device for treatment of an internal hollow organ of the body, said organ having a constricted narrow orifice part and being the uterus, comprising in combination means for producing a defocussed beam of supersonic energy, said beam comprising multiplicity of supersonic currents traveling in multiple and different directions simultaneously, said means producing supersonic energy being so constructed and arranged so as to be mounted outside of said body, a hollow member adapted in size and shape for introducing into the cavity of uterus, said member having the length greater than its diameter, a source of fluid with means for injecting said fluid through said hollow member into said cavity and filling said cavity with said fluid, means for coupling said fluid with said means producing supersonic energy, and means for transmitting said defocussed beam of supersonic energy to walls of said cavity of said organ through said fluid whereby all recesses of said cavity are subjected to the action of said fluid.

3,358,678

MOVING AND SUPPORT SYSTEM FOR THE HUMAN BODY

Emery Kultsar, Cross Highway, West Redding, Conn. 06896

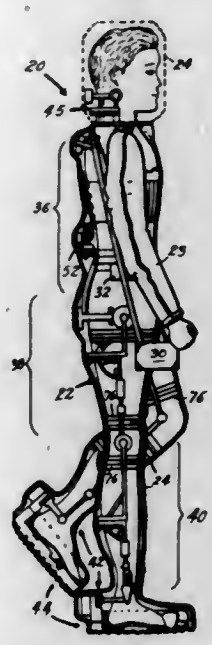
Filed July 29, 1964, Ser. No. 386,094
22 Claims. (Cl. 128—25)

22. A torso sub-assembly for personnel support apparatus comprising in combination,

A. a rear frame adapted for cradling the wearer's waist and hips,

B. an anchor plate adapted to be positioned behind the wearer's shoulders and secured to the wearer's body,

C. extensible length adjusting means mounted on the anchor plate,



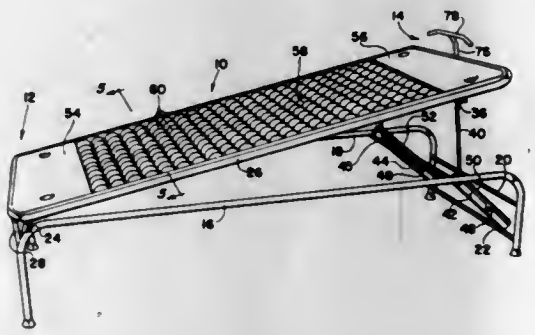
D. and powered actuator means connected to a universally-pivoting crossed-axis coupling joining the rear frame to the anchor plate in universally articulating movable relationship.

3,358,679

MASSAGING DEVICE WITH VIBRATING SURFACE FORMED OF SPACED RESILIENT MEMBERS

Albert J. Borrelli, Stoneham, Mass., assignor to Verta-Aide Corporation, Woburn, Mass., a corporation of Massachusetts

Filed Jan. 5, 1965, Ser. No. 423,535
6 Claims. (Cl. 128—33)



5. A cot, or the like, for supporting a person in a reclining position while applying a vibratory massaging action, said cot comprising, in combination:

(a) a generally rectangular, rigid frame;

(b) a plurality of shafts extending in parallel relation between two opposite sides of said frame, said shafts being fixedly secured to said frame;

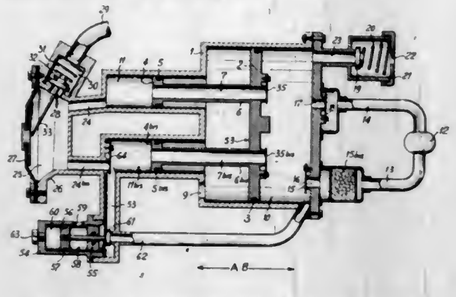
(c) a plurality of resilient, spherical elements arranged in side-by-side relation on each of said shafts with a point on each of said elements lying substantially in a single flat plane, said elements being substantially fixedly mounted on said shafts; and

(d) vibrator means selectively operable to impart to said elements a high frequency vibratory motion.

3,358,680
BREATHING APPARATUS WITH CONTROL MEANS FOR THE INHALED GAS MIXTURE

Bernard Chabanier, Paris, France, assignor to La Spirotechnique

Filed June 3, 1963, Ser. No. 285,039
Claims priority, application France, June 13, 1962, 900,506, Patent 1,340,197; July 3 1962, 902,746 (first addition)
9 Claims. (Cl. 128—142.2)

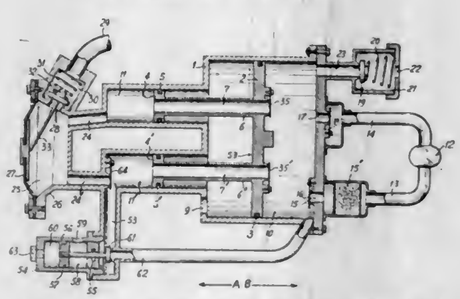


1. An inhaling or similar apparatus comprising a main variable-volume chamber, a plurality of secondary variable-volume chambers, mechanically connected pistons in each chamber comprising one wall of each chamber, a breathing mask, conduit means connecting the breathing mask with the main variable-volume chamber and the main variable-volume chamber with the secondary variable-volume chambers, check valve means for allowing the passage of gas from the secondary variable-volume chambers into the main variable-volume chamber, a source of fresh breathing mixture, conduit means connecting the secondary variable-volume chambers to the source of fresh breathing mixture, controller means responsive to the pressure in one of the secondary variable-volume chambers for controlling the flow of fresh breathing mixture to said one secondary chamber when the pressure therein is lower than the ambient pressure, and means feeding the other of said secondary chambers with gas exhaled from the mask and with fresh breathing mixture in accordance with a predetermined ambient pressure, the ratio of said exhaled gas to said fresh breathing mixture in terms of volume increasing with an increase in ambient pressure.

3,358,681
BREATHING APPARATUS WITH CONTROL MEANS FOR THE INHALED GAS MIXTURE

Bernard Chabanier, Paris, France, assignor to La Spirotechnique

Filed Oct. 22, 1965, Ser. No. 501,758
13 Claims. (Cl. 128—142.2)

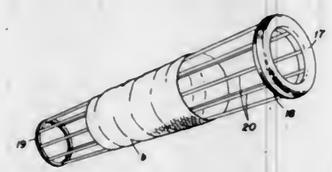


1. An inhaling or similar apparatus comprising a main variable-volume chamber, a plurality of secondary variable-volume-chambers, means interconnecting said variable-volume chambers at one wall of each chamber, a breathing mask, conduit means connecting said breathing mask with said main variable-volume chamber and said main variable-volume chamber with said secondary variable-volume chambers, check valve means for allowing the passage of gas from said secondary variable-volume chambers into the main variable-volume chamber; a source of fresh breathing mixture, conduit means connecting said secondary variable-vo.ume chambers to said source of fresh breathing mixture, controller means responsive to the pressure in one of said secondary variable-volume chambers for controlling the flow of fresh mixture to said chamber when the pressure therein is lower than the ambient pressure, and means feeding the other of said secondary variable-volume chambers with gas exhaled from said mask and with fresh breathing mixture in accordance with a predetermined ambient pressure, the ratio of said exhaled gas to said fresh breathing mixture in terms of volume increasing with an increase in ambient pressure.

3,358,682
TUBULAR BANDAGE APPLICATOR AND CUT-OFF

Norman Roy Preston, 38 17th St., Toronto, Ontario, Canada

Filed Aug. 9, 1965, Ser. No. 478,187
Claims priority, application Canada, Mar. 23, 1965, 926,928
5 Claims. (Cl. 128—157)



1. A medical instrument for the application of tubular bandages and comprising:
- an applicator including a member having a tapered diameter and a shoulder cylindrical cutting member dimensioned to fit over at least part of said applicator member;
- cutting edge formed at one end of said cutting member to engage said shoulder on said applicator member and of reduced diameter in relation to said chamfered diameter on said applicator member;
- a synthetic plastic ring attachment for said applicator;
- retaining means formed in said ring to fit one end of a said applicator;
- an internal shoulder formed in said ring to engage said one end of said applicator;
- an external shoulder formed on said ring to receive said cutting edge;
- a tapered sleeve formed on said ring attachment to guide said cutting edge on said cutting member;
- and an enlarged chamfered diameter formed on said ring to dispense the tubular bandage.

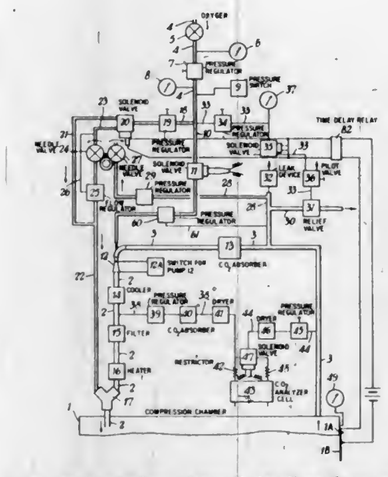
3,358,683
GAS RECIRCULATION SYSTEMS

Karl Goitein, Windsor, England, assignor to Vickers Limited, London, England, a British company

Filed July 14, 1964, Ser. No. 382,477
Claims priority, application Great Britain, July 24, 1963, 29,404/63
8 Claims. (Cl. 128—204)

1. Apparatus for super-atmospheric oxygen therapy comprising:
- (a) a treatment chamber for receiving the patient to be treated,

- (b) a door for said chamber for sealing the latter with the patient therein,
- (c) a source of high pressure oxygen,
- (d) an inlet to said chamber,
- (e) an outlet from said chamber,
- (f) a conduit connecting said source to said inlet,
- (g) means for controlling increase of pressure in said chamber from atmospheric up to the desired treatment pressure,
- (h) means for preventing said treatment pressure exceeding a set value,
- (i) means for controlling decrease of pressure in said chamber from the treatment pressure down to atmospheric,

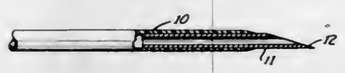


- (j) a recirculation channel leading from said outlet to said inlet to form a substantially closed circuit with said chamber and having a junction with said conduit,
- (k) gas reconditioning means in said channel,
- (l) an injector pump at said junction for circulating gas around said circuit and for introducing oxygen from said source into said circuit, and
- (m) means for maintaining a constant ratio between the absolute pressure of oxygen supplied to the injector pump from said source and the absolute pressure of gas in said chamber.

3,358,684
PARENTERAL INJECTION DEVICES

Gerald Marshall, 1649 Coventry Road, Cleveland Heights, Ohio 44118

Filed Mar. 12, 1965, Ser. No. 439,352
1 Claim. (Cl. 128—214.4)

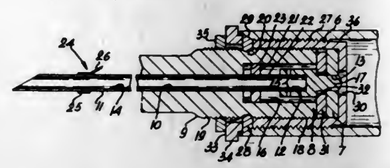


A parenteral injection device comprising a form-sustaining cannula constructed of material impervious to body fluids, said cannula having a body tissue penetrating sharpened needle end portion associated therewith, the penetrating end portion of the cannula being composed of a dissolvable substance, said end after entry of a portion of the cannula within the tissue dissolvable by physiological process leaving a portion of the cannula indwelled within said tissue.

3,358,685
PROJECTILE HYPODERMIC SYRINGES

Colin A. Murdoch, 14A Hassel St., Timaru, South Island, New Zealand

Filed Nov. 10, 1964, Ser. No. 410,058
Claims priority, application New Zealand, Nov. 18, 1963, 136,579
6 Claims. (Cl. 128—215)

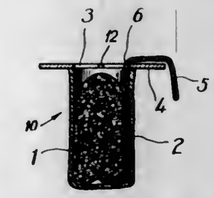


1. A projectile adapted to inject liquid medicines, drugs and the like into animals, comprising a hollow body, a piston of resilient material within said body capable of axial movement therein and dividing the body into anterior and posterior portions, closure means for the end of said anterior portion provided with a bore extending axially thereof, a hollow needle positioned in said bore for axial movement therein, valve means closing said bore for preventing communication between the anterior portion and the interior of said needle, said anterior portion being adapted to be filled with the liquid medicine, actuating means within said posterior portion normally urging said piston in the direction of said closure means and maintaining said anterior portion under pressure, said valve means including two co-acting components, one of said components being provided at the rear end of said bore and the other adjacent the rear end of said needle cooperable with said one component for closing said valve means when the needle is moved rearwardly respecting the body and for opening the valve means when the needle is moved forward effective immediately subsequent to the penetration of the needle into the animal by the residual momentum of the needle causing the needle to be displaced axially and forwardly of the bore so that the actuating means forces the piston towards the closure thereby expelling the contents of the anterior portion through the hollow needle.

3,358,686
TAMPON CONTAINER

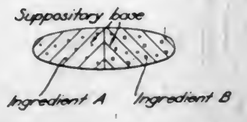
Kunitami Asaka, Tokyo, Japan, assignor to Anne Co., Ltd., Tokyo, Japan

Filed July 13, 1965, Ser. No. 471,532
Claims priority, application Japan, July 15, 1964, 39/55,871; July 24, 1964, 39/58,610
10 Claims. (Cl. 128—263)



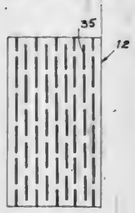
1. A tampon container comprising a bag for the reception of a tampon, said bag having an opening in one end thereof, a cover plate attached to said bag at its opening and forming a closure for the opening, means in said cover plate for affording an opening therethrough for the passage of a tampon through the cover plate, said bag being formed of a pliable material whereby a tampon can be dislodged from the bag through the opening in the cover plate by exerting a pushing action on the exterior of the bag.

3,358,687
SUPPOSITORIES
Robert A. Miley, London, John Ruff Gwilt, Monkseaton, Northumberland, David Godfrey, Ewell, Surrey, England, assignors to Sterling Drug Inc., New York, N.Y., a corporation of Delaware
Filed Dec. 6, 1965, Ser. No. 511,802
4 Claims. (Cl. 128—271)



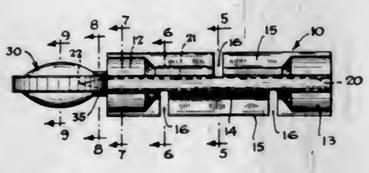
1. A suppository containing at least two active ingredients and divided transversely into two portions abutting end to end, one or more of the active ingredients being confined to one portion and one or more of the other active ingredients being confined to the other portion, one of the active ingredients being a decongestant agent and another being a local anaesthetic agent, the decongestant agent being in the end portion of the suppository intended for insertion into the patient.

3,358,688
METHOD OF PREPARING SKIN FOR USE IN A SKIN GRAFT
James C. Tanner, Jr., 384 Peachtree St., Suite 1001, Atlanta, Ga. 30383
Filed Jan. 15, 1964, Ser. No. 337,795
8 Claims. (Cl. 128—305)



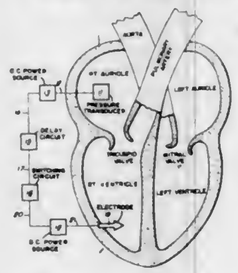
1. A method of preparing a piece of skin for a skin graft, said method comprising the steps of making parallel columns of slits in the piece of skin with the slits of one column being offset from the slits in its adjacent column, and expanding the piece of skin into a mesh of skin ribbons.

3,358,689
INTEGRAL LANCET AND PACKAGE
John L. Higgins, Daytona Beach, Fla., assignor to Roehr Products Company, Inc., De Land, Fla., a corporation of Delaware
Filed June 9, 1964, Ser. No. 373,775
5 Claims. (Cl. 128—329)



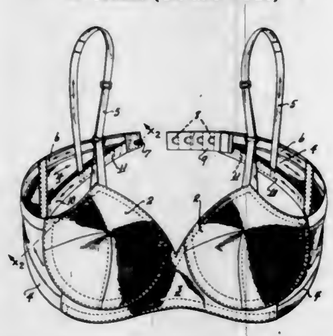
1. A medical lancet unit which comprises: a molded lancet retaining member having a main body section adapted to be held between the fingers of an operator and a lancet member having a solid sterile pointed end section fixedly mounted in said retaining member with said sterile pointed end section extending beyond the end of said main body section and having a solid cap section molded integrally with said main body section and sealably embedding and enclosing said sterile pointed end section in the material thereof to prevent bacterial contamination, and said cap section being sealably connected with said main body section by a frangible section which is readily severable to effect separation of said cap section from said body section for exposing said sterile pointed end section immediately before using said lancet.

3,358,690
HEART STIMULATOR UTILIZING A PRESSURE-SENSITIVE SEMICONDUCTOR
Marvin M. Cohen, Silver Spring, Md., assignor to United States of America as represented by the Secretary of the Army
Filed Nov. 18, 1964, Ser. No. 412,268
3 Claims. (Cl. 128—419)



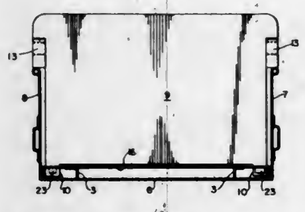
1. A heart stimulator, comprising:
(a) a pressure sensitive transducer means adapted to be inserted in the atrium of a heart for sensing a high pressure condition in said atrium;
(b) electrode means adapted to be inserted in the ventricle of said heart; and
(c) telemetering means connecting said transducer and said electrode means, said telemetering means comprising a delay circuit, a switching circuit, and a DC power source, said delay circuit being connected to receive the output of said pressure sensitive transducer, said switching circuit being connected to receive the output of said delay circuit, and said DC power source being adapted to be connected to said electrode means by said switching circuit when said switching circuit is activated by the delayed signal from said pressure sensitive transducer.

3,358,691
BRASSIERE
Jesse R. Hayes, Hewlett Harbor, N.Y., assignor to Treo Company, Inc., Jamaica, N.Y., a corporation of New York
Filed Oct. 18, 1965, Ser. No. 496,853
1 Claim. (Cl. 128—510)



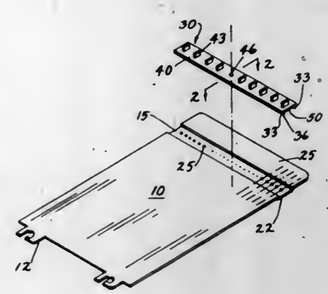
In a brassiere comprising cups, back bands, and shoulder straps, of an elastic web band having longitudinal stretch for each back band of the brassiere and said elastic web band being secured at its ends to the brassiere back band, the elastic web being positioned at the lower margin of the brassiere back band, and a shoulder strap secured at one end to the elastic web band centrally thereof, the elastic web band having free action of motion between its ends.

3,358,692
FILING SYSTEM
Romeo T. Proulx, Coplague, N.Y., assignor to VISIrecord, Inc., Coplague, N.Y., a corporation of New York
Filed Mar. 17, 1965, Ser. No. 440,433
5 Claims. (Cl. 129—16)



1. In a filing system including a file housing having a bottom and opposed side walls with free top edges, the improvement comprising:
(a) a base member having an upper supporting surface, said base member being positionable within said file housing, said supporting surface being spaced above the bottom of said housing and having at least one pair of openings extending therethrough, and
(b) at least one divider comprising a flat, semi-rigid plate having upper and lower portions, being removably positioned on said base member, and adapted to be inclined on said base member, said divider having:
(1) a pair of positioning tabs extending downward from and integrally with the lower portion of the plate in the same plane thereof, the tabs spaced apart to be in registry with and disposable through said pair of openings in said base member,
(2) shoulder means extending from each side of the plate and adapted to overlie each side wall of said housing, the lower portion of each shoulder means engageable with the top edge of a side wall, and
(3) locking means within each positioning tab, comprising a generally rectangular locking tab having upper and lower portions, the lower portion being integral with and in the plane of each positioning tab, the upper portion being formed from an inverted U-shaped cut in the positioning tab and being displaced out of both the surface and the plane of the positioning tab, the top edge of the locking tab defining in cross-section a substantially straight line approximately equal in length to the thickness of the tab, and extending generally normal to the plane of the positioning tab, the closed portion of the inverted U-cut defining a generally straight line the combined thickness of each divider and its associated locking means as measured along a plane normal to the plane of the plate, being less than the corresponding dimension of the opening in said base member, only when said divider is positioned in a plane extending substantially normal to the plane of said base member.

3,358,693
WRITING PLATEN FOR LEDGER BOOKS
Hyman Brechner, 65 Bella Vista Road, Tuckahoe, N.Y. 10707
Filed May 26, 1965, Ser. No. 458,877
3 Claims. (Cl. 129—21)

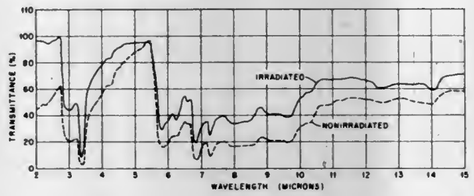


1. A writing platen having a groove with a bottom wall of magnetic material and said groove having sides connecting said bottom wall with said platen, a peg strip slidable in said groove, said peg strip being a U shaped channel having side flanges with edges slidable on said bottom wall, a magnetic member in said channel and slidable therewith having oppositely polarized edges adjacent respective flanges, said channel being of magnetic material whereby the edges thereof are magnetic poles to effect an attractive force holding said peg strip in said groove an indexing pin carried by said peg strip and indexing holes in said platen at the bottom of said groove for effecting predetermined positions of said peg strip therein, said pin being engageable in a selected indexing hole as said channel is slidably positioned in said groove.

ERRATUM

For Class 131—105 see:
Patent No. 3,358,707

3,358,694
METHOD OF REDUCING IRRITANTS IN TOBACCO BY GAMMA IRRADIATION
Herman V. Boenig, Wingate A. Lambertson, Walter J. Braun, and Homer S. Myers, Lexington, Ky., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed May 11, 1965, Ser. No. 455,019
3 Claims. (Cl. 131—121)



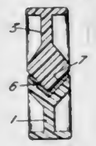
1. A process of treating harvested tobacco for the purpose of reducing tars and free radicals comprising exposing it to at least one megarad of gamma radiation.

3,358,695
FOAMS
Angus Rucker Blakey, Jr., Kennett Square, Pa., and Ernest Albert Coleman II, Fairfax, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Original application Dec. 18, 1962, Ser. No. 245,481, now Patent No. 3,253,967, dated May 31, 1966. Divided and this application July 6, 1965, Ser. No. 478,784
5 Claims. (Cl. 131—269)



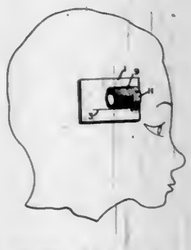
1. A cigarette filter element formed of a predominantly ruptured celled polyoxymethylene foam having an average cell size of under 1 millimeter, a surface area of from 0.4 to 4.0 square meters per gram, a density of from 0.001 to 0.320 gram per cubic centimeter, and an average wall thickness of over 2 microns.

3,358,696
METHOD FOR TEASING HAIR
Alexander Littlejohn Ruxton, London, England (Mafeking House, 43 West Gate, North Berwick, Scotland)
Filed Nov. 23, 1964, Ser. No. 413,136
1 Claim. (Cl. 132—7)



A method of teasing hair, comprising drawing a tress of hair transversely between one bar having a substantially V-shaped groove whose side walls meet at a sharp dihedral angle at the root of the groove and another bar having a substantially V-shaped wedge surface with the apex of said wedge surface disposed in the root of said groove and the side walls of said V-shaped wedge surface meeting at a sharp dihedral angle at the apex of the wedge, and pressing said bars together while drawing the tress of hair between them.

3,358,697
HAIR-CURLING CUSHION
Marilyn Blundell, 4718 Arnold St., R.D. 4, Ballston Spa, N.Y. 12020
Filed July 19, 1966, Ser. No. 566,403
3 Claims. (Cl. 132—9)



1. A hair curling device of the type in which a strand of hair coiled upon itself, fastened, and coated with a hair curling solution is left so coiled upon the head to dry including sleeping hours when the head may rest upon such coils which comprises:

(a) a pad of freely flexible, softly resilient, solution-absorbent material having a slit therethrough from face to face solely in the interior of the face area thereof and with the ends of the slit closed and terminating entirely within the body of the pad, said slit extending along and adjacent to but spaced from one edge of the pad and providing a relatively wide face area, at the other side of the slit from said one edge, that is wide enough to cover a coil of a strand of hair which has been passed through said slit, coiled and disposed against such relatively wide face area at one side of the said slit and there secured in coiled condition by suitable fastening means,

(b) the walls of said slit, by the resiliency of said material, gripping the strand of hair that passes through the slit sufficiently to resist substantial pulls on the strand tending to uncoil it and pull the coil of the strand over upon the slit,

(c) said pad having a thickness adequate to fully cushion the coil of the strand and its fastening means against pressure on the head of the user when the user sleeps with her head on the pad, coil and any fastening means, and also adequate to absorb a substantial amount of curling solution from the strand of hair during drying of the strand, thereby accelerating the drying operation,

(d) the material of the pad at both sides of the slit being flexible and enabling it to be easily bent up and provide space for the application of additional pads to other strands of hair.

3,358,698
HAIR-SETTING ROLLER DEVICE WITH LOAD DISTRIBUTING COMBS
Floyd W. Blanchard, 2334 Loma Vista Place, Los Angeles, Calif. 90039
Filed July 28, 1964, Ser. No. 385,618
2 Claims. (Cl. 132—40)



1. A hair setting appliance comprising:
a device including a plurality of rollers for rolling a strip of hair of the user of said appliance into a coil positionable closely adjacent the head of said user, at least two of said rollers being arranged in side-by-side relationship on said head with the major axis of one roller lying adjacent and substantially parallel to the major axis of another roller; and
means engageable with each of said rollers to distribute the load exerted on said head by said rollers and to maintain said coils in contact with said rollers including an individual hollow, semi-cylindrical clamp member snapped over an associated roller in substantial encompassing relationship and an individual comb extending from each clamp member, said combs being positionable between an associated roller and said head when an associated clamp member is in position on said associated roller, each of said combs being arcuate along both its major axis and its minor axis for conforming said combs to the shape of said head.

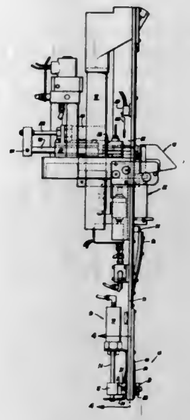
3,358,699
COSMETIC STORING AND DISPENSING DEVICE
Robert Gordon Bau, 3271 Laurel Canyon Blvd., North Hollywood, Calif. 91604
Filed Oct. 3, 1962, Ser. No. 228,199
8 Claims. (Cl. 132—79)



1. A dispensing device comprising:
a substantially cylindrical casing having an open end;
a sleeve member carried at the open end of said casing and rotatable with respect to said casing;
a substantially cylindrical cartridge section removably secured at the end of said sleeve member opposite that carried by said casing and rotatable with said sleeve member;
a piston within said cartridge section;
a stick of potted material within said cartridge section adapted to be advanced longitudinally along the axis of said section by said piston;
a threaded rod coaxially supported within said casing and said sleeve member, the leading end of said rod being adapted to releasably engage said piston;
means for preventing relative rotation of said rod with respect to said casing while permitting axial displacement of said rod with respect to both said casing and said sleeve member whereby said rod can be moved into and out of said casing;
spring means within said casing, said spring means engaging a portion of said rod for biasing said rod to a retracted position within said casing;
normally disabled threaded means carried within said sleeve member for releasably engaging the threads upon said rod;
and means carried within said cartridge section for bringing about engagement between said threaded means and said rod upon installation of said cartridge section upon said sleeve member, whereby rotation of said rear casing with respect to said sleeve member and cartridge section will cause axial movement of said rod, said piston and said stick of potted material.

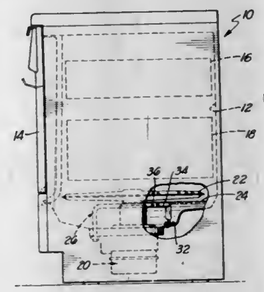
3,358,700
COIN HANDLING APPARATUS
Lindley Manning, Reno, Nev., and Alan Day, Hayward, Calif., assignors to Nevada Electronics, Reno, Nev., a corporation of Nevada
Filed Nov. 3, 1965, Ser. No. 506,181
13 Claims. (Cl. 133—5)

1. In coin handling apparatus, means defining an upright riser channel for guiding a column of coins upwardly in their own planes in edge to edge relation, a passage formed in the side of said channel and adapted to pass coins therethrough to enter the channel, means defining a downwardly directed coin receiving channel for guiding coins to move by gravity in their own planes to pass through said passage, a readily removable coin lifter in and movable along said riser channel between lowered and raised positions to engage in its lowered position a coin delivered to the riser channel via said passage and to carry said coin and the column of coins upwardly along said riser channel in moving to its raised position, detent means protruding into the riser channel for engaging the lowermost coin in the column to arrest retrograde movement of the column, said detent means being movable manually away from the riser channel to permit retrograde movement of the column of coins, the lower end of



said riser channel being otherwise unobstructed after removal of said lifter to permit unloading of the riser column by the manual movement of said detent means.

3,358,701
DISHWASHER WATER LEVEL CONTROL SYSTEM
John A. Fay, North Hollywood, Calif., assignor to Waste King Corporation, Los Angeles, Calif., a corporation of California
Filed Jan. 14, 1966, Ser. No. 520,695
4 Claims. (Cl. 134—57)

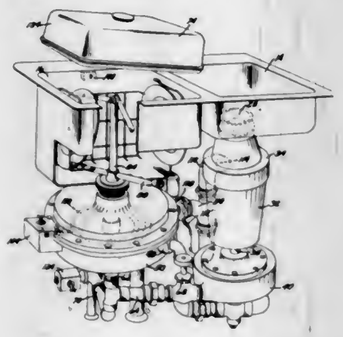


1. In a dishwasher, the combination of:
(a) a tub adapted to contain dishes to be washed and rinsed and adapted to contain water for washing and rinsing them;
(b) an electrical resistance heating element in said tub adjacent the bottom thereof and below the static water level in said tub when it contains water for washing and rising dishes therein;
(c) said heating element having a high temperature coefficient of resistance providing it with a low resistance permitting a high current flow therethrough when it operates at a low temperature, and providing it with a high resistance permitting only a low current flow therethrough when it operates at a high temperature;
(d) whereby said heating element has a low resistance and a high current flow therethrough when it is submerged in water in said tub and has a high resistance

and a low current flow therethrough when it is exposed to air in said tub; and

(e) control means responsive to the current flowing through said heating element for permitting the introduction of water into said tub when said heating element is exposed to air in said tub and has a low current flow therethrough, and for preventing the introduction of water into said tub when said heating element is submerged in water in said tub and has a high current flow therethrough.

3,358,702
COMBINATION DISPOSAL AND WASHER
Theodore Schaap, 2521 Brookside SE., Grand Rapids, Mich. 49507
Filed May 21, 1965, Ser. No. 457,708
10 Claims. (Cl. 134—58)

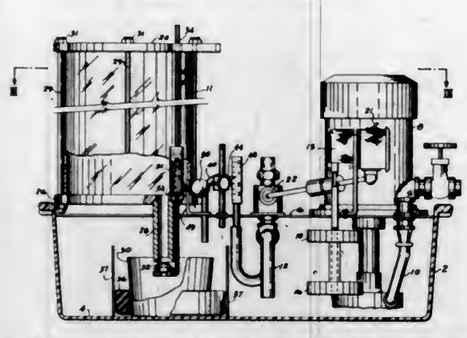


8. An integrated multiple-appliance apparatus for a kitchen comprising: a general purpose sink and a dishwasher chamber located in proximity to each other; said sink having at least one bottom outlet; a common drain line means for said sink and dishwasher chamber; a general purpose disposal appliance located underneath said sink means and in communication with and between said outlet and said drain line means so as to receive and dispose of garbage deposited in said sink and passing through said outlet without contaminating said dishwasher chamber; a water injecting washer means including a plurality of spray jets located in said dishwasher chamber and a separate pump means for supplying water under pressure to said spray jets; and a common power motor operably connected by means of a common shaft to both said disposal appliance and pump means.

3,358,703
METHOD FOR SEALING LEAKS
Irwin Ginsburgh, Morton Grove, Ill., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana
No Drawing. Filed Dec. 20, 1965, Ser. No. 515,195
4 Claims. (Cl. 137—15)

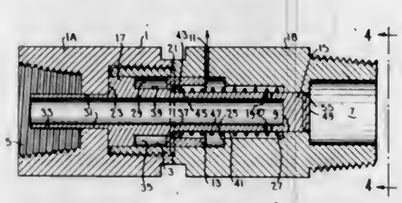
1. In the method of sealing leaks in liquid carrying conduits being operated at superatmospheric pressures wherein wood sawdust particles are introduced into the liquid in said liquid carrying conduit upstream of said leak and carried downstream in said liquid to the area of said leak where said particles are drawn into the opening in the conduit causing the leak by the sideflow resulting from the leak whereby said particles become lodged in said opening sealing said leak, the improvement comprising the step of impregnating said wood particles with a gaseous fluid prior to introduction of said particles to said liquid carrying conduit whereby said particles are floatable in said liquid in said conduit.

3,358,704
PRINTING PRESS WATER SOLUTION MIXING MECHANISM
James B. Wyatt, Brooklyn, and Andrew N. Stad, Syosset, N.Y., assignors to Baldwin-Gegenheimer Corporation, Brooklyn, N.Y., a corporation of New York
Filed Sept. 24, 1964, Ser. No. 398,846
12 Claims. (Cl. 137—101.21)



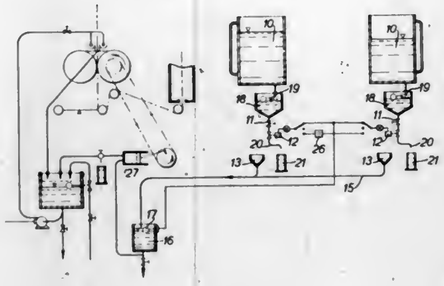
1. A mixing device for making solutions from predetermined proportions of chemical concentrate and water comprising: a tank, a metering cup located within the tank, said metering cup being floatable within said tank between an upper and lower position, a closed reservoir of chemical concentrate mounted on the tank having an opening communicating with said metering cup, means for locating said metering cup under said reservoir, a water supply means and means cooperating with said water supply means and said metering cup for removing said chemical concentrate from the metering cup when said metering cup is in the upper position mixing it with the water and directing it into said tank.

3,358,705
VALVE ASSEMBLY
Joseph L. Krechel, Lake Montowese, Rte. 2, House Springs, Mo. 63051
Filed Sept. 9, 1964, Ser. No. 395,229
13 Claims. (Cl. 137—116)



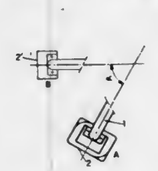
1. An unloader valve assembly for compressors or the like comprising a valve body having a bore with an inlet end and an outlet end, a valve seat in the valve body, a bleeder port through the body from the bore to the outer body surface, a sleeve reciprocable in the bore for opening and closing the port, a valve having a portion engageable with the valve seat for closing the bore, the valve being slidable within the bore and the sleeve for opening and closing the bore, the valve when moving from the bore closing to the bore opening position initially having a sliding lost-motion connection with the sleeve and then the valves engaging the sleeve for moving the sleeve and closing the bleeder port, means carried by the valve and having a sliding lost-motion connection with the sleeve for moving the sleeve and opening the bleeder port as the valve moves to its bore closing position, and means defining a passage between the inlet end of the bore and the port when the valve is in its bore closing position.

3,358,706
APPARATUS FOR PRODUCING TREATING BATHS FOR TEXTILES
Claus Tischbein, Kreis Harburg, Germany, assignor to Artos Dr. Ing. Meier-Windhorst K.G., Hamburg, Germany, a corporation of Germany
Filed Aug. 17, 1966, Ser. No. 573,050
Claims priority, application Germany, Aug. 31, 1965, A 50,151
6 Claims. (Cl. 137—263)



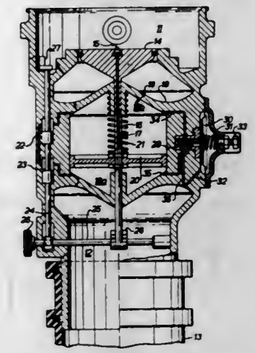
1. In an apparatus for producing a treating bath having a plurality of components, a separate supply container for each component, said supply containers having outlets, throttle valves, means connecting said throttle valves with said outlets, magnetic valve means connected with said throttle valves, a bath-receiving container, a float valve in said bath-receiving container, means connecting said magnetic valve means with said float valve, and means connected with said magnetic valve means for supplying said components to said bath-receiving container, wherein the first-mentioned means comprise funnel-shaped level-indicating containers communicating with the outlets of said supply containers and having outlets communicating with said throttle valves, and a separate float valve in each funnel-shaped level-indicating container.

3,358,707
DEVICE FOR REVERSING PIECES OF TOBACCO LEAVES EMPLOYED FOR ROLLING CIGARS
Claude Pirat, Strasbourg-Neudorf, France, assignor to Service d'Exploitation Industrielle des Tabacs et des Allumettes, Paris, France, a French public establishment
Filed June 7, 1965, Ser. No. 461,858
Claims priority, application France, June 9, 1964, 977,578
3 Claims. (Cl. 131—105)



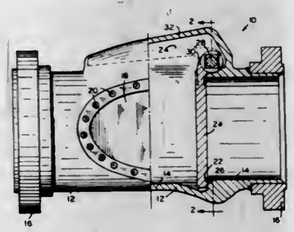
1. A device for transferring pieces cut from tobacco leaves for subsequent use as cigar wrappers comprising a moving arm pivotally mounted thereon around a vertical axis, suction means on said arm and means on the device for pivoting said arm through at least two different angles having supplemental values and opposite directions.

3,358,708
COUPLING DEVICES FOR PIPES OR CONDUITS
Peter Gillingham Williams, London, England, assignor to The British Petroleum Company Limited, London, England, a corporation of England
Filed May 13, 1964, Ser. No. 367,024
Claims priority, application Great Britain, June 5, 1963, 22,314/63
8 Claims. (Cl. 137—495)



1. A coupling device for pipes or conduits comprising, a coupling member provided with a valve member having a first passage containing an auxiliary valve member therein, a piston mechanically coupled to said valve member, fluid pressure equalizing means for equalizing the pressure on either side of said piston, and manually operable means to inactivate said fluid pressure equalizing means, said manually operable means being mechanically coupled to said valve member, said valve member adapted to move from a closed to an open position in a direction opposite to that of the fluid flow through the coupling member, movement of said valve member being caused by fluid flowing only through said first passage into said coupling member as a result of mechanical pressure applied to said auxiliary valve member so as to cause it to move from a closed to an open position, the pressure of the fluid flowing through said first passage moving said piston when said manually operable means is operated to inactivate said fluid pressure equalizing means, said movement of said piston causing said valve member to move to said open position.

3,358,709
CHECK VALVES
Griffith N. Thresher, Robert E. Elliott, and Alfred D. Hogan, Tulsa, Okla., assignors to Frank Wheatley Industries, Inc., Tulsa, Okla., a corporation of Oklahoma
Filed Dec. 6, 1963, Ser. No. 328,577
10 Claims. (Cl. 137—527.4)



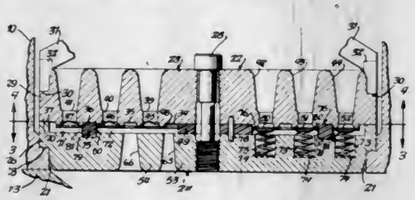
1. A check valve comprising:

a valve body having a fluid passage therethrough defined in part by a planar valve seat and a small diameter hinge pin opening therein;

a hinge pin rotatively supported in said body about a fixed axis adjacent and exteriorly of said valve seat and in a plane substantially parallel the plane of said valve seat, a portion of said hinge pin extending sealably exteriorly of said body through said hinge pin opening; and

a clapper supported to said hinge pin, said clapper having a seating face sealably engaging said body valve seat when said clapper is pivoted to the closed position, said clapper rigidly supported to said hinge pin in the plane of the face of the clapper and loosely supported in the plane of the hinge pin perpendicular to the clapper seating face.

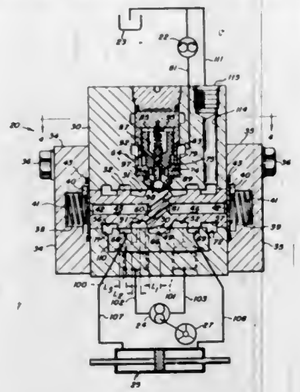
3,358,710
VALVE CONSTRUCTION FOR RECIPROCATING TYPE COMPRESSOR
Kingman W. Page, Olean, N.Y., assignor to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
Filed Apr. 1, 1964, Ser. No. 356,551
2 Claims. (Cl. 137—512.1)



1. In a valve construction, the combination comprising a seat member including radially spaced annular portions connected by radially extending portions to provide a plurality of circumferentially interrupted annular inlet passages, an annular valve for each of said passages and closing the same when seated against said seat member, said valves having opposed generally concentric peripheral edges, a stop member limiting movement of said valves away from said seat member, spring means operatively interposed between said stop member and valves for urging the latter toward said seat member, said stop member having grooves in its face which opposes said seat member and also having outlet passages which communicate with said inlet passages when said valves are unseated, and elongated segments constructed of a polymer of ethylene such as tetrafluoroethylene removably disposed partially in said grooves and being dimensioned for a press fit with the walls of said grooves, said segments having exposed arcuate circumferentially elongated surface portions generally concentric with said peripheral edges and guidingly engaging the same during movement of said valves.

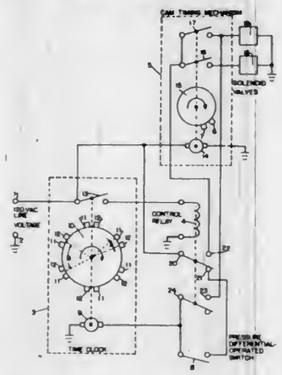
3,358,711
VALVE
Francois C. Pruvot, Garches, Seine-et-Oise, France, assignor to TRW Inc., Euclid, Ohio, a corporation of Ohio
Filed July 20, 1965, Ser. No. 473,433
10 Claims. (Cl. 137—596)

1. An open center valve construction including in combination a housing having a main bore, a valve spool in said main bore movable from a neutral position in first and second opposed axial directions, wall means defining a porting on said spool and in said main bore for providing fluid communication between fluid components connected to said porting upon movement of said valve spool, a secondary bore in said housing intersecting said main bore and extending in a direction generally normal thereto, a valve seat in said secondary bore, a poppet valve movable into and out of engagement with said valve seat to alternately prevent and permit fluid communication between an inlet and outlet side of said poppet valve, wall means defining a fluid chamber in said secondary bore at an end of said poppet valve opposite said valve seat, wall means defining a fluid passage extending from said fluid chamber to said outlet side of said poppet valve, a check valve in said fluid passage biased to open position and normally maintained open to allow fluid flow from said fluid chamber to said outlet side of said poppet valve, wall means on the outer surface of said poppet valve defining a helical groove providing fluid communication between



said inlet side of said poppet valve and said fluid chamber, a cam surface on said valve spool, an actuating pin engaging said cam surface at one end and engageable with said check valve at another end, means for moving said valve spool in one of said first and second opposed axial directions whereby said actuating pin closes said check valve increasing fluid pressure in said fluid chamber thereby causing said poppet valve to move into engagement with said valve seat and prohibit fluid flow from said inlet to said outlet side of said poppet valve.

3,358,712
WATER SOFTENER CONTROL APPARATUS
Donald F. Lane, Minneapolis, Minn.
(13736 E. Wellington Crescent, Burnsville, Minn. 55378)
Filed Sept. 30, 1965, Ser. No. 491,647
4 Claims. (Cl. 137—624.18)



1. In a water softener regeneration control including solenoid-actuated valve means for regeneration, and means including timing means for energizing said solenoid valve means, the combination of:

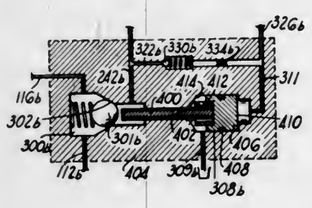
an electrically operated timeclock device,

a pressure differential switch in series with said clock device,

a control relay operable when deenergized to complete the circuit between said pressure differential switch and its source of current and when energized to supply voltage to said means for energizing said solenoid valve means and also complete a circuit between said solenoid valve means and said timeclock device to reset the same during the final phase of the regeneration cycle, and

switch means in series with and actuated by said timeclock device according to a predetermined time sequence for intermittently supplying voltage to said control relay.

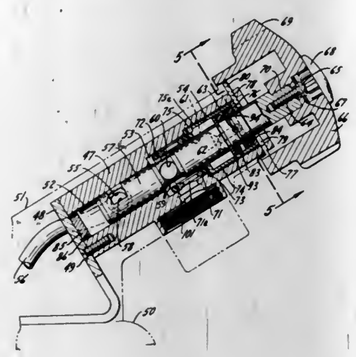
3,358,713
CONTROL SYSTEM HAVING SEQUENTIALLY ALTERNATELY SEATING FLOW CONTROLLERS
Harvey E. Wortz, St. Joseph, Mich., assignor to The Bendix Corporation, a corporation of Delaware
Original application Apr. 13, 1964, Ser. No. 359,173, now Patent No. 3,255,671, dated June 14, 1966. Divided and this application Oct. 18, 1965, Ser. No. 497,024
4 Claims. (Cl. 137—627.5)



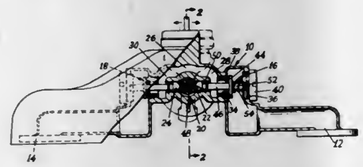
3. A valve comprising: a first chamber and a second chamber, a valve seat in said first chamber, said first chamber having first and second ports, said valve seat being located between said ports, a first valve member biased against said valve seat, said first and second ports being communicated with each other when said first valve member is unseated and are cut off from each other when said first valve member is seated, said second chamber having a pressure port and a return port, a slidable seat in said second chamber, said slidable valve seat being located between said pressure port and said return port and having an opening therein for communicating the same, a reciprocable valve member having a portion located in said second chamber for engagement with said slidable valve seat sealing said opening thereby cutting off communication between said pressure port and return port and a portion in said first chamber for engagement with said first valve member unseating the same, said reciprocable valve member portion located in said second chamber being located on the return port side of said slidable valve seat, means for supplying pressure to said pressure port whereby said slidable valve seat will be forced against said reciprocable valve member engaging the same to unseat said first valve member, means for releasing pressure at said pressure port, whereby any leakage of pressure to said pressure port will pass through said opening in said slidable valve seat to return to prevent build up of pressure thereat.

3,358,714
MIXING VALVE
Alfred M. Moen, 25 Lakeview Drive, Grafton, Ohio 44044
Continuation of application Ser. No. 287,698, June 13, 1963. This application Oct. 8, 1965, Ser. No. 494,036
7 Claims. (Cl. 137—625.17)

1. In combination in a mixing faucet, a hollow housing, a plurality of inlets formed in the wall of said housing for the introduction of hot and cold water, an outlet therefrom to discharge mixed amounts of hot and cold water, a hollow valve stem positioned in said housing and a handle fixed thereto for rotation and reciprocation of the valve stem with respect to the housing, said valve stem having an inlet opening and an outlet opening, said inlet opening being adapted to be moved selectively into and out of register with one or more of said inlets to introduce hot and/or cold water into said hollow stem, said valve outlet opening being adapted to be moved into and out of communication with said outlet opening in said housing, packing means positioned within and in contact with said housing and with said valve stem, said valve stem including means, on the stem, defining a pressure area generally equal in size to the cross sectional area of the valve stem, said pressure area and cross sectional area of the valve stem providing equal and opposite fluid pressure areas in constant communication with equal fluid pressures independently of the position of said valve stem for equalizing the water pressure on said stem in both the open and closed position thereof.



3,358,715
MIXING FAUCET WITH SEALED ACTUATOR CHAMBER
Milton M. Garvin, % Garvin Corporation, 2619 Colerain Ave., Cincinnati, Ohio 45214
Continuation of application Ser. No. 304,017, Aug. 23, 1963. This application Dec. 27, 1965, Ser. No. 516,525
3 Claims. (Cl. 137—636.4)



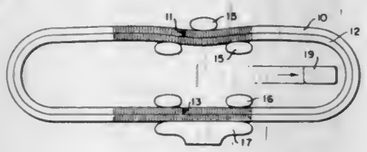
1. A mixing faucet comprising:

(a) a valve body having (i) two fluid inlets, (ii) means defining a valve seat adjacent each said inlet, and (iii) a control chamber intermediate said valve seats, said control chamber having an opening for and axially aligned with each said valve seat;

(b) valve means for controlling the flow of fluid through each said inlet, said valve means comprising a substantially planar valve element adapted to seat against said valve seat, a valve stem extending from said valve element through said openings in said control chamber, and a projection coaxial with said stem extending from the opposite surface of said valve element;

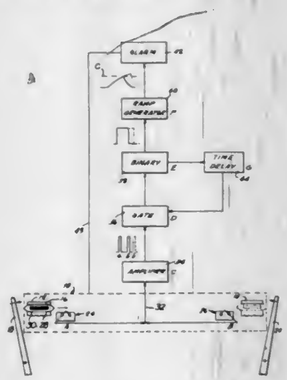
(c) sealing means cooperating between said valve stems and said openings in said control chamber;
(d) guide means secured to said valve body and slidably receiving said projections;
(e) means normally biasing said valve elements to the closed position;
(f) a cam movable in said control chamber; and
(g) means for moving said cam, whereby to move at least one of said valve stems and open at least one of said valve means.

3,358,716
ENDLESS CHECK STRAPS
Chester R. Messer, Concord, N.H., assignor to Page Belting Company, Concord, N.H., a corporation of New Hampshire
Filed Mar. 14, 1966, Ser. No. 533,895
7 Claims. (Cl. 139—161)



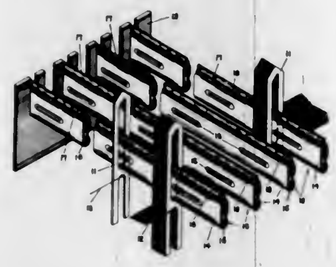
1. A check strap assembly comprising the combination of an endless textile strap and friction fingers, the strap having inner and outer plies laminated together in elongated loop formation and spliced respectively in different areas located respectively in the long sides of the loop formation, the plies being bonded together throughout their length, and the friction fingers being arranged to bend inwardly the spliced area of the outer ply and the unspliced area of the inner ply.

3,358,717
SHUTTLE SPEED MONITOR
Robert W. Schooley, Jr., R.D. 2, Lebanon, N.J. 08833
Filed May 21, 1965, Ser. No. 457,598
10 Claims. (Cl. 139—341)



1. Apparatus for indicating the speed of a flying shuttle comprising, a photoelectric sensing device adapted to be positioned along a shuttle's flight path, said photoelectric sensing device including illuminating means and photoresponsive means arranged such that first and second fluctuations in the light energy incident upon said photoresponsive means are produced upon the passage of a shuttle thereby, the time displacement of said fluctuations being inversely proportional to the speed of such shuttle, a ramp generator operable to generate an output signal whose magnitude changes gradually at controlled rates and alternately in opposite directions as successive input signals are applied thereto, means arranged to supply input signals to said ramp generator in response to fluctuations in light energy incident upon said photoresponsive means, and a signal responsive alarm means set to operate in response to an applied signal of predetermined magnitude, said alarm means being connected to receive input signals from said ramp generator.

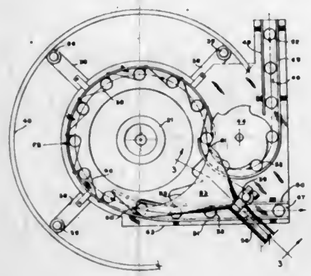
3,358,718
DROP WIRE GUIDE
Harold J. Boger, Marion, S.C., and Lloyd B. Dunmore, Poland, Ohio, assignors, by direct and mesne assignments, of one-half to John Donald Marshall and Horace L. Bomar, as trustees under a trust known as "The Carolina Patent Development Trust," and one-half to Hynes Steel Products Company, Youngstown, Ohio, a corporation of Ohio
Filed Apr. 6, 1966, Ser. No. 540,564
2 Claims. (Cl. 139—358)



1. In a warp stop motion for looms having electrodes disposed above and extending transversely of the warp, drop wires on said electrodes and a bridge member for supporting the latter intermediate the ends thereof, said electrodes including a generally U-shaped body portion, a blade member protruding from said body portion and extending longitudinally therewith and for substantially the full length thereof, an insulating element wrapped about that portion of said blade member within said body portion, said body portion having a plurality of elongated indentations disposed generally centrally and extending longitudinally thereof.

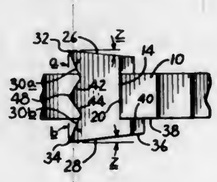
3,358,719
DRIP COLLECTOR FOR RECEPTACLE FILLING MACHINES
Everett S. Minard, Laguna Hills, Calif., assignor to Chemetron Corporation, Chicago, Ill., a corporation of Delaware
Continuation of application Ser. No. 91,955, Feb. 27, 1961. This application Jan. 22, 1965, Ser. No. 434,163
2 Claims. (Cl. 141—86)

1. In combination in a receptacle filling machine, a first rotating feed star having a plurality of receptacle receiving pockets movable along a first path, a second feed star for feeding empty receptacles to the first feed star, means for transporting filled receptacles from the first feed star, a plurality of filling assemblies overlying said first path and movable along on a path in synchronism with the plurality of receptacle receiving pockets, a common reservoir for material to be filled, means associated with each of said filling assemblies comprising an outlet through a nozzle having a discharge end, measuring means for discharging a measured quantity of material through said outlet into a receptacle beneath its associated filling assembly outlet, and vacuum means positioned along said first path after said means transports filled receptacles from said first star and before said second star feeds empty receptacles to the first star for withdrawing any material tending to cling to said nozzles after said measured material has been discharged into receptacles, said vacuum means having an arcuate edge and a slit-like intake opening disposed substantially at



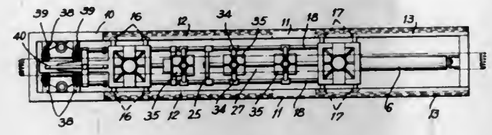
the level of said discharge ends so that material clinging to the discharge ends of the nozzles is withdrawn as said nozzles moves along said path between the transporting means and the second feed star, said intake opening of said vacuum means having an upper forward end and a lower forward end, said upper forward end overhanging said lower forward end to obviate the possibility of fluid clinging to said discharge ends being deposited on said lower forward end and then falling out of reach of the vacuum.

3,358,720
CIRCULAR SAW WITH SCRAP DISINTEGRATOR
George A. Henderson, 2923 N. Linder Ave., Chicago, Ill. 60641
Filed Feb. 28, 1966, Ser. No. 530,702
8 Claims. (Cl. 143—133)



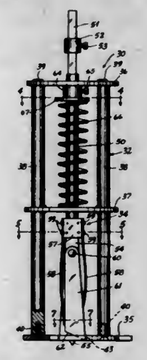
1. A circular saw comprising a saw body having opposite sides, circumferentially spaced tooth backing elements on the periphery of the saw body, each backing element having a seat, a carbide saw tooth secured to each seat, each tooth having opposite side faces lying laterally outwardly respectively of the adjacent peripheral parts of said opposite sides, each tooth having surfaces with portions thereof that intersect respectively the side faces of the tooth to form cutting edges lying outwardly of said peripheral parts and which cutting edges define opposed surfaces of revolution forming the kerf of the saw, said surfaces providing a recessed tooth face and equal and opposite acute shear face angles at each side of the tooth, and wedge shaped means constituting an integral part of said tooth and located intermediate said side faces of the tooth for breaking up stock material cut by the saw and reducing accumulation of stock material on the recessed face.

3,358,721
MEANS FOR JOINING WORKPIECES AT THEIR END FACES BY MEANS OF A BONDING AGENT, MORE ESPECIALLY WORKPIECES OF WOOD
Gunter Giesecke and Manfred Arnold, Tirschenreuth, Upper Palatinate, Germany, assignors to Gunter Giesecke, Gerhard Giesecke, Karoline Giesecke and Hermine Giesecke, trading as Hubel & Platzer, Tirschenreuth, Upper Palatinate, Germany, a partnership of Germany
Filed Jan. 29, 1964, Ser. No. 340,951
Claims priority, application Germany, Feb. 6, 1963, H 48,169; July 9, 1963, H 49,681
36 Claims. (Cl. 144—1)



1. Apparatus for uniting workpieces at their ends by means of a binder, in which the said workpieces rest on relatively movable supporting tables at the same height level and are moved relatively to one another for carrying out the connection and the bearing pressure necessary for this purpose, said supporting tables being arranged to be jointly movable in a forward direction by means of guideways in an adjustable longitudinal spacing from one another by a predetermined amount with the workpieces which are steadily advancing and means for moving the tables relatively towards one another during this displacement by reducing the spacing of the tables from one another.

3,358,722
REVERSE TAPER BORING TOOL
Russell L. Berry, P.O. Box 428, Mansfield, Mo. 65704
Filed July 5, 1966, Ser. No. 562,895
6 Claims. (Cl. 145—124)

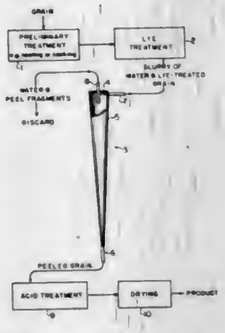


1. A bit assembly comprising in combination:
a shaft;
a stationary blade at one end of said shaft terminating in a cutting edge; a pair of movable blades pivotally mounted on said stationary blade and each terminating in a cutting edge;
means on said shaft biasing the terminal ends of said movable blades laterally away from the terminal end of said stationary blade;
support means mounting said shaft for reciprocal movement therein; and means removably mounted on said support means limiting the expansive movement of said movable blades as the bit assembly is moved downwardly so as to drill a hole having internal diameters greater than that at the hole entrance.

3,358,723
PROCESS FOR PEELING WHEAT AND OTHER GRAINS

Robert P. Graham, El Cerrito, Edward J. Barta, Albany, and Arthur I. Morgan, Jr., Berkeley, Calif., assignors to the United States of America as represented by the Secretary of Agriculture

Filed Jan. 12, 1966, Ser. No. 520,273
4 Claims. (Cl. 146—225)

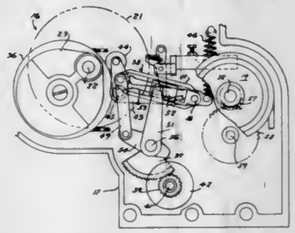


1. A process for peeling grain which comprises:
(a) Contacting the grain with hot, aqueous sodium hydroxide until the peel is loosened,
(b) Pumping a slurry of the treated grain and water into a conical zone wherein the slurry is directed in a spiral path of decreasing radius of curvature and increasing angular velocity sufficiently high to detach the loosened peel from the kernels, and to separate the peeled kernels from the remainder of the slurry, and
(c) Separately withdrawing from said zone the peeled kernels and the remainer of the slurry.

3,358,724
SLICING MACHINE FEED CONTROL APPARATUS

Max E. Toby, 1255 Shafter Ave.,
San Francisco, Calif. 94124

Filed Feb. 17, 1966, Ser. No. 528,142
10 Claims. (Cl. 146—101)

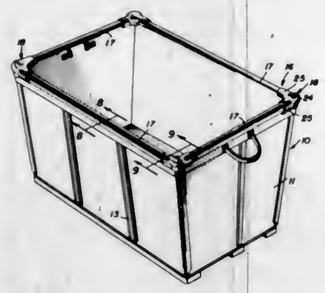


1. In apparatus for cutting slices from a mass of sliceable material, which apparatus includes a feed mechanism for advancing the material along a path of movement toward a slicing mechanism, said slicing mechanism including a blade intermittently crossing said path, and a counter responsive to such intermittent blade movement for counting the slices formed thereby and responding to the cutting of a predetermined number of slices; feed control means operatively connected to said counter and adapted to stop movement of said feed mechanism, means for energizing said control means, said control means including a delay mechanism for maintaining such means inoperative notwithstanding such energization until the slicing of the last slice of said predetermined number and then operating to stop movement of said feed mechanism until de-energization of said control means.

3,358,725
GUARD STRUCTURE FOR CANVAS BASKET RIMS

David D. Bussard, Corvallis, Oreg., and Russell D. Bussard, Albany, Oreg. (both % P.O. Box 206, Albany, Oreg. 97321)

Filed June 29, 1966, Ser. No. 561,640
8 Claims. (Cl. 150—51)

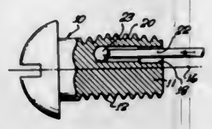


1. The combination of a basket of canvas or like material having a top rim constituted by a plurality of substantially cylindrical side members extending longitudinally between basket corners, and a protective guard structure for said basket rim, said guard structure comprising a plurality of substantially tubular and longitudinally slotted guard rails enclosing and frictionally retained on the respective side members of the rim, and a plurality of corner pieces disposed at the respective basket corners, each corner piece including a pair of angularly disposed split tubular sockets overlapping and frictionally engaging end portions of said guard rails on two adjacent of said side members, said basket rim being four-sided, said sockets of each corner piece being disposed at right angles to each other, said guard rails and said corner pieces being formed from plastic material, each of said guard rails being slotted at the underside thereof and includes inner and outer side portions at the opposite sides of its slot, the outer side portion of the guard rail being formed integrally with a thickened rib projecting downwardly below the inner side portion of the rail.

3,358,726
ARTICLE WITH SELF-LOCKING SCREW THREAD

Eric G. Gabbey, Box 43271, Los Angeles, Calif. 90043

Continuation of application Ser. No. 451,784, Apr. 29, 1965. This application Apr. 27, 1967, Ser. No. 634,390
8 Claims. (Cl. 151—22)



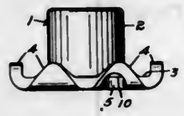
1. A device for providing a locked connection with a mating threaded part comprising
a one-piece solid member of resilient material having a helical thread thereon,
said member having at least one opening extending therein of considerably less diameter than that of said thread,
said opening being offset relative to the axis of said thread and relatively closely spaced from said thread at one side thereof,
said thread only adjacent said opening being distorted beyond its elastic limit away from the axis of said opening and beyond the normal contour of said thread,

thereby providing an unsupported resilient bulged portion for forcing a mating threaded part into tight frictional engagement with said thread on the side thereof opposite said unsupported resilient bulged portion.

3,358,727
COUNTERBORING FLANGED NUT

Norman J. Hughes, Melrose, Mass., assignor to United-Carr Incorporated, Boston, Mass., a corporation of Delaware

Filed Feb. 26, 1965, Ser. No. 435,435
3 Claims. (Cl. 151—41.73)

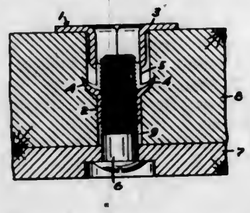


1. A fastener adapted to counterbore its way into and below the surface of an apertured workpiece comprising a barrel portion which is inserted into the aperture and a peripheral flange extending outwardly from one end of said barrel portion, portions of the periphery of said flange being bent towards the end of said barrel portion opposite said one end to provide a plurality of arcuately profiled fins defining with said flange an uninterrupted leading edge for cutting a groove in the workpiece concentrically spaced from the aperture therein, said flange having a plurality of through openings formed therein and extending from immediately adjacent said barrel portion across the non-bent portions of said flange and into certain of said fins, whereby upon the simultaneous application of axial and rotational force to said fastener said fins will cut a groove in the workpiece and compress the portions of the workpiece between the groove and the aperture therein inwardly and upwardly into said openings, which portions are sheared away by the edges of said flange defining said openings and escape through said openings.

3,358,728
PRONGED NUT

Norman J. Hughes, Melrose, Mass., assignor to United-Carr Incorporated, Boston, Mass., a corporation of Delaware

Filed Mar. 3, 1966, Ser. No. 531,534
3 Claims. (Cl. 151—41.73)

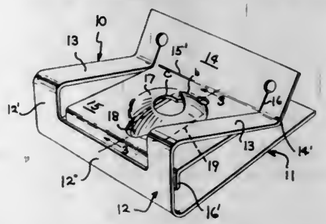


1. A sheet metal nut comprising a barrel portion adapted to be axially driven into a through bore in a workpiece, a workpiece-engaging flange disposed at one end of said barrel portion and a plurality of integral prongs partially sheared from and disposed about the periphery of said barrel portion intermediate the length thereof and having free ends extending toward said flange, said nut having a plurality of through openings formed therein each of which is generally aligned with one of said prongs, said barrel portion having a section of lesser extending diameter than other sections thereof immediately adjacent each of said openings, said prongs having been sheared from said section of lesser diameter and having a generally concavo-convex configuration in transverse cross section and being longitudinally tapered from said barrel portion to said free ends to provide sharp leading edges which bitingly engage the wall of the bore to prevent the nut from being pushed out of the bore when a bolt is turned into the nut from the end of the bore opposite said flange.

3,358,729
C-TYPE FASTENER

Robert A. Munse, Perrysburg, Ohio, assignor to The Bishop and Babcock Corporation, Toledo, Ohio, a corporation of Ohio

Filed Apr. 25, 1966, Ser. No. 544,988
4 Claims. (Cl. 151—41.75)



1. In a one-piece C-type spring sheet metal fastener,
a lower arm portion in the form of a flat plate,
an upper arm portion spaced above the lower arm portion,
means integral with said upper and lower arm portions disposed at about right angles to said lower arm portion and connecting corresponding edges of said upper and lower arm portions,
said upper arm portion comprising a pair of laterally spaced spring strips inclining from said connecting portion toward and into juxtaposed relation with said lower arm portion,
a panel integral with the ends of said spring strips, said panel being inclined away from the lower arm portion and connecting with the ends of the spring strips along a line of bend,
and a main plate between the spring strips having one end integral with said inclined panel,
and a free end toward said connecting means, said main plate being normally disposed at angles with respect to both said spring strips and inclined plate and joining the latter along a line of bend constituting a substantial continuation of the first-mentioned line of bend and a nut impression, said main plate being separate from said spring strips from the free end thereof at least to approximately the line of bend along which said spring strips connect with the panel,
said main plate, in the unstressed condition of said fastener, being disposed in a plane parallel to said lower arm and with the free end spaced normally below the jointure between said spring strips and said connecting means,
whereby said main plate and said lower arm maintain substantial parallelism when gripping panels of different thickness.

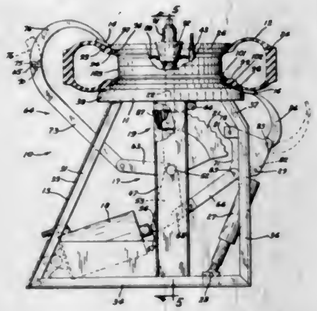
3,358,730
TIRE HANDLING MACHINE

Melvin A. Mandelko, 1231 6th Ave. S.,
Fort Dodge, Iowa 50501

Continuation of application Ser. No. 220,701, Aug. 31, 1962. This application Sept. 26, 1966, Ser. No. 582,166
1 Claim. (Cl. 157—1.17)

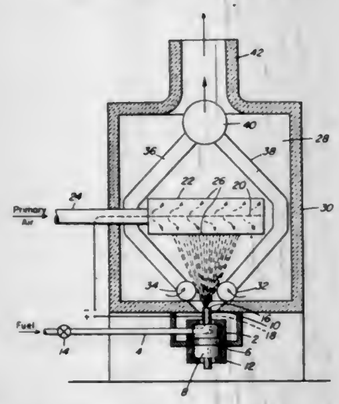
A machine for handling a tire and wheel assembly comprising in combination,

a wheel support,
ground engaging supporting means for supporting said wheel support,
shoe elements movable against the beads of a tire on said wheel support to break the beads away from the rim of a wheel upon which such tire is mounted,
an upright shaft mounted within said supporting means and extending upwardly through said wheel support,
a gear element on said shaft,



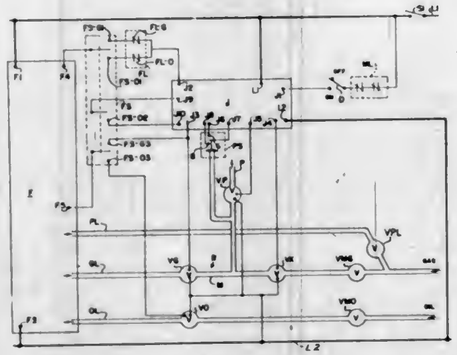
power means on said supporting means,
linkage means operatively connecting said shoe elements and said power means whereby said power means can move said linkage means and said shoe elements,
and a second gear element rigidly secured to said linkage means and being in mesh with the gear element on said shaft.

3,358,731
LIQUID FUEL SURFACE COMBUSTION PROCESS AND APPARATUS
James J. Donnelly, Cinnaminson, N.J., assignor to Mobil Oil Corporation, a corporation of New York
Filed Apr. 1, 1966, Ser. No. 539,522
7 Claims. (Cl. 158—4)



2. Apparatus for effecting fuel surface combustion comprising in combination:
(A) Means for coincidentally atomizing and electrostatically charging a liquid fuel to produce a flow of atomized fuel to a surface combustion means,
(B) Surface combustion means located downstream in the direction of atomized fuel flow comprising;
(1) A surface capable of promoting surface combustion having a plurality of uniformly spaced openings to permit contact of free oxygen and said atomized fuel thereon,
(2) A free oxygen inlet means adapted to direct free oxygen to said surface and,
(3) An electrode located downstream from said surface in the direction of fuel flow having an electrical potential sufficiently different from (A) to electrostatically attract said atomized fuel to said surface.

3,358,732
APPARATUS FOR VALVE CHECKING
Richard W. Stuart, Cleveland, Ohio, assignor to The North American Manufacturing Company, Cleveland, Ohio, a corporation of Ohio
Filed Apr. 30, 1965, Ser. No. 452,100
36 Claims. (Cl. 158—11)



1. An apparatus for checking the operation of a fluid flow controlling valve means, comprising valve checking means for automatically detecting a defect in the operation of said valve means, said valve means comprising three valves including a conduit, an upstream valve and a downstream valve connected to control in series flow through said conduit, a vent valve connected in fluid communication with said conduit between said upstream and downstream valves for selectively sealing or venting said conduit, and means for moving one of said valves other than the downstream valve between open and closed positions in timed sequence with movement of said downstream valve between these positions.

3,358,733
SELF-HEATING HAIR SETTING DEVICE
Arthur T. Manning, 2648 NW. 9th Lane, Wilton Manors, Fla. 33305
Filed Dec. 9, 1964, Ser. No. 416,981
3 Claims. (Cl. 158—20)

1. A self-heating hair setting device comprising
(a) a first hollow member forming a handle,
(b) said first hollow member providing a fuel storage space,
(c) a second hollow member,
(d) a connecting member to which said first and second hollow members are detachably connected at opposite ends thereof,
(e) a flameless combustion burner held by said connecting member and extending into said second hollow member,
(f) said burner being in communication with said fuel storage space,
(g) a gauze-like material containing a precious metal catalyst forming the outer surface of said burner,
(h) said second hollow member having a plurality of ventilating openings adjacent said burner,

(i) a detachable clamp on the outside of said second hollow member, and



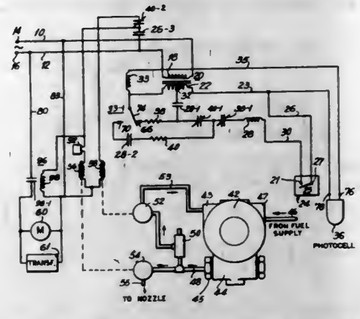
(j) said clamp being pivotable away from said second hollow member.

3,358,734
WELDING TORCH
John P. Broderick, Bayside, N.Y., assignor to Eutectic Welding Alloys Corporation, Flushing, N.Y., a corporation of New York
Filed Aug. 8, 1966, Ser. No. 571,002
7 Claims. (Cl. 158—27.4)



1. A welding torch comprising a main body portion, a tip section disposed in front of said main body portion, separate passageways in said main body portion for separately conducting a pressurized combustible gas and a combustion supporting gas through said main body portion, first valve means for independently adjusting the gas flow in each of said passageways conducting said pressurized combustible gas and said combustion supporting gas, a mixing area in said main body portion of said torch for mixing said two gases and communicating with said tip section for directing the exit of said gases therefrom, dual by-pass passageways extending rearwardly from said mixing area and communicating with said separate passageways upstream from a flame switching assembly, second valve means for independently adjusting the gas flow in each of said by-pass passageways; said flame switching assembly comprising a pair of cavities in said main body portion of said torch, said cavities interrupting the continuity of said separate passageways, instantaneously acting valve means disposed in each of said cavities permitting the flow of gases to be controlled by one of said first and second valve means, actuating means secured to said main body portion of said torch and communicating with said instantaneously acting valve means for instantaneously switching from one working flame controlled by one of said valve means and having a predetermined ratio of combustion supporting gas to combustible gas to another working flame controlled by the other of said valve means and having another predetermined ratio of combustion supporting gas to combustible gas.

3,358,735
FUEL BURNER CONTROL SYSTEM
Alfred Nathan Luft, Sarasota, Fla., assignor to Sun-Ray Burner Manufacturing Corporation, Jamaica, N.Y., a corporation of New York
Filed Aug. 25, 1966, Ser. No. 575,014
15 Claims. (Cl. 158—28)

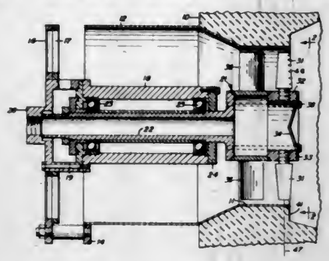


1. A control system for a fuel burner having a nozzle, a source of fuel under pressure, and means for igniting said fuel when leaving said burner nozzle, said control system comprising fuel pump means for providing a supply of fuel from said fuel source to said burner nozzle; relay control means adaptable to be connected to an electrical power source having a pair of output terminals; valve means in circuit with said relay control means and operative in response thereto for controlling said fuel pump means for selectively providing a first level of fuel flow to said burner nozzle corresponding to a low-fire burner condition, and a second level of fuel flow to said burner nozzle greater than said first level corresponding to a high-fire burner condition; an ignition transformer adaptable to being selectively connected to an electrical power source having a pair of output terminals for providing a voltage to energize said fuel ignition means; fail safe means operative to allow the establishment of said high-fire burner condition only upon the prior establishment of said low-fire burner condition, said fail safe means comprising flame detection means for detecting said low-fire condition; said pump means comprising a fuel pump having first and second suction inputs and a pressure output, an input fuel line adaptable to be connected from said source of fuel to said first suction input, an output fuel line connected to said pressure output, a feedback fuel line connected between said output fuel line and said second suction input, and a nozzle fuel line connected to said burner nozzle from the junction of said output fuel line and said feedback fuel line; said valve means comprising a first normally closed valve disposed in said feedback line, said first valve being operative in response to said relay control means to selectively vary the magnitude of fuel flow from said output fuel line to said second suction input, and a second valve disposed in said nozzle fuel line to selectively vary the magnitude of the fuel flow from said output fuel line to said burner nozzle to thereby control the magnitude of the burner flame.

3,358,736
ROTARY GAS BURNER ASSEMBLY
Robert D. Reed and Hershel Goodnight, Tulsa, Okla., assignors to John Zink Company, Tulsa, Okla., a corporation of Delaware
Filed July 16, 1965, Ser. No. 472,416
2 Claims. (Cl. 158—99)

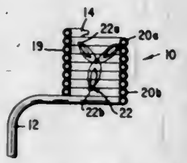
1. In a rotary gas burner assembly, a ceramic member having an annular interior surface, a hub structure supported for rotation within said ceramic member, a plurality of hollow arms radiating from said hub structure, means for supplying gaseous fuel into said hub

structure for movement into said arms, each arm having a plurality of discharge ports disposed in one general direction with respect to the rotation of the hub structure for escape of a major portion of said gaseous fuel whereby the reactive energy of the escaping fuel develops rotation of the hub structure and the hollow arms, impeller blades carried by said hub structure for moving air through said annular interior surface, a ledge



carried by the ceramic member having a downstream facing surface substantially flush with the path of movement of the free ends of said hollow arms, each hollow arm having an orifice therein adjacent the free end thereof for discharging a minor portion of gaseous fuel along said downstream facing surface, and the axis of each of said orifices being disposed at an angle from about thirty to forty-five degrees with respect to the center line of the hollow arm.

3,358,737
FLUID FUEL BURNER
Gerald L. Applebee, Dormansville, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed Oct. 3, 1966, Ser. No. 583,616
1 Claim. (Cl. 158—115)



A fuel burner comprising a single length of tubing having a first open end for receiving combustible fluid introduced therein at relatively high velocity, a second closed end and a plurality of openings disposed therein said tubing being formed to define a hollow substantially cylindrical member formed by bending the tubing into a helix of relatively small pitch with the successive turns thereof in engagement, the plurality of openings being located so as to communicate with the interior of the cylindrical member with at least one in an upper part of the cylindrical member and at least one in a lower part of the cylindrical member, the upper opening being directed inwardly and downwardly of the cylindrical member and the lower opening being directed inwardly and upwardly of the cylindrical member.

3,358,738
HEAT RESPONSIVE SWITCH CONTROL
William W. Chambers, Anaheim, Calif., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware
Filed Oct. 24, 1965, Ser. No. 504,807
9 Claims. (Cl. 158—123)

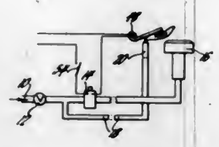
1. In a burner control system, the combination comprising

a main burner,

a pilot burner disposed in igniting proximity to said main burner whereby the same is ignited by a pilot burner flame,

valve means movable between on and off positions to control operation of said main burner,

electrical means for operating said valve means,

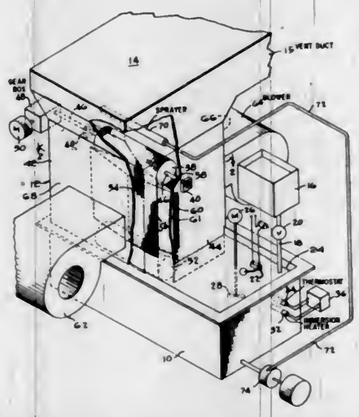


electric circuit means including a semiconductor amplifier having an output controlling said electrical means, and

a pilot burner flame responsive safety device including a semiconductor element controlling said semiconductor amplifier,

said semiconductor element being conductive as long as a flame is present at said pilot burner.

3,358,739
APPARATUS FOR CONCENTRATING SOLUTIONS
Henry Latta Pinkerton, Hatboro, and Arthur Kenneth Graham, Jenkintown, Pa., assignors to Graham, Savage & Associates, Inc., Jenkintown, Pa., a corporation of Illinois
Filed Mar. 7, 1966, Ser. No. 532,408
3 Claims. (Cl. 159—8)



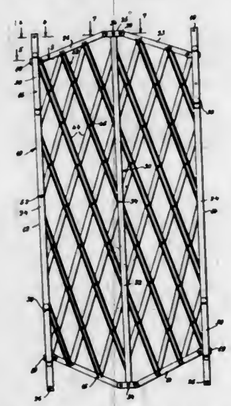
1. A concentrator comprising a vessel containing a solution, means to maintain the solution at a predetermined liquid level, means to heat the solution in said vessel, an air pervious member, means to move said air pervious member into and out of the solution, and means above the liquid level to blow relatively dry air through said air pervious member to effect evaporation of the solvent from the solution wetting said air pervious member, said air pervious member being an endless screen and said means to move it includes a pair of rotatable rolls over which said screen is trained, one of which is immersed in the solution and said vessel while the other is mounted outside the liquid level, and means to drive one of said rolls, said air blowing means including a blower opening upon each flight of said endless screen and a deflector

between the flights to prevent conflict between the opposing air streams laden with evaporated vapor and direct the streams beyond the side edges of said screen to exhaust.

3,358,740
SALT WATER CONCENTRATION WITH ALUMINA-SILICA ADDITIVE AND SEPARATION OF SODIUM SULFATE-CALCIUM SULFATE DOUBLE SALT
Shinkichi Akimoto, Hodogaya-ku, Yokohama, Japan, assignor to Kurita Industrial Company Limited, Osaka, Japan, a corporation of Japan
No Drawing. Filed Nov. 4, 1963, Ser. No. 321,288
Claims priority, application Japan, Dec. 31, 1962, 38/320; Feb. 27, 1963, 38/9,837
7 Claims. (Cl. 159—47)

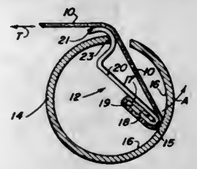
1. In a method for concentrating salt water, the improvement comprising evaporating water from said salt water in the presence of at least one additive selected from the group consisting of silica, silicic acid, alumina, an aluminosilicate, acid clay, kaolin, and bentonite to reduce scale formation.

3,358,741
ADJUSTABLE WINDOW GRILLE
Albert Udin, 4234 Park Ave., Bronx, N.Y. 10457
Filed Feb. 24, 1966, Ser. No. 529,740
2 Claims. (Cl. 160—161)



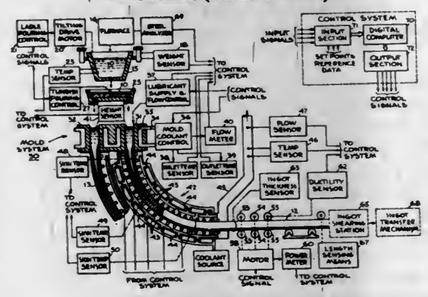
1. A grille of the character described comprising a spaced pair of vertically disposed side stiles and a central intermediate stile; each of said stiles comprising a pair of spaced opposed channel irons connected at the lower and top ends thereof, with the side flanges thereof extending inwardly toward each other, by pivot pins which extend through spacer sleeves interposed between opposed channel irons, a lazy tong grille work composed of a plurality of angularly disposed channel-shaped links arranged back to back with the flanges thereof presented outwardly and pivotally riveted together at their points of crossing and at the upper and lower ends thereof, said grille work extending between said side stiles through said central stile and pivotally connected to each of said side and central stiles, a front pair of longitudinally disposed straight flat bottom and top links, a rear pair of longitudinally disposed straight flat bottom and top links, said links pivotally mounting U-shaped straps slidably mounted on the side stiles, plates disposed transversely across the ends of the channel irons of the central stile, the other ends of the bottom and top links pivotally connected to the ends of said plates, the bottom and top pivotally connected ends of the channel links of said grille work being disposed within the space between said front and rear pairs of bottom and top links whereby access thereto is prevented.

3,358,742
SECURING DEVICES
John W. Sanderson, Chicago, Ill., assignor to Signode Corporation, a corporation of Delaware
Filed Mar. 1, 1965, Ser. No. 436,140
2 Claims. (Cl. 160—391)



1. In a structure comprising a pair of spaced-apart slotted tubular frame elements and flexible webbing extending between said elements with the opposite ends of said webbing secured in said slots which extend transverse to the longitudinal axis of said webbing, the improvement comprising an anchoring device, which is formed of a strip of metal having a body portion, a hook portion at one end of said body portion, and a U-shaped channel clamping portion at the other end of said body portion, the outer end of which extends toward said hook portion on the side of the body portion that defines the open side of said hook portion, said hook portion being open in a lateral direction in order to engage one side of said slot which functions as a fulcrum so that tension applied to said webbing which passes between the closed end of said U-shaped channel clamping portion and the interior of said tubular frame will cause said anchoring device to pivot about said side of said slot causing said U-shaped channel clamping portion to jam the webbing against the interior of said tubular frame, the unclamped portions of said webbing immediately adjacent the clamped ends of said webbing being positioned within said slots remote from the open end of said slots, said webbing changing its direction while passing over and bearing against the hook portion of said anchoring devices to reduce the transmission of tensile forces imposed on said webbing between said frame elements to the clamped ends thereof.

3,358,743
CONTINUOUS CASTING SYSTEM
Robert V. Adams, Canoga Park, Calif., assignor to The Bunker-Ramo Corporation, Canoga Park, Calif., a corporation of Delaware
Filed Oct. 8, 1964, Ser. No. 402,440
16 Claims. (Cl. 164—154)



1. An automatically controlled casting system including the combination of:

a plurality of control means, each affecting the product being cast;

a plurality of sensing means, each responsive to a different property of the product being cast;

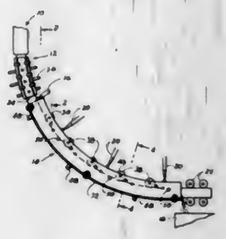
computing means including storage means, responsive to the sensing means and including means for identifying continuous and discontiuous casting phases;

means responsive to the storage means and operable with the computing means for operating the control means in open loop modes during discontinuous casting phases;

means responsive to the storage means and operable with the computing means for operating the control means to maintain closed loop control of the casting during continuous casting phases; and

means responsive to the sensing means of additionally maintaining closed loop control of selected control means during continuous casting phases.

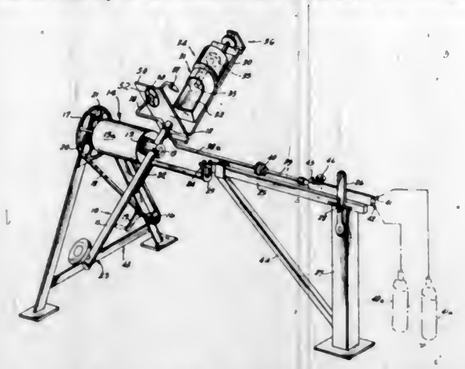
3,358,744
COOLING AND APRON ARRANGEMENT FOR CONTINUOUS CASTING MOLDS
Irving Rossi, Morristown, N.J., assignor to Concast, Inc., New York, N.Y.
Filed Nov. 30, 1965, Ser. No. 510,625
6 Claims. (Cl. 164—282)



1. A continuous casting plant comprising a continuous casting mold, said mold being an open ended mold to solidify the periphery of molten metal poured therein to define a strand continuously issuing from the bottom of said mold, a cooling apron positioned to receive the strand issuing from said mold, said cooling apron being an open topped chute having a bottom wall extending along the desired curve of said strand for continuously supporting said strand and side walls extending upwardly from said bottom wall, and means at the receiving end of said chute to introduce a steady stream of water into said chute to flow down said chute substantially along the entire length thereof.

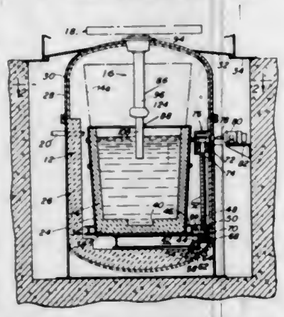
3,358,745
CENTRIFUGAL CASTING MACHINE
Vittorio Ghiorzo and Francesco Ghiorzo, both of 328 W. 44th St., New York, N.Y. 10036
Filed Nov. 27, 1964, Ser. No. 414,148
Claims priority, application Italy, Nov. 27, 1963, 24,605/63; Dec. 7, 1963, 25,254/63
5 Claims. (Cl. 164—289)

1. In a centrifugal casting machine, particularly in a machine for casting precious metals and similar materials, drive means including a rotary output member rotatable about a fixed axis; a casting arm fixedly secured to and having a leg extending substantially radially with reference to said output member; a mold fixed to said leg and having a cavity arranged to receive a supply of molten material, said mold being distant from said output member; a crucible mounted on said leg intermediate said mold and said output member and having a chamber communicating with said cavity, said chamber being arranged to receive a charge of material to be melted whereby, upon heating to melting temperature, said charge enters the cavity by centrifugal force in response to rotation of said arm; heating means including a melting torch having a tip mounted on and rotatable with said arm, said tip being adjacent to said crucible to produce a flame which heats said charge to melting temperature when said arm is idle and also when said arm rotates, said torch further comprising a fixed conduit coaxial with said output member, a second conduit connected with said tip, a joint connecting said conduits so that the second conduit is free to rotate with said arm, and a source of fuel connected with said fixed conduit, a windshield mounted on said leg in front of said tip to shield the flame when said arm rotates,



said windshield comprising a panel having an aperture receiving with clearance a portion of said second conduit; and mounting means securing said second conduit to said panel so that said second conduit is free to move within the confines of said aperture.

3,358,746
INJECTION-TYPE CASTING APPARATUS
John E. Crowe, Park Ridge, Ill., assignor to Amsted Industries Incorporated, Chicago, Ill., a corporation of New Jersey
Filed July 9, 1965, Ser. No. 470,704
9 Claims. (Cl. 164—306)

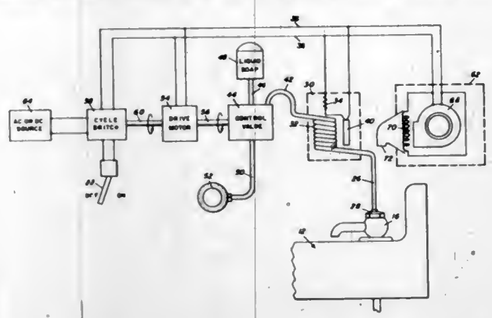


4. Casting apparatus comprising a ladle containing molten metal, a pouring tube extending downwardly into the molten metal and adapted for pouring communication with an associated mold thereabove, power means for elevating the ladle, and control means responsive to diminution of the molten metal in the ladle for automatically energizing said power means to maintain the molten metal in contact with the pouring tube at its lower end as the upper level of molten metal is lowered withing the ladle by passage of the molten metal through the tube into the mold.

3,358,747
HAND WASHING DEVICE
John C. Lesher and Orlo C. Norton, Erie, Pa., assignors to Electr-O-Mech, Inc., Erie, Pa., a corporation of Pennsylvania
Filed Aug. 5, 1966, Ser. No. 570,644
10 Claims. (Cl. 165—12)

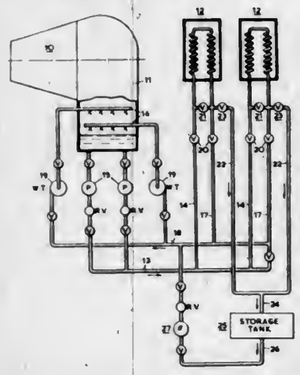
1. In combination with a lavatory having a water faucet, an automatic hand washing device, comprising: a housing, means for mounting said housing on a lavatory, driven

control valve means having a predetermined sequence mounted in said housing, means within said housing for heating and supplying water from said faucet to said control valve means, means for supplying a cleansing medium to said control valve means, dispensing means con-



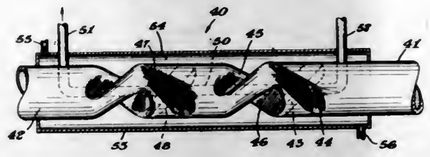
nected to said control valve means, and motor means for driving said control valve means through its sequence, whereby said heated water and said cleansing medium are applied to said dispensing means in a predetermined sequence to effect a washing cycle of operation.

3,358,748
STEAM TURBINE COOLING SYSTEM
Peter James Christopher, Rugby, England, assignor to The English Electric Company Limited, London, England, a British company
Filed Aug. 19, 1965, Ser. No. 480,948
Claims priority, application Great Britain, Sept. 4, 1964, 36,279/64
1 Claim. (Cl. 165—46)



A steam turbine cooling system of the kind comprising a direct contact condenser having a condensate drain outlet and a cooling water inlet, at least one cooler having an inlet and an outlet, first and second pipes connecting said condensate drain outlet and said cooler inlet and said condensate cooling water inlet and said cooler outlet, respectively, whereby condensate may be fed into said cooler for cooling by indirect heat exchange with air circulated over said cooler and returned to said condenser, and a water tank connected into the system for storing water emptied from the system and for filling up the system when required, wherein the improvement comprises providing said water tank of flexible waterproof material which isolates water contained therein from the atmosphere and which collapses, by the action of the atmospheric pressure on the outside of the tank, to reduce the size of the tank to the volume of the water contained in the tank.

3,358,749
INTERFACIAL SURFACE GENERATOR AND METHOD OF PREPARATION THEREOF
Douglas S. Chisholm and Turner Alfrey, Jr., Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed July 22, 1966, Ser. No. 567,168
5 Claims. (Cl. 165—141)



1. An interfacial surface generator comprising

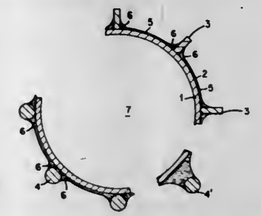
a hollow tubular conduit defining an internal longitudinal passageway, the conduit having

a wall, the wall defining

a plurality of opposed crimps, the crimps being disposed in angular relationship to the longitudinal axis of the conduit and forming an angle therewith substantially less than 90° and being in angular opposition to each other, the crimps having

troughs, a portion of each of the troughs of opposed crimps being in closely adjacent relationship, the opposed pairs of crimps being of alternating right handed and left handed configuration, the right handed and left handed crimps being disposed generally in planes which contain the longitudinal axis of the conduit, the plane of the troughs of the right handed crimps being disposed in angular relationship to the plane at the left handed crimps.

3,358,750
CONDENSER TUBE
David G. Thomas, Oak Ridge, Tenn., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Aug. 10, 1966, Ser. No. 571,655
6 Claims. (Cl. 165—177)

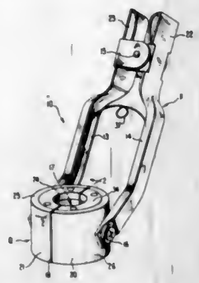


1. In a heat exchange member having a vertically oriented condensing surface, means for causing said surface to exhibit a large film condensation heat transfer coefficient comprising at least one elongated, vertically oriented projection extending longitudinally along said condensing surface, said projection causing condensate formed on said condensing surface to be drawn through the action of surface tension forces to flow channels formed by the intersection of said projections and said condensing surface.

3,358,751
HEAT SINK
Marvin W. Berwald, El Cajon, and Harold D. Palmer, Santee, Calif, assignors to General Dynamics Corporation, a corporation of Delaware
Filed Apr. 19, 1965, Ser. No. 448,999
11 Claims. (Cl. 165—185)

1. A heat sink for terminal soldering applications comprising a heat regulating member, said member including

a terminal passage extending therethrough, and a handle portion connected to said heat regulating member, said heat regulating member being provided with a first por-



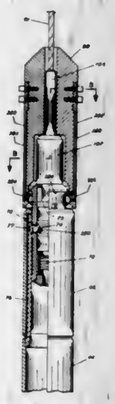
tion of high thermal conductivity for establishing a zone of heat dissipation and a second portion of low thermal conductivity for establishing a zone of even heat distribution.

3,358,752

DETACHABLE COUPLING APPARATUS FOR ATTACHING AND DETACHING A GUIDE CABLE TO AN UNDERWATER WELL BASE

William R. Postlewaite, Menlo Park, Calif., assignor to Chevron Research Company, San Francisco, Calif., a corporation of Delaware

Filed Oct. 23, 1965, Ser. No. 503,852
3 Claims. (Cl. 166—.5)



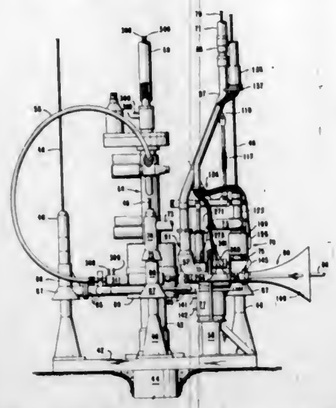
1. Apparatus for disconnectably connecting a guide line to an underwater well post comprising an underwater well post, an annularly extending groove in the upper portion of said post, a coupling member, said coupling member including means forming an operating chamber, means for rotatably connecting said coupling member to a guide line, port means in said means forming an operating chamber, means movable in said operating chamber of said coupling member for extending through said port means and into engagement with said annularly extending groove to disconnectably connect said coupling member and said post, a movable member in said operating chamber and in contact with said means movable, said movable member having at least two surfaces contactable with said means movable, the first of said surfaces being adapted to extend said means movable through said port means and into said annularly extending groove and the second of said surfaces allowing said means movable to retreat from said annularly extending groove and into said port means and resilient means normally urging said movable member into a position where the first of said surfaces contacts said means movable.

3,358,753

UNDERWATER FLOWLINE INSTALLATION

John A. Haeber, Ventura, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Dec. 30, 1965, Ser. No. 517,595
21 Claims. (Cl. 166—.6)



1. Apparatus for use at an underwater installation for installing a flowline at said installation, said apparatus comprising:

(a) flowline anchoring means securable to said installation, said anchoring means including a receiver portion for receiving a flowline from a predetermined direction;

(b) alignment means operatively securable to said installation, said alignment means having an alignment axis arranged substantially in the same axis as said receiver portion of said anchoring means;

(c) flowline pulling means adapted to be operatively secured to said installation, said flowline pulling means including a detachable flowline connector carried at the end of a cable and adapted to be secured to the end of a flowline, and cable guide means in which said cable is adapted to move; one end of said cable guide means being normally operatively positioned adjacent said anchoring means and in substantially the same axis as the receiver portion thereof; and,

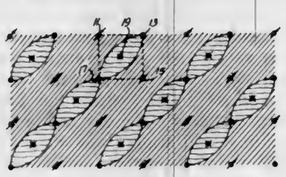
(d) mover means operatively engageable with said flowline pulling means for moving said flowline pulling means out of axial alignment with the axis of said receiver portion of said anchoring means.

3,358,754

RECOVERY OF HYDROCARBONS FROM UNDERGROUND FORMATIONS BY IN SITU COMBUSTION

Roland B. Stelzer and Robert E. Kunetka, Houston, and Joseph C. Allen, Bellaire, Tex., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware

Filed Dec. 29, 1965, Ser. No. 517,247
14 Claims. (Cl. 166—2)



1. A process for recovering hydrocarbons by in situ combustion from a gas pervious underground hydrocarbon bearing formation by exploitation through a well pattern of a central well and a plurality of wells surrounding said central well in ring-like fashion comprising

(a) pumping air down into a first pair of diametrically located wells of said pattern, while

(b) concurrently producing hydrocarbons from a second pair of diametrically located wells, the diameters of the pairs of wells crossing each other,

(c) shutting in said first pair of wells upon breakthrough of air at said second pair of wells,

(d) injecting air into said central well and igniting the hydrocarbon bearing formation thereat, thereby developing a concurrent in situ combustion front with respect to said second pair of wells, and

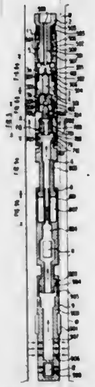
(e) upon breakthrough of said in situ combustion front at said second pair of wells, again injecting air into said first pair of wells while continuing producing hydrocarbons at said second pair of wells.

3,358,755

MULTIPLE CLOSED IN PRESSURE SAMPLING APPARATUS AND METHOD

Pat T. W. Chisholm, Alice, Tex., assignor to Halliburton Company, Duncan, Okla., a corporation of Delaware

Filed July 27 1965, Ser. No. 475,093
6 Claims. (Cl. 166—3)



1. A method of obtaining and retrieving samples of well bore fluids, said method comprising:

confining a sample of flowing well fluid within a well bore, with said fluid being confined at substantially the pressure of the flowing fluid before said confinement;

transporting said confined fluid to a well head while maintaining said fluid in a substantially annular configuration;

while transporting said fluid in said annular configuration, maintaining a closed outlet for said fluid disposed generally axially of said annular configuration and maintaining radial shielding between said outlet and the wall of said well bore; and

removing said confined fluid by causing said fluid to flow generally transversely inwardly of and then axially outwardly of said annular configuration through said outlet.

3,358,756

METHOD FOR IN SITU RECOVERY OF SOLID OR SEMI-SOLID PETROLEUM DEPOSITS

John V. Vogel, Houston, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

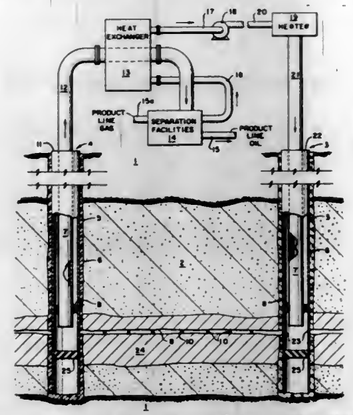
Filed Mar. 12, 1965, Ser. No. 439,169
3 Claims. (Cl. 166—7)

1. A method of recovering solid to semi-solid hydrocarbons from uniform underground oil shale reservoirs comprising the steps of:

(a) penetrating such a reservoir with at least one injection well and at least one production well;

(b) horizontally fracturing and establishing fluid communication channels through said reservoir between said injection well and said production well;

(c) passing hot benzene through said reservoir by injecting it through said fractured injecting well into



said fluid communication channels at a temperature in excess of 650° F. to convert solid to semi-solid hydrocarbon residues in said formation to mobile fluids;

(d) recovering said mobile fluids from said production well; and

(e) separating said mobile fluids into liquid and gaseous hydrocarbon fractions.

3,358,757

WATERFLOOD PROCESS EMPLOYING MULTIPLE LIQUIDS

Billy G. Holmes, Lancaster, Tex., assignor to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed Nov. 29, 1965, Ser. No. 510,392
15 Claims. (Cl. 166—9)

1. In a method of recovering oil from an oil-containing subterranean formation wherein water is injected into an injection means and into said formation, and oil is produced therefrom through a production means, the improvement comprising the steps of:

(a) injecting through said injection means a first slug of a hydrocarbon solution containing an acid ester;

(b) injecting through said injection means a second slug of an aqueous solution of caustic; and

(c) injecting through said injection means a third slug of water to drive said hydrocarbon solution, said aqueous solution, the reaction products thereof, and said oil toward said production means.

3,358,758

SECONDARY RECOVERY OF PETROLUEM

William C. Hardy and Horace R. Crawford, Richardson, Tex., assignors to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

Filed Aug. 12, 1963, Ser. No. 301,299
1 Claim. (Cl. 166—10)

The secondary recovery method for petroleum-containing fluid from a reservoir containing said fluid in layered formations of varying permeabilities which includes:

introducing through at least one injection well into said reservoir an aqueous material, without substantial oil content, including at least one emulsifying agent to produce in the reservoir at a location remote from the injection well in combination with

residual fluid in the reservoir, a slug having the form of an emulsion with a liquid continuous phase and a liquid discontinuous phase;

the emulsion slug having a higher effective viscosity due to the Jamin effect than the petroleum-containing fluid in the reservoir and higher than the injected aqueous material and varying in penetration into said formations; and

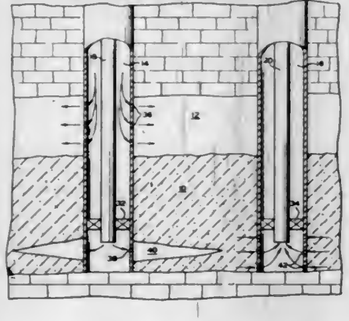
then providing a fluid drive through the same injection well to advance said slug to drive before it the petroleum-containing fluid towards at least one producing well.

3,358,759

STEAM DRIVE IN AN OIL-BEARING STRATUM ADJACENT A GAS ZONE

Harry W. Parker, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed July 19, 1965, Ser. No. 473,059
8 Claims. (Cl. 166—11)



1. A process for producing oil from an oil-bearing stratum lying adjacent a gas-bearing zone which comprises the steps of:

(1) fracturing said stratum at a level remote from said zone through an injection well therein;

(2) injecting steam into said fracture toward at least one offset production well so as to produce oil therein;

(3) injecting a non-condensible gas into said stratum adjacent said zone so as to obstruct the passage of steam into said zone; and

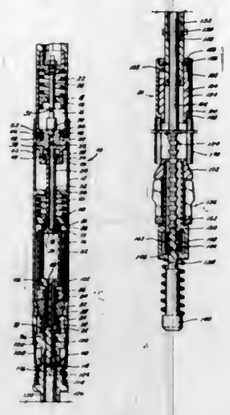
(4) recovering oil from said at least one production well.

3,358,760

METHOD AND APPARATUS FOR LINING WELLS

Leon Blagg, Channelview, Tex., assignor to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas

Filed Oct. 14, 1965, Ser. No. 495,864
25 Claims. (Cl. 166—14)



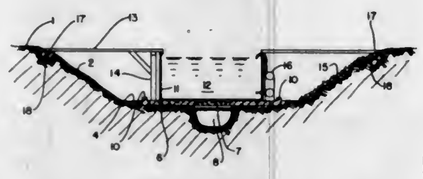
1. A method for expanding a tubular liner within a tubular member comprising the steps of: positioning within a tubular member to be lined a tool having a body carrying a movable expander and supporting a liner at a location where it is desired to expand the liner into engagement with the interior surface of the tubular member anchoring the tool against longitudinal movement in either direction in the tubular member, and moving the body with a first force to generate a greater second force on the expander to force the expander through the liner thereby expanding the liner.

3,358,761

FAMILY RECREATION AREA

Thomas E. Powers, Reading, Pa. (1552 King Charles Drive, Pittsburgh, Pa. 15237)

Filed Oct. 22, 1965, Ser. No. 501,749
8 Claims. (Cl. 4—172)



1. A family recreation area comprising

(A) an excavation in the ground having sloping sidewalls extending substantially therearound and wherein the slope of said sidewalls does not exceed the angle of repose of the ground, said excavation having a substantially level bottom portion;

(B) access means into said excavation;

(C) a cement floor extending over a substantial portion of the bottom of said excavation, the outer periphery of said cement floor having a raised lip suitable for containing water;

(D) a removable swimming pool resting on said floor, said swimming pool comprised of removably mounted support walls extending suostantially vertically from said floor to ground level;

(E) a removable horizontal ground level deck bridging the space between the sidewalls of said excavation and the sidewalls of said pool;

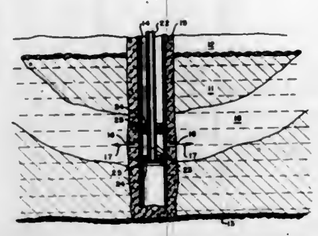
(F) said recreation area in the absence of said swimming pool and its associated deck serving as an outdoor patio.

3,358,762

THERMOAUGMENTATION OF OIL-PRODUCING RESERVOIRS

Philip J. Closmann, Houston, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Dec. 6 1965, Ser. No. 511,660
7 Claims. (Cl. 166—40)



1. An improved method for recovering oil from gas-permeable, subterranean reservoirs by backflowing wherein the reservoir interval has a vertical injectivity equal to at least one-half of the horizontal injectivity comprising:

(a) penetrating such a gas-permeable reservoir interval with a borehole;

(b) inserting a casing string into said reservoir interval of said borehole and sealing it therein to prevent the fluid communication between the inside of said casing string and said reservoir interval;

(c) providing fluid communication between said inside of said casing string and said reservoir interval only in the central portion of said reservoir interval;

(d) injecting heated fluids having a temperature above the natural temperature of said reservoir interval through said fluid communication established in said central portion of said reservoir interval via said casing string;

(e) retaining said heated fluids in said reservoir interval for a period sufficient for some of the heat of said heated fluids to be transferred to said reservoir interval;

(f) backflowing said reservoir interval through said fluid communication in said central portion of said reservoir interval to recover effluents from said reservoir interval; and

(g) recovering effluents entering said casing string during said backflowing step.

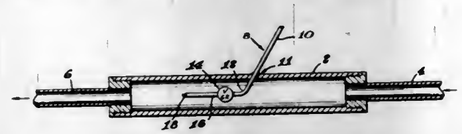
3,358,763

LIQUID NITROGEN IN WELL OPERATIONS

Billy C. Petty, El Dorado, Ark., and Alfred R. Hendrickson and Lloyd S. Brown, Tulsa, Okla., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Nov. 27, 1964, Ser. No. 414,283
3 Claims. (Cl. 166—42)

3. In the method of fracturing a stratum of a formation penetrated by a well employing an operating liquid to exert hydraulic pressure to and in the stratum, the improvement consisting essentially of injecting liquid nitrogen into said operating liquid at a rate such that the temperature of the operating liquid is desirably lowered but which does not adversely affect the fluid characteristics of the operating liquid in an amount sufficient to provide a mixture comprising a gas phase and a liquid phase at the stratum being fractured and at a pressure on the resulting nitrogen-operating liquid mixture which



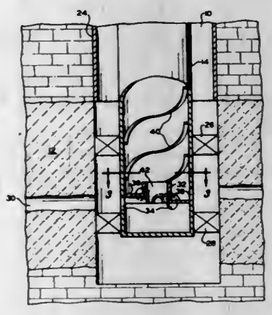
is sufficiently great to force said mixture into contact with the stratum to effect fractures therein, releasing the pressure from the well, and allowing a substantial portion of the nitrogen-operating liquid to flow out of the well under the effect of the compressed nitrogen gas therein.

3,358,764

METHOD OF FRACTURING SUBTERRANEAN STRATA

Harry W. Parker, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed July 16, 1965, Ser. No. 472,454
11 Claims. (Cl. 166—42)



1. A process for fracturing and propping a subterranean stratum penetrated by a well which comprises the steps of:

(1) injecting a fracturing fluid thru said well into a selected level of said stratum at sufficient pressure to fracture and raise the overburden;

(2) depositing in alternate circumferentially spaced areas of the resulting fracture a relatively non-fluidizable solid particulate propping agent in a concentration supporting the overburden;

(3) sequentially depositing in intervening, areas a readily fluidizable solid particulate propping agent; and

(4) thereafter, fluidizing the propping agent of step (3) and destroying the propping nature thereof so as to leave highly permeable flow paths formerly occupied by the fluidizable agent alternately spaced around said well with respect to the propped areas resulting from steps (1) and (2).

3,358,765

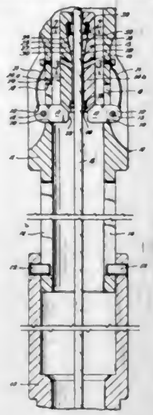
METHOD AND APPARATUS FOR FREEING A WELL TOOL AND CABLE

Edward R. Le Blanc, Houston, Tex., assignor, by mesne assignments, to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas

Filed Jan. 26, 1966, Ser. No. 523,226
10 Claims. (Cl. 166—46)

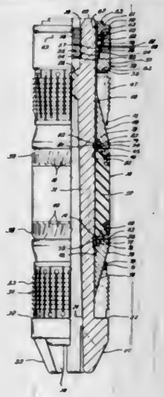
1. A method for freeing a well tool dependently suspended from a suspension cable and lodged in a well bore comprising the steps of: coupling a first member to the well tool; coupling a second member to the suspension

cable above said first member; moving said first and second members apart with sufficient force to separate at least



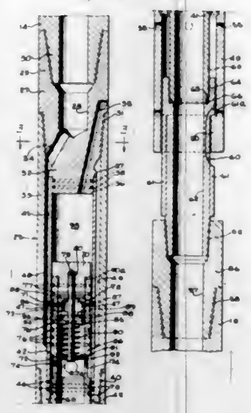
a major portion of the suspension cable from the well tool; and retrieving the suspension cable and well tool.

3,358,766
ANTI-EXTRUSION DEVICE FOR A WELL TOOL PACKING ELEMENT
James H. Current, Houston, Tex., assignor to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas
Original application Oct. 11, 1965, Ser. No. 500,467, now Patent No. 3,298,440, dated Jan. 17, 1967. Divided and this application Aug. 31, 1966, Ser. No. 576,405
5 Claims. (Cl. 166—134)



1. In a packer having an elastomeric packing element operatively mounted around a body and adapted for expansion to pack off a well bore, the improvement comprising: an integrally formed, cup-shaped, expansible member disposed around said body for confining an end of said packing element, said expansible member having an annular base portion receiving said element end and a circumferentially expansible skirt portion around the periphery of said base portion and extending around a portion of said packing element, said skirt portion including a plurality of individual, circumferentially spaced, flexible, imbricated segments, each of said segments having an uppermost end portion at one side thereof formed over a portion of the uppermost end of the segments adjacent said one segment side, said segments being responsive to expansion of said packing element to flex laterally outwardly to substantially confine said element portion and element end when said packing element is expanded.

3,358,767
MULTI-SHUT-IN TOOL
Daniel Richard Reardon, Garden Grove, Calif., assignor to Cook Testing Co., a corporation of Nevada
Filed Aug. 27, 1965, Ser. No. 483,131
2 Claims. (Cl. 166—152)

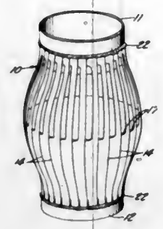


1. A shut-in tool for use in deep well formation testing, when incorporated sequentially with other elements of a test tool assembly, which assembly includes a hydraulic valve tool and a well bore packer and is suspended on the lower end of a drill string, said shut-in tool comprising: telescopic valve means including telescopically slideable outer and inner mandrels; means for connecting said mandrels to contiguous elements of said test tool assembly, said valve means controlling axial flow through said shut-in tool and being shut off by the telescopic extension of the tool when said assembly is suspended, and being opened by the telescopic contraction thereof as effected by lowering said string after said assembly has come to rest on the well bottom; sleeve means in said outer mandrel an end of which is closed to form a cylindrical chamber into which an end of said inner mandrel slideably extends, said end of said inner mandrel also being closed so as to act like a piston in said chamber; means for connecting the other end of said inner mandrel to an element of said tool assembly which conducts fluid to said shut-in tool from a test area portion of a well bore which is packed-off from the rest of the latter by said packer, whereby the hydrostatic pressure of the fluid within said packed-off area is applied upwardly against said inner mandrel; and passage means in said outer mandrel admitting well fluid having a substantially higher hydrostatic pressure from above said packer into said closed end of said chamber into hydrostatic pressural contact with the closed end of said inner mandrel, a preponderantly downward hydrostatic pressure thus being applied to said inner mandrel, whereby said telescopic valve means of said shut-in tool may be closed and reopened repeatedly during a formation test program without disturbing the collapsed open condition of the hydraulic valve tool of said assembly.

3,358,768
CEMENT BASKET
James R. Solum, Los Angeles, Calif., assignor to B & W Incorporated, Torrance, Calif., a corporation of California
Filed Jan. 20, 1966, Ser. No. 521,872
11 Claims. (Cl. 166—202)

1. In a cement basket for use on a well pipe with a well bore or casing, the combination of; a pair of spaced and aligned collars, a multiplicity of outwardly bowed and

resilient staves positioned circumferentially around said collars and extending between and mounted on said collars, each said stave having upper and lower body portions above and below respectively the most outwardly bowed portion of the stave, said upper body portion of



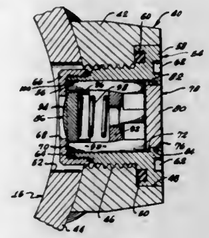
each stave having a lateral width substantially less than the lateral center-to-center spacing of said staves, and said lower body portion of each stave overlapping the next adjacent stave to form a barrier for preventing material from passing downwardly through the basket.

3,358,769
TRANSPORTER FOR WELL CASING INTERLINER OR BOOT
William B. Berry, P.O. Box 1951, Clarksburg, W. Va. 26301
Filed May 28, 1965, Ser. No. 459,725
5 Claims. (Cl. 166—207)



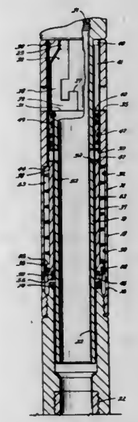
1. Apparatus for temporarily sealing apertures formed in the casing of a well comprising a cylindrical transporter member, an inwardly extending radial guide member provided on the inner surface of said transporter member, a sealant member formed of a resilient material and having a normal external diameter greater than the internal diameter of said transporter member, resilient means connected to one end of said sealant member, said guide member engaging said sealant member to radially compress same in a direction throughout its length and reduce its cross sectional area upon its insertion into said transporter member, means connected to an end of said transporter member for lowering and raising same in said casing and positioning said resilient means in engagement with said casing at a point below said apertures for withdrawing said sealant member from said transporter member and allowing said sealant member to expand into engagement with the casing in the area of the apertures.

3,358,770
CEMENTING VALVE FOR OIL WELL CASING
Solis Myron Zandmer, Banff, Alberta, Canada, assignor to Zanal Corporation of Alberta, Ltd., Calgary, Alberta, Canada, a corporation of Canada
Filed Apr. 16, 1965, Ser. No. 448,707
10 Claims. (Cl. 166—224)



10. A cementing valve for use in a well cementing operation, comprising:
a hollow valve body having a flow passage extending through said body to the exterior of said body;
check valve means mounted in one end of said passage which unseats in a direction to permit outward flow through said passage;
and a shear valve means fixed in the other end of said passage including a disc slidably received in said body and closing said passage and adapted to be expelled outwardly from said passage in response to a predetermined pressure within said passage on the inner surface of said shear valve means;
said shear valve means including an arcuate shear member engaging said disc at the circumference thereof and the surrounding valve body to resist in shear outward movement of the disc, the shear resistance being proportional to the circumferential length of the arcuate shear member.

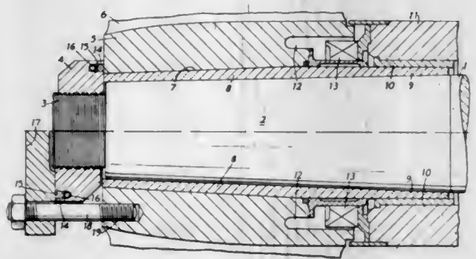
3,358,771
MULTIPLE-OPENING BYPASS VALVE
William O. Berryman, Houston, Tex., assignor to Schlumberger Well Surveying Corporation, Houston, Tex., a corporation of Texas
Filed Jan. 19, 1966, Ser. No. 521,590
12 Claims. (Cl. 166—226)



1. A tubular control valve adapted for connection to a tubular string for operation in a well bore comprising:

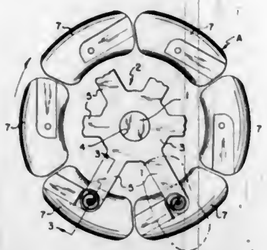
inner and outer tubular members each having a lateral port and telescopically arranged together for relative movement between spaced positions; a sleeve member slidably disposed between said tubular members; sealing means on said sleeve member and fluidly sealed to said tubular members; means retaining said sleeve member and sealing means between said ports whenever said tubular members are in one of their said positions to block fluid communication between said ports; and means responsive to the pressure differential between the exterior and interior of said control valve for positioning said sleeve member with respect to the downstream one of said tubular members as said tubular members are relatively moved to the other of their said positions to open fluid communication between said ports, said pressure-responsive means responding to a greater interior pressure to maintain said sleeve member stationary relative to said outer member and responding to a greater exterior pressure to maintain said sleeve member stationary relative to said inner member.

3,358,772
SHIP'S PROPELLER MOUNTINGS
Thomas Walter Bunyan, London, England, assignor to P & O Research and Development Co. Limited, London, England
Filed Oct. 28, 1966, Ser. No. 590,398
Claims priority, application Great Britain, Nov. 8, 1965, 47,257/65; Jan. 11, 1966, 1,191/66
5 Claims. (Cl. 170—173)



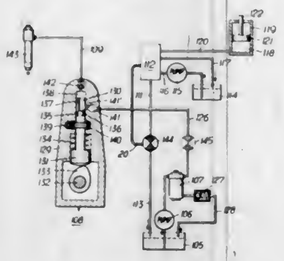
1. A propeller mounting comprising:
a shaft having a tapered end,
a metal sleeve element tapered internally and over at least a rear part externally, both tapers decreasing in diameter towards the rearward end, the internal taper corresponding to that of the tapered end of the shaft and the said metal sleeve element being force-taper fitted on the shaft, a propeller including a hub internally tapered at its rearward end and force-taper fitted on a circumferential zone on the externally tapered rear end part of the metal sleeve element of an axial length corresponding to a part only of the axial length of the hub, and with an axially elongated annular clearance space between a part of the said metal sleeve element forward of and adjacent said circumferential zone and the part of the hub surrounding said part of the metal sleeve element forward of and adjacent said circumferential zone, said clearance space extending from said circumferential zone through the forward end of the hub, and
a further part of said metal sleeve element on the shaft extending forwards beyond the end of the hub surrounding said clearance space to extend through the stern post of a ship and form a journal in the rearmost bearing of the propeller shaft.

3,358,773
VARIABLE DELIVERY FAN
Sidney Oldberg, Birmingham, Mich., assignor to Eaton Yale & Towne Inc., a corporation of Ohio
Continuation of application Ser. No. 501,469, Oct. 22, 1965. This application June 6, 1966, Ser. No. 555,616
19 Claims. (Cl. 170—160.11)



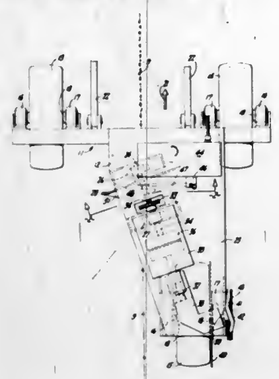
17. A fan mechanism comprising a support member rotatable about an axis, a plurality of fan blades mounted on said support member for rotation therewith and pivotal with respect thereto between a first radially extended position wherein said blades provide a first fluid flow and a second radially retracted position wherein said fan blades provide a second fluid flow smaller than said first fluid flow at a given speed of rotation of said support member, pivot means supporting each fan blade for pivotal movement between its said positions about another axis substantially parallel to said axis of rotation of said support member, said another axis of each fan blade being located at substantially the center of gravity of each respective blade.

3,358,774
METHOD AND APPARATUS FOR REGULATING THE DEPTH OF PENETRATION OF A TRACTOR-DRAWN PLOUGH
Johann Lipinski, Vienna, Austria, assignor to Alex. Friedmann Kommandit-Gesellschaft, Vienna, Austria
Filed Jan. 19, 1965, Ser. No. 428,015
Claims priority, application Austria, Jan. 20, 1964, A 396/64
31 Claims. (Cl. 172—1)



1. In a method for regulating the depth of penetration of a hydraulically controlled plough drawn by a tractor having an internal-combustion engine with fuel injection including an injection pump having a fuel carrying chamber, in dependence on the applied tractive power of the tractor and plough moving means operable to lift and to lower said plough, the steps comprising selecting a predetermined fuel delivery rate, sensing the pressure change in said fuel carrying chamber, and transmitting said sensed pressure change to said plough moving means, whereby, an increase of the tractive power will result in a control of the movement of the plough in the lifting sense and a decrease of the tractive power in a movement of the plough in the lowering sense.

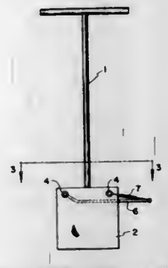
3,358,775
PLANT THINNING MACHINE AND METHOD OF THINNING PLANTS
Roger E. Garrett, Davis, Calif., assignor to The Regents of The University of California, Berkeley, Calif.
Continuation of application Ser. No. 449,963, Apr. 22, 1965. This application Nov. 22, 1966, Ser. No. 596,344
4 Claims. (Cl. 172—6)



1. A plant thinning machine for use with a row of plants growing in the ground comprising a frame adapted to be advanced over said ground along said row, a shaft, means for mounting said shaft on said frame for limited oscillation about an axis extending lengthwise of said row and situated directly above said row of plants, a blade mounted on said shaft and disposed in a plane containing said axis, said blade having a length substantially equal to the length of a block of said plants to be removed from said row and having a radial dimension terminating substantially at said ground in the central position of oscillation of said blade in a position to dislodge some of said ground into the vicinity of said plants as said blade oscillates, an electrically conducting probe, means for mounting said probe on said frame to extend transversely of said row in a location slightly above the ground and just to the rear of said blade in a position in the path of some of said ground dislodged by said blade, means for oscillating said shaft to swing said blade from a first position on one side of said row through said row to a second similar position on the other side of said row, an electrical circuit including said probe and a return portion and adapted to be completed through said plant and said return portion by contact of said probe with a particular plant in said row, and means responsive solely and immediately to completion thereof to operate said oscillating means to make one swing of said blade, beginning at said first position and ending at said second position just ahead of said particular plant.

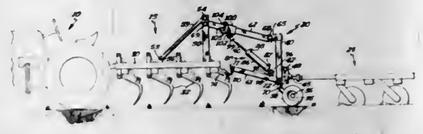
3,358,776
LAWN EDGER
Albert Alecci, Cleveland Heights, Ohio, assignor of one-fourth to Stanley M. Fisher and John Giarrizzo
Filed Dec. 8, 1964, Ser. No. 416,932
4 Claims. (Cl. 172—18)

1. A lawn edger for cutting uniform strips of sod along a straight surface comprising:
a first blade;
a second blade spaced part but operatively connected and substantially parallel to said first blade;
the top edges of said blades forming shoulders with the side edges of said blades so that the operator may apply pressure with his foot to the shoulders thereby forcing the blade into the sod;
cutting surfaces on the bottom edges of said blades;
a handle having one end operatively connected to at least one of said blades and extending upwardly therefrom;



a spring-biased rotatably mounted arm connected to said lawn edger and positioned between and extending outwardly from between said blades to permit manual ejection of sod from between said blades.

3,358,777
DOLLY WHEEL HITCH
Merlin A. Groenke, Glencoe, Minn., assignor to Portable Elevator Manufacturing Company, Bloomington, Ill., a corporation of Illinois
Filed July 2, 1965, Ser. No. 469,133
3 Claims. (Cl. 172—417)

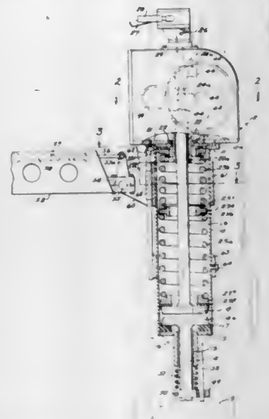


1. A dolly wheel hitch for supporting the rear end of a piece of cultivating apparatus adapted to be pivotally connected to a draft means and moved vertically between working and transporting positions, comprising, a shaft having wheel means journaled thereon, a post journaling said shaft, a second post adapted to be rigidly mounted on the cultivating apparatus in spaced parallel relation with the first post in a substantially vertical position, a pair of lever means pivotally mounted at each of their extremities on the first and second named posts to form a parallelogram type mounting connecting the shaft having the wheel means thereon to the end of the cultivating apparatus, a linear motive means including a pair of relatively movable parts connected between the pair of lever means forming the opposite sides of the parallelogram type mounting of a shaft to move the second named post and the end of the cultivating apparatus in a vertical direction between working and transporting positions with operation of said linear motive means, and adjustable flange means mounted on the first named post means and adapted to be connected to a second piece of argricultural equipment to be drawn with the first named piece of cultivating equipment by said draft means with said wheel means of the dolly being continuously on the ground, one of the relatively movable parts of the linear motive means including a sleeve mounted on one of the pair of pivoted lever means and a flange coupled thereto and pivotally mounted thereon and a stop means on said one of said pivoted lever means to be engaged by said sleeve.

3,358,778
SPRING DRIVEN POWER HAMMER
Ray Ferwerda, 1050 NW. 163rd Drive, North Miami, Fla. 33161
Filed Aug. 19, 1965, Ser. No. 480,990
3 Claims. (Cl. 173—119)

1. A pile driving and pavement breaking hammer comprising a housing; a tool-carrying member having a

shaft extending into said housing at one end thereof; said shaft having a blow receiving and transmitting anvil extension disposed within said housing; a hammer reciprocatably mounted in said housing for a stroke movement in line with said shaft toward and away from said anvil extension; said hammer having an elongated extension coaxial with said shaft and extending in said housing away from said hammer and said anvil extension; a helical spring means surrounding said hammer extension and disposed between said hammer and the end of said housing opposite said one end; said spring means including at least two separate helical springs in end to end relationship differing from each other in frequency of



vibration sufficiently so that they exert a mutual dampening effect upon release of the loaded spring means and prevent destruction of the hammer and spring means; said spring means delivering a blow of spring-means-destructive force when delivered by a single spring; a rigid wear plate between said two separate springs and holding them concentric; and power means carried by said housing including means repeatedly retracting said hammer extension and said hammer against the bias of said spring means and then suddenly releasing them, in use of said hammer, thereby permitting said spring means to cause said hammer to deliver sequential blows against said anvil extension.

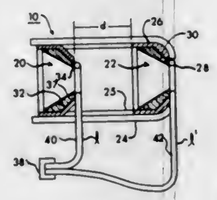
3,358,779
DEMOLITION DEVICE
Wesley B. Cunningham, 2 Morris St., Charleston, W. Va. 25301
Original application Feb. 17, 1965, Ser. No. 433,364. Divided and this application Feb. 10, 1967, Ser. No. 634,786
5 Claims. (Cl. 173—119)

1. An impact imparting device comprising:
an elongated hollow housing;
the housing including opposite ends;
an impact member including a shaft and a striking head;
fixed collar means on the impact member;
a slidable collar on the impact member;
a spring means in the housing adapted to bias the impact member in one direction;
means to load the impact member in opposition to the spring bias, said means including a hydraulic cylinder with an extendable portion, and linkage means connecting the extendable portion of the hydraulic cylinder with the impact member;
catch means mounted on one end of the housing to engage the impact member in its loaded position;
the linkage means being secured to the slidable collar for movement of the slidable collar against the spring bias; and



release means to permit spring urged movement of the impact member.

3,358,780
CUMULATIVE SHAPED CHARGES
A. A. Venghiattis, Houston, Tex., assignor to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
Filed May 24, 1965, Ser. No. 457,978
3 Claims. (Cl. 175—4.5)

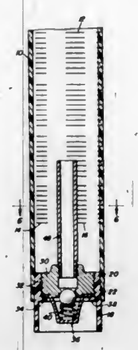


2. A shaped charge unit for perforating a well casing comprising:
a pair of shaped charges;
a carrier for said shaped charges, said carrier coaxially aligning said shaped charges;
means maintaining the shaped charges in spaced relation in said carrier;
means for detonating said shaped charges formed of a common booster and two pieces of Primacord, one piece of Primacord extending to each shaped charge, the length of each Primacord being such that the detonation of the rear charge is retarded a sufficient length of time so that the jet of the rear charge begins to form as the jet of the forward charge is about to be completed, whereby the tip of the jet of the rear charge closely follows the end of the jet of the front charge.

3,358,781
SLOTTED PLASTIC WELL SCREEN WITH BACK-WASH VALVE AND METHOD OF INSTALLATION
William R. Cotton, Rte. 5, Franklinton, La. 70438
Filed Jan. 27, 1965, Ser. No. 428,310
6 Claims. (Cl. 175—314)

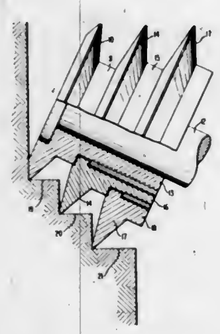
1. A well strainer comprising in combination, an integral pipe having slots cut therein, said slots being cut in a series and being disposed circumferentially of the

pipe and along a plane perpendicular to the axis of said pipe, and a backwash valve, said backwash valve comprising a threaded nut member, said backwash valve being connected to the bottom of said well strainer, said threaded nut member having threads on the outer circumference thereof, and wherein said backward valve includes an annular adapter having threads on the inner periphery thereof whereby said threaded nut member may be



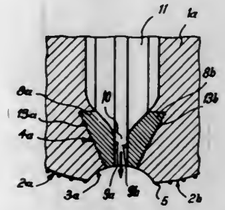
threaded into said adapter, said adapter having an inner flange thereon disposed adjacent to the threaded inner periphery, a cage means disposed between said inner flange and said threaded nut member, a seat means on said threaded nut member, a ball valve means retained by said cage means for seating against said seat means, and biasing means retained by said cage means for biasing said ball valve means against the seat means on said nut member.

3,358,782
CUTTING ROLLER, IN PARTICULAR FOR ROLLER-TYPE ENLARGING BITS
Karl Günter Bechem, Tiefendorfer Weg, Hagen, Westphalia, Germany
Filed July 27, 1964, Ser. No. 385,424
Claims priority, application Germany, July 25, 1963, S 86,376
4 Claims. (Cl. 175—344)



1. A roller-type enlarging bit for forming a substantially stepped cut along a generally conical cutting face on a wall of a pilot opening, comprising a boring rod, at least one axle having an inner end portion mounted on said boring rod and an outer end portion disposed radially outward of said rod and terminating in a free end; and a plurality of individual annular cutting ribs mounted at axial intervals for rotating about the outer end portion of said axle adjacent the free end thereof, the diameter of said ribs increasing with increasing distance away from the free end of said axle, the radially outward extent from said rod of the outermost cutting rib being greater than that of the free end of the axle.

3,358,783
ABRASIVE RESISTANT ELEMENTS FOR THE VENTS OF ROTATABLE DRILLING TOOLS AND METHOD OF MANUFACTURE
Jean Raynal, Serge A. Gstalder, and Bruno Renard, Pau, France, assignors to Societe National des Petroles d'Aquitaine, Paris, France
Filed May 18, 1965, Ser. No. 456,772
Claims priority, application France, June 4, 1964, 976,992; Mar. 2, 1965, 7,649
11 Claims. (Cl. 175—393)



1. A rotable drilling tool having fluid blades of the full body or ring type, comprising a central input conduit for the passage of drilling fluid under pressure, a head having areas provided with cutting elements, and areas without cutting elements alternating with said cutting areas and generally being located in a rearward position with respect to the latter, vents for distributing the drilling fluid arranged in the head perpendicularly to said areas and opening out onto said areas and each being connected to said central conduit, said vents being constituted by elements whose resistance to abrasion is greater than that of the matrix of the tool and substantially equal to that of said cutting elements, said elements constituting said vents being embedded in said matrix and extending in one direction to the interior of the fluid input conduit, to form at least one part of said conduit in its narrow area and to protect said matrix up to an area of said conduit where the speed of the drilling fluid is sufficiently low, and extending in the other direction so as to have a lower end protruding beyond the surface of said areas having no cutting elements and in which areas said vents are arranged, said lower end being located at a distance from the cutting face which is substantially equal to the distance between the corresponding latitudinal line of said areas provided with cutting elements and the cutting face, i.e. a distance which is substantially equal to the height of the actual cutting elements themselves.

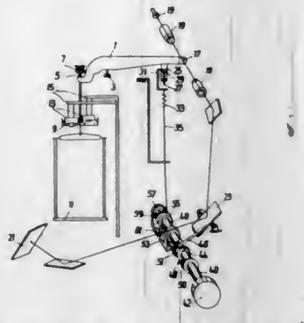
10. A method of manufacturing a rotatable drilling tool comprising the steps of: connecting elements which are to constitute vents in the tool by a plurality of spots of welding material, leaving the desired space for a slit between said elements; fixing small closure plates to each end of said elements, filling the space between said elements and said closure plates with a pasty substance to prevent the opening being closed by the molten substance used in the subsequent step of molding the matrix of said tool; and after molding said matrix of said tool and removing the same from the mold, removing the paste closing the opening and destroying the spots of welding material remaining on the elements.

3,358,784

PRECISION WEIGH SCALES WITH COMMONLY-CONTROLLED TARING AND ZEROIZING MEANS

Ludwig Welckhardt, Gottingen, Germany, assignor to Sartorius-Werke (und vormals Gottinger Prazisionswaagenfabrik G.m.b.H.) Aktiengesellschaft, Gottingen, Germany

Filed July 20, 1965, Ser. No. 473,338
Claims priority, application Germany, Aug. 8, 1964, S 49,740
7 Claims. (Cl. 177—169)



1. High-precision scales, comprising a load receiving member, load-responsive means positively connected to said load receiving member, a tare compensating spring biasing said load-responsive means, an adjustable stressing member for varying the initial stress of said spring, a friction brake constantly acting on said stressing member, weight indicating means responsive to said load-responsive means and having an adjustable zero position, a zero setting member operable to adjust said zero position, a positioning member frictionally connected to said zero setting member, a frame carrying said load receiving member, load-responsive means, spring, stressing member, brake, weight indicating means, zero setting member and positioning member, two stationary stops carried by said frame and arranged to limit the adjustment of said zero setting member, said positioning member being movable through an adjusting range including a zero setting range within which said positioning member is operable to move said zero setting member, and coupling means arranged to positively couple said positioning and stressing members when said positioning member is in predetermined positions of said adjusting range on opposite sides of said zero setting range.

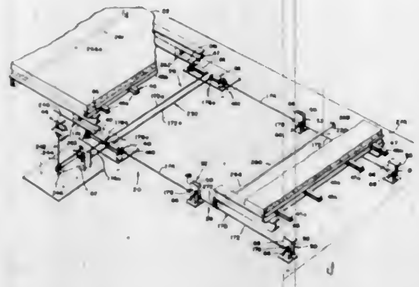
3,358,785

VEHICLE PLATFORM SCALES

Gerald C. Mayer, Wayne, and Arthur J. Burke, Oakland, N.J., assignors to Howe Richardson Scale Co., Clifton, N.J., a corporation of Delaware

Filed Sept. 16, 1966, Ser. No. 579,975
14 Claims. (Cl. 177—256)

1. In a scale having a load receiving structure, a weight indicating device, and a lever system operatively connecting said load receiving structure to said weight indicating device, said lever system comprising at least two pairs of main levers, two pairs of direction conversion levers, and a force accumulating lever, each of said levers having parallel spaced apart fulcrum, load and power knife pivots, the force transmitting knife edges on said load and power pivots of each lever facing in mutually perpendicular directions, means engaging the fulcrum pivots for pivoting each of said levers about a stationary fulcrum axis, the main lever fulcrum axes being contained in a substantially common plane that extends at right angles to the force accumulating and direction conversion lever fulcrum axes, the fulcrum axes of said direction conversion levers being parallel and at right angles to the fulcrum axis of said force accumulating lever, means mounting said load receiving structure on the load pivots of said main levers, first substantially inextensible force transmitting assemblies respectively and independently connecting the main lever power pivots to separate ones of the direction conversion lever load pivots, a pair of second substantially inextensible force transmitting assemblies respectively and independently connecting the power pivots of two of said conversion levers separately to the power pivots of the other two of said conversion levers, a pair of third substantially inextensible force transmitting assemblies respectively and independently connecting the power pivots of said other



two conversion levers separately to the load pivot of said force accumulating lever, means operatively connecting the power pivot of said force accumulating lever to said weight indicating device, said means mounting said load receiving structure on the load pivots of said main levers providing for universal displacement of said load receiving structure in a horizontal plane, said load receiving structure comprising a horizontally extending, vehicle platform, and means for checking the displacement of said platform in said horizontal plane under the horizontal thrusts applied to said platform by moving vehicles and comprising a plurality of cantilever mounted flexure members having their free ends fixed to said platform.

3,358,786

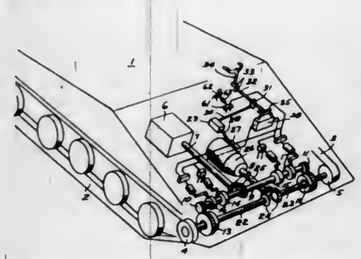
STEERING DEVICE FOR A TRACK-LAYING VEHICLE

Karl Sten Rudolf Hultgren, Bofors, and Lars Gustav Robert Engberg, Karlskoga, Sweden, assignors to Aktiebolaget Bofors, Bofors, Sweden, a corporation of Sweden

Filed Oct. 15, 1965, Ser. No. 496,498
Claims priority, application Sweden, Oct. 28, 1964, 13,007/64
3 Claims. (Cl. 180—6.7)

1. A device for controlling the braking of a moving track-laying vehicle having two tracks and the steering of the vehicle, said device comprising in combination:
- a brake for each track;
- a hydraulic servo means for each brake to actuate the same by operation of the respective servo means;
- a supply conduit for supplying hydraulic pressure fluid to the device;
- first valve means common to both servo means and connected to said supply conduit for feeding pressure fluid to the valve means and discharging the same therefrom, said valve means including spring means biasing the same into a neutral position in which flow of pressure fluid through the valve means is blocked;

- second valve means, one for each of the servo means and connected thereto;
- first feed conduits connectinng the first valve means to each of the second valve means;
- driving braking control means coacting with the first valve means for moving the same against the action of the spring means thereof from the neutral position into an active position in which the first valve means is open for the flow of pressure fluid into said feed conduits, the flow of fluid through the feed conduits into the second valve means causing both said valve means to move from a neutral position into an active position in which both second valve means are open for the flow of fluid to the servo means, thereby simultaneously activating both brakes;
- third valve means communicating with said pressure fluid supply conduits and biased into a neutral position blocking the flow of pressure fluid through the third valve means;



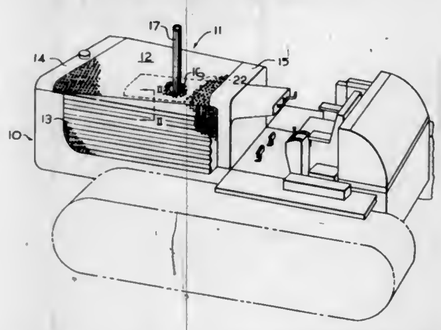
- second feed conduits connecting said third valve means with each of said second valve means; and
- steering braking control means coacting with said third valve means for moving the same from the neutral position into a position open for flow of fluid through a selected one of said second feed conduits to the respective second valve means, such flow of pressure fluid to the respective second valve means moving said valve means from its neutral position into the active position in which the respective second valve means is open for a flow of fluid therethrough to the respective servo means to operate the brake associated therewith.

3,358,787

ENGINE ENCLOSURE

James E. Bangasser, Morton, and Robert E. Woodcock, Farmington, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California

Filed Mar. 3, 1966, Ser. No. 531,532
4 Claims. (Cl. 180—69)



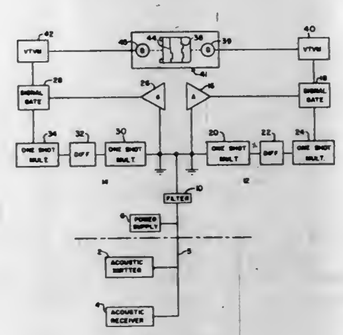
1. An improved engine enclosure having side doors and a hood the improvement comprising forming said side doors with corrugated sheet material having a plurality of perforations, said perforations being located remote to the ridges and furrows of said sheet material and said ridges and furrows being oriented substantially parallel with the longitudinal axis of the vehicle.

3,358,788

METHOD AND APPARATUS FOR ACOUSTIC CEMENT BOND LOGGING

John C. Wilson, Houston, Tex., assignor to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware

Filed July 25, 1963, Ser. No. 297,501
2 Claims. (Cl. 181—.5)



1. The method of acoustic cement bond logging comprising the steps of:
- generating an acoustic pulse at a first point in a cased borehole,
- detecting acoustic pulses at a second point in said borehole spaced a predetermined distance from said first point,
- converting the detected acoustic pulses into electrical signals,
- supplying said signals to a pair of gate circuits,
- opening one of said gate circuits to pass signals after a first time delay which is approximately equal to the time required for acoustic pulses to travel through the casing from said first point to said second point,
- closing said one of said gate circuits to block passage of signals after a second time delay which is approximately equal to one half cycle of the frequency of said acoustic pulse,
- opening the other of said gate circuits to pass signals during a third time interval which is approximately equal to one full cycle of the frequency of said acoustic pulse,
- closing said other of said gate circuits simultaneously with the opening of said one of said gate circuits, and
- correlatively recording the signals passed by each of said gate circuits.

3,358,789

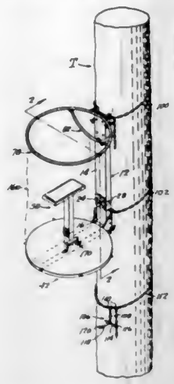
PORTABLE TREE STAND

Walter E. Laun, 9162 Simmons Blvd., Shreveport, La. 71108

Filed Oct. 7, 1966, Ser. No. 585,195
10 Claims. (Cl. 182—113)

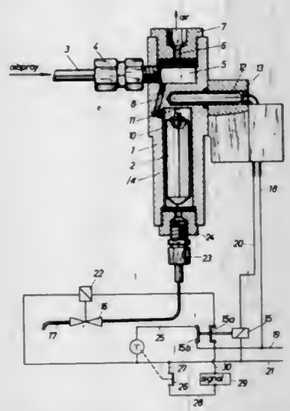
1. A device of the character described, comprising an upright, a horizontal lateral arm on the lower end of the upright, a floor secured upon said arm, a normally horizontal guard ring pivoted on the upright at its upper end, a brace pivoted to said ring, a clip on the upright

spaced below the pivotal point of the guard ring, said brace being adapted to be releasably engaged with said



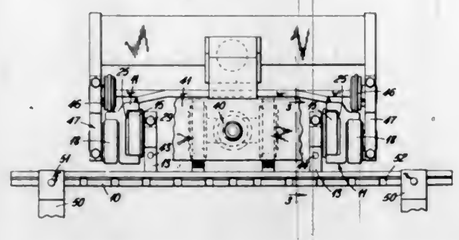
clip, and upper and lower tree trunk embracing means connected to said upright at locations spaced therealong.

3,358,790
WARNING DEVICE FOR OIL SPRAY LUBRICATION APPARATUS
Hans Krüdewig, Dusseldorf, Germany, assignor, by mesne assignments, to C. A. Norgren Co., Littleton, Colo., a corporation of Colorado
Filed May 19, 1964, Ser. No. 368,521
5 Claims. (Cl. 184—6)



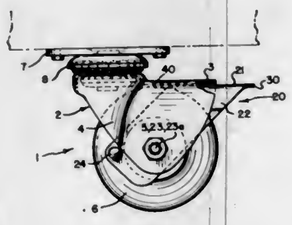
4. A warning device for liquid supply system to indicate a deficient supplying of liquid from a source to an end location, comprising: a housing having a fluid chamber therein; communicating means between said liquid source and said chamber; drain means for said fluid chamber; control means for said drain means responsive to the liquid level in said fluid chamber to open said drain means at one level of said liquid and close it at a lower level of said liquid; and warning means associated with said control means for providing a warning upon failure of of said control means to open said drain means with a given time; and timing means actuated upon said control means closing said drain means and operative upon operation for said given time to actuate said warning means and operative to reset to its starting position upon said control means opening said drain means within said given time; whereby said warning means will give an alarm only upon failure of said source to supply the required amount of liquid to said chamber within said given time.

3,358,791
INDUSTRIAL LIFT TRUCKS
Ronald Goodacre, Basingstoke, England, assignor to Lansing Bagnall Limited, Basingstoke, England, a British company
Filed June 1, 1966, Ser. No. 554,434
Claims priority, application Great Britain, June 1, 1965, 23,375/65
9 Claims. (Cl. 187—9)



1. An industrial lift truck comprising two upright guide members braced together in spaced apart relation one with the other, each member having a channel portion facing towards the channel portion of the other member, a load-carriage extending at least between the guide members, two pairs of rollers fixed to the load-carriage, the rollers of each pair being located one above the other and extending into and being in contact with the inside of the flanges of the channel portion of one of the guide members, the carriage and the guide members being free to slide relatively to each other, characterised in that the axes of the rollers are perpendicular to the web of the channel portion of the associated guide member but, in the normal intended alignment of the carriage to the vertical, displaced to one side of the longitudinal axis of the channel portion, the axis of each top roller being displaced forwardly of the axis of the channel portion and the axis of each bottom roller being displaced rearwardly of the axis of the channel portion, and in that means are provided to prevent lateral movement of the rollers relative to the channel portions of the guide members, which means comprise, in respect of one roller of each pair of rollers, a step projecting inwardly from the web of the channel portion of the associated guide member and contacting the roller and in respect of the other roller of each pair of rollers, a flange projecting from the periphery of the roller and contacting the free edge of the flanges of the channel portion.

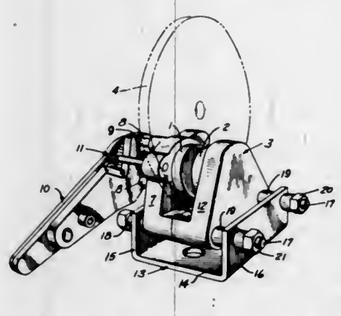
3,358,792
CASTER BRAKE
Romeo T. Proulx, Coplague, N.Y., assignor to VISIrecord, Inc., Coplague, N.Y., a corporation of New York
Filed Feb. 28, 1966, Ser. No. 540,435
1 Claim. (Cl. 188—29)



In a caster having an inverted U-shaped frame, two side skirts thereof forming the legs of the U, an axle traversing and engaging said side skirts, a wheel disposed

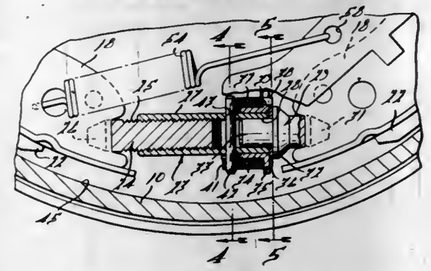
between said skirts and mounted rotatably on said axle, and mounting means on said frame for attaching said caster to an article of equipment, the improvement in combination therewith comprising a friction-plate brake means having (a) friction plates disposed on both sides of said wheel and joined with a top part, thus forming in end-view cross-section and inverted U similar to and narrower than that of the frame, corresponding parts of said frame and plates being generally adjacent with clearance space on both sides of each plate, said plates and frame skirts having aligned holes for pivotal mounting of said plates about said axle, (b) can means which coact with each skirt and plate to cause deflection of each plate against said wheel to develop a friction force to oppose rotation of said wheel, said cam means being a rigid projection mounted on each plate and extending outwardly toward said adjacent skirt, said brake means having a lever portion which extends beyond the periphery of said wheel, said brake plates being pivotable about their axis when a force is applied to said lever portion, said pivoting engaging said cams to function, each frame skirt having an inward curving portion such that as said brake plate is pivoted said cam coacts with said curved portion urging said plate further inward developing greater force against said wheel, said brake plates springing back to normal undeflected position when the brake is released, said caster frame, plates, axle and mounting means being made of a strong, generally rigid material such as steel, and said wheel being made of rubber or the like, said axle having fixed length, its ends engaging the side skirts of said frame to maintain constant the space therebetween when the brake is actuated and said parts would tend to be forced apart, and said wheel and brake axes being coincident.

3,358,793
COMPACT FLOATING DISC BRAKE
Harold E. Hollnagel, 10229 N. River Road 43W, Mequon, Wis. 53092; and Harold S. Hollnagel, 918 W. Laramie Lane, Milwaukee, Wis. 53217
Filed Oct. 20, 1965, Ser. No. 498,808
2 Claims. (Cl. 188—73)



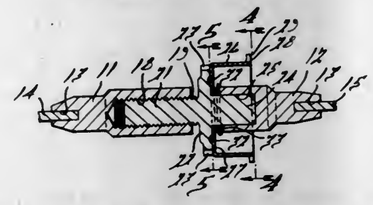
1. In a brake of the class described, a caliper having a base with relatively fixed arms extending in substantially parallel spaced relation therefrom and said arms carrying opposed brake pads for applying friction to a rotary disc disposed therebetween, a fixed channel support straddling the base of said caliper and having its flanges spaced on opposite sides of the caliper and encompassing said base, said support flanges being spaced apart and each being spaced substantially from the nearest corresponding side of said caliper base, and laterally extending means fixed to said caliper base on opposite sides at each end thereof and slidably extending through corresponding openings in said corresponding flanges to provide free lateral floating movement of said caliper upon said fixed support.

3,358,794
DRUM BRAKE WITH AUTOMATIC ADJUSTER
David T. Ayers, Jr., Birmingham, Mich., assignor to Kelsey-Hayes Company, a corporation of Delaware
Filed July 20, 1966, Ser. No. 566,548
5 Claims. (Cl. 188—79.5)



1. In a device for adjusting brake shoes within a brake drum, an expanding device having end members engaging a web of a pair of shoes at the end opposite to that to which the brake pressure is applied, a rotatable member for expanding said device by moving said end members apart, a rotatable sleeve on said rotatable member having a toothed star wheel thereon, a spring having one end secured to said star wheel and the opposite end connected to said rotatable member, and means for advancing said star wheel to apply a force to said rotatable member through said spring.

3,358,795
AUTOMATIC ADJUSTER FOR DRUM BRAKES
John E. Guest, Plymouth, Mich., assignor to Kelsey-Hayes Company, Romulus, Mich., a corporation of Delaware
Filed July 20, 1966, Ser. No. 566,577
5 Claims. (Cl. 188—79.5)

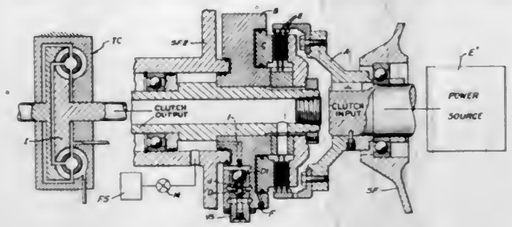


1. In a device for adjusting the brake shoes within a brake drum, a stud mechanism between adjacent ends of the shoe, a flange on the stud of the mechanism, a face on one side of said flange, a driven element, a face on the side of the driven element abutting said face of the flange, drive means for said driven element, and holding means between said faces which permits the faces to relatively move when the resistance of the stud to rotation reaches a predetermined amount.

3,358,796
FRICTION CLUTCH HAVING CENTRIFUGALLY OPERATED BALL VALVE MEANS
Conrad R. Hilpert, Winnebago, Ill., assignor to Twin Disc, Incorporated, a corporation of Wisconsin
Filed May 5, 1966, Ser. No. 547,912
10 Claims. (Cl. 192—3.33)

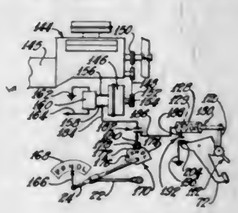
1. Centrifugally controlled, friction clutch mechanism comprising: a rotatable driving member and a rotatable driven member; slippingly engageable friction clutch means between said members for establishing a slippable drive connection therebetween; hydraulically operated means for causing variable engagement of said friction clutch means; pressure fluid, centrifugally operated, control valve means in one of said members and responsive

to speed changes thereof, said control valve means including a valve seat and a first radially shiftable ball adapted to sealingly engage said seat to prevent flow of fluid and controlling the amount of fluid in said hydraulically operated means, and a second ball for acting on said first ball and radially shiftable therewith; externally actuated, fluid pressure control means for supplying pressure fluid to said



centrifugally operated control valve means for control thereof, and passage means placing said centrifugally operated control valve means in operative communication with said hydraulically operated means to cause variable actuation of the latter and consequent continuously controlled, slipping engagement of said friction clutch means in accordance with the rotation speed of said one of said members.

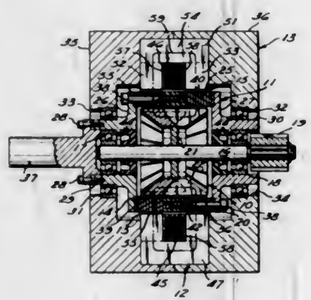
3,358,797
AUTOMATIC CONTROL SYSTEM AND APPARATUS FOR VEHICLE PARKING BRAKES
Wilfred E. Walton, Sylvania, Ohio, assignor to Universal American Corporation, New York, N.Y., a corporation of Delaware
Filed Oct. 20, 1965, Ser. No. 498,263
14 Claims. (Cl. 192—4)



13. A system for automatic release of the parking brakes of an automotive wheeled vehicle powered by an internal combustion engine, in combination, means for setting the parking brakes, locking means for retaining the parking brakes in brake setting positions, electrically actuable means for releasing said locking means, a circuit for said electrically actuable release means, an engine-driven source of electric current for said circuit, and switch means in said circuit operable only when the engine is in operation for supplying current to said circuit.

3,358,798
MAGNETIC PARTICLE CLUTCH
Gunnar H. Janson, Aurora, Ohio, assignor to Lear Siegler, Inc., Santa Monica, Calif., a corporation of Delaware
Filed Oct. 22, 1965, Ser. No. 501,384
8 Claims. (Cl. 192—21.5)

1. A magnetic coupling comprising
a pair of concentrically related, inner and outer, cylindrical coupling members comprising magnetic material and mounted for rotation relative to the other and having radially outwardly and inwardly facing adjacent cylindrical surfaces respectively, said surfaces being radially opposite and closely spaced from each other to form an axially extending inner cylindrical air gap therebetween,
magnetic particles in said air gap,
sealing means having sealing contact with said coupling members for confining said magnetic particles in a space within said radially inwardly facing cylindrical surface of said outer coupling member and containing said inner coupling member and said air gap,
a magnetizing field structure supported adjacent said outer cylindrical coupling element, said magnetizing structure comprising a magnetic core encircling said outer coupling member and comprising flat, thin, generally U-shaped laminations of magnetic material, each having a pair of laterally spaced apart leg portions joined together at one end by an interconnecting portion and each lying substantially in a radially directed plane containing the axis of said coupling members and arranged in a plurality of circumferentially aligned and spaced sets of laminations stacked together in superposed relationship, said sets each having a magnetically interconnected pair of

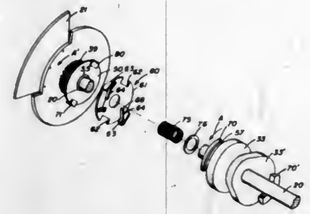


pole faces radially opposite axially spaced portions of said outer cylindrical coupling member and spaced therefrom by an outer air gap, and a cooperating electrical coil adapted to magnetize said pole faces with opposite polarities and including a circular supporting bobbin of non-magnetic material having oppositely facing and generally parallel annular end faces with axially opposite pairs of radial slots therein for receiving and supporting said sets of magnetic laminations, said sets of U-shaped superposed laminations being positioned astride and supported by the bobbin with said interconnecting portions overlying the outside of said bobbin and said leg portions extending radially therefrom in said radial slots and spaced apart axially of and by said bobbin to form said radially inwardly facing pole faces in cylindrical arrangement,
said inner and outer cylindrical coupling members together comprising a magnetic flux path between said pole faces.

3,358,799
SHIFTABLE DRIVE COUPLING
John J. Bundschuh, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed May 12, 1965, Ser. No. 455,222
7 Claims. (Cl. 192—67)

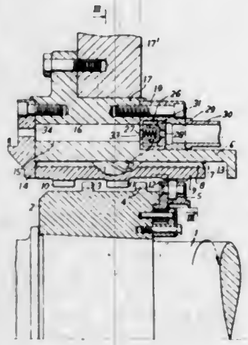
1. A shiftable drive coupling comprising: a rotatable drive member; a rotatable driven member supported in coaxial relationship with said drive member; a drive lug connected to said drive member to rotate therewith; a driven lug connected to said driven member to rotate therewith; means for moving at least one of said lugs relative to the other to and from an operative position in which said drive lug upon rotation can drivingly

engage said driven lug to couple said drive member to said driven member; and means supported on one of said members for latching said drive lug in engagement



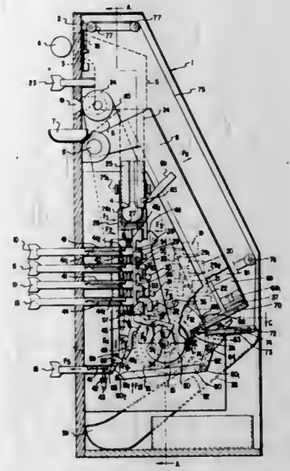
with said driven lug to prevent relative rotation thereof while permitting relative movement of at least one of said lugs from said operative position to uncouple said drive member and said driven member.

3,358,800
SYNCHRONOUS SELF-SHIFTING CLUTCHES
Herbert Arthur Clements, Weybridge, England, assignor to S.S.S. Patents Limited, London, England
Filed Sept. 29, 1965, Ser. No. 491,253
Claims priority, application Great Britain, Oct. 8, 1964, 41,156/64
5 Claims. (Cl. 192—67)



1. A synchronous self-shifting clutch comprising:
coacting clutch teeth,
first and second rotary clutch members, and
clutch actuating mechanism operative upon passage of said clutch members through rotational synchronism, said mechanism including an intermediate member movable helically relative to one of said clutch members to effect at least partial engagement of said coacting clutch teeth, with means for limiting the helical movement of said intermediate member in the clutch engaging and disengaging directions relative to said one clutch member, wherein the improvement comprises a further member arranged with lost motion in the rotary sense between said further member and one of said clutch members when the clutch is in a disengaged condition, whereby the take-up of load by the clutch involves, subsequent to engagement of the clutch, taking up of the lost motion by relative angular movement of said last-mentioned clutch member and said further member, and dashpot mechanism effective between said last-mentioned clutch member and said further member to damp said relative angular movement and thereby cushion the take-up of the load following engagement of the clutch.

3,358,801
DISTRIBUTING APPLIANCE
Constantin Feldzer, Meudon, France, assignor to Societe pour l'Affranchissement et le Timbrage Automatiques S.A.T.A.S., Paris, France
Filed Apr. 12, 1965, Ser. No. 447,370
Claims priority, application France, Apr. 16, 1964, 971,171, Patent 1,403,684; Apr. 6, 1965, 12,151, Patent 88,218
29 Claims. (Cl. 194—2)

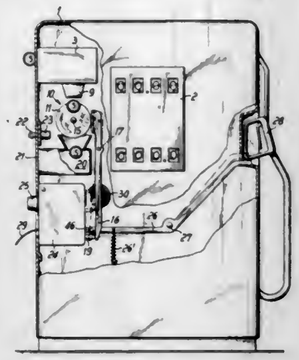


1. A distributing appliance comprising means for inserting a coin, components for selecting articles for distribution, a spindle, a rotary drum on said spindle and provided with perforations on its periphery, means connecting the selecting components to said drum and rotatively driving said drum for an angular value as a function of the selecting components actuated, a registering component comprising a pinion mounted on said spindle and enabling the operator to choose at least one article by means of the selecting components, a lever pivoted on said spindle, studs on said lever in engagement with each of the selecting components, said studs being staggered on said lever so that for substantially identical travel of the selecting components, the lever pivots for a variable angle as a function of each stud on said lever, a receptacle for containing coins and provided with feeling fingers cooperating with the perforations of the drum for giving change so that the sum of the coins given in change corresponds to the difference between the value of the coin inserted and the value of the articles chosen.

3,358,802
COIN CONTROLLED PRINTER
Eduard Schuh, Villingen, Black Forest, Germany, assignor to Kienzle Apparate G.m.b.H., Villingen, Black Forest, Germany
Filed June 23, 1966, Ser. No. 559,944
Claims priority, application Germany, June 25, 1965, K 56,474
12 Claims. (Cl. 194—10)

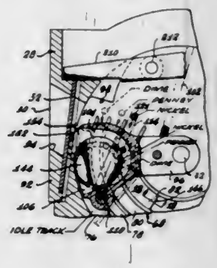
1. Coin controlled printer for use in a coin controlled fuel dispensing apparatus, comprising, in combination printing means movable to successive printing positions representing monetary values; actuating means for stepwise operating said printing means; a coin holding device for receiving and holding different coins; a sensing device for sensing coins held by said coin holding device; drive means for moving one of said devices relative to the other device so that said sensing device senses a coin held in

said coin holding device and represents the value of the sensed coin, said sensing device controlling said actuating means to move said printing means different numbers of steps representing the values of different sensed coins so that said printing means is set to a printing position representing the total value of coins successively sensed by



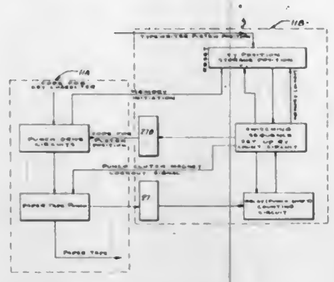
said sensing deice; supply means for supplying blanks to said printing means; operating means for operating said printing means to print said total value on a blank, and for then discharging the imprinted blank as a receipt for the total monetary value of the received coins; and clearing means for clearing said printing means.

3,358,803
PARKING METER
Manuel J. Fernandez, 7009 Maynard Ave., Canoga Park, Calif. 91304
Filed Aug. 9, 1965, Ser. No. 478,151
16 Claims. (Cl. 194—85)



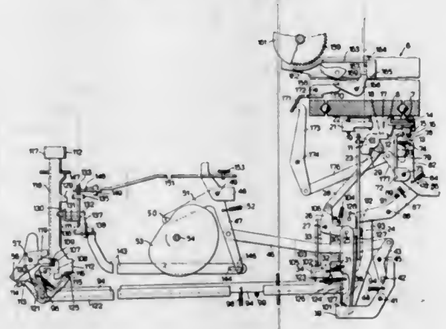
1. A parking meter, comprising:
a meter mechanism including
a clock,
clock setting means for selectively setting said clock to operate for different periods of time,
coin receiving means having an opening for receiving coins of different sizes,
coin gauging means for sensing the size of the coins received by said coin receiving means,
and actuating means for selectively actuating said clock setting means in accordance with the size coin sensed by said coin gauging means;
a housing supporting said mechanism;
token storage means in said housing;
and means connected to said actuating means of said mechanism for selectively and automatically dispensing a token from said storage means only when the coin sensed by said gauging means is of a predetermined size.

3,358,804
TWO-DIMENSIONAL STRUCTURE ENCODING TYPEWRITER
Alfred P. Feldman, 1440 Locust Road NW., Washington, D.C. 20012
Filed Feb. 26, 1963, Ser. No. 261,238
10 Claims. (Cl. 197—20)



1. A process for simultaneously producing a typewritten record and an encoded record of the symbolic content and two-dimensional structure of the typewritten record comprising:
(a) selectively activating a series of symbols; and
(b) recording codes for each selected symbol upon a memory means according to their activated sequence representative both of said activated symbol and of said activated symbol's spatial relationship with respect to said typewritten record, such that the retrieval of the activated symbol code additionally retrieves the activated symbol's spatial relationship code, and the retrieval of the activated symbol's spatial relationship code additionally retrieves the activated symbol code.

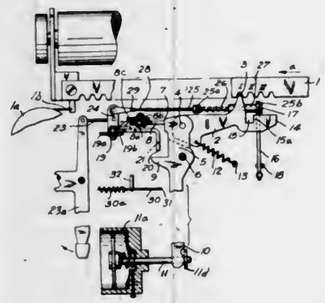
3,358,805
EXPRESS MARGIN SETTING DEVICE FOR TYPEWRITERS
Rinaldo Salto, Ivrea, Turin, Italy, assignor to Ing. C. Olivetti & C., S.p.A., Ivrea, Italy, a corporation of Italy
Filed July 26, 1965, Ser. No. 474,679
Claims priority, application Italy, Aug. 1, 1964, 17,130/64
9 Claims. (Cl. 197—63)



1. In a typewriter having a transversely traveling carriage, a rack secured to said carriage, at least a margin stop settable on said rack in different transverse positions, a tabulating mechanism operable for cooperating with a plurality of settable tabulating stops, and a tabulating key depressible for operating said tabulating mechanism, an express margin setting device comprising in combination:

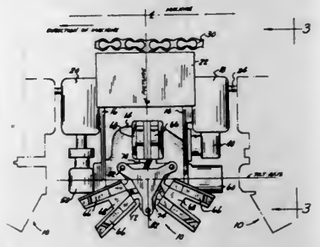
(a) control means operable for transversely locking said margin stop and for disengaging same from said rack,
(b) and a manually operable member for simultaneously operating said control means and said tabulating mechanism without affecting said tabulating key, whereby said margin stop is expressly set in the columnar position of the next following set tabulating stop in the advancing direction of the carriage.

3,358,806
ESCAPEMENT MECHANISM FOR TYPEWRITERS
Otto Krauss, Herbert Decker, and Manfred Link, Nurnberg, and Walter Stuiber, Stein, near Nurnberg, Germany, assignors to Triumph Werke Nurnberg A.G., Nurnberg, Germany
Filed Feb. 24, 1964, Ser. No. 346,716
Claims priority, application Germany, Feb. 27, 1963, G 37,157/63
5 Claims. (Cl. 197—84)



1. An escapement mechanism comprising, in combination, carriage means biassed to move in one direction and having a rack with teeth spaced in said one direction; a support reciprocable along said rack; an escapement member mounted on said support for movement between a rack engaging position and a releasing position, and for movement with said support between a plurality of positions cooperating with different teeth of said rack, said escapement member having a recess; biassing means for urging said support to move opposite to said one direction of carriage movement for moving said escapement member to said plurality of positions, and said escapement member to move to said engaging position; operating means including an operating member movable transversely to said one direction of carriage movement to and from an operative position engaging said escapement member for moving said escapement member to said releasing position so that said biassing means move said support with said escapement member in a direction opposite to the carriage movement until said escapement member moves to said engaging position whereupon said carriage means moves said escapement member and said support in said one direction, said operating member being located opposite said recess when said support has moved opposite to said one direction so that said ecapement member is free to move to said engaging position even if said operating member remains in said operative position, sad operating means including a means supporting said operating member for movement in said one direction, and resilient means opposing movement of said operating member whereby said operating member moves with said carriage means, said support, and said escapement member when located in said recess and engaged by said escapement member; and stop means for limiting movement of said support and said carriage means in said one direction.

3,358,807
TELEVISION TUBE COATING APPARATUS
Wilbur H. Kraus, Birmingham, Mich., assignor to Engineering Industries, Inc., Detroit, Mich., a corporation of Michigan
Filed Dec. 27, 1966, Ser. No. 604,935
4 Claims. (Cl. 198—19)

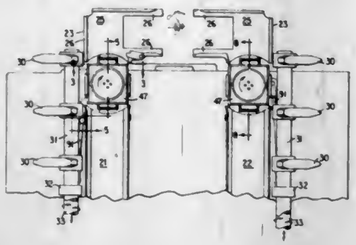


1. In a multiple station conveyor type apparatus having a stationary supporting frame, a power operated conveyor, a plurality of identical workpiece supporting fixtures removably secured to the conveyor for movement therewith through the various stations, the improved fixture and fixture control system that comprises:
a platform removably secured to the conveyor for movement therewith;
a tiltable housing pivotally secured to said platform for pivotal movement in relation thereto about a tilt axis passing through said housing;
tilt drive means secured to said platform and drivingly connected to said tiltable housing for causing said tiltable housing to rotate about the tilt axis;
workpiece gripping means for releasably supporting and gripping a workpiece, said workpiece gripping means being rotatably mounted on and with respect to said tiltable housing about a spin axis perpendicular to said tilt axis and passing through a workpiece secured within said gripping means;
spin drive means secured to said platform and connected to said workpiece gripping means for causing said workpiece gripping means to spin about said spin axis;
control means for controlling the operation of said tilt drive means and said spin drive means in timed relation to the position of the fixture relative to the conveyor stations comprising a set of triggering devices located at each of a plurality of stations along the conveyor and mounted on the conveyor supporting frame, a set of trigger responsive devices secured to said fixture platform and so positioned as to operatively register with said triggering devices as the fixture passes said triggering stations, tilt angle sensing means connected to said platform and to said tiltable housing for sensing the angle of tilt of said housing, and electrical circuit means secured to said fixture platform and connected with said trigger responsive means, said tilt angle sensing means, and with said spin drive means and said tilt drive means.

3,358,808
APPARATUS FOR ORIENTING CARTONS DURING THE ADVANCEMENT THEREOF
William A. Reynolds, Leawood, Kans., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed June 24, 1966, Ser. No. 560,182
4 Claims. (Cl. 198—33)

1. Apparatus for orienting cartons during the advancement thereof comprising an elongated guideway for supporting a procession of cartons, a carton turning station located along said guideway, a carton advancing member mounted for reciprocation through repeated cycles

forwardly and rearwardly in a direction lengthwise of said guideway, said advancing member being operable upon forward movement to engage the cartons of said procession and advance the same successively to said turning station, a carton turning mechanism at said station including a support member journalled for rotation about a vertical axis, a plate fixed to the upper end of said support and arranged in substantially coplanar relation to said guideway for the reception of a carton advanced thereon, carton clamp members mounted on said



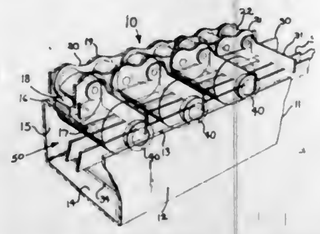
support, said clamp members being movable from a down position below the plane of said guideway to an up position above the plane of said guideway to form a quadrate wall about the periphery of said plate for the retention of a carton thereon, actuating mechanism operatively connecting said support to said carton advancing member and operable upon rearward movement of said carton advancing member to effect rotation of said support and plate through an arc of 90°, and means operable to maintain said clamp members in up position during such rotation.

3,358,809
BUCKET WHEEL LOADER
Raimonds Sukurs, Rheinhausen, and Hans Pelzer, Krefeld, Germany, assignors to Beteiligungs- und Patentverwaltungsgesellschaft mit beschrankter Haftung, Essen, Germany
Filed Dec. 17, 1965, Ser. No. 514,563
Claims priority, application Germany, Dec. 24, 1964, B 79,886
5 Claims. (Cl. 198—36)



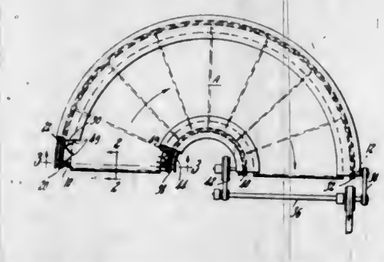
1. A bucket wheel loader which includes: a freely movable carriage, a rotatable bucket wheel, longitudinally extending supporting means supported by said carriage and rotatably supporting said bucket wheel at one end portion of said supporting means, mounting means for preventing rotation of said supporting means about a vertical axis while permitting rotation of said supporting means about a horizontal axis, said bucket wheel being so located with regard to said carriage that the vertical plane passing through the center of said carriage and through the center of said bucket wheel forms an acute angle with the advancing direction of said carriage, bridge means having one end thereof supported by the other end portion of said supporting means, additional supporting means supporting the other end portion of said bridge means for pivotal movement about a substantially horizontal axis, and conveyor means leading from said bucket wheel to said other end portion of said bridge means.

3,358,810
ARTICLE HANDLING APPARATUS
Otto Zauner, Vineland, N.J., assignor to Owens-Illinois, Inc., a corporation of Ohio
Filed June 6, 1966, Ser. No. 555,341
2 Claims. (Cl. 198—171)



1. An article handling apparatus including a conveyor with article urging means attached thereto, article support means positioned adjacent the path over which a plurality of articles traverse, a substantially enclosed chamber for generating a reduced pressure positioned adjacent said support means and longitudinally aligned therewith, the opening of said chamber adjacent the path over which said articles traverse, so that the ingress of air into said chamber will maintain said articles in a selected position while said articles are being translated, said chamber having a plurality of openings wherein at least one air ingress opening into said chamber is positioned beneath the articles being transported so as to force said articles downward when a reduced pressure is generated within said chamber and at least one air ingress opening into said chamber positioned at the side of the articles being transported so as to force said articles in a lateral direction under the influence of a reduced pressure in said chamber.

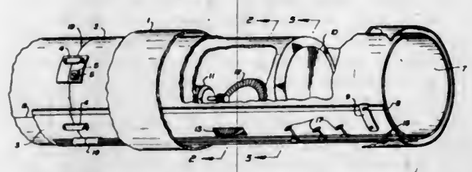
3,358,811
BELT TURN
Grenville Bradbury Gerrish, 26 Standish Road, Melrose, Mass. 02176
Filed Jan. 19, 1966, Ser. No. 521,661
10 Claims. (Cl. 198—182)



1. A belt turn conveyor comprising: an endless belt having conveying and return traverses generally shaped as sectors of circles, and end portions interconnecting corresponding end limits of said traverses, said traverses and said end portions defining a folded outer radial edge of said belt; support means located intermediate said traverses for supporting said conveying traverse and including belt reversing means at each of said end portions; an endless drive member carried by said support means, disposed radially with respect to said traverses and movable about a path conforming generally to said folded outer radial edge of said belt; resilient means connected between respective portions of said drive member and said belt for urging a tension force between said drive member and said belt and for transmitting drive forces to said belt from said drive member; and at least one of said belt reversing

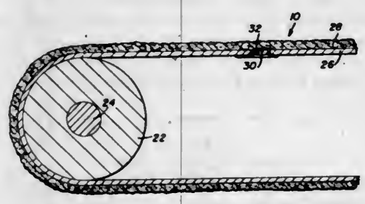
means comprising an elongated rotatable member in engagement with said belt to define one end limit of said return traverse and an elongated plate member having a generally straight edged portion extending radially with respect to said conveying traverse and in engagement with said belt to define one generally straight edged end limit of said conveying traverse.

3,358,812
CONVEYOR SYSTEM FOR MOVING SOLIDS OVER LONG DISTANCES
Norman George Tribe, 42 Houltain Crescent, Regina, Saskatchewan, Canada
Filed Feb. 23, 1966, Ser. No. 529,571
9 Claims. (Cl. 198—184)



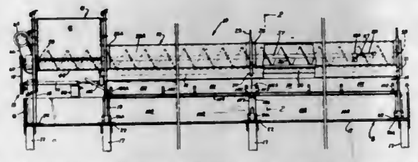
1. A device for continuously transporting solid material over long distances comprising:
(a) a rigid, generally closed, carrier pipe, having at least one loading station and at least one unloading station each formed as an opening in its wall.
(b) a continuous closed conveyor adapted to travel within said carrier pipe and consisting of a series of open-ended sections which are connected together end to end, each such sections of the closed conveyor being formed as a belt with marginal portions joined together so as to constitute a longitudinal joint.
(c) means to spread apart, and subsequently to close, said longitudinal joint at a loading station, and further means to spread apart, and subsequently to close said longitudinal joint at an unloading station.
(d) electrically powered drive units positioned at regular intervals within the conveyor and comprising motor means, motor capsule means surrounding said motor means and fixed in relation to said conveyor to travel with and propel said conveyor and a plurality of frictionally engaging drive means extending from said capsule means through orifices in the conveyor and engaging the inside of the carrier pipe whereby they are adapted to propel the conveyor through the pipe line.

3,358,813
FELT PIT BELT FOR BOWLING MACHINES
Frederick A. Kohlhagen, 125 Cedar Road 14215, and Charles N. Falletta, 220 Camden 14216, both of Buffalo, N.Y.
Filed Feb. 18, 1966, Ser. No. 528,556
1 Claim. (Cl. 198—193)



In automatic bowling pin spotting mechanism wherein a pit conveyor means is arranged to receive struck bowling pins and bowling balls thereon for removal and reuse, the conveyor means, including a pit conveyor belt forming a part of said mechanisms to receive bowling pins and bowling balls, the improvement comprising said pit conveyor belt being formed from a lamination of a backing material and an outer facing of felt material bonded to the backing material, said felt material completely covering the backing material and being relatively soft as compared with the backing material to eliminate marking of the pins and balls when engaged therewith and also serving to clean the pins and balls when engaged therewith, said backing material being in the form of a flexible belt member having the ends thereof secured together by fastening means, said fastening means for the belt member being completely covered by the felt material to eliminate any contact between the bowling pins and balls and the belt fastener, said felt material being relatively thick as compared with the backing material for providing a cushioning resilient surface for the pins and balls thereby reducing damage thereto due to contact or impact therewith, said backing material having substantially higher strength characteristics than the felt material.

3,358,814
BUNK FEEDER OR THE LIKE
Floyd E. Buschbom, Long Lake, Minn., assignor to Vandale Corporation, Long Lake, Minn., a corporation of Minnesota
Application Mar. 24, 1965, Ser. No. 442,434, now Patent No. 3,303,966, dated Feb. 14, 1967, which is a division of application Ser. No. 201,052, June 8, 1962, now Patent No. 3,254,798, dated June 7, 1966. Divided and this application Sept. 1, 1966, Ser. No. 576,639
10 Claims. (Cl. 198—213)

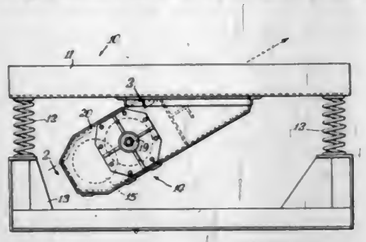


1. A reversible wear means for a bunk feeding apparatus having an elongated support member, an elongated helical conveying means located adjacent and generally parallel to the elongated support member, said conveying means movable about an axis comprising: an elongated wear means having longitudinal edges, a first linear portion along one edge and a second linear portion along the other edge, said second linear portion being spaced from the first linear portion, and an arcuate cross-section of a concave curvature substantially larger than the arcuate peripheral curvature of the helical conveying means so that the conveying means only engages one of the linear portions, the center axis of the arcuate curvature of the wear means located along a line generally parallel to and offset upwardly and outwardly from the axis of the conveying means, and means for attaching said elongated wear means to the elongated support member selectively in initial or end-for-end reverse position whereby the bottom portion of the helical conveying means selectively engages only one of said linear portions of the wear means.

3,358,815
VIBRATORY APPARATUS
Albert Musschoot, Barrington, and Marvin G. Thomson, Prospect Heights, Ill., assignors to General Kinematics Corporation, a corporation of Illinois
Filed Jan. 9, 1967, Ser. No. 617,744
16 Claims. (Cl. 198—220)

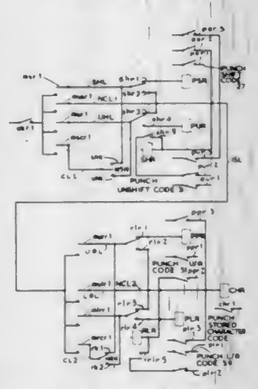
1. In a vibratory apparatus having a work member supported on isolation springs and an exciter member connected to the work member by a spring system for imparting a vibratory force to the work member, means for

varying the magnitude of the vibratory force comprising, a motor on the exciter member, a counterweight member connected to the motor to be rotated thereby, a first fluid reservoir on the counterweight member on one side of the axis of rotation thereof, a second fluid reservoir on the counterweight member on the other side of said axis, the



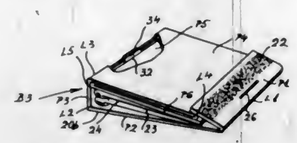
second reservoir being closer to said axis than the first reservoir, a fluid conduit interconnecting the reservoirs, the positions of the reservoirs relative to the axis biasing the fluid in the second reservoir to flow through said conduit to the first reservoir upon rotation of the counterweight member, and pressure producing means to move fluid from the first reservoir against said bias.

3,358,816
ELECTRICAL EQUIPMENT FOR CODING INTELLIGENCE
Haydn Victor Purdy, 30 Fontenoy Road, London, England, and Ronald Campbell McIntosh, Skimpans, Welham Green, England
Filed Apr. 7, 1965, Ser. No. 446,285
Claims priority, application Great Britain, Apr. 10, 1964, 15,027/64
7 Claims. (Cl. 199—1)



1. An automatic program-coding system comprising: a signal generator for generating series of first-order functional electrical signals interspersed with second-order functional electrical signals; program recording equipment; first storage apparatus for storing the identity of the last second order signal inserted into a program; second storage apparatus for storing in turn each second-order signal received from said signal generator; signal transfer apparatus for transferring a signal stored in said second storage apparatus to said program recording equipment; comparator equipment for comparing the contents of said first and second storage apparatus prior to recording each first order signal; and order equipment under control of said comparator equipment for ordering said transfer apparatus to transfer the second order signal in said second storage apparatus to said program recording equipment if the comparator equipment determines that the signals compared are incompatible.

3,358,817
SAFETY MATCH BOOK
Theodore O. Will, 20 Winthrop Ave., Syosset, N.Y. 11791
Filed May 11, 1966, Ser. No. 550,085
12 Claims. (Cl. 206—29)

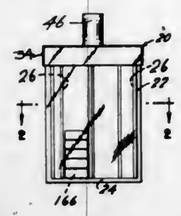


1. A match book having easy opening and effective closure means comprising a folder formed by a substantially rectangular strip of flexible sheet material, said strip having a plurality of transverse folds defining and joining a plurality of panels, a first one of said panels being narrow and connected to a second longer panel by a first fold, a plurality of match layers having matches joined to base ends of the layers, said base ends being interposed between the first and second panels, fastener means engaging the match layers and the first and second panels to hold the match layers in the folder, said fastener means being positioned to accommodate interlocking innershield panels between the narrow first panel and the match layers, said first panel forming part of a front side of the folder and said second panel forming a rear cover side of the folder, a narrow third one of the panels joined to the second panel by a second fold and defining a top cover panel of the folder, a longer fourth panel joined to the third panel by a third fold and defining a front cover for the folder in cooperation with the first panel when disposed thereunder so as to form a complete outer cover, the portion of said strip disposed behind and between said front cover panels and match layers defining a safety protective innershield member for said matches positioned in front of and covering the matches when the strip is in fully folded and open position, said innershield member being joined at one end to the said front cover fourth panel by a fourth fold and having a plurality of further rectangular panels spaced with transverse folds between and behind said front cover panel and in front of the match layers and said other end of the strip, said first panel of the safety protective innershield member being a fifth panel joined to the fourth panel by the fourth fold, said fourth and fifth panels being equal in length and providing a joined end that fits tightly into the matchbook folder between the first narrow front panel and match layers and at least three panel thicknesses therebetween whereby to provide a secure pressurized frictional closure, said joined end thereby thrusting the fifth fold against the inside of the third fold and top cover panel so as to tension the third and fourth panel and to compress the fifth panel to hold the folder securely closed, whereby the fourth, fifth and remaining panels will spring open and away from the match layers when the fourth fold is disengaged from the first narrow panel, and to position and to draw the safety protective innershield member in position for closing said panelled inner shield member being longer in length than the combined length of the front cover fourth panel and the inner shield fifth panel joined thereto.

3,358,818
PILL DISPENSER
Genevieve H. Davis, 10202 NE. 59th, Houghton, Wash.
Filed Oct. 21, 1965, Ser. No. 500,146
3 Claims. (Cl. 206—42)

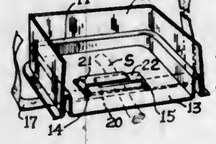
1. A dispenser for pills, capsules and the like, said dispenser comprising:
(a) a container;
(b) said container comprising a tubular case;

(c) said tubular case being transparent to light;
(d) a plurality of tubes in said case and said tubes being distinct and separate from the case;
(e) said tubes being transparent to light;
(f) a cap for said container;
(g) said cap having access opening to each tube;
(h) means to attach said cap to said container;



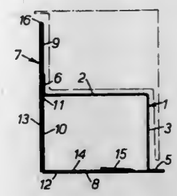
(i) a selector top;
(j) said selector top having an opening for registering with the opening in said cap and selectively with one tube; and
(k) means for moving said selector top in registry with one tube whereby the opening in said selector top allows pills to leave that one tube only.

3,358,819
CONTAINER FOR A CORSAGE
Sigfred J. Johnson, Forest Park, Ill. (P.O. Box 216, Lombard, Ill. 60148)
Filed Sept. 12, 1966, Ser. No. 578,594
2 Claims. (Cl. 206—45.14)



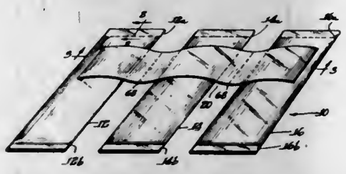
1. A container for a floral piece and the like comprising:
(a) a rectangularly shaped substantially flat base tray having a raised peripheral flange inwardly from the outer edges of the base tray defining an article-receiving area,
(b) slots formed in said base tray within said article-receiving area adjacent one end thereof, and extending parallel to the elongated sides of the rectangularly shaped base tray through which an article-holding element is adapted to be projected,
(c) an article-holding element projectable from the under side of the base tray through said slots engaging an article within said article-receiving area to removably secure the same on to said base tray,
(d) a removable hollow open bottom transparent cover frictionally positioned about said raised peripheral flange providing a substantial flat top above and in spaced relation to said article-receiving area of said base tray,
(e) said article holding element having portions of a length to embrace said substantial flat top of said transparent cover to secure the same on said base tray, and
(f) a hollow open bottom rectangularly shaped protective cover of a size to be positioned upon said transparent cover to protect the same.

3,358,820
DISPLAY PACKAGE
Howard Wm. Fairbairn, Dallington, England, assignor to The Mettoy Company Limited, London, England, a British company
Filed Jan. 4, 1967, Ser. No. 607,279
Claims priority, application Great Britain, Jan. 4, 1966, 280/66
6 Claims. (Cl. 206—45.31)



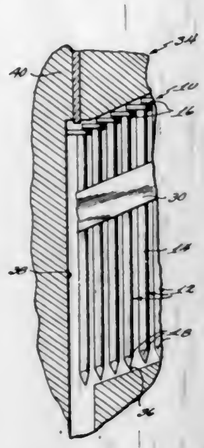
1. A display package comprising a support formed of a sheet of flexible material having a base portion and a rear panel positioned in a plane transverse to said base portion, and a display part formed of transparent sheet material secured to said base portion and rear panel to form a housing therewith, said rear panel having an aperture therein for access to the interior of said housing, and said support also including a rear cover hinged to said rear panel, and means for releasably retaining said rear cover in a position in which it is disposed to the rear of said rear panel and overlies said aperture to close said housing.

3,358,821
MULTI-COMPARTMENT PACKAGE
Sydney R. Weisberg, 1715 S. Halsted St., Chicago, Ill. 60608
Filed June 15, 1966, Ser. No. 557,762
4 Claims. (Cl. 206—56)



1. A multi-compartment package unit comprising: a plurality of separate, juxtaposed, flattened, extruded flexible seamless tubular containers holding a liquid material made of thermoplastic material which is heat sealed at the opposite ends thereof to provide liquid and air-tight seals for the contents of the containers, the direction of extrusion of the thermoplastic material of the containers being oriented in a direction parallel to the flattened sides of the containers and transversely of the direction of extent of the heat seals at the ends of the tubular containers, means for joining said tubular containers together comprising only a single strip of readily manually tearable material extending along the flat sides of the tubular containers and joining each adjacent pair of separate juxtaposed flattened containers in spaced relation with the longitudinal axes of the tubular containers extending transversely of the strip, to form a unitary multi-compartment package wherein any container may be separated from an adjacent container by manually tearing the strip therebetween, and said strip of manually tearable material joining each adjacent pair of containers being positioned intermediate the ends of the tubular containers so the strip is spaced from the sealed ends of the containers and carrying label-forming indicia thereon.

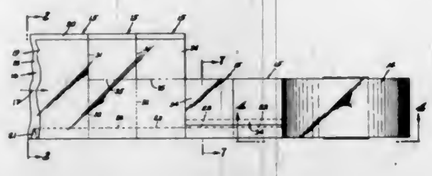
3,358,822
FASTENER STICK EMBODYING NAILS WITH ECCENTRIC FULL ROUND HEADS
Robert F. O'Connor, Greenville, R.I., assignor to Textron Inc., East Greenwich, R.I., a corporation of Rhode Island
Filed Mar. 6, 1967, Ser. No. 620,813
7 Claims. (Cl. 206—56)



1. A fastener stick comprising a multiplicity of nails generally of the same size and configuration, each of said nails including an elongated shank having a central longitudinal axis and longitudinally spaced ends, a work piercing portion formed on one end of the shank, and an enlarged circular head having a central axis fixedly secured to the other end of the shank with its central axis disposed in parallel laterally spaced relation to the axis of the shank so that said parallel axes are disposed in a common plane and a pair of planes normal to the common plane and tangent to the periphery of the shank adjacent the head intersect the circular head along chord lines spaced apart a distance X and define a large segment having a height H^1 and a small segment having a height H^2 in which the ratio of H^1 plus X plus H^2 to X is greater than 2.1 but less than 3 and H^1 exceeds H^2 by at least $X/10$ but no more than X, and means securing said nails a generally rigid row having spaced end nails and intermediate nails therebetween with all of the nails of the row disposed with the axes of their heads and shanks aligned substantially in a single common plane and with the small segment of each intermediate nail disposed in substantial abutting relation to the periphery of the shank of one nail adjacent thereto and the large segment of each intermediate nail disposed in overlying adjacent relation to the small segment and a portion of the shank of the other nail adjacent thereto.

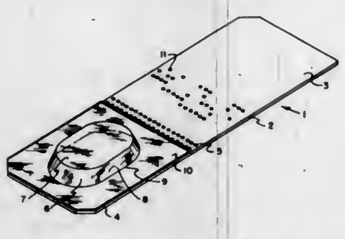
3,358,823
GUSSET BOTTOM BAGS IN ROLL FORM AND METHOD OF MAKING SAME
Allen D. Paxton, 8503 Kail Drive, Yakima, Wash. 98902
Filed Jan. 16, 1967, Ser. No. 609,496
6 Claims. (Cl. 206—58)

1. Gusset bottom bags in roll form comprising:
a single web of polyethylene or the like folded against itself along a longitudinal fold line to produce a W cross-section re-entrant fold having a pair of outer external folds and a central internal fold;
a series of pairs of seals extending transversely of said folded web to unite the overlapping layers thereof,
said pairs being disposed at intervals to divide said folded web into a consecutive series of bags with open ends at the opposite side of said web from the side having said re-entrant fold,
said folded web being partially severed inwardly from said opposite side thereof along lines located between the respective seals of said pairs of seals,
for distances approximately one-half the difference between the width of said folded web and the width of said re-entrant fold thus separating open end portions of said bags from each other along their juxtaposed bag sides,



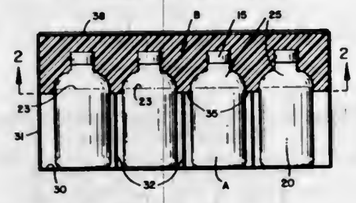
said separated bag portions being folded along a medial line parallel with said web to overlie respectively unseparated portions of said bags, with the exception of those portions embodying said re-entrant fold,
said web, with said separated bag portions thus folded thereagainst, being rolled on itself from one end thereof,
the approximately uniformity in the distribution transversely of the bulk of said folded web effecting a corresponding uniformity of density of the roll thus produced by rolling said web.

3,358,824
DISPENSING OF PHARMACEUTICALS
Frank Vincent Stagnitto, Denville, N.J., assignor to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey
Filed Aug. 3, 1965, Ser. No. 476,956
1 Claim. (Cl. 206—63.2)



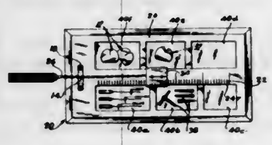
A medicament dispensing article suitable for conveying information upon processing with an automatic data processing system comprising an identifying means and a receptacle means, said identifying means being of a single uniform thickness and adapted for separation into two components by a transverse score line, said identifying means bearing indicia representing information concerning the medicament one of said two components in a manner so as to convey said information upon the automatic data processing thereof; said indicia comprising punch coded characters in the form of perforations or magnetic ink characters; said recetacle means comprising a blister disposed on the other of said two components of said identifying means intermediate the transverse score line and end of said component and being secured thereon with a peripheral flange, said blister comprising a raised portion having removably received therein a unit dose of a medicament.

3,358,825
PHARMACEUTICAL PACKAGE
John W. Pullman, Lafayette, Calif., assignor to Cutter Laboratories, Berkeley, Calif.
Filed Dec. 27, 1965, Ser. No. 516,584
7 Claims. (Cl. 206—63.2)



1. A method of storing dextran solution within a container having gas at the top portion of said container including the steps of thermally insulating the top portion of the container from ambient conditions from a position adjacent the liquid level within the container upwardly to a greater extent than from the liquid level downwardly, the thermal insulation differential being to such an extent that the temperature differential within the container of the liquid and of the gas is maintained sufficiently low to prevent precipitation of the dextran throughout wide variations of ambient temperatures.

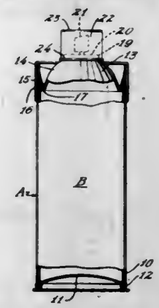
3,358,826
DENTAL TOOLS FOR ROOT CANAL THERAPY KIT
Allan D. Siegel, 748 Colonade Road, West Hempstead, N.Y. 11552
Filed Sept. 7, 1965, Ser. No. 485,442
14 Claims. (Cl. 206—63.5)



1. A kit for use in root canal therapy, said kit comprising:
(a) a sterilizable tray;
(b) a plurality of stop members in said tray each said stop member having means for affixing said stop member to a reamer tool;
(c) holding means carried by said tray for temporarily holding a said stop member, while said stop member is being attached to a reamer tool; and
(d) measuring means carried by said tray in cooperative relationship with the said stop member held by said holding means.

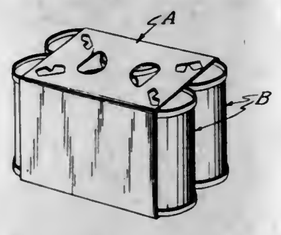
3,358,827
CAN UNITIZING PACKAGES
John G. Hughes, St. Paul, Minn., assignor to Waldorf Paper Products Company, St. Paul, Minn., a corporation of Minnesota
Filed Dec. 23, 1963, Ser. No. 332,351
7 Claims. (Cl. 206—65)

1. A can containing carton in combination with a series of similar cans having at least one chimed end, the carton including
a folder including a bottom panel and a pair of upright side wall panels hinged to opposite sides of said bottom panel,
said bottom panel being substantially of a width equal to the can diameter,
said side walls being of a height extending substantially above the side walls of the cans,
flanges connected to the upper edges of the side walls along fold lines,
a pair of tabs holding the side walls in substantially parallel relationship, said tabs being defined by generally U-shaped cut lines in said side walls adjoining said fold lines and connected to said flanges to be substantially coplanar therewith, and



said tabs being coextensive with the side walls spaced apart a distance substantially equal to the diameter of the cans and being downwardly dependable to engage into the chimes at said chimed end when the other ends of the cans rest upon said bottom panel.

3,358,828
CAN RETAINING TABS FOR CARRIER CARTONS
William M. Tolaas, St. Paul, Minn., assignor to Waldorf Paper Products Company, St. Paul, Minn., a corporation of Minnesota
Filed May 20, 1965, Ser. No. 457,431
11 Claims. (Cl. 206—65)

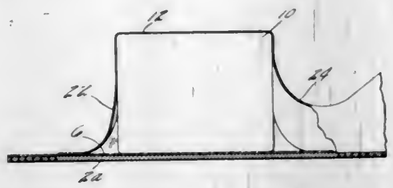


1. A wrapper for packing a plurality of articles having recessed ends and whose axes are disposed in substantially parallel relation and whose ends are arranged in common planes, said wrapper comprising generally parallel top and bottom walls interconnected by spaced side walls to form an open end tubular sleeve, said top and bottom walls being arranged for disposition in contacting generally parallel relation to the ends of the packaged articles, and a plurality of tabs struck out of at least one of said parallel walls, and foldable inwardly approximately 180 degrees along individual hinge lines and engageable respectively with the recessed ends of the articles, said tabs having end portions adapted to engage the periphery of the recessed ends and being bifurcated to provide two individually flexible recessed end engaging portions.

3,358,829
SKIN PACKAGE AND METHOD OF FORMING SAME
Harry A. Smith, Middletown, and Edward S. Galaska, Hartford, Conn., assignors to Packaging Specialists, Inc., Feeding Hills, Mass., a corporation of Connecticut
Filed Jan. 5, 1966, Ser. No. 518,952
10 Claims. (Cl. 206—80)

1. A package for an article comprising an air permeable backing member, a first layer of fluid impervious film

material bonded to at least part of said backing member, said article being in contact with said first layer of film material on the side of said first layer of film material removed from said backing member, and a second layer of fluid impervious film material overlying said article and conforming to the shape of at least the upper part of said article to thereby partly encapsulate said article, said first and second layers of film material being of the same

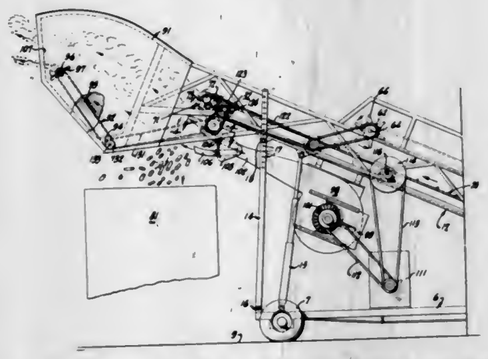


material, part of said second layer of film material being heat fusion bonded to part of said first layer of film material to provide continuous bonding communication between said backing member, said first layer of film material and said second layer of film material, and said second layer of film material flaring outwardly from said upper part of said article and cooperating with said first layer of film material to form a fillet around the base of said article.

3,358,830
DEVICE FOR DRY SEPARATING CUT SUGAR CANE

Richard A. Duncan, Lafayette, La., assignor, by mesne assignments, to The Thomson Machinery Company, Inc., a corporation

Filed Dec. 9, 1964, Ser. No. 417,188
12 Claims. (Cl. 209—3)



1. A sugar cane handling device comprising a portable main frame; an incline frame; means for pivotally mounting said incline frame on said main frame; means for supporting said incline frame at a desired angle on said main frame; a hopper frame; means for pivotally mounting said hopper frame on said incline frame; means for supporting said hopper frame at a desired attitude on said incline frame; a tail shaft roll on said hopper frame; a head shaft roll on said incline frame; a conveyor extending around said tail shaft roll and said head shaft roll for advancing material supported thereon in a forward direction; a combing roller on said incline frame above said conveyor; a discharge drum on said incline frame spaced forwardly from said head shaft roll to leave a narrow primary gap therebetween affording gravity separation of unwanted material smaller than the sugar cane diameter; an auger trough on said incline frame beneath said primary gap to receive the smaller unwanted material falling therethrough; an auger in said auger trough; a trash screen on said incline frame spaced forwardly from said discharge drum to leave a secondary gap therebetween; means on said incline frame for directing a blast of air through said secondary gap toward said trash screen; and means on said incline frame for driving said conveyor, said combing rollers, said discharge drum and said auger.

3,358,831
APPARATUS FOR AND METHOD OF SORTING SHEET MATERIAL

Le Roy E. Cothrell, Box 696A, Lorane Route, Cottage Grove, Oreg. 97424

Filed Sept. 3, 1965, Ser. No. 484,877
16 Claims. (Cl. 209—125)



1. Apparatus for conveying and sorting semi-rigid sheet material along inclined paths extending in a single longitudinal direction,

said apparatus comprising a storage zone, a grading zone, a transfer zone and a receiving zone all arranged contiguously and successively conveying the sheet material in said direction,

conveyor means for said sheet material within each of said zones with said conveyor means in said storage and transfer zones comprising vertically spaced apart trays,

suction means within said storage and grading zones subjacent said conveyor means whereby the underside of sheet material conveyed therein will be subjected to a reduced atmospheric pressure resulting in pressured contact with said conveyor means.

3,358,832
HYDRO-CYCLONE SEPARATOR

Ronald Stevenson Cantrell, Bremen, Ga., assignor to The Bauer Bros. Co., Springfield, Ohio, a corporation of Ohio

Filed July 21, 1964, Ser. No. 384,077
17 Claims. (Cl. 209—211)



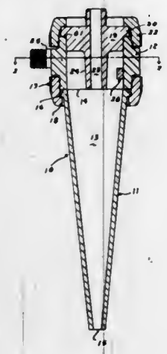
1. In a hydrocyclone operating to separate an acceptable fraction from a slurry containing acceptable and rejectable fractions, said hydrocyclone having oppositely disposed accepts and rejects outlets and inlet means admitting slurry in a manner to induce helical flow within

the hydrocyclone; an object foreign to both fractions and unable to discharge with either purposefully introduced into said hydrocyclone and characterized by means responding to a slurry in-flow to cause said object to orbit in said hydrocyclone around said liquid free core, in the area between said outlets, for increased separating efficiency.

3,358,833
CENTRIFUGAL SEPARATOR

Ronald S. Cantrell, Hamilton County, Tenn., assignor to The Bauer Bros. Co., Springfield, Ohio, a corporation of Ohio

Filed Apr. 23, 1965, Ser. No. 450,301
8 Claims. (Cl. 209—211)



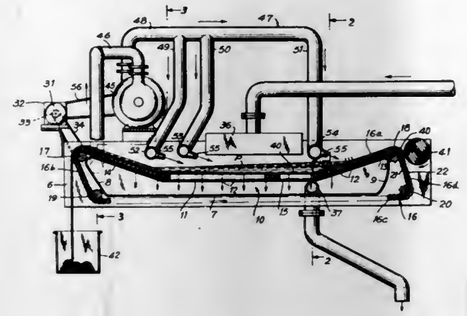
1. In a centrifugal separator for dividing a liquid suspension of solids into dirt poor and dirt rich fractions, including a hollow body of circular cross-sectional interior forming underflow and overflow outlets at its opposite ends and having an entrance portion near said overflow outlet, closure means for one end of said hollow body including said overflow outlet, tubular means defining said overflow outlet and projecting inwardly of said body on the axis thereof, there being an inlet in said entrance portion for tangential inflow of the liquid suspension, the liquid suspension progressing in swirling motion in said hollow body, initially about said tubular means and progressing toward said underflow outlet, a dirt poor fraction separating and moving in a reverse sense longitudinally of the body to said overflow outlet; the improvement residing in a ramp type obstruction located in the entrance portion of the hollow body at the wall thereof encountered by the inflowing suspension and creating a disturbance to flow causing turbulence substantially throughout the length of said hollow body along the wall thereof, said obstruction presenting an impact surface of longitudinal extent terminating at its opposite ends within the extremities of said tubular means for limited impact with extended turbulence.

3,358,834
METHOD AND APPARATUS FOR FILTERING LIQUIDS

Ahmad Mahamad El-Hindi, East Syracuse, N.Y., assignor to Belson Corporation, New York, N.Y., a corporation of New York

Filed Feb. 17, 1965, Ser. No. 433,426
11 Claims. (Cl. 210—73)

1. A method of filtering solids from a mixture of immiscible liquids having different specific gravities and each of which when passing through the filter will block the flow of the other liquid therethrough, comprising the steps of, directing a filter medium along a generally horizontal path inclined upwardly at the ends, delivering the liquids to be filtered onto the filtering medium to form a pool of the liquids thereon between the inclined ends of the horizontal path, producing a pressure less than atmospheric on the under side of said medium to promote flow of one liquid therethrough, physically displacing the other liquid floating on the top of the liquid being filtered to one end of the pool to segregate said other liquid from

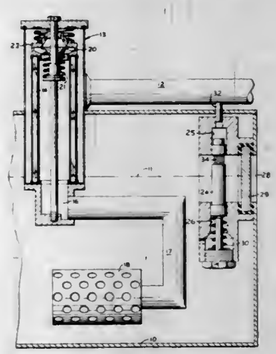


the body of liquid, and wet the clean filter medium with said other liquid which passes through the filter medium due to the difference in pressure, and passing a sufficient amount of gas through the filter medium to remove all of said other liquid from the pores of the filter medium before the latter is contacted by the one liquid to be filtered which will then pass through the filter medium.

3,358,835
FILTER CONDITION INDICATOR

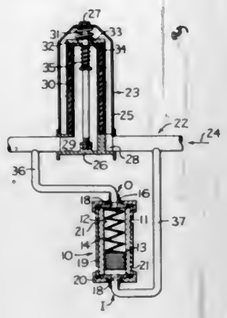
James E. Scheidt, Joliet, Ill., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of California

Filed Aug. 2, 1965, Ser. No. 476,374
1 Claim. (Cl. 210—90)



In a hydraulic system which includes a filter between a fluid return line and a tank, means to indicate a high pressure differential between the inlet and outlet side of the filter and thereby indicate the presence of heavy deposits in the filter, said means comprising a window in the tank, a piston in the tank visible through said window, means communicating tank pressure and low spring pressure to one end of the piston, means communicating return line pressure to the opposite end of the piston whereby a rise in return line pressure caused by deposits in the filter will impart movement to the piston, and a normally concealed distinctive marking on the piston brought into view through said window upon such movement.

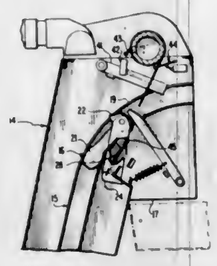
3,358,836
FILTER ELEMENT INDICATOR
James L. Schmitt, Washington, Ill., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Apr. 20, 1966, Ser. No. 543,962
5 Claims. (Cl. 210—90)



1. In combination with a fluid circuit containing a replaceable filter element disposed in a filter with an inlet and outlet, a dual reading filter condition indicator capable of indicating either a clogged or ruptured filter element comprising:
(a) a body having a passage therethrough, said body having transparent end portions through which said passage can be visually observed;
(b) a plunger means disposed reciprocally in said passage and sealing portions of said passage on opposite sides of said plunger means from one another;
(c) spring means supported at one end of said body within said passage and bearing on said plunger means and having sufficient extension to push said plunger means to the opposite end of said passage;
(d) conduit means connecting the portion of said passage containing said spring means with said outlet of said filter; and
(e) second conduit means connecting the portion of such passage free of said spring means with said inlet of said filter whereby a differential pressure across the filter element will centrally position said plunger in said passage until said filter element is clogged or ruptured which will cause said plunger means to move into one or the other warning areas at opposite ends of said indicator.

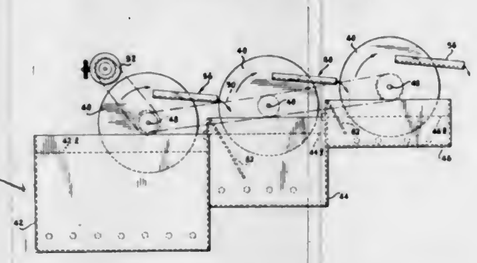
3,358,837
BAR SCREEN CLEANING DEVICE
Thomas J. Tillett, Ambler, and Bedrich Auerbach, Lansdale, Pa., assignors to Link-Belt Company, a corporation of Illinois
Filed Oct. 22, 1965, Ser. No. 500,757
9 Claims. (Cl. 210—159)

5. A screen cleaning device for use in combination with a screen to catch debris or refuse in a flowing liquid stream comprising:
guide track means adjacent to the screen to be cleaned having a generally straight lower portion and a curved upper portion extending over a discharge point,
a rake assembly movable along said track means including a rake member pivotable between an open position out of engagement with the screen and a closed position to cleaningly cooperate with the screen,
means for moving said rake assembly along said track means and across the screen,
pin means stationarily mounted adjacent the curved portion of said track means,
guide means mounted on said rake member engageable with said pin means to prevent said rake member from pivoting from said closed position to said open position until it is positioned over said discharge point,
pusher means adjacent the curved portion of said track means engageable with said rake assembly to initiate descending movement of said rake assembly along the curved portion of said track means towards the lower portion thereof,



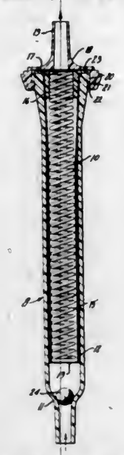
and latch means operable to retain said rake assembly against said pusher means incident discharge of debris from said rake member and pivotal movement of said rake member from said closed position to an at rest position in readiness to start another screen cleaning operation.

3,358,838
OIL SKIMMING DEVICE
Peter Kosar, Garden City, and Orlan McGrew Arnold, Grosse Pointe Park, Mich., assignors to Ajem Laboratories, Inc., Livonia, Mich.
Filed June 11, 1965, Ser. No. 463,078
14 Claims. (Cl. 210—179)



1. Apparatus for separating a liquid from a mixture comprising a plurality of rotatably mounted disks, each having a selectively adsorbent surface in respect to at least one constituent liquid in said mixture, a reservoir for each disk adapted to hold a body of a liquid mixture so as to submerge a substantial fraction of said adsorbent surface, means for collecting and transporting, adhering liquid from each disk, said disks being serially arranged so that the liquid adhering to each disk in its reservoir is transferred thereby into another reservoir wherein it is further separated by selective adherence to another partially submerged disk therein and wherein at least one of said disks is of opposing adsorbent selectivity from the preceding serially arranged disk, wherein the constituent of liquid mixtures selectively adherent to said preceding disk is a major constituent in the reservoir for said preceding disk and the same constituent is a minor constituent in the reservoir for the disk having opposing adsorbent selectivity.

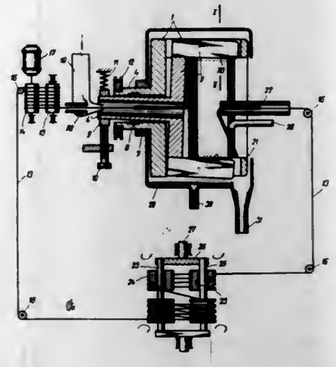
3,358,839
IN-LINE FILTER ELEMENT ASSEMBLING MEANS
Clifford G. Simons, Delavan, Wis., assignor, by mesne assignments, to Sta-Rite Industries, Inc., Delavan, Wis., a corporation of Wisconsin
Filed Mar. 1, 1965, Ser. No. 436,253
3 Claims. (Cl. 210—232)



1. An in-line filter for a milking system, comprising a transparent tubular body having openings in opposite ends to be connected to a milk line, a tubular filtering sleeve disposed within the body, said sleeve formed of a flexible filtering material and having a closed end facing a first end of the body and having an open end facing the second end of the body, the inner surface of said second end of the body being tapered inwardly, a porous support disposed within the sleeve, a resilient plug disposed within the second end of the body and having an outer tapered surface to wedge against the inner tapered surface of said second end and having central passage therein communicating with the interior of said sleeve, an end of said support being mounted within the central passage of said plug and the open end of said sleeve being sealed between the tapered surfaces of the plug and said second end of the body, said plug having a flange extending radially outward and disposed in bearing engagement with the outer annular edge of the second end of the body, and a cap removably engaged with the body and being rotatable between a locked and unlocked position, said cap having a surface bearing against the flange of said plug to force said flange against the second end of the body when the cap is in the locked position and provide a seal, said locked and unlocked positions being less than 90° apart.

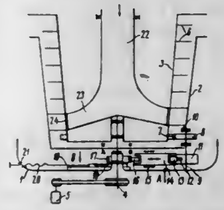
3,358,840
ENDLESS, HELICAL FIBRE, FILTRATION CENTRIFUGE
Jan Pinkava, Prague, Czechoslovakia, assignor to Ceskoslovenska akademie ved, Prague, Czechoslovakia
Filed Sept. 21, 1966, Ser. No. 581,091
Claims priority, application Czechoslovakia, Sept. 30, 1965, 5,945/65
7 Claims. (Cl. 210—370)

1. Continuous filtration centrifuge, comprising:
an outer drum and an inner drum inserted in the said outer drum;
the envelopes of the said two drums each comprising a plurality of ribs and having their axes arranged with respect to each other in directions different from parallel, and the ribs of each of the two envelopes arranged with respect to each other so that if one of the two drums is rotated, the other is also rotated;
a hollow shaft on said outer drum;
a hollow shaft on said inner drum mounted in the said hollow shaft of the said outer drum;
a device with a motor for driving a continuous fibre;
a winding device which guides the continuous fibre from the inner space of the said two drums to the outside through a tube and over rollers;



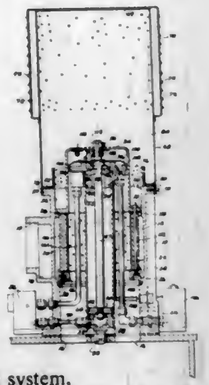
means for guiding the continuous fibre back from the fibre winding device to the fibre driving device;
a jet near the said tube through which a suspension can be injected into the inner space of the said two drums onto the filtration layer formed in consequence of the continuous fibre being wound by action of the centrifugal force of the running centrifuge over the inner surface of the said inner drum in the form of a helix.

3,358,841
CONTINUOUSLY-ACTING CENTRIFUGE
Iosif Naumovich Khibnik, Minsk, U.S.S.R., assignor to Minskoe Spetsialnoe Konstruktorskoe Bjuro tekstilnoi i legkoi promyshlennosti, Minsk, U.S.S.R.
Filed Oct. 15, 1964, Ser. No. 404,125
5 Claims. (Cl. 210—374)



1. A continuously-acting centrifuge for fibrous materials, comprising a frame, an outer drum with perforated walls, an inner drum concentrically mounted relative to the said outer drum, said inner drum including a screw thread on the outer surface thereof; means for rotatably mounting said drums on the frame; means for driving the outer drum in rotation; coupling means including first means on the outer surface of the inner drum and second means mounted on the outer drum and engaging the first means for driving the inner drum in rotation as the outer drum rotates, means engaging said coupling means for supplying additional speed to the inner drum through said coupling means, means movably coupled to the last mentioned means for effecting continuous adjustment of the additional speed of the inner drum while the drums are in rotation, and means for charging material into the said centrifuge.

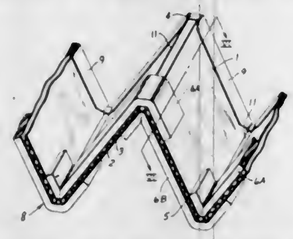
3,358,842
CONTINUOUS FILTER
Nils O. Rosaen, Bloomfield Hills, Mich. (1776 E. Nine Mile Road, Hazel Park, Mich. 48030)
Filed Nov. 16, 1964, Ser. No. 411,242
11 Claims. (Cl. 210—411)



1. In a filtering system,
(a) means defining a filter chamber, and a cleaning chamber separated from said filter chamber,
(b) a filter element normally disposed within said filter chamber,
(c) means directing a normal flow of fluid from said filter chamber through said filter element in one direction,
(d) means operable to move said filter element from said filter chamber to said cleaning chamber, and
(e) means operable to direct a second flow of fluid under pressure through said filter element in a direction opposite to normal fluid flow therethrough as said filter element is being moved from said filter chamber to said cleaning chamber, said last mentioned means subjecting the entire filtering area of said filter element to complete exposure to said second flow of fluid when said filter element has been entirely positioned within said cleaning chamber, said last mentioned means defining an outlet and said filter element moving means is operable to move the outlet side of said filter element past said outlet and closely adjacent thereto upon movement of said filter element from said filter chamber to said cleaning chamber.

3,358,843
FILTER ELEMENT AND METHOD OF MAKING SAME
Lucien Bourdale, 33 Blvd. de Valmy, Colombes, France
Filed Oct. 14, 1966, Ser. No. 598,562
Claims priority, application France, Oct. 22, 1959, 808,193, Patent 1,324,210
4 Claims. (Cl. 210—487)

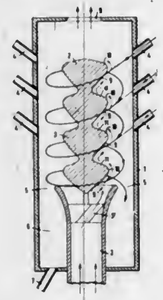
1. An elongated filtering panel from which filtering elements of selected lengths can be cut and used after sealing the cut ends thereof, the combination comprising:
two elongated, thin and substantially parallel strips of filtering material having interior surfaces facing each other and having exterior surfaces facing away from each other, said strips being capable of being of indefinite extended length;
an elongated, corrugated and intercalary strip disposed between and extending lengthwise between said filtering material strips and separating same from each other a predetermined distance, the side surfaces of the corrugations in said intercalary strip being respectively engaged by the interior surfaces of said filtering material strips at longitudinally spaced and laterally extending zones spaced lengthwise along said strips, said strips being spaced from each other between said zones, said filtering strips and intercalary strip being of substantially identical and uniform widths so that said zones extend from adjacent one set of lengthwise edges of said strips to adjacent the opposite set of lengthwise edges to define passageways which extend from and between said sets of edges whereby fluid can pass through said filter material strips and into said passageways;
adhesive means securing said intercalary strip and said filtering material strip to each other along said zones, said adhesively secured strips having a plurality of transverse and spaced fold lines extending between the lengthwise sets of edges so that the filtering panel is divided into hingedly connected sections which alternately extend in opposite directions in a generally zig-zag fashion;
an elongated and fluid-tight edge member having wall means covering one set of said lengthwise edges, and means including adhesive means securing said edge member to the said filtering material strips, the ends of said passageways adjacent said one set of edges being closed by said edge member and the other ends of said passageways being open, whereby fluid in said passageways can flow through the open ends thereof;
edging of flexible and fluid-tight material; and



adhesive means securing said flexible material upon the exterior surface of at least one of said filtering material strips adjacent the other set of edges thereof, said flexible material being arranged so that the flexible material on one filtering element can engage a corresponding edge portion of another filtering element to provide a fluid-tight seal therebetween, whereby, when the filtering element is immersed in the fluid to be filtered and a differential pressure is maintained between the interior and exterior surfaces of said filtering strips, said flexible material will withstand leakage and thereby cause the fluid to pass through the filtering strips and said passageways.

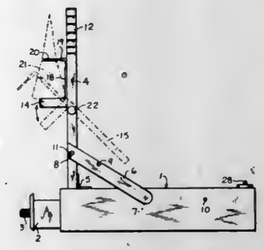
4. In a method of producing finite filter elements from a filter panel of indefinite extended length, the steps comprising:
causing an elongated strip of corrugated sheet material to move along a linear path, said corrugated strip having uniformly spaced, transverse grooves and ridges on both sides thereof;
applying an adhesive to said ridges on both sides of said corrugated strip;
causing a pair of similar, elongated and thin filtering strips to move along said path on opposite sides thereof at the same rate as said corrugated strip and to engage firmly the adhesive coated ridges on the opposite sides of said corrugated strip, said corrugated strip and filtering strips being of substantially the same width;
causing a channel-shaped edge member to move along said path at the same rate as said corrugated strip adjacent one set of lengthwise edges of said strips;
adhesively securing said channel member to the exterior surfaces of said filtering strips as they move along said path;
applying an edging of flexible and fluid-tight material to the exterior surface of at least one of said filtering strips along the other set of lengthwise edges thereof as said filtering strips move along said path;
cutting said filtering panel at a selected point lengthwise thereof to produce a filtering element having opposite cut edges; and
applying a fluid-tight seal to the opposite cut edges of the cut filtering element.

3,358,844
DEVICE FOR INCREASING THE TOTAL AMOUNT OF SEPARATION OF A VORTEX SEPARATOR
Heinrich Klein and Rudolf Pieper, Erlangen, Germany, assignors to Siemens-Schuckertwerke Aktiengesellschaft, Berlin and Erlangen, Germany, a corporation of Germany
Filed Aug. 17, 1965, Ser. No. 480,458
7 Claims. (Cl. 210—512)



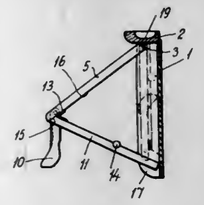
1. In a vortex separator for separating out particulate material entrained in a carrier fluid, the separator comprising a vortex chamber having a substantially cylindrical wall and a pair of opposite end walls, inlet means at one of said end walls for supplying a primary flow of carrier fluid with entrained material to said chamber in a circulatory path about a primary flow axis, outlet means at the other of said end walls for discharging the carrier fluid from said chamber, a collection space for the material separated from the carrier fluid, said collection space being located in said chamber and surrounding said inlet means, nozzle means in said substantially cylindrical wall for injecting secondary fluid in a direction tangential to the circulatory path of said primary flow and inclined with respect to said primary flow axis at a predetermined distance from said inlet means, said secondary fluid being injected along a helical flow path into said chamber and having a component opposed to said primary flow so that a circulatory secondary flow coaxial with said circulator primary flow is superimposed on said primary flow, said circulatory secondary flow having a vortex sink near said inlet means and a vortex source spaced from said inlet means along said primary flow axis, the improvement which comprises flow guide means having a rotationally symmetrical shape and extending coaxial to and inside said circulatory flows, said flow guide means having a plurality of lengths, each with an end of minimum cross-sectional area, an endmost one of of said lengths having said end thereof located at said primary flow inlet means, the cross-sectional area of said lengths of said flow guide means increasing to a maximum value in the primary flow direction from said ends of minimal cross-sectional area and then decreasing in said direction again to a minimum value, the rate of increase in cross-sectional area per unit length of said lengths of said flow guide means being greater than the rate of decrease per unit length thereof in a direction from said inlet means toward said outlet means.

3,358,845
RACK STRUCTURE FOR SUPPORTING BOTTLES
Robert Louis Ising, West New York, N.J. (216 Oak St., Weehawken, N.J. 07087)
Filed Aug. 17, 1965, Ser. No. 480,352
6 Claims. (Cl. 211—74)



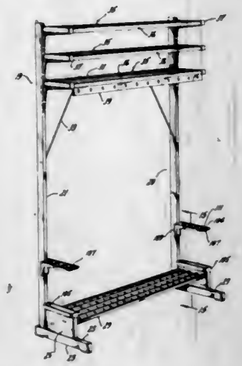
1. A rack structure for supporting bottles containing liquids or the like, comprising
a base member,
a frame member supported by and projecting at least in one position vertically upwardly from said base member,
a substantially horizontally disposed rack pivotally mounted in said frame member for a tilting movement about a horizontal axis,
means for retaining said rack selectively in any one of a plurality of inclined positions, and
clamping means projecting upwardly from said rack member and adapted to surround and to retain the bottles mounted on said rack while the latter is in tilted position.

3,358,846
CLOTHES RACK
Per Grane Wilhelm Granebro, Bagargrand 9, Stockholm, Sweden
Filed Nov. 18, 1965, Ser. No. 508,477
3 Claims. (Cl. 211—104)



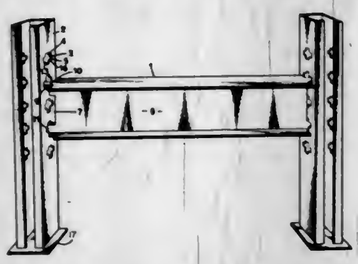
1. A clothes rack adapted to be fastened to a wall, said rack comprising a rear facing board adapted to lie close to the wall, a cross-piece connected to said board and extending outwardly from said board; two parallel spaced arms each of which has one end hingeably connected to a corresponding end of said cross-piece at the underside thereof; a first crossbar rotatably connected to said arms between the other ends thereof, a clothes hanger centrally fastened to said cross-bar, a support means comprising two parallel braces, a hinge connecting each brace to a corresponding arm at said other end thereof; said arms having oblique end surfaces at the location where they are hinged to the braces, each hinge including one leg fastened to the corresponding brace and a second leg fastened to the corresponding arm at a distance from said other end thereof which corresponds to the length of the oblique surface, thereby providing a blocking means to maintain the support means in an unfolded position.

3,358,847
GARMENT RACK
Raymond A. Magnuson, Hinsdale, Ill., assignor to Vogel-Peterson Co., Elmhurst, Ill., a corporation of Illinois
Filed Oct. 24, 1965, Ser. No. 504,531
16 Claims. (Cl. 211—177)



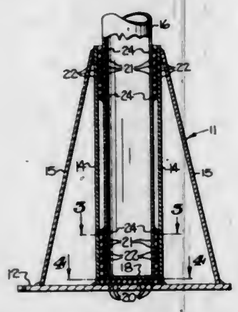
1. A wardrobe rack comprising, in combination, a pair of end frames each including an upright post and a horizontally extending base member connected to the bottom of said post for maintaining said post in an upright position, forwardly extending brackets attached near the tops of said upright posts, means rigid with said brackets for limiting lateral and longitudinal shelf movement and transverse shelf movement, and an elongated laterally flexible shelf pan bowed and sprung about a longitudinal axis into position between said brackets and secured in place therein in engagement with said means for limiting shelf movement and bracing said brackets against movement with respect to said posts.

3,358,848
VERTICALLY ADJUSTABLE SUPPORTING MEANS
Sven Erik Johnsson, Varnamo, Sweden, assignor to ETH Maskin AB, Varnamo, Sweden
Filed Mar. 16, 1966, Ser. No. 534,754
1 Claim. (Cl. 211—177)



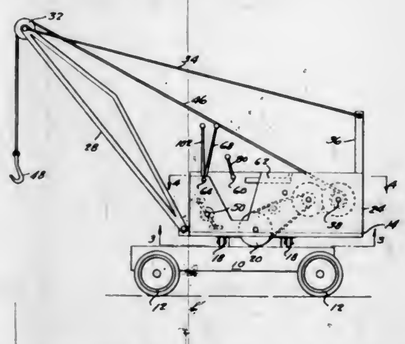
In a supporting assembly the combination of supporting means including a pair of opposed and horizontally spaced and substantially vertical walls, at least one bridging member extending substantially horizontally between the walls, mounting means comprising at least one vertical row of holes in each of the opposed walls, each of the holes being in the form of a Greek cross with a vertically extending slot portion and at right angles thereto a horizontally extending slot portion, the bridging member having at least adjacent each of its ends a portion with the cross section of an I-beam, the flanges of which are vertically spaced a distance equal to a factor corresponding to one or more whole numbers of the spacing of the holes in the walls and being greater in width than the length of the horizontal slot portions of the holes, each end of said I-beam having a pair of elongations each in the shape of a T-beam and both formed by recessing the end portions of said web of the I-beam, the flanges and the webs of said pair of T-beams forming elongations of the flanges and web, respectively, of the I-beam but being of lesser width and length, respectively, the flanges of the T-beams being slightly smaller in width than the length of the horizontal slot portions of the holes in the supporting wall and the web of the T-beams being of substantially smaller height than the length of the vertical slot portions of said holes so that the T-beam portions are insertable each into one of two superimposed holes in the supporting wall, and that the web of the upper T-beam has a slot extending vertically from the lower edge thereof, the flanges of the lower T-beam having on opposite sides of the web one pair of opposed slots positioned in the vertical plane of said vertical web slot and extending horizontally inwardly from the edges of said flanges, each of the web and flange slots having a width slightly greater than the thickness of the supporting wall, the horizontal space between the inner ends of the slots in the flanges of the lower T-beam being slightly smaller than the width of the vertical slot portions of the hole in the supporting wall, whereby said pair of T-beams after insertion into said superimposed holes in the supporting wall are adapted to be settled down so that the webs of the lower T-beams with their lower flanges are seated on the bottom walls of the vertical slot portions of said holes and the flanges of the upper T-beams are seated on the bottom walls of the horizontal slot portions of said holes, while the end portions of said web of the upper T-beam and said flanges of the lower T-beam are adapted to prevent unintentional withdrawal of the bridging member from said supporting walls.

3,358,849
JIB CRANE
Francis N. Becker, Charlotte, N.C., assignor to Parks-Cramer Company, Fitchburg, Mass., a corporation of Massachusetts
Filed Feb. 2, 1966, Ser. No. 524,422
6 Claims. (Cl. 212—63)



1. A readily rotatable jib crane adaptable to varying load capacities and comprising
(a) a base having side and bottom wall means defining a vertically extending bore, said side wall means having a generally vertically extending, unmachined interior surface and said bottom wall means having a horizontally extending substantially planar, unmachined upper surface,
(b) a vertically extending mast having a lower portion thereof rotatably mounted in said bore, said lower portion of said mast having an unmachined outer surface and a horizontally extending substantially planar, unmachined lower end,
(c) a first plurality of loose ball members randomly disposed between and in direct contact with the unmachined surfaces of said bottom wall means and the lower end of said mast, and
(d) a second plurality of ball members disposed in at least two spaced apart toroidal rows between and in direct contact with said unmachined surfaces of said side wall means and said lower portion of said mast, said ball means in said toroidal rows being sufficiently loosely arranged for the rolling contact with said unmachined surfaces.

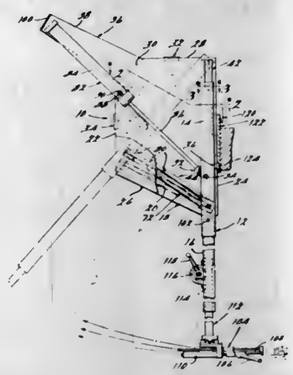
3,358,850
MOBILE MANIPULATIVE TOY FOR CHILD PARTICIPATION
Kenneth G. Neils, Box 267, Bigfork, Mont. 59911
Filed Nov. 28, 1966, Ser. No. 597,360
6 Claims. (Cl. 212—65)



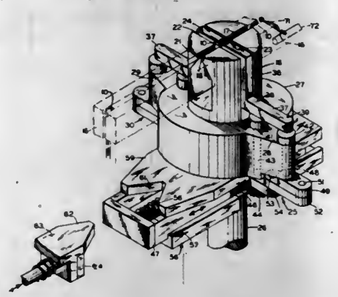
1. A toy on which a child may sit while activating various instrumentalities from the sitting position, said toy comprising: a base portion; a platform rotatably mounted on said base portion; a shaft mounted for continuous rotation on said platform; a child's seat on said platform contiguous to said shaft; a boom projecting from said platform; a hoisting drum on said platform having a hoisting line passing over a pulley on said boom; a pair of drive wheels mounted on said platform and engaging said base member to rotate said platform relative to said base member; a lever within reach of said seat for optionally connecting said drum to said shaft for driving said drum; and a second lever contiguous to said first lever, said second lever acting in one position to connect one of said drive wheels to said shaft and in another position to connect the other of said drive wheels to said shaft and in another position to connect the other of said drive wheels to said shaft.

3,358,851
PRESS UNLOADER
Harry M. Ashton, Birmingham, Mich., assignor to Ashton Automation International, Inc., Detroit, Mich., a corporation of Michigan
Filed June 4, 1965, Ser. No. 461,488
3 Claims. (Cl. 214—1)

1. In a press unloader, a pair of vertically extending spaced parallel side members, an elongated unloading arm disposed between said side members and comprising upper and lower end sections, first and second guide channel assemblies disposed between said side members, each of said assemblies comprising a pair of channel members secured one to the inboard side of each of said side members, each of said channel members comprising a backing plate and spaced parallel guideways, the channel members of said first assembly being laterally aligned and extending vertically along said side members, the channel members of said second assembly being laterally aligned and extending forwardly and upwardly along said side members, a first pair of rollers journal supported on the upper end of said upper section of said arm and slidably disposed within said first channel assembly, a second pair of rollers journal supported on the lower end of said upper section of said arm and slidably disposed within said second channel assembly, a piston and cylinder assembly comprising a reciprocable piston rod, said last mentioned assembly being pivotally connected between said side members adjacent the forward edges thereof, said piston rod being pivotally connected to said arm whereby actuation of the said last mentioned assembly biases the lower end of said arm along a preselected path from a first position adjacent the press to a second position spaced away from the press, and clamping means secured to the lower end of said arm detachably engageable with work stock within the press.



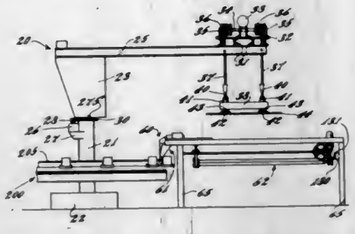
3,358,852
APPARATUS FOR ORIENTING, CLAMPING, AND ROTATING ARTICLES
Charles R. Fegley, Laureldale, Pa., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Feb. 28, 1966, Filed 530,729
6 Claims. (Cl. 214—1)



1. In an article gripping and rotating apparatus,
a head mounted for rotary movement,
a pair of gripping units mounted in said head for arcuate translatory movement toward each other to grip an article positioned therebetween,
means for holding said head from rotation,
means for releasing said holding means,
means operated by the release of said holding means for imparting said arcuate translatory movement to said gripping units, and

means rendered effective upon completion of said arcuate translatory movement of said gripping units for rotating said head.

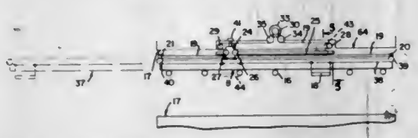
3,358,853
SHEET HANDLING DEVICE
Lucius Earl Thomas, Norristown, and Walton Rainey, Ardmore, Pa., assignors to The Warner & Swasey Company, Cleveland, Ohio, a corporation of Ohio
Filed Oct. 11, 1965, Ser. No. 494,349
6 Claims. (Cl. 214—6)



1. In a sheet handling device for repetitiously placing work sheets into, and removing work sheets from, a reference position on a machine tool:

a loader, including a power rotating jib crane and a power hoist, for transferring by rotation and translation a sheet from a first stack of sheets at a first position into the reference position; an unloader including a reciprocating carriage journalling a system of power operated rotating pinch rolls which move over and selectively clamp onto the work sheet in the reference position, for translating a sheet from the reference position to a second position, and a stacker having a drop bay with doors hinged on a horizontal axis for receiving the sheet from the first means and dropping the sheet onto a second stack, and electrical control means for automatically operating the loader and the unloader including the reciprocating carriage and the stacker, wherein the sheets are taken from the first stack at the first position by the loader and placed in a second stack at the second position by the unloader.

3,358,854
CRANE
Murray M. Montgomery, Jr., Oakland, Calif., assignor to Matson Navigation Company, San Francisco, Calif., a corporation of California
Filed Aug. 1, 1966, Ser. No. 569,434
6 Claims. (Cl. 214—15)

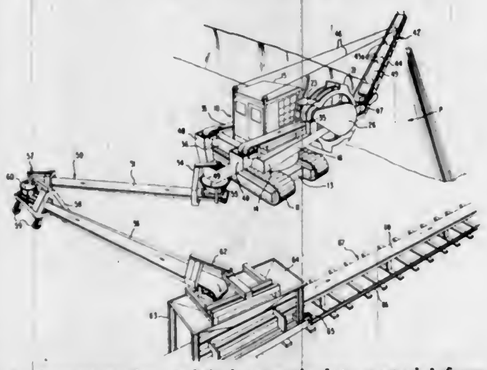


1. In a crane that includes a boom support structure, a horizontally elongated boom supported on said boom support structure for movement of said boom longitudinally of the latter in opposite directions from a predetermined retracted position, a load trolley mounted on said boom for reciprocable movement thereon longitudinally thereof, a pair of sheaves respectively on opposite ends of said boom, a pair of cables dead ended at one of their ends on said trolley and respectively reeved over said sheaves and dead ended at their opposite ends on a member on said boom support structure, the improvement that comprises:

(a) member-supporting means supporting said member on said boom support structure for movement from a point on said boom support structure adjacent to and intermediate the ends of said boom when the latter is in said retracted position to an offset position between said one end of said boom and said point;

(b) member-locking means for releasably locking said member-supporting means stationary relative to said boom support structure at said operative position, to thereby provide a greater outreach of said boom and trolley in the direction in which said member is offset than when said member is at said point, upon movement of said boom relative to said member in said last-mentioned direction.

3,358,855
APPARATUS FOR RECLAIMING PARTICULATE MATERIAL FROM A PILE
Kirkendall Carlton, Hinsdale, and David A. Davis, Chicago, Ill., assignors to Link-Belt Company, a corporation of Illinois
Filed Aug. 6, 1965, Ser. No. 477,802
17 Claims. (Cl. 214—10)



1. Apparatus for reclaiming particulate material from a pile comprising

a movable supporting frame,

a digging wheel mounted adjacent one end of said frame to rotate in a generally vertical plane, said wheel including a plurality of spaced buckets on its periphery and a plurality of compartments on the interior of said wheel, each of said buckets communicating with a pair of said compartments with one compartment of said pair having a discharge opening through one end of said wheel and the other compartment of said pair having a discharge opening through the other end of said wheel whereby material entering said pair of compartments from the bucket associated therewith is discharged partly from each end of said wheel,

and a pair of belt conveyors on said frame disposed adjacent each end of said wheel to receive by gravity flow material discharged from the interior compartments of said wheel through the wheel ends and convey such material away from said wheel toward the opposite end of said frame.

3,358,856
SILO UNLOADING DEVICE
Claes Martin Weibull, Malmo, Sweden, assignor to Ingeniorsfirman Nils Weibull AB, Malmo, Sweden
Filed Apr. 25, 1966, Ser. No. 544,999
5 Claims. (Cl. 214—17)

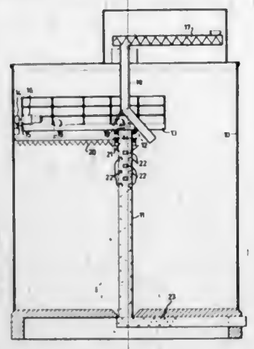
1. A silo for bulk storage of vault-forming material comprising a roof, floor and side walls forming a cylindrical storage space for said material,

a hollow cylindrical column secured to said floor, extending axially in said cylindrical storage space and terminating below said roof;

a power-driven beam journaled on said column and extending radially therefrom substantially to the inner periphery of said cylindrical storage space for rotary movement about the vertical axis of said column;

conveyor means extending beneath said beam and suspended therefrom for conveying material radially toward said column, said conveyor means and beam being rotatable as a unit;

said conveyor means including an annular, scraper-type conveyor surrounding said column and movable with said conveyor means about the axis of said column;



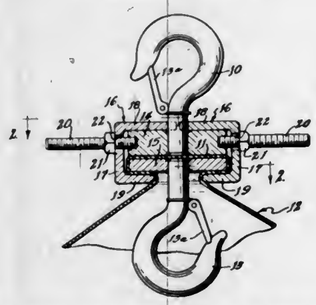
said column including openings in side portions thereof whereby the stored material will enter said column due to action of said scraper-type conveyor;

said column including a power-driven screw conveyor extending axially thereof for moving the stored material downwardly through said column;

and a second power-driven screw conveyor extending radially from the lower end of said column for receiving material from said column and directing it outwardly of said silo;

said second conveyor having a capacity at least as great as said first-mentioned screw conveyor and said screw conveyors being operable in coordinated relation.

3,358,857
LIFTING AN OBJECT CONTAINED IN A BAG
Gerhard J. Vogel, Elmhurst, Erwin L. Carls, Glen Ellyn, and William A. Murphy, Palos Heights, Ill., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed May 3, 1966, Ser. No. 547,313
4 Claims. (Cl. 214—17)



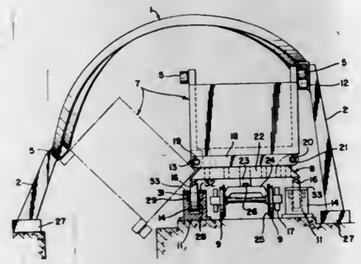
1. In a system wherein a lifting apparatus is located above a top opening in a box and is exterior to a bag having its open end sealed to the opening, and two hooks are located at the closed end of the bag external and internal thereto and act against one another through the closed end of the bag without penetration thereof and between the lifting apparatus and a contaminated device in the box for removing the device through the top opening therein;

the combination with the hooks and the closed end of the bag;

of a pair of base members for the hooks, one base member being attached to the said one hook and engaging the outside of the closed end of the bag, and other base member being attached to the said other hook and engaging the interior of the closed end of the bag opposite the said one base member, and

of clamping means located outside the bag and engaging the side of the said one base member away from the said other base member and pressing the closed end of the bag against the side of the said other base member away from the said other base member.

3,358,858
UNLOADING SYSTEM FOR BULK MATERIALS
William P. Zabel, Jr., 2060 Hanover Drive, Cleveland Heights, Ohio 44112
Filed Oct. 23, 1965, Ser. No. 503,146
6 Claims. (Cl. 214—62)



1. An unloading system for dumping transport cars comprising:

(a) a hopper;

(b) a truck supporting said hopper;

(c) means attached to said hopper and said truck for pivoting said hopper about a side of said truck, said means for pivoting including a grid support frame extending laterally beyond the sides of said truck;

(d) engaging means on said hopper;

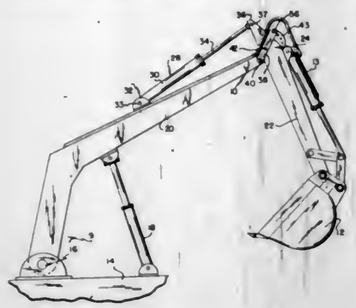
(e) a guide means which cooperates with said engaging means to pivot said hopper about said truck to an unloading position while said truck moves in a generally horizontal path and then return said hopper to its rest position on said truck; and

(f) means for positioning said truck and said hopper at a correct level so that said engaging means may cooperate with said guide means, said means for positioning including support means at the outer edges of said support frame and cooperating support assemblies in position along the truck path to hold at least some of the weight of the transport car during unloading.

3,358,859
MATERIAL HANDLING APPARATUS
Daniel F. Przybylski, Winona, Minn., assignor to The Warner & Swasey Company, Cleveland, Ohio, a corporation of Ohio
Filed Mar. 3, 1966, Ser. No. 531,540
11 Claims. (Cl. 214—138)

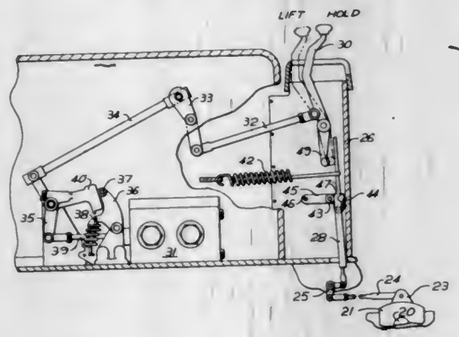
1. In a material handling apparatus, a boom member, a support member pivotally connected at one end of said boom member for movement about a first axis, a dipper stick connected to said support member for bodily movement relative thereto, locking means for locking said dipper stick and support member in predetermined relative positions for movement as a unit about said first axis and releasable to provide for relative movement between

said dipper stick and support member, and power means pivotally connected to said dipper stick at a force application location spaced from said first axis and operable to effect movement of said support member and dipper stick



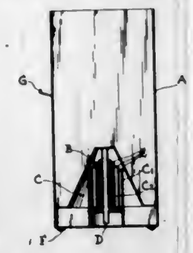
as a unit about said first axis and operable to effect movement of said dipper stick relative to said support member with the distance between said first axis and said force application location varying upon relative movement between said support member and said dipper stick.

3,358,860
AUTOMATIC VALVE CONTROL MECHANISM FOR TRACTOR MOUNTED LOADERS
Donald M. Jaruseski, Yorkville, and Adolph M. Schliwa, Oswego, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed May 11, 1966, Ser. No. 549,406
4 Claims. (Cl. 214—762)



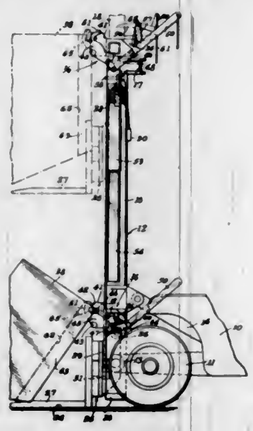
1. In a tractor mounted loader having a bucket supported on lift arms and adapted to be raised by a hydraulic jack pivotally connected to the tractor, a valve for directing fluid to said jack upon movement of the valve away from a neutral position to raise the bucket, detent means to hold the valve in its bucket-raising position, and means to override the detent means and return the valve to its neutral position when the bucket reached a predetermined height, said last named means including a valve actuating lever, a control rod, means actuating said control rod by the pivotal movement of said jack, mechanical linkage between said actuating lever and said valve, and means operable by the actuation of said control rod upon raising of the bucket to a predetermined height to bring the control rod into forcible contact with the actuating lever to actuate the same and override the detent means and return the valve to its neutral position to hold said bucket at said predetermined height.

3,358,861
LAUNDRY LOADING CONTAINER DEVICE FOR WASHING MACHINES
Antonio Gelmetti, Rome, Italy, assignor to Termogestioni Aster S.p.A., Rome, Italy, a corporation of Italy
Filed Feb. 3 1966, Ser. No. 524,909
Claims priority, application Italy, May 20, 1965, 11,231/65
5 Claims. (Cl. 214—310)



1. A laundry loading container for washing machines with front doors, said container comprising a tube with a closed bottom end and an open top end, a piston slidable in said tube from a position adjacent said bottom end to a position within the tube adjacent the top end, said piston having a raised hollow broad central section with a depressed outer lower periphery, a telescopic jack consisting of several relatively telescopic members including one innermost endmost member and one outermost endmost member, one of the endmost members being connected to the piston and the other endmost member being connected to the bottom end of the tube, said jack being centrally located in the tube and in telescoped position being wholly contained within the raised central section, and fluid pressure means to extend the jack when it is desired to discharge dirty laundry from the tube into a washing machine.

3,358,862
FORKLIFT ELEVATING AND BIN-TIPPING MECHANISM
William A. Allen, 603 S. Arrowhead Ave., San Bernardino, Calif. 92408
Filed Jan. 17, 1966, Ser. No. 520,958
6 Claims. (Cl. 214—317)



1. In a forklift truck having a vertical mast that constitutes a guide for vertical movement of a slide mounting a carriage provided with forwardly directed lift forks:

(a) an extension frame including depending tubes telescopically received in guide tubes fixed to the outer side of said vertical mast,
(b) means for locking said telescopic tubes in adjusted position,
(c) means carried by the extension frame and movable into the path of movement of said carriage for engagement by said carriage for moving the extension frame vertically with respect to said mast,
(d) two pairs of vertically spaced manually actuated hook-provided arms, one pair of hook-provided arms being carried by the extension frame and the other pair by said mast, the arms of each pair being located on opposite sides of the mast, the arms being movable between retracted positions with the hooks thereof rearwardly clear of the forward face of said carriage, and projected positions with the hooks forward of said carriage face, and
(e) a container having aligned pivot pins at the lower rear corners adapted to be supported on the lift forks of the carriage with said pivot pins in the path of the projected hooks of either pair thereof, selectively, during lowering movement of the carriage and the container supported on the lift forks thereof,
(f) said pins on the container pivotally engaging the projected hooks as the carriage is lowered, and the container upon continued lowering movement of the carriage and its lift fingers, tilting forwardly from a level position around said hook-engaged pins as a fulcrum.

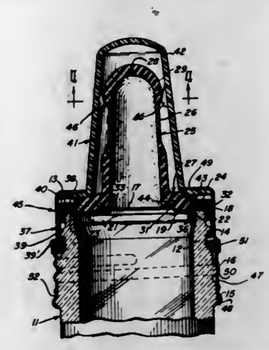
3,358,863
HAND TRUCK
Lorin C. Griffith, Thiensville, and George L. Congdon, Fort Atkinson, Wis., assignors to S & G Enterprises, Inc., Milwaukee, Wis., a corporation of Wisconsin
Filed June 24, 1965, Ser. No. 466,605
8 Claims. (Cl. 214—501)



1. A hand truck for moving articles having a smooth upper surface, comprising a frame, wheel means connected to the frame for moving the frame, an abutment located at one end of the frame, a vacuum lifting member disposed at the other end of the frame, means to adjust the position of the vacuum lifting member with respect to the frame and thereby engage the lifting member with the upper surface of the article, and means for moving the vacuum lifting member toward and away from the abutment to thereby lift the article, the lower end of said article being tilted into engagement with said abutment in response to lifting of the article by said vacuum lifting member.

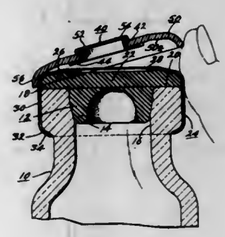
3,358,864
SEALED FEEDING BOTTLE ASSEMBLY
Eugene J. Melerhoefer, Columbus, Ohio, assignor to Abbott Laboratories, a corporation of Illinois
Filed Nov. 29, 1965, Ser. No. 510,204
11 Claims. (Cl. 215—11)

3. A feeding container comprising a bottle having a finish, a sealing disk positioned on top of said finish, a nipple comprising a teat portion and an annular flange having a thick inner section and a thinner outer section, said nipple flange being seated on said sealing disk, said outer section defining a vent extending therethrough, inner ferrule means comprising a skirt portion secured to said finish and an annular flange extending laterally inwardly from the upper edge of said skirt portion, said inner ferrule means clamping said nipple flange and said



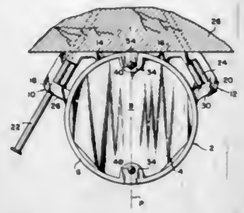
sealing disk against the top of said finish, the flange of said inner ferrule means being seated on said nipple flange with its inner edge portion covering said vent, an annular lip extending laterally from said nipple, and outer ferrule means secured to said finish and clamping said annular lip in sealing engagement with the inner edge portion of the flange of said inner ferrule means.

3,358,865
CONTAINER CLOSURE
Eli Frank Andersen, Devon, Pa., assignor to The West Company, Phoenixville, Pa., a corporation of Pennsylvania
Filed Sept. 22, 1965, Ser. No. 489,184
4 Claims. (Cl. 215—38)



2. In combination with a bottle and a stopper adapted to fit within the neck of the bottle, a tamperproof closure comprising a cap adapted to hold the stopper in place, said cap being of cup-like form and comrising an annular top portion and a skirt depending from the outer peripheral edge of the annular portion, said annular portion terminating in an inner edge defining an opening in the cap, and a button projecting upwardly from the top of the cap and connected at one end to the annular top portion by fracturable bridge means, a cover member of disc-like form having a central opening overlying the annular portion and circumscribing the button, the end of the button opposite said one end having a flange holding the cover member in place, said bridge means being fracturable upon actuation of the cover member to expose the stopper to permit the contents of the container to be withdrawn.

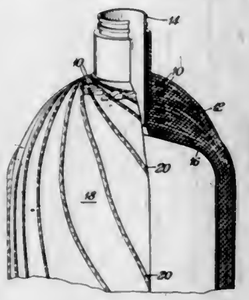
3,358,866
MOLDED INSULATION ELECTRICAL BOX
David W. Kinney, Parkersburg, W. Va., assignor to Union Insulating Company, Inc., Parkersburg, W. Va., a corporation of West Virginia
Filed Oct. 19, 1965, Ser. No. 497,866
5 Claims. (Cl. 220—3.9)



1. A unitary molded plastic electrical wiring box adapted for nailing to a support, comprising

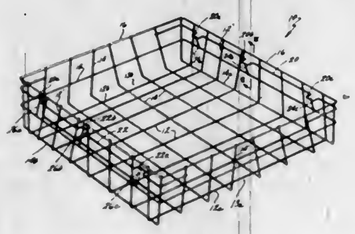
an open-topped body molded of insulating material and having bottom and side wall portions defining in said body a chamber, said body having integrally molded therewith on opposite sides of a first plane containing the longitudinal central axis of said body a pair of laterally extending ears extending outwardly from the external surfaces of said side wall portions, said ears each having a thickness less than half the height of said body and being arranged adjacent the bottom wall portion of said body, said ears having also flat coplanar stabilizing surfaces lying in a second plane normal both to said first plane and to the plane containing said bottom wall portions, the external surface of said body side wall portion containing the intersection of said first and second planes, said ears having molded therein nail guiding passageways lying in a third plane and arranged at a common acute angle to and on opposite sides of said first plane, whereby when said body is arranged with the ear stabilizing surfaces in contiguous engagement with the support and nails guided by said passageways are angularly driven into the support, said body is rigidly attached to said support.

3,358,867
DOUBLE-WALLED THERMALLY INSULATED CONTAINER
Ransom P. Skinner, Carmel, Ind., assignor to Union Carbide Corporation, a corporation of New York
Filed Apr. 7, 1965, Ser. No. 446,199
4 Claims. (Cl. 220—14)



1. A double-walled, vacuum-insulated container which comprises an inner vessel; an outer jacket enclosing said inner vessel and spaced therefrom to provide an evacuated insulation space therebetween; a conduit connected at opposite ends to a rim of an opening in said outer jacket and to a rim of an opening in said inner vessel and extending through such space, said conduit having smaller cross-sectional area than said inner vessel such that said insulation space is wider between the conduit and outer jacket than between said inner vessel and said outer jacket; a composite multi-layered insulation disposed within said space comprising low conductive material and radiant heat barrier material; and a plurality of low conductive, compressible spacers substantially uniformly interpositioned in said composite multi-layered insulation across said space in the vicinity of said conduit in superimposed relation to each other and aligned parallel to the conduit longitudinal axis such that the low conductive and radiant heat barrier components of said composite multi-layered insulation are uniformly separated across said space in the vicinity of said conduit.

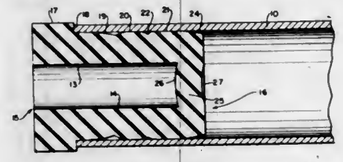
3,358,868
NESTING BASKET
Walter G. Purucker, Ludington, Mich., assignor to Straits Steel & Wire Co., Ludington, Mich., a corporation of Michigan
Filed Oct. 5, 1966, Ser. No. 584,874
4 Claims. (Cl. 220—19)



1. An alternately stackable and nestable wire mesh basket comprising: a plurality of crisscrossed, interconnected wire members forming a bottom and four integral upstanding side walls tapered slightly upwardly and outwardly; horizontal support connection wire means extending along and connected to said walls, including at least a peripheral top wire extending around said walls along the upper edges thereof; stacking means including a first portion extending along and connected to one of said four walls, at a spacing below said top wire, and a second portion extending along and connected to a second of said four walls opposite said one wall; each of said portions including generally U-shaped stacking lugs projecting inwardly of said basket at a level below said top wire; and said wire members including wires along the lower edges of said one wall and said opposite second wall to enable a like basket to be stacked on said lugs when the baskets are oriented in like manner; the outside surfaces of said four walls being free of protrusions, and the inside surfaces of the third and fourth walls being free of protrusions; and said wire members being positioned to form spaces along the lower edges of said third and fourth walls to receive the lugs of a like basket rotated 90° with respect thereto, to enable nesting thereof.

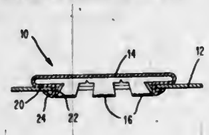
3,358,869
VACUUM SEALING PLUG
Earl W. Palmer and Ronald B. L. Jones, Watertown, Conn., assignors to Anaconda American Brass Company, a corporation of Connecticut
Filed Aug. 19, 1965, Ser. No. 480,924
1 Claim. (Cl. 220—24.5)

A resilient plug for vacuum sealing one end of an evacuated tubular member comprising a generally cylindrical body member having an axial bore extending from one open end to a closed end and thereby defining a positive high pressure chamber, an annular flange portion extending radially outward from the open end to a greater diameter than the inside diameter of the tube and defining a shoulder by the increase in diameter from the cylindrical member, a diaphragm portion extending across said bore at said closed end and closing said bore, said diaphragm having a normally concavo-convex shape with the convex side defining the closed end of said bore and the concave side inwardly recessed from the endmost portion of the closed end of the plug said diaphragm being of a thickness slightly less than the thickness of the wall of the body chamber, a first annular convex-shaped integral ring portion extending radially outward from the body member along an intermediate portion, an intermediate tapered portion of the body member tapering in diameter from adjacent the flange portion to said first ring portion, a second annular convex-shaped integral ring portion extending radially outward from the body member along said closed end portion, said second ring portion being



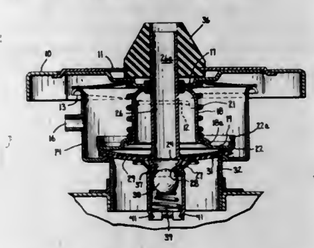
axially connected to the endmost edge of the closed end by an inwardly bevelled marginal end portion, said first and second ring portions having a greater diameter than the inside diameter of said tubular member so that they will slidably and sealingly engage the inner wall of the tubular member, at least a portion of said diaphragm underlies a portion of the second ring portion with a substantial portion integrally connected with the body member axially forward of the ring portion at the endmost edge and said diaphragm is sufficiently flexible such that the differential in vacuum pressure within the tubular member and that of the atmosphere in the positive pressure chamber will cause the diaphragm to be displaced axially out of its concavo-convex shape to a substantially flattened shape causing an increase in surface area of contact and radial pressure along a portion of the body member where said annular ring portion is positioned to flatten a portion of the convex-shaped ring portion and a portion of the bevelled marginal end portion in tight sealing engagement with the inner wall of the tubular member.

3,358,870
HOLE CLOSURE FOR ELECTRICAL TERMINAL BOX
Joseph J. Larkins, 325 Delaware Ave., Riverside, N.J. 08075
Filed May 10, 1965, Ser. No. 454,382
5 Claims. (Cl. 220—27)



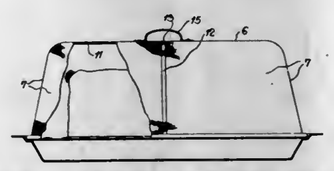
1. A one-piece knockout seal for p'ugging an opening in an electrical box comprising a hollow circular main head portion having an arcuate surface, a plurality of fingers extending from said head portion, said fingers including first, second and third bent portion extending from said main head portion, said first portions extending from the circumference inwardly toward the center of said main head portion, said second portions extending at an angle away from said head portion, said third portions extending outwardly away from the center towards the circumference of said head portion, whereby when said arcuate surface of said head portion is flattened said second portions are moved axially with respect to said head portion and said third portions extend outwardly away from the axis of said head portion so that the ends thereof physically engage the interior surface of said electrical box.

3,358,871
FILL CAP FOR PRESSURIZED RADIATOR
Howard J. Leichner, 1510 N. Neil St., Champaign, Ill. 61820
Filed Oct. 6, 1965, Ser. No. 493,463
2 Claims. (Cl. 220—44)



1. An automobile radiator fill cap assembly adapted to seal closed the valve seat within the fill spout of an automotive radiator, said fill cap assembly comprising a top plate adapted to engage the end of the radiator fill spout, a tube extending freely through a central aperture in said plate with its upper portion extending above the outer surface of the plate and its lower portion depending from the inner surface of the plate and into the radiator fill spout, a valve disc carried by the lower portion of said tube adapted to close against the fill spout valve seat, a compression spring extending between said plate and said valve disc urging said disc away from said plate, a stop limiting the separation of said valve disc and said plate, means forming a valve seat interiorly of said tube, a spring biased ball closure member cooperable with said valve seat to obstruct fluid flow from the lower end to the upper end of said tube but to permit fluid flow from the upper end to the lower end of said tube, and a resilient frusto-conically shaped member encircling the said upper portion of the tube, said resilient member being adapted to have sealing pressure engagement with a fluid supply fitting, whereby fluid can be introduced into the radiator fill spout through said tube without removing said valve disc from engagement with the fill spout valve seat.

3,358,872
OVEN PROTECTOR
Frank Johnson, R.D. 2, Box 50, Freehold, N.J. 07728
Filed Oct. 14, 1965, Ser. No. 496,066
1 Claim. (Cl. 220—44)



A shield for protecting an oven from the spatter of cooking foods, comprising

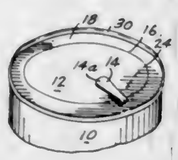
a heat passing but grease restraining canopy for covering a cooking vessel and contents and composed of

a single one piece, continuous layer of seamless fine, open mesh wire screen shaped in the form of a canopy having unobstructed continuously connected top and side walls and

a permanently attached binding extending in a continuous loop about the lower edge of said side walls and in a single plane for supporting said shield at a height to cover such a vessel, free and clear of the contents of the vessel,

said binding consisting of a wire about which the lower raw edge of the wire screen are wrapped and a sheet metal cover and reinforcing strip rolled about that part of the screen wrapped about the wire.

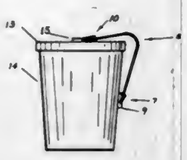
3,358,873
CONTAINERS WITH OPENING MEANS
Eleaizer Gelber, 740 Lexington Ave., Westmount, Quebec, Canada
Filed Mar. 4, 1965, Ser. No. 437,019
Claims priority, application Great Britain, Mar. 6, 1964, 9,616/64
7 Claims. (Cl. 220—54)



1. In a container to be opened only by direct, finger-applied tension comprising sheet material defining an enclosure for retaining a product, and a weakened line defining the periphery of a tear-out area, and in which the thickness of the sheet material and depth of the weakened line are such that the weakened line and material will withstand normal stresses of manufacture and handling without rupture, the improvement comprising: a relatively short minute, cut-score slit forming a relatively imperceptible portion of said weakened line and extending through said material and defining a tear-initiation point in said weakened line, said slit completing said weakened line and forming only a relatively short portion thereof. a tab having a portion permanently secured to the tear-out area immediately adjacent and overlying said slit on the outer surface of said material and having a free, finger-graspable portion, said tab finger-graspable portion being so located adjacent said slit whereby force is initially applied directly to said slit when said tab is pulled away from said tear-out area, and a patch adheringly secured on the inner surface of said material in underlying relation over said minute, cut-score slit with a margin extending on all sides of said slit and sufficiently therebeyond to prevent leakage thereby and through said minute slit, said patch being releasably secured to said tear-out area immediately adjacent said slit, said patch having a relatively small area as compared with the overall area of said tear-out area.

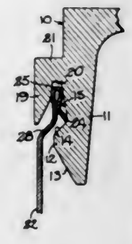
3,358,874
LID RETAINER
William L. Smith, 2345 50th St., Lubbock, Tex. 79412
Filed Oct. 22, 1965, Ser. No. 502,063
4 Claims. (Cl. 220—55.7)

1. In a container assembly having a lid, a handle on the lid, and a handle on the side of the container, the improvement comprising a plastic coated wire having a central portion and two end parts, each end part including means forming a clasp, the first said clasp being adapted to be loosely affixed to said lid handle, the second end part being adapted to be loosely affixed to said container handle, the central portion being adapted to be



bent into a configuration to permit said lid to be removably fitted to said container, whereby said lid is always retained in close proximity to said container.

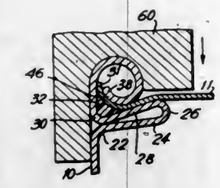
3,358,875
SHEET METAL CONTAINER WITH HEMMED BODY END
Ted M. Ekstrom, Rockford, Ill., assignor to J. L. Clark Manufacturing Co., Rockford, Ill., a corporation of Illinois
Filed Nov. 15, 1965, Ser. No. 507,929
4 Claims. (Cl. 220—60)



1. For securing a molded plastic cover against the end lip of a container body, said body comprising a tube of thin sheet metal having a short length at one end folded laterally and then bent reversely to form a flange lying adjacent the side wall of the tube and cooperating therewith to form a relatively flat hem with the fold defining a lip of rounded cross-section, said flange being depressed laterally intermediate said lip and the free edge of the flange and toward said wall whereby the portion of the flange adjacent said lip converges to said wall and the free edge portion diverges from the wall to space the free edge of the flange away from the wall a distance about equal to the radial thickness of said lip.

3,358,876
REVERSE SEAM CAN WITH HERMETIC DRUMHEAD
Richard Leo Joosten, Cary, and Richard Conrad Thorp, Crystal Lake, Ill., assignors to American Can Company, New York, N.Y., a corporation of New York
Filed Sept. 14, 1964, Ser. No. 396,020
4 Claims. (Cl. 220—67)

1. A container comprising a container body, said body including an annular ledge adjacent to one end of said body and extending radially inwardly and axially upwardly, a tubular wall extending axially upwardly from and merging at its lower end with the outermost face of said ledge in alignment with the remainder of the container body, an annular channel between said ledge and said tubular wall, sealing compound within said channel, an annular curl connected with and extending upwardly and inwardly from the free end of said tubular wall, the free end of said curl projecting generally upwardly and radially outwardly, said container body being in combination with an end closure the peripheral portion of which extends between said ledge and the bottom of said curl and between the upper portion of said tubular wall and the free end of



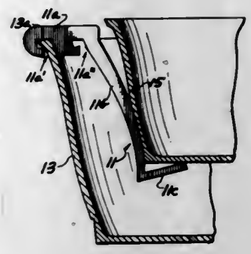
said curl, said ledge being flexed downwardly to urge said end closure upwardly against the bottom of said curl, said curl having a tendency to straighten so that said curl end urges said end closure against said tubular wall.

3,358,877
CARRYING BAIL AND METHOD OF APPLYING SAME
Paul Sheppard Eckhoff, Oyster Bay, N.Y., assignor to American Can Company, New York, N.Y., a corporation of New Jersey
Continuation of application Ser. No. 383,469, July 17, 1964. This application June 27, 1966, Ser. No. 562,426
1 Claim. (Cl. 220—95)



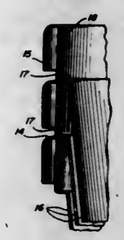
A can comprising a can body, a pair of hollow bail ears on opposite sides of said body, each of said ears having an outer wall with an inwardly extending indentation, a circular opening located in the center of said indentation, a pair of slits in said outer wall, each of said slits extending outwardly from said circular opening and having sides which project inwardly, a substantially U-shaped wire bail having a substantially semi-circular central handle portion, a pair of hook portions, each of said hook portions merging with and extending inwardly from one of said offset portions, a pair of thin cutting barbs, each of said barbs comprising a substantially flat thin rounded front end, a pair of side edges merging with said front end and diverging as they progress outwardly from said end, a pair of laterally projecting shoulders, each of said shoulders merging with one of said side edges at the point thereon which is farthest away from said front end and from the other of said side edges, and each pair of said laterally projecting shoulders merging with one of said hook portions at the end of said one hook portion, said barbs being tapered over their entire area so that they are thinnest at said front ends and thickest at their said shoulders, said shoulders having a thickness only a fraction of the diameter of the remainder of said wire bail, but greater than the width of said slits, each of said barbs being disposed within one of said hollow bail ears so that said offset portion engages the outside surface of said outer wall.

3,358,878
NESTING ACCESSORY
Jan Nathan Ostborg, Lombard, and Robert Boleslaw Lurski, Chicago, Ill., assignors to Club Aluminum Products Company, La Grange Park, Ill., a corporation of Illinois
Filed Oct. 14, 1965, Ser. No. 495,989
2 Claims. (Cl. 220—97)



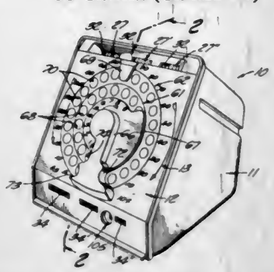
1. A nesting accessory for separating stacked articles having upper edges, comprising a body portion having a plurality of spaced apertures formed therein for engaging an upper article edge so that the nesting accessory hangs from the upper edge, an elongated leg portion depending from the body portion at an acute angle with respect thereto, and a foot portion shorter than the leg portion and extending from the extremity thereof in a direction away from the body portion, the portions being integrally formed of a pliable, nonmetallic material.

3,358,879
NESTING CONTAINER
Martin Mueller, Chicago, Ill., assignor, by mesne assignments, to Lily-Tulip Cup Corporation, New York, N.Y., a corporation of Delaware
Filed Oct. 20, 1965, Ser. No. 498,711
3 Claims. (Cl. 220—97)



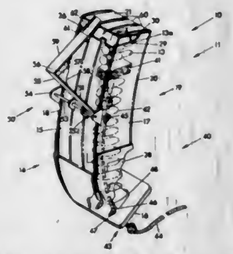
1. A one-piece, thin-walled plastic container comprising a bottom wall, a sidewall extending upwardly and outwardly from said bottom wall, a rim extending outwardly from the upper end of said sidewall, and a flange depending from the outer edge of said rim, said sidewall defining a generally horizontally extending annular shoulder spaced vertically from said rim by a wall section of greater height than the height of said flange, said wall section extending inwardly and upwardly from the outer edge of said shoulder, the inward inclination of said wall section being sufficient to provide an annular horizontal seating surface on the rim of container of greater width than the thickness of said wall section for the generally horizontally extending shoulder of a container nested therein with the sidewalls of said nested containers in spaced apart relation.

3,358,880
THREE DENOMINATIONAL STAMP DISPENSING MACHINE
James H. Walker, Los Angeles, Calif., assignor of one-half to Leland F. Dills and one-half to Richard W. Callaway, Arcadia, Calif.
Filed Aug. 25, 1966, Ser. No. 575,002
38 Claims. (Cl. 221—7)



1. A stamp dispensing device for dispensing a predetermined number of stamps selectively from a plurality of stamp supply strips, said dispensing device having means rotatably supporting first and second dials; first, second and third stamp dispensing mechanisms; drive connection means between said first dial and said first stamp dispensing mechanism operable to dispense a predetermined number of stamps as said first dial is rotated through a corresponding number of increments; and drive connection means between said second dial and said second and third stamp dispensing mechanisms selectively operable in response to the direction of rotation thereof to drive a particular one only of said second and third stamp dispensing mechanisms.

3,358,881
CARTRIDGE CARRIER AND LOADER
Joseph Medina, 914 Le Borgne Ave., La Puente, Calif. 91746
Filed Dec. 6, 1966, Ser. No. 607,114
17 Claims. (Cl. 221—227)



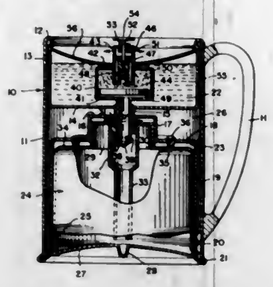
1. A cartridge carrier and loader adapted to hold a large number of cartridges and to insert said cartridges singly and axially in sequence directly into a weapon magazine by manual manipulation comprising:

(a) a housing having front and rear walls and at least one cartridge compartment adapted to hold at least one stack of cartridges, said compartment having opposed openings in said front and rear walls adjacent to its top;

(b) biasing means adjacent the bottom of said compartment for holding said cartridges against the top of said compartment in registry with said openings; and

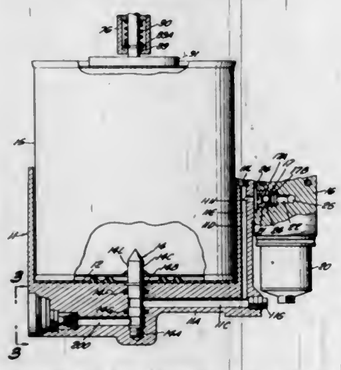
(c) ejector means mounted adjacent to said compartment rear opening, said ejector means being adapted to be moved through said compartment rear opening and to simultaneously separate the top cartridge in the stack from the remaining cartridges and to cause its movement out of said front compartment opening along an axial path said biasing means acting on said ejector to urge same out of said rear opening.

3,358,882
WARM FOAM DISPENSING DEVICES
Robert V. Mathison, 5 Woodcrest Road, Asheville, N.C. 28804
Filed May 12, 1965, Ser. No. 455,070
5 Claims. (Cl. 222—80)



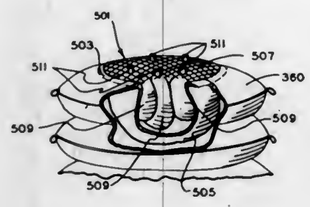
1. A device useful in dispensing a warm, aerosol cream comprising a hollow body divided by a transverse wall into a downwardly-opening lower cavity and an upwardly-opening upper cavity, said transverse wall having a central opening therein, a cartridge containing a propellant-pressurized cream, means removably mounting said cartridge in said lower cavity, a heating chamber with heat-conductive walls in said upper cavity, tube means for conveying said propellant-pressurized cream from said cartridge to said heating chamber, a screen mounted across the upper portion of said upper cavity, means for discharging said propellant-pressurized cream onto the upper surface of said screen after it passes through said heating chamber, a valve for controlling flow of said propellant-pressurized cream from said cartridge through said chamber and onto said screen, and means to manually operate said valve, said means including a manually movable member above said screen, whereby the cream may be warmed by placing hot water in said upper cavity and substantially immersing said heating chamber therein prior to dispensing the propellant-pressurized cream onto said screen.

3,358,883
PIERCING AND VENTING MEANS FOR CANS
Wallace D. Loe, Escondido, Calif., assignor to Loe Industries, a corporation of California
Filed Mar. 21, 1966, Ser. No. 536,007
8 Claims. (Cl. 222—86)



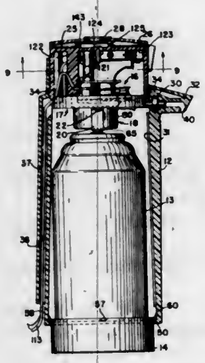
1. In apparatus of the character described wherein an unsealed can is placed in a holder and pressed against puncturing means to puncture one end of said can, the improvement which resides in providing said puncturing means with two separate channels, one of which is in communication with a fluid flow passageway and the other one of which is in an air vent passageway, each of said passageways being formed in said holder, said puncturing means comprising a pointed post threaded in said holder and having two diametrically and oppositely extending openings near the pointed end of said post.

3,358,884
HYDRAULIC SALVAGE JACK
Edwin A. Link, Binghampton, N.Y., assignor to Ocean Systems, Inc., a corporation of New York
Filed Oct. 4, 1965, Ser. No. 492,715
1 Claim. (Cl. 222—94)



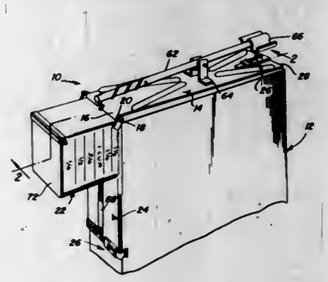
A hydraulic cushion comprising an expansible accordion-pleated bag of elastomeric material; a pouch for containing a lubricant positioned within the upper portion of said cushion, said pouch having its outlet communicating with the top surface of said cushion through a plurality of small openings therein, whereby the lubricant will be retained in said pouch until the internal pressure in said cushion is increased.

3,358,885
DISPENSER WITH HEATING MEANS
Theodore R. Flowers, Fairfield, Conn., assignor to Eversharp, Inc., Milford, Conn., a corporation of Delaware
Filed Jan. 17, 1966, Ser. No. 521,118
5 Claims. (Cl. 222—146)



1. In combination, an aerosol container and a dispensing arrangement for use in dispensing a pressurized product from said aerosol container in a heated condition, said aerosol container having a depressible nozzle portion which operates a valve to release the product from said container, said dispensing arrangement including a hollow shell closed off at one end by a housing portion, said shell enveloping at least a part of said aerosol container, electrical heating means mounted in said housing portion of said shell in engagement with a heat exchanger, said heat exchanger having an inlet and an outlet and being mounted between said electrical heating means and said aerosol container, said inlet being adapted to receive the nozzle on said aerosol container for releasing said product for passage through said heat exchanger whereby said product will be warmed before leaving said outlet, and means mounted on said aerosol container and engaging said hollow shell to permit limited longitudinal movement when assembled thereto to maintain it loosely and removably positioned within said shell with said nozzle located in axial alignment with said inlet on said heat exchanger.

3,358,886
MEASURING DISPENSER
Johnny P. Provenza, 9640 Kingston Road, Shreveport, La. 71108
Filed Apr. 1, 1966, Ser. No. 539,506
8 Claims. (Cl. 222—158)

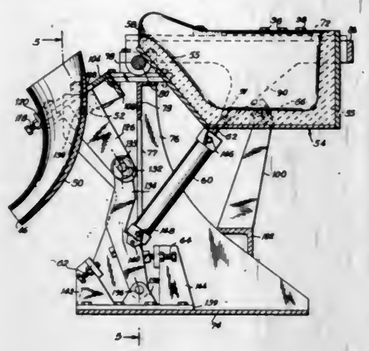


1. A measuring dispenser for use in conjunction with a container, said dispenser comprising a measuring cup mountable on said container with one end of the cup penetrating a side panel of said container at a point below the container top and being in material receiving relation therewith, gate means normally held open mounted rearward of said one end of the cup between said one end and the interior of said container, lever means coupled to said gate means for selectively closing said gate means thereby preventing communication between said container and said cup, the second end of said cup defining a dispensing opening, openable door means closing said dispensing opening, and means operatively associating said door means with said gate means comprising an elongated operating rod enclosed within said measuring cup, engaging said door means and actuable so as to push open said door means, a head on said rod, and a cam member on said gate means engageable against said rod head as said gate means closes so as to actuate said rod and open said door means.

3,358,887
MOLTEN METAL POURING MECHANISM INCLUDING A RELATIVELY MOVABLE LADLE AND BOOT ASSEMBLY
Russell W. Taccone, Erie, Pa., assignor to Shahmoon Industries, Inc., New York, N.Y., a corporation of Delaware
Filed Oct. 23, 1965, Ser. No. 502,918
12 Claims. (Cl. 222—166)

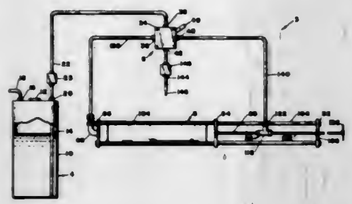
1. A pouring station comprising a boot pivoted for movement of its lower discharge end between a forward pouring position and a retracted position, a tiltable ladle disposed with its pivot and spout near the upper end of

the boot, and a single actuator so connected between the boot and the ladle that operation of the actuator advances



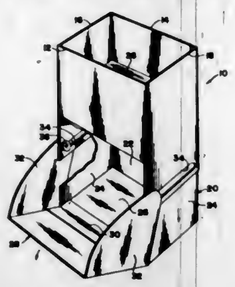
the boot and tilts the ladle to pour its contents into the boot.

3,358,888
DISPENSING APPARATUS
Joseph Carl Dawson, St. Louis County, Mo. (93 Ford Lane, Hazelwood, Mo. 63042)
Filed Jan. 5, 1966, Ser. No. 518,899
10 Claims. (Cl. 222—250)



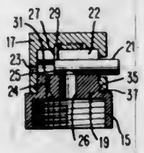
1. An apparatus for dispensing measured quantities of fluid, said apparatus comprising a tubular body, a first end wall located at one end of the tubular body, a second end wall carried by the body and located in spaced relation to the first end wall whereby a measuring chamber is defined by the tubular body and end walls, the first and second end walls being provided with first and second end ports, respectively, which communicate with the measuring chamber, a metering element carried by the tubular body within the measuring chamber for movement between the first and second end walls and having a specific gravity substantially equal to that of the fluid, the metering element being adapted to block the first port when forced against the first end wall and to block the second port when forced against the second end wall, a source of fluid, means for maintaining the fluid under pressure, a control valve, conduits for establishing communication betwen the control valve and the first port, second port and source of fluid, the control valve being adapted for optionally establishing communication between the source of fluid and the first or second ports whereby fluid is introduced into the measuring chamber from one port thereby forcing the metering element toward the opposite port so as to cause a measured dosage of fluid to flow out of the opposite port before the metering element is forced against the end wall in which such opposite port is located, the metering element further being loosely fitted within the measuring chamber so that a limited amount of fluid slips past the metering element as it moves from one end wall to the other.

3,358,889
DISPENSING CONTAINER
James Frank Robinson, 19611 Battersea Blvd., Rocky River, Ohio 44116
Filed Feb. 6, 1967, Ser. No. 614,266
3 Claims. (Cl. 222—457)



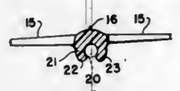
1. In a dispensing container comprising a tubular sleeve having opposed side wall portions, and receptacle means slidably and telescopically receivable within said sleeve, the improvement comprising: a lid having an edge portion hinged to said receptacle means, and wing portions enveloping at least a part of each of the side wall portions of said tubular sleeve; and camming means operatively interconnecting said wing portions and the enveloped parts of the side wall portions of said tubular sleeve to limit the movement of said wings to travel along a predetermined path, whereby withdrawal of said receptacle means from telescopic engagement with said tubular sleeve, simultaneously causes said lid to open and advancement of said receptacle means into telescopic engagement with said tubular sleeve, simultaneously causes said lid to close.

3,358,890
DISPENSER DEVICE FOR FLOWABLE MATERIAL
Guy J. Dalfo, 2927 Crafton Drive, Cornwells Heights, Pa. 19020
Filed June 15, 1966, Ser. No. 557,699
10 Claims. (Cl. 222—507)



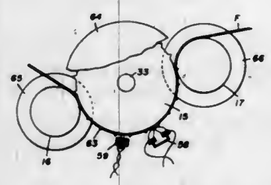
1. A capping and dispensing means to be used with a container which holds flowable material comprising in combination:
(a) a base member adapted to be secured to said container;
(b) an upper member movably engaged with said base member;
(c) a spout member slidably disposed in linear reciprocating relationship with said base member, and having a first aperture therein;
(d) second aperture means disposed in said base member to be aligned with said first aperture when said spout member is moved to a predetermined position and to provide an opening to said container;
(e) motion translation means disposed in said upper member and slidably coupled to said spout member to translate the movement of said upper member into a movement of said spout member so as to cause said spout member to extend and retract from said base member in response to said movement.

3,358,891
ANTI-SLIP ATTACHMENT FOR GARMENT HANGER
Walter G. Rowe, 697 West End Ave., New York, N.Y. 10025
Filed Feb. 25, 1965, Ser. No. 435,243
1 Claim. (Cl. 223—88)



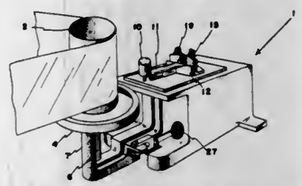
Anti-slip attachment for the sloping shoulder portions of a conventional triangular wire garment hanger comprising a flexible plastic body consisting of an elongated member, means extending transversely of said member for engagement with a garment when suspended from said hanger, said elongated member having a longitudinally extending channel formed the entire length thereof, said longitudinally extending channel being substantially circular in cross section and having resilient inwardly curved side flanges, said side flanges having closely spaced free ends providing an opening into the channel whereby said attachment may be snapped on said sloping shoulder portions of said hanger.

3,358,892
SPROCKET-TYPE MECHANISM FOR MOVING PHOTOGRAPHIC FILM
Robert B. Johnson, Rochester, N.Y., and Henry A. Thomson, Denver, Colo., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Apr. 26, 1965, Ser. No. 450,643
14 Claims. (Cl. 226—85)



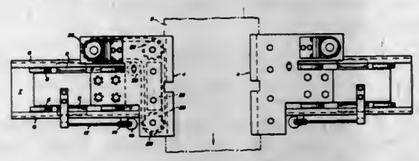
1. A system for moving with a substantially constant linear velocity a web having spaced perforations adjacent at least one longitudinal edge thereof, the perforations having a pitch substantially equal to or less than a predetermined pitch, comprising in combination:
a rotatable member about which the web is adapted to be at least partially wrapped in frictional engagement therewith, said member having a peripheral surface and a plurality of circumferentially-spaced teeth extending from said surface for entering the perforations in the web, said teeth having a pitch corresponding substantially to the predetermined pitch;
means for rotating said member at a substantially constant velocity;
first means positioned adjacent said rotatable member for guiding the web into engagement with said member; and
second means positioned adjacent said rotatable member generally opposite said first means for guiding the web into an outgoing path;
said second means cooperating with said first means to urge a portion of the web into frictional engagement with said surface and to establish a predetermined tension in the web portion, whereby movement of the web is effected by surface friction between the web and said surface and by successive ones of said teeth engaging the leading ends of their respective perforations, the transfer of movement of the web by one tooth to the next tooth occurring when the perforation engaged by said one tooth is at least partially in the outgoing path of the web and differences in the pitch of said teeth and the perforations being compensated for by relative frictional slippage between the web portion and said surface.

3,358,893
APPARATUS FOR UNIFORMLY MOVING A WEB PAST A SPECIFIC POINT
Fernand Belanger, Phoenix, and Jack E. Steinfeldt, Buckeye, Ariz., assignors to Goodyear Aerospace Corporation, Akron, Ohio, a corporation of Delaware
Filed July 13, 1965, Ser. No. 471,575
10 Claims. (Cl. 226—195)



4. In an apparatus for moving a web past a predetermined pont at a constant uniform speed the combination of
a cylindrically shaped roller,
means rotatably mounting said roller on the longitudinal axis thereof in a substantially vertical position,
a supporting frame,
means pivotally mounting said means rotatably mounting said roller to said frame to allow substantially horizontal pivotal movement thereof,
means operatively affixed to said roller so as to move the radius of gyration of the roller into substantial coincidence with the circumference defining the roller,
an elongated web passed around the roller so that it contacts at least 90° of the circumference thereof and so that one end extends outwardly therefrom substantially perpendicular to the pivotal mounting means, and
means to uniformly pull the web from the one end to effect advancement around the roller.

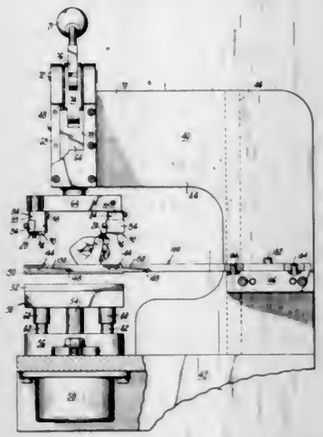
3,358,894
STRIP GUIDE FOR A PINHOLE DETECTOR
Joseph W. Hags, North Huntington Township, Westmoreland County, Pa., assignor to United States Steel Corporation, a corporation of New Jersey
Filed Dec. 10, 1965, Ser. No. 513,031
3 Claims. (Cl. 226—198)



1. Apparatus for guiding and shielding the edges of a strip passing through a pinhole detector or the like comprising a support, a pair of carriages mounted on said support for movement with respect to one another transversely of the strip, means for urging said carriages inwardly toward each other, an endless belt on each of

said carriages movable parallel to the adjacent edge of the strip and adapted to engage said edge, two pulleys mounted on each carriage and arranged on vertical axes in a plane parallel to the adjacent strip edge, and a third pulley mounted on each carriage rearwardly of the said two pulleys with its axis parallel to the axes of the said two pulleys, said pulleys having peripheral grooves for receiving said belt, and a motor mounted on each carriage for driving said third pulley.

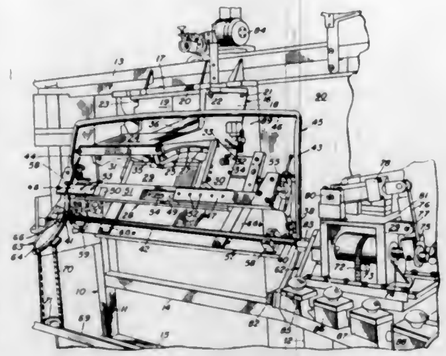
3,358,895
FASTENER SETTING MACHINE
Robert J. Chiabrandy, Saugus, Mass., assignor to North and Judd Manufacturing Company, New Britain, Conn., a corporation of Connecticut
Filed Jan. 3, 1966, Ser. No. 518,114
6 Claims. (Cl. 227—15)



1. A machine for attaching a two-part fastener to the outside and inside of a pocket formed by extension waistbands and the like comprising a frame, a fixture, means supporting said fixture at only one end thereof on said frame, said fixture having an elongated free end portion insertable into a pocket formed by an extension waistband, said free end portion having an opening therethrough communicating with an aperture of an apertured fastener part when the same is received in an assembly position on said free end portion, first and second operating members disposed on opposite sides of said fixture and mounted on said frame for reciprocating rectilinear movement along a common axis generally perpendicular to the longitudinal axis of said free end portion of said fixture between retracted and extended positions relative thereto, and prong deflecting means movable in said opening in said free end portion of said fixture in response to said second operating member being moved from retracted to extended position for clenching a pronged fastener part when it is positioned in said opening by said first operating member being moved from retracted to extended position.

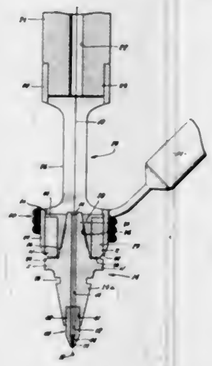
3,358,896
FULL-CIRCLE WELDING MACHINE
Robert E. Kemp, Grand Rapids, Mich., assignor to McInerney Spring & Wire Company, Grand Rapids, Mich., a corporation of Michigan
Filed May 10, 1965, Ser. No. 454,375
5 Claims. (Cl. 228—29)

1. A machine for welding the full circumference of a particular primary member at a junction with a particular transverse member, said machine comprising:
a frame having arcuate guideway means;
a receptacle on said machine for rotatably receiving a primary member in a position coaxial with the axis of curvature of said arcuate guideway means;
a carrier movably mounted in said guideway means, said carrier being provided with at least one welding torch disposed in a position to operate on a primary member mounted in said receptacle;
clamping means rotatably mounted on said frame for gripping a transverse member, said clamping means



being mounted coaxially with the axis of curvature of said guideway means;
drive means for rotating said clamping means and for moving said carrier in said guideway means; and
control means for said drive means adapted to establish opposite rotation of said carrier and said clamping means about the axis thereof during operation of said torch.

3,358,897
ELECTRIC LEAD WIRE BONDING TOOLS
Frank L. Christensen, Saratoga, Calif., assignor to Tempress Research Co., Sunnyvale, Calif., a corporation of Utah
Filed Mar. 31, 1964, Ser. No. 356,282
17 Claims. (Cl. 228—40)



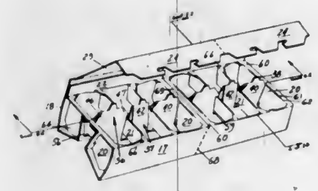
1. In a wire lead bonding tool: a tip comprising a sintered tungsten carbide portion, said portion having an end face and a passage including an orifice of substantially constant diameter opening through said end face, whereby wire fed through said passage and its orifice can be pressed by said end face against a companion surface; the length of said orifice being about three to ten times the diameter of said orifice.

3,358,898
REPAIR TAPE
Russell J. Medkeff, 235 Old Eagle School Road, Wayne, Pa. 19087, and James S. Jackson, 40 Overhill Circle, Media, Pa. 19063
Filed Jan. 27, 1965, Ser. No. 428,459
4 Claims. (Cl. 228—56)



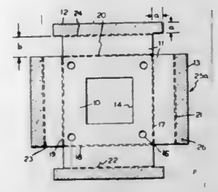
1. Mending tape for use with pipes, rods and the like comprising: base material having two outer surfaces and being formed into a relatively long strand whereby its length is many times longer than its width; said base material being tension formed along its length to cause it to wind itself lengthwise into a spiral pattern; solder material coated on both said outer surfaces.

3,358,899
CONTAINERS
Daniel Wainberg, 4755 Blvd. des Grandes Prairies, St. Leonard, Montreal, Quebec, Canada
Filed Apr. 28, 1966, Ser. No. 545,973
5 Claims. (Cl. 229—29)



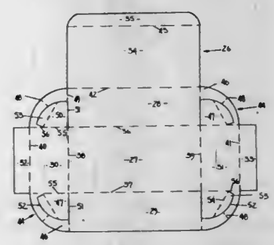
1. A container comprising a pre-cut blank, scored, folded and set up to provide a container having front and rear walls, a bottom wall section formed of a pair of bottom walls integral with said front and rear walls and extending inwardly therefrom at an inclined angle and terminating into inner parallel longitudinal intermittent fold lines interspaced with parallel cut-out portions extending away therefrom and towards the front and rear walls, a pair of integral longitudinal central partitions formed from the cut-out portions of the bottom walls and integral with the inner parallel longitudinal intermittent fold lines and having common and parallel transverse cut-out portions, longitudinal alternate locking panels and longitudinal alternate separator panels formed from the transverse cut-out portions of said longitudinal central partitions and interspaced with one another, end and intermediate inverted U-shaped struts integral with said longitudinal central partitions and formed from the transverse cut-out portions thereof, transverse walls and transverse partitions hingedly secured to said front and rear walls and straddling the transverse cut-out portions of said longitudinal central partitions and the longitudinal intermittent fold lines of said bottom walls, each of said longitudinal locking panels having a locking shoulder for overlapping and engaging the top edge of an adjacent transverse partition and a contact shoulder for abutting a flat side of an adjacent transverse wall, transverse ledges integral with said front and rear walls and adapted to engage with the top surface of at least two of said inverted U-shaped struts, and a cover integral with said rear wall and adapted to form a closure for said container.

3,358,900
PACKAGING
Richard R. Perdue, Taylors, S.C., assignor to W. R. Grace & Co., a corporation of Connecticut
Original application May 10, 1963, Ser. No. 279,550. Divided and this application Oct. 18, 1965, Ser. No. 508,622
6 Claims. (Cl. 229—30)



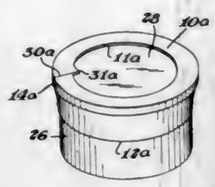
1. A foldable blank composed of paperboard or the like and useful for manufacture of carton-protected film packages comprising:
(a) a rectangular base portion;
(b) a rectangular side wall portion extending laterally from each edge of the base portion; each such side wall being coextensive with the edge from which it extends and having an equal width;
(c) a rectangular flange extending laterally from the free edge of each side wall portion; each having an equal width; one opposing pair of said flanges having a length equal to the length of its respective side wall plus a rectangular extension on each end equal to the width of the flange; the other opposing pair of flanges having a length equal to their respective side walls; and
(d) means along the jointures of the base portion and each wall portion and along the jointures of each wall portion and its respective flange permitting folding of these portions with respect to each other.

3,358,901
CONTAINERS
Daniel Wainberg, 4755 Blvd. des Grandes Prairies, St. Leonard, Montreal, Quebec, Canada
Filed May 12, 1966, Ser. No. 549,588
7 Claims. (Cl. 229—31)



1. A container formed from a one-piece pre-cut blank and comprising a bottom wall, upright walls integral with said bottom wall, extension members integrally connecting the adjacent upright walls to one another, characterized by the fact that each of said extension members is composed of a cut-out portion so as to complete an overlocking member that is an intergral part of the adjacent upright walls and an underlocking member that is integral with one of the adjacent upright walls, the overlocking member and the underlocking member adapted to engage with one another to interlock the adjacent upright walls together, in their erected position and from the inside of the container.

3,358,902
SECONDARY CLOSURE
Robert W. Emmert and William R. R. Park, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed June 24, 1966, Ser. No. 560,127
10 Claims. (Cl. 229—43)



1. A heat shrinkable secondary closure, the closure comprising an elongate strip of a heat shrinkable synthetic resinous thermoplastic material, the strip having two generally parallel edges along first and second sides, the strip having a first end and a second end, the first end terminating in an edge generally normal to the direction of the sides, the second end having an edge defining an acute angle with one edge of the side of the strip and an obtuse angle with the remaining side of the strip, the first end and the second end of the strip being joined together wherein the edges of the first and second ends are in generally parallel relationship to form a generally circular configuration having an inner surface and an outer surface.

3,358,903
PAPER BAGS HAVING LEAK-PROOF SEAMS
Patrick J. De Stefano and Burke P. Lokey, Metairie, La., assignors to West Virginia Pulp and Paper Company, New York, N.Y., a corporation of Delaware
Filed Mar. 31, 1966, Ser. No. 539,036
4 Claims. (Cl. 229—53)



1. A paper bag with leak-proof capability that has a seamless bottom and a leak-proof compound seam along each side, each compound seam comprising:
(a) a primary seam of peel-joint type that is formed by adhesively conjoining the edges of opposed bag walls, the adhesive being exposed to the interior of the bag and the seam being protected from transversely applied loads, and
(b) a secondary seam of shear-joint type that is parallel to the primary seam and is formed by adhesive juncture with a bag wall on the tension side of the primary seam, the adhesive being shielded from the interior of the bag by the primary seam, said secondary seam being capable of functioning as a secondary leakage barrier and of entirely sustaining transversely applied loads.

3,358,904
PLASTIC BAGS
Ghislain Leon Van Houtte, 4 Rue Cardinal Lavigerie, Etterbeek, Belgium
Filed Oct. 17, 1966, Ser. No. 587,140
Claims priority, application Belgium, Nov. 23, 1965, 20,648
1 Claim. (Cl. 229—54)



A bag of weldable sheet plastic material in the form of a flattened seamless tube providing front and back panels, the panels having their side edges welded together to provide a closed bag with a seamless top and bottom and seamed side edges, an integral loop-shaped handle formed as two spaced apart integral loop straps extending obliquely toward the top center of the bag and provided by removing a top central portion as well as the top corner edges of the closed bag so that the bag bottom, front and back panels, and integral loop handle which are stressed by a load in the bag are seamless and continuous.

3,358,905
FLEXIBLE BAG TYPE SHIPPING CONTAINER AND METHOD OF CLOSING AND SEALING SAME
Adrianus Soesbergen, Utrecht, Netherlands, assignor to Inland Steel Company, Chicago, Ill., a corporation of Delaware
Filed Sept. 27, 1966, Ser. No. 582,419
Claims priority, application Great Britain, Sept. 27, 1965, 41,050/65
6 Claims. (Cl. 229—62)



1. A method of closing and sealing a flexible bag formed of fusible material comprising the steps of gathering the material of the bag adjacent its free end so as to form a skein, placing a ring formed of a fusible material that is solid and rigid at normal room temperature about the skein with a portion of the skein projecting through and above the ring, applying heat and pressure to the free projecting portion of the skein with such pressure being applied in a generally axial direction relative to the ring so as to fuse and compact the ring together with the free projecting skein portion; and allowing the fused and compacted ring and skein portion to cool and solidify thereby forming a solid seal.

3,358,906
HEAT SEALABLE PLASTIC MATERIAL BAGS FOR COINS
John A. Faiers, London, England, assignor to Lamson Paragon Limited, London, England
Filed Dec. 29, 1966, Ser. No. 605,716
3 Claims. (Cl. 229—62)

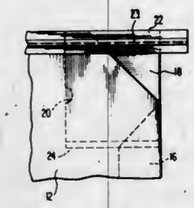
1. An integral bag made entirely of transparent material including a continuous first wall and a second wall provided with a transverse cut-out portion extending along

the entire width of said second wall, said cut-out portion commencing substantially at a point halfway along the length of said second wall and terminating at about two thirds along the length thereof, the top and bottom transverse edges and the longitudinal lateral edges of said walls being heat sealed to one another so as to define a pair of



spaced pockets of unequal size therewithin, the larger of said pockets being substantially three times the size of the smaller of said pockets, said larger pocket adapted to retain a plurality of coins and to be folded into the smaller of said pockets, the coins within said larger pocket preventing displacement of said pockets from their folded position.

3,358,907
SEWN VALVE BAG WITH FLEXIBLE ELASTIC INSERT
Howard J. Winegard, Trenton, N.J., assignor to Union Camp Corporation, New York, N.Y., a corporation of Virginia
Filed Feb. 14, 1967, Ser. No. 616,031
9 Claims. (Cl. 229—62.5)

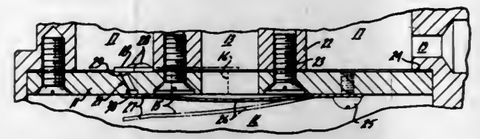


1. A sewn valve bag having its corner turned inwardly to form a valve with an inwardly directed valve flap, an elastic valve insert secured to the sides of said valve flap and extending from the bottom to the top of the flap, said elastic valve insert having a stretchable opening in communication with the interior of said bag for receiving a filling spout.

3,358,908
FLUID COMPRESSOR
Norbert J. Gawin, Greenfield, Wis., assignor to Johnson Service Company, Milwaukee, Wis., a corporation of Wisconsin
Filed Oct. 22, 1965, Ser. No. 500,802
10 Claims. (Cl. 230—24)

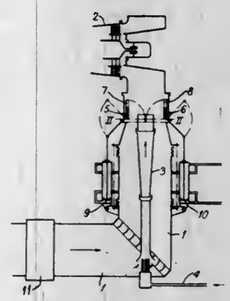
1. A fluid pump having a pumping chamber and an outlet chamber and having an inlet port member opening and closing a port from the pumping chamber to a fluid source and having a movable pump member in the pumping chamber with a suction stroke to move the port member to open the inlet port and draw fluid into the pumping chamber and a compression stroke to transfer the fluid through a valved outlet port of the outlet chamber, the improvement comprising

a wall means separating said pumping chamber and said outlet chamber having a leak passageway joining said chambers, and
a valve means connected to the leak passageway responsive to the relative pressure in the pumping chamber



and the outlet chamber to open said leak passageway during the suction stroke and close the passageway during the compression stroke, and
means responsive to stopping of the movable pump member to simultaneously open the pumping chamber to a referenced pressure and the valve means.

3,358,909
DEVICE FOR STARTING GAS TURBINES
Ivar Martin Mansson and Frans Eric Ossian Ostmar, Finspong, Sweden, assignors to Stal Laval, Finspong, Sweden, a corporation of Sweden
Filed Mar. 7, 1966, Ser. No. 532,460
Claims priority, application Sweden, Apr. 20, 1965, 5,075/65
4 Claims. (Cl. 230—45)

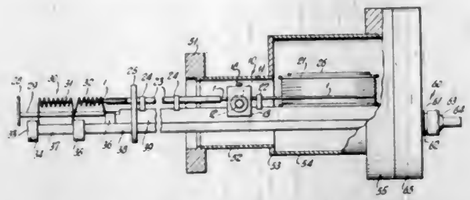


1. A device for starting gas turbines with a low pressure and a high pressure compressor, said compressors being connected in series by means of an air duct, a compressed air jet arranged between the compressors, said jet being located centrally in the air duct and providing spacing between it and the wall of the duct, hinged valve flaps operable across the air duct around the jet, said flaps when closed being effective to close the space between the jet and the interior of the duct when the jet is in operation, to thereby prevent the backflow of the compressed air introduced by the jet and which when the compressors begin to suck air, are opened to allow passage to the flow of air from the low pressure compressor.

3,358,910
VACUUM PUMP
Zenjiro Oda and Tatsuo Asamaki, Tokyo, Japan, assignors to Nippon Electric Company, Limited, Tokyo, Japan, a corporation of Japan
Filed Nov. 15, 1965, Ser. No. 507,727
Claims priority, application Japan, Nov. 16, 1964, 39/64,674
4 Claims. (Cl. 230—69)

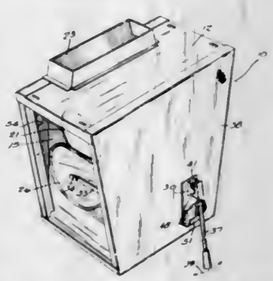
1. In a vacuum sublimation pump wherein evacuation of gas is achieved with the aid of evaporation of a getter material, the combination comprising:
means for continuously feeding getter material from a getter supply bank,

a first filamentary type heater for continuously melting said getter material in a chamber,
a second filamentary type heater adjacent said first heater for periodically melting an additional amount of getter material to supplement the amount of such material vaporized by said first heater,
means for sensing the presence or absence of said getter material in the region of said melting means where-



by the same may be controlled to insure the continuous supply of said material to said melting means,
said sensing means including a contact electrode positioned to be engaged by said getter material,
and means for allowing the getter material in said getter supply bank to be replenished without breaking vacuum in said chamber, whereby said pump may be continuously operated for extremely long periods of time.

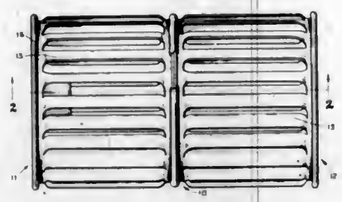
3,358,911
BLOWER
Frederick H. Bandlow, Theresa, Wis., assignor to Broan Mfg. Co., Inc., Hartford, Wis., a corporation of Wisconsin
Filed Sept. 17, 1965, Ser. No. 488,225
7 Claims. (Cl. 230—114)



1. A blower comprising a housing having laterally spaced walls respectively with axially aligned air inlet ports, an air impeller between the walls to draw air into the housing through said ports, a slide damper for each port, a cross pintle projecting between said walls and connected to each damper, a cross swing arm offset radially from the pintle axis and connected to the dampers, crank means for totating the cross swing arm about the axis of the pintle to swing the dampers with respect to the ports, and springs reacting between the cross swing arm and the dampers to bias the dampers against the said spaced walls.

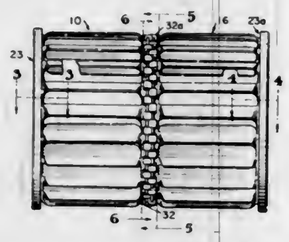
3,358,912
MULTI-SECTION BLOWER WHEEL
Robert A. Beesley, Decatur County, Ind., assignor to Vernco Corporation, Columbus, Ind.
Filed July 5, 1966, Ser. No. 562,842
4 Claims. (Cl. 230—134)

1. The combination of
a plurality of separate blower wheels in axial abutment;
a circumferential flange around each end of wheels facing end to end with an adjacent wheel; and
a ring extending circumferentially around, transversely over and around sides of said flanges urging one against the other into compressive abutment;



an interengagement between said ring and said abutting flanges constituting the sole means for axial aligning and driving of one wheel from the other.

3,358,913
MULTI-SECTION BLOWER WHEEL
Robert A. Beesley, Westport, Ind., assignor to Vernco Corporation, Columbus, Ind.
Filed May 31, 1966, Ser. No. 554,010
5 Claims. (Cl. 230—134)

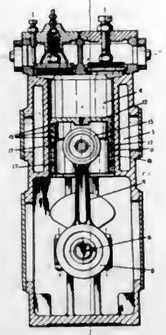


1. A blower wheel comprising
a pair of cylindrically grouped blades extending parallel with a common axis;
a circumferential flange at each end of each of said pairs carrying the respective ends of the blades;
a circular member located between the blade groups and having a marginal zone therearound in a radial plane on opposite sides;
opposing end flanges bearing against said member zones; and
a plurality of tabs extending from the peripheral edge of said member, part in one axial direction and part in the opposite axial direction over said flanges and radially inwardly thereover from said periphery retaining the flanges respectively, against opposite faces of said member.

3,358,914
COMPRESSORS
William Robertson Macmillan, Sale, England, assignor to Tilghman's Limited, Broadheath, Altrincham, England, a British company
Filed Oct. 6, 1965, Ser. No. 493,403
Claims priority, application Great Britain, Oct. 6, 1964, 40,668/64
4 Claims. (Cl. 230—172)

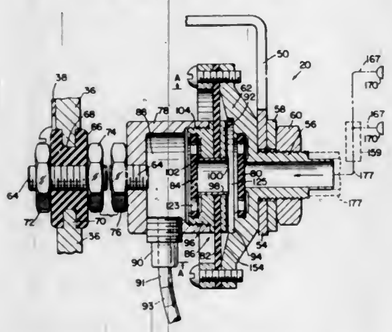
1. An oil-free gas compressor comprising a piston and cylinder, piston rings of anti-friction material, a segmented circumferential layer of anti-friction material surrounding the skirt of the piston and detachably secured thereto, a bearing of the lubricated, sealed type connected with said piston, a connecting rod carrying said piston through

the intermediary of said bearing, a crankshaft carrying said connecting rod, said crankshaft being formed in a plurality of parts, and a plurality of bearings of the lubri-



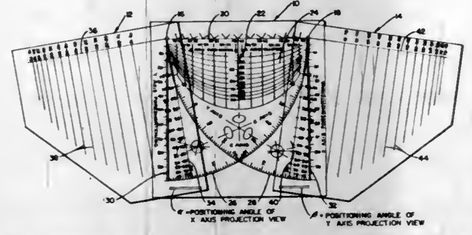
cated, sealed type for the crankshaft parts, one of said bearings for the crankshaft parts supporting the connecting rod on one of the crankshaft parts.

3,358,915
DIAPHRAGM TYPE AIR PUMP
Roland D. Beck and Thomas H. David, Jr., Anaheim, Alva R. Davis, Jr., Corona del Mar, Donald A. Doyle, Santa Ana, and John H. Geiger, Los Alamitos, Calif., assignors to Robertshaw Controls Company, a corporation of Delaware
Application Jan. 21, 1965, Ser. No. 428,605, now Patent No. 3,255,956, dated June 14, 1966, which is a continuation of application Ser. No. 149,990, filed Nov. 3, 1961. Divided and this application May 11, 1966, Ser. No. 568,995.
2 Claims. (Cl. 230—228)



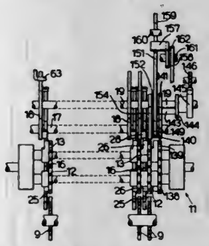
1. In combination: a fluid pump having a fluid intake, a pumping chamber and a fluid exhaust; a valve seat in said chamber; a one piece valve groove forming construction surrounding said valve seat and defining two opposed substantially flat parallel walls joined together by an outer annular wall; and a flexible disc having an outer peripheral edge means loosely held in said groove and adapted to be spaced from said flat and annular walls, centrally seating on said valve seat, and having an opening in said disc, said valve seat and valve disc being so constructed and arranged that said valve seat extends beyond the plane of the adjacent flat groove wall in the direction of said valve disc and engages said valve disc to cause said outer peripheral edge means of said valve disc to engage the other flat groove wall and to cause the central part of said valve disc to bear against said valve seat with a slight force and normally close the same.

3,358,916
AXONOMETRIC DRAWING GUIDE
Paul A. Suto, Windsor, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Oct. 24, 1966, Ser. No. 588,788
9 Claims. (Cl. 235—89)



1. Apparatus for use in the preparation of three dimensional drawings comprising:
a base member having a plurality of scales imprinted thereon, a first one of said scales being commensurate with horizontal angles of view of objects to be drawn, a first plurality of additional scales being oriented perpendicularly with respect to said first one of said scales, at least one of said first plurality of scales being calibrated in accordance with percentage of foreshortening of an axis of the object to be drawn, said base member further carrying a family of curves which cross said first plurality of additional scales and a pair of protractor scales;
a first transparent overlay, said first overlay carrying second and third scales and a plurality of parallel lines commensurate with indicia on the second of said scales, said first overlay being pivotably attached to said base member at one end of one of said protractor scales; and
a second transparent overlay, said second overlay carrying fourth and fifth scales and a plurality of parallel lines commensurate with indicia on the fourth of said scales, said second overlay being pivotably attached to said base member at one end of the other of said protractor scales.

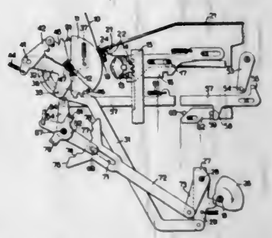
3,358,917
TOTAL TAKING DEVICE FOR A PRINTING CALCULATING OR LIKE MACHINE
Teresio Gassino, Ivrea, Turin, and Michele Bovio, Banchette, Turin, Italy, assignors to Ing. C. Olivetti & C., S.p.A., Ivrea, Italy, a corporation of Italy
Filed Mar. 25, 1966, Ser. No. 537,489
Claims priority, application Italy, Apr. 5, 1965, 756,570
14 Claims. (Cl. 235—60.31)



1. In a printing calculating or like machine having a set of denominationally arranged reciprocable actuators differentially movable according to an amount to be accumulated, and a register adapted to be engaged with said actuators when so reciprocated to accumulate said amount, a total taking device comprising in combination:

(a) means for causing said actuators to be reciprocated under control of said register to zeroize the corresponding orders thereof,
(b) at least one additional order on said register located at right of said actuators,
(c) and at least a toothed member located at right of said actuators and automatically reciprocable immediately before said corresponding orders are zeroized by said actuators for zeroizing said additional order.

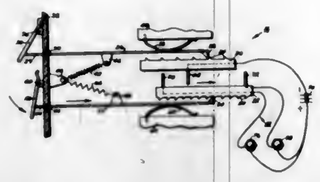
3,358,918
PAPER FEED MECHANISM FOR A PRINTING CALCULATING OR LIKE MACHINE
Teresio Gassino, Ivrea, and Lorenzino Bertino, Settimo Vittone, Italy, assignors to Ing. C. Olivetti & C., S.p.A., Ivrea, Italy, a corporation of Italy
Filed Apr. 11, 1966, Ser. No. 541,625
Claims priority, application Italy, Apr. 10, 1965, 8,943/65
6 Claims. (Cl. 235—60.51)



1. In a paper feed mechanism for a printing calculating or like machine, having a platen adapted to be rotated before the printing in a predetermined direction a plurality of line spaces for retracting said paper and to be rotated after the printing in an opposite direction for advancing said paper at least one line space farther than said plurality of line spaces, a ratchet wheel bodily rotatable with said platen, and a spring urged locking member normally locking said ratchet wheel, the combination comprising:
(a) cyclically operating means for moving said locking member through a predetermined forward stroke before the printing,
(b) means for causing said locking member to yieldably rotate said ratchet wheel in said predetermined direction,
(c) an intercepting member for arresting said ratchet wheel after being rotated said plurality of line spaces in said predetermined direction, said locking member being adapted to complete its said forward stroke independently from said ratchet wheel,
(d) and restoring means effective after the printing for returning said locking member through a rearward stroke equal to said forward stroke to rotate said ratchet wheel in said opposite direction said farther line space.

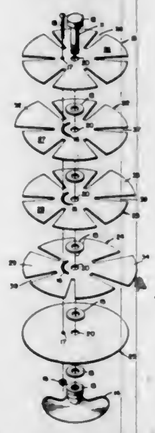
3,358,919
RATIO ANALYZING APPARATUS AND METHOD
Louis B. Williams, Jr., Pensacola, Fla., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Filed Aug. 26, 1966, Ser. No. 575,332
8 Claims. (Cl. 235—61)

1. A method of administering a sequential sampling plan, comprising in combination:
(a) increasing by a given increment the distance from an actuator to a first limit means along a linear path of fixed length connecting said first limit means to a second limit means, in response to each occurrence of a first signal,
(b) increasing by a different given increment the distance along said linear path from said actuator to said second limit means, in response to each occurrence of a second signal,



(c) and detecting when said actuator actuates either of said first and said second limit means.

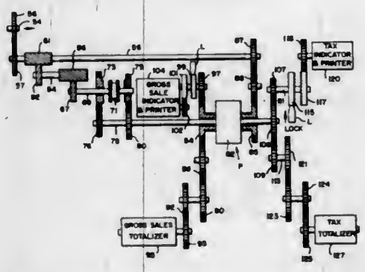
3,358,920
DEVICE FOR STORING AND RETRIEVING INFORMATION
Michael B. Ringley, Charleston Heights, S.C., assignor to West Virginia Pulp and Paper Company, New York, N.Y., a corporation of Delaware
Filed June 13, 1966, Ser. No. 557,213
1 Claim. (Cl. 235—88)



A hand-held device for storing, correlating and retrieving kraft pulping data, comprising:
(a) a bottom disk,
(b) a top disk that is parallel to said bottom disk, comprising:
(1) a plurality of sectors having equal angular width and concentrically disposed circles inscribed thereupon, at least one sector having identifying descriptions of kraft paper properties and pulping results with reference to said circles,
(2) a plurality of sectorial slots of equal angular width, each slot being bounded by test sectors and having an anguar width equalling one-fourth of the angular width of the test sectors, and
(3) a central zone that contains data identifying each slot as to pulping time and temperature,
(c) a plurality of data disks that are parallel to and between said bottom disk and said top disk, each data disk comprising:
(1) a central zone,
(2) a plurality of sectors that coincide in width and spacing with the sectors in the top disk,

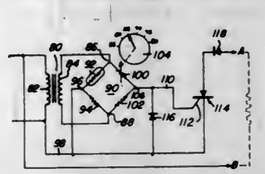
each sector being divided into four radial files of equal angular width that contain data about paper properties and cooking results, arranged in concentric rows and in spatial correspondence with the concentric circles in the top disk,
(3) a plurality of sectorial slots, separating the sectors, that coincide in width and spacing with the sectorial slots in the top disk, and
(4) a tab, rigidly attached to each data disk, that is adjacent to the outer boundary of a sector and protrudes beyond the rim of said data disk, comprising:
(a) a concentric alkalinity layer, adjacent to said outer boundary, that is divided into four equal parts, each part having one of two active alkali pulping levels inscribed thereon, whereby differing levels are side-by-side,
(b) a concentric sulfidity layer, adjacent to the alkalinity layer, that is divided into two equal parts, each part having one of two sulfidity levels inscribed thereon and each sulfidity level coinciding with both alkalinity levels in the alkalinity layer, and
(c) a concentric slowness layer, adjacent to said sulfidity layer, having a slowness level inscribed thereon that coincides with both sulfidity levels and characterizes all data on said data disk,
(d) a shaft that centrally transpierces all disks and is aligned perpendicularly thereto,
(e) means for retaining said disks on said shaft, and
(f) means for limiting the rotational movement of said data disks, comprising:
(1) an arcuate slot within the central zone of each data disk, each arcuate slot being equally spaced from the centrally transpiercing shaft and having an angular length equalling five times the angular width of the arcuate slots, and
(2) a limit bolt that is rigidly attached to said top disk and to said bottom disk, is parallel to said shaft, and passes through all of said arcuate slots.

3,358,921
TAX-COMPUTING METERING DEVICE
William F. Berck, Hayward, and Leif J. Sundblom, Castro Valley, Calif., assignors to Rockwell Manufacturing Company, San Leandro, Calif., a corporation of Pennsylvania
Filed May 9, 1966, Ser. No. 548,718
12 Claims. (Cl. 235—94)



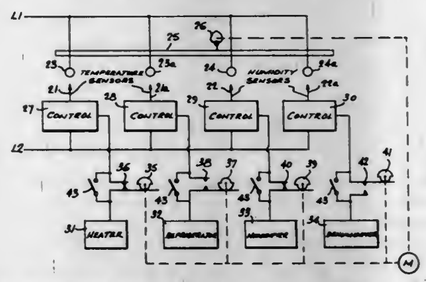
1. A tax-computing metering computer, comprising:
(a) means for computing the price of a commodity being metered;
(b) means for computing a selectable percentage of said price;
(c) means for providing indications of both said percentage and said price plus said percentage; and
(d) means for selecting said percentage, said means being capable of selecting a percentage of zero and at least two percentages other than zero.

3,358,922
MODULATING VALVE
Orlo C. Norton, Erie, Pa., assignor to Electr-o-Mech, Inc., Erie, Pa., a corporation of Pennsylvania
Filed Oct. 20, 1965, Ser. No. 498,323
14 Claims. (Cl. 236—9)



1. In a fluid flow control system, a flow line; modulating valve means in said flow line for regulating the flow therethrough; solid-state temperature sensitive circuit means for producing a modulation control signal proportional to the deviation of ambient temperature from the desired value, said circuit means including a bridge circuit having a pair of input terminals and two arms connected between said input terminals, the first arm including a thermistor in series with a first fixed resistance, and the second arm including a variable resistor in series with a second fixed resistance, the resistance of said thermistor varying with changes in said ambient temperature and the resistance of said variable resistor being changeable to select said desired value, whereby said bridge has a null point when said ambient temperature equals said desired value; means for obtaining from the junction of the resistance in one of the said arms of said bridge circuit an output signal proportional to the difference between said ambient temperature and said desired value, and for applying said output signal to the gate electrode of a silicon controlled rectifier to control the conductivity thereof, said modulation control signal being carried by the anode and cathode of said silicon controlled rectifier; and means responsive to said modulation control signal for modulating said valve means, whereby the passage of fluid through said valve means is proportional to said temperature difference.

3,358,923
CONTROL APPARATUS
Donald F. Stedman, Ottawa, Ontario, Canada, assignor to Canadian Patents and Development Limited, Ottawa, Ontario, Canada, a corporation of Canada
Filed May 17, 1965, Ser. No. 456,363
9 Claims. (Cl. 236—46)

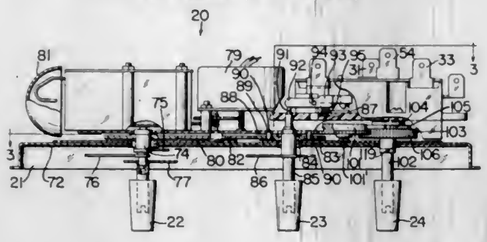


1. In control apparatus for maintaining the value of a controllable physical quantity close to a predetermined level,
(a) means for increasing said value,
(b) means for decreasing said value,

(c) means for applying a cyclic Gouy oscillation to said means (a) and (b),

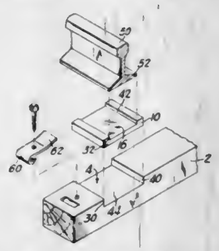
(d) and means synchronous with said oscillating means for limiting the maximum duration of actuation of at least one of said increasing and decreasing means to less than a full cycle.

3,358,924
SYSTEM FOR CONTROLLING HEATING MEANS AND PARTS THEREFOR OR THE LIKE
Carl J. Goodhouse, Litchfield, and Francis J. Forte, Waterbury, Conn., assignors to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware
Filed Mar. 21, 1966, Ser. No. 535,853
32 Claims. (Cl. 236—46)



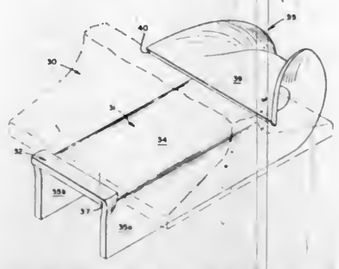
1. In combination, heating means for cooking food or the like, thermostatically operated means having a first condition for operating said heating means for a first temperature effect thereof and having a second condition for operating said heating means for a second temperature effect thereof, timer means, a first selector means operatively interconnected to said thermostatically operated means and said timer means to actuate said thermostatically operated means in said first condition thereof after a first lapse of time selected by said first selector means, and a second selector means operatively interconnected to said thermostatically operated means and said timer means to actuate said thermostatically operated means in said second condition thereof after a second lapse of time selected by said second selector means.

3,358,925
BONDED NON-METALLIC TIE PLATE
Charles J. Pennino, Monroeville, and Moses W. Gaylord, Pittsburgh, Pa., assignors to Koppers Company, Inc., a corporation of Delaware
Filed June 28, 1966, Ser. No. 561,232
5 Claims. (Cl. 238—287)



1. Rail support means comprising a generally rectangular wood railroad tie having an upper surface thereon, a non-metallic tie plate comprising a non-flowable cross-linked plastic material having a tensile strength of at least 4000 p.s.i., and being substantially non-permanently deformable, and being adhesively bonded to the wood on said upper surface to completely seal the interface between tie and tie plate, and to support a rail which is secured to said tie and said tie plate by holding means spaced apart from said tie plate.

3,358,926
RAIL ANCHOR
William A. Blackford, 901 Sloat Blvd., San Francisco, Calif. 94132
Filed Jan. 10, 1966, Ser. No. 528,684
4 Claims. (Cl. 238—321)



1. A one-piece rail anchor for gripping the base flange of a railroad track which comprises a channel-shaped body portion; a toe; and a gripping finger:

(a) said body portion consisting of a web and a pair of spaced flanges formed integrally therewith and extending in the same direction therefrom;

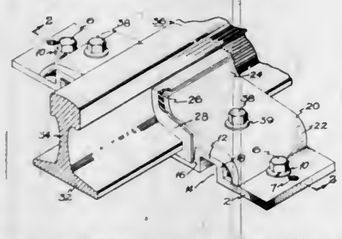
(b) said toe including an upstanding portion formed integrally with said web and extending substantially perpendicularly therefrom in a direction opposite the direction of extension of said flanges and in a plane substantially perpendicular thereto;

(c) said gripping finger being formed integrally with said body portion at the end thereof opposite said toe and consisting of an albow portion and a terminal portion formed integrally therewith,

(1) said elbow portion being generally arcuately, channel-shaped, extending integrally from said web and said flanges in an arcuate direction generally opposite the direction of extension of said flanges,

(2) said terminal portion overlying said web and consisting of said web and said flanges diverged into substantially one plane to thereby define a gripping edge.

3,358,927
RAIL TIE DOWN ASSEMBLY
Richard D. Hein, Wabash, Ind., and John A. Welch, Northampton Township, Summit County, Ohio, assignors to The General Tire & Rubber Company, a corporation of Ohio
Filed May 3, 1966, Ser. No. 547,233
6 Claims. (Cl. 238—338)



1. An assembly for supporting and securing a rail on and to a substructure such as a cross tie and including

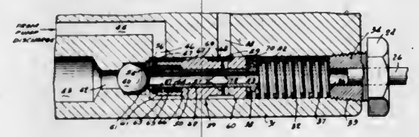
(a) a substantially rectangular tie plate secured to said substructure underneath and transverse to said rail, said tie plate including a pair of inverted U-shaped channels extending in the direction of the rail and spaced laterally therefrom, each of said channels including a pair of sides, an inner side facing the rail and an outer side remote from said rail,

(b) a pair of rigid rail clamps and associated threaded means to secure the same to said channels, each clamp conforming to the contour of the flange and web of the rail and extending up a substantial distance toward the upper part of said rail, provided with a downwardly extending flange adapted to engage the inner side of said channel to absorb transversely directed forces imposed on said assembly, and downwardly curving means in contact with the tie plate outside of said channel to relieve the tensile stress on the threaded securing means, and

(c) elastomeric means completely separating the rail from the tie plate and the clamps and providing electrical insulation therefrom, the portion of said elastomeric means interposed between the rail and said plate and clamps having a uniform thickness and being uniformly compressed,

the improvement comprising flexible reinforcing means embedded within said elastomer, approximately midway between the two surfaces thereof in the portion under compression between the rail and the clamps and tie plate.

3,358,928
CUTOFF VALVE FOR OIL BURNER CIRCUIT
Harold A. Melendy, Royal Oak, Mich., assignor to TRW Inc., Cleveland, Ohio, a corporation of Ohio
Filed Nov. 8, 1965, Ser. No. 506,650
5 Claims. (Cl. 239—111)



2. A valve for controlling oil flow between the cut-off and the nozzle in an oil burner circuit comprising

a valve seat,

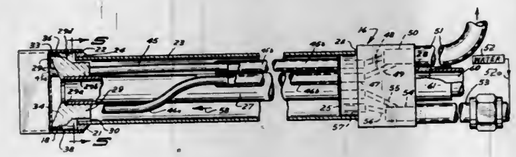
a movable hollow spool valve having an annular closure head engaging said seat to open and control a flow passage extending past said seat and through the hollow interior of said spool valve.

and means including said spool valve forming a valve controlled relief passage which is opened in response to movement of said spool valve towards said seat to vent any compressed air trapped in said valve after closure,

thereby to prevent forced dribble of oil from the nozzle after closure of the valve.

3,358,929
WATER COOLED TORCH INCLUDING AN OXYGEN-GAS MIXER ASSEMBLY
Joseph F. Fleischhacker, Wayzata, Minn., assignor to Tescom Corporation, Minneapolis, Minn., a corporation of Minnesota
Filed Oct. 7, 1965, Ser. No. 493,813
16 Claims. (Cl. 239—132.3)

1. In liquid cooled heating torch apparatus, a torch head, a preheat member having a plate, said head and preheat member cooperatively forming a plenum chamber, an axially elongated first tube having one end portion opening to the plenum chamber, first means for joining said preheat member and torch head in fluid tight relationship, a plurality of transversely spaced preheat tubes each having one end opening to said plenum chamber, extending away from said plate and an opposite outlet end opening to the ambient atmosphere, second means for joining said preheat tubes to said plate in fluid tight relationship, a housing in surrounding relationship to said preheat tubes, preheat member and at least in part overlapping said torch head, said housing and preheat member cooperatively forming a liquid chamber surrounding a major portion of said preheat tubes, and passageways around the periphery of the preheat member that open to said liquid chamber, said housing being spaced from the torch head to provide a perimetric clearance space surrounding at least one end portion of said torch head and opening to said passageways to permit liquid flow between said clearance space and liquid chamber, said housing having an open end adjacent said torch head and a wall opposite said open end, said preheat tubes outlet ends opening through said wall, a barrel surrounding said elongated tube having a first end portion, means for attaching said barrel first end portion to the open end portion of the housing to form a fluid seal between the barrel and housing and retain said barrel first end portion spaced from the torch head and generally concentric to said first tube in spaced relationship thereto to provide a liquid passageway between said barrel and first tube that opens to said clearance space and conduit means extending within the barrel and opening to said liquid chamber for conducting liquid.



13. Torch apparatus comprising a mixer assembly, said mixer assembly including a mixer body having an axially elongated main bore, an oxygen inlet and a fuel gas inlet, said main bore including an outlet portion, a shoulder portion, a reduced diameter portion intermediate said shoulder portion and outlet portion, and a frusto-conical portion intermediate the above mentioned reduced diameter portion and outlet portion, and a mixer seatable in said main bore, said mixer having a diametric portion seatable against said shoulder portion, a reduced diameter portion to in conjunction with said bore reduced diameter portion provide an annular clearance space, and a frusto-conical portion to form a close fit with the bore frusto-conical portion, said mixer frusto-conical portion having circumferential spaced slots for placing the annular clearance space in fluid communication with the bore outlet portion, said oxygen inlet opening to said clearance space, said mixer having an annular groove axially opposite the shoulder portion from said last mentioned clearance space, and a fluid passageway opening to said annular groove and to the bore outlet portion radially intermediate said slots, said fuel gas inlet opening to said annular groove, means for supplying a fuel gas under pressure to said fuel gas inlet, means for supplying oxygen under pressure to said oxygen inlet, a torch head assembly having a gas inlet and an outlet opening to the ambient atmosphere, and means connecting the mixer assembly to the torch head assembly for conducting gas from the main bore outlet portion to the torch head assembly inlet.

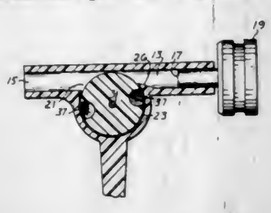
3,358,930
TURBINE WATER SPRINKLER
Edward L. Parr, 301 N. Cuyamaca, El Cajon, Calif. 92020
Filed Dec. 6, 1965, Ser. No. 512,578
4 Claims. (Cl. 239—210)

1. A spray nozzle for spraying a fluid comprising in combination:

(A) a housing having:

(1) an elongated passage extending from one end of the housing to the opposite end, one end providing an inlet and the opposite end an outlet;

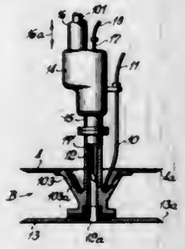
(2) a cylindrically shaped chamber interposed between the inlet and the outlet, the axis of the chamber being transverse with respect to the passage, a chord of the chamber forming an intermediate part of the passage;



(B) a cylindrical member disposed for rotation within the chamber, the axis thereof being coincident with that of the chamber, a chord of the member extending into said chord of the chamber, said member being spirally grooved in the periphery thereof substantially through the width of the periphery,

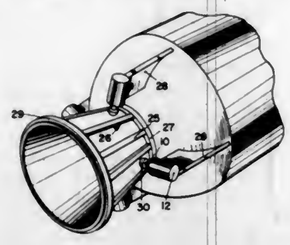
(1) said cylindrical member being rotated solely by the passage of fluid between the inlet and outlet.

3,358,931
PAINTING APPARATUS
Hermann Wirth, Gundelfingen, Germany, assignor to Robert Bosch G.m.b.H., Stuttgart, Germany
Filed July 16, 1965, Ser. No. 472,650
Claims priority, application Germany, Aug. 26, 1964, B 78,257
7 Claims. (Cl. 239—223)



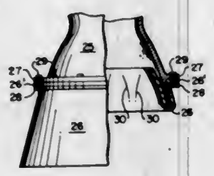
1. In an apparatus for applying coats of atomized liquid paint, particularly lacquer, and including a centrifugal distributor having an elongated upright rotary shaft, at least one first distributor disk rigid and coaxial with said shaft and including a horizontal upper endface provided with a substantially funnel-shaped central first recess having a lower end and being adapted to receive liquid paint, and a paint-supply tube extending along said shaft into said recess and having an opening located in the region of said lower end for discharging liquid paint into said recess, the improvement consisting in providing said shaft as a hollow shaft extending through said lower end of said recess and downwardly beyond said first disk; at least one second distributor disk rigid with said hollow shaft downwardly spaced from said first disk and also having an endface provided with a second recess, said hollow shaft being constructed and arranged so that the interior thereof communicates with said second recess; and supply means for supplying paint through said paint-supply tube into said first recess, and through said hollow shaft into said second recess.

3,358,932
DIRECTIONAL CONTROL FOR ROCKETS
Verbon H. B. Wilhite, Brigham City, Utah, assignor to Thiokol Chemical Corporation, Bristol, Pa.
Filed June 16, 1965, Ser. No. 464,506
3 Claims. (Cl. 239—265.43)



1. In a gas propelled rocket engine, a nozzle assembly comprising a refractory annular throat, a frame positioned rearwardly of the throat and having inner and outer rings with longitudinal members extending therebetween, a wall of flexible material diverging from said throat in said frame, and means for selectively deforming said diverging wall inwardly comprising a fluid motor having a piston and a piston rod connected to deform said flexible wall and thereby deflect gas flowing through said nozzle to steer said rocket engine.

3,358,933
ROCKET NOZZLE WITH AUTOMATICALLY ADJUSTABLE AUXILIARY NOZZLE PORTION
John H. Altseimer, Carmichael, Calif., assignor to Aerojet-General Corporation, Azusa, Calif., a corporation of Ohio
Original application Sept. 14, 1962, Ser. No. 223,646, now Patent No. 3,249,306, dated May 3, 1966. Divided and this application Mar. 7, 1966, Ser. No. 557,846
2 Claims. (Cl. 239—265.43)

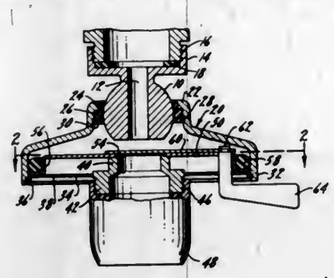


1. In a rocket motor having a combustion chamber provided with a rearwardly directed outlet, a rearwardly extending rocket nozzle defining the outlet of the combination chamber, an automatically adjustable auxiliary nozzle portion comprising a skirt of pliable material secured at one end thereof to said rocket nozzle and being folded upon itself in an inoperative folded configuration, and said skirt of pliable material being movable from its inoperative folded configuration to an operative position where said skirt forms an outwardly flared rearward extension of said rocket nozzle which is of progressively increasing greater diameter than said rocket nozzle.

3,358,934
SWIVEL AERATORS WITH COMBINATION SPRAY
Alfred M. Moen, 25 Lakeview Drive, Grafton, Ohio 44044
Filed Oct. 11, 1965, Ser. No. 494,652
5 Claims. (Cl. 239—443)

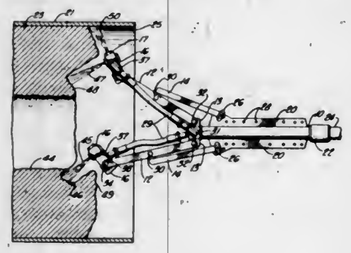
1. In a spray aerator for attachment to a faucet discharge, a swivel member and means for attaching it to

a faucet discharge, a housing member mounted and movable on said swivel, said housing member having a generally central water chamber with said swivel having a centrally located water passage opening in said chamber, a jet forming member closing the lower end of said chamber, said jet forming member having a plurality of jet forming apertures, an aerator attached to said housing downstream of said jet forming member, and means for discharging water either from said aerator or said jet



forming apertures, including a closure plate within said chamber and spaced upstream from said jet forming member so as to form an annular space therebetween, a pair of openings in said closure plate, with one of said closure plate openings communicating only with said aerator and the other opening communicating only with the apertures in said jet forming member, and a closure member, movable from outside of said housing for closing either one of said closure plate openings.

3,358,935
APPARATUS FOR REMOVING CAKED MATERIAL FROM A CONTAINER
Jon B. Andersen, Anaheim, Calif., assignor to Byron Jackson Inc., Long Beach, Calif., a corporation of Delaware
Filed June 3, 1965, Ser. No. 461,013
2 Claims. (Cl. 239—589)



1. A tool for removing caked material from a container comprising:

(a) a body having an axis;

(b) first arms pivoted to said body;

(c) means for locking said first arms to said body comprising second arms attached to said first arms and to said body to provide locking of said first arms in selected angular positions with respect to said axis;

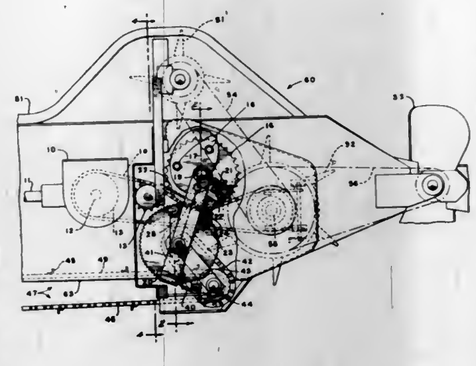
(d) spray heads pivoted to said first arms, each of said spray heads having nozzles;

(e) means for changing nozzles for varying orifice sizes;

(f) means for locking said spray heads to said first arms in selected angular positions with respect thereto; and

(g) means for supplying fluid under pressure to said nozzles.

3,358,936
MANURE SPREADER
Charles A. Smith, New Holland, Pa., assignor to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware
Filed Apr. 1, 1965, Ser. No. 444,648
11 Claims. (Cl. 239—680)



11. In a manure spreader of the class in which a feed mechanism is operative to discharge material rearwardly from a longitudinally disposed body having a pair of side walls for action by distributing mechanism, the combination with said spreader of a rotary drive element mounted on one side wall and means transmitting rotation thereto at a constant speed, driving mechanism between said element and the distributing mechanism, a ratchet wheel rotatably supported on said one side wall in driving relation with said feed mechanism, an arm mounted for oscillation about the axis of said ratchet wheel and a pawl carried by said arm for driving engagement with said wheel, means establishing an operative driving connection between said arm and said drive element to cause oscillation of said arm, said means including a rotatable cam having an outer periphery in operative contact with said arm, and said feed mechanism being substantially even with the lowermost portions of said ratchet wheel and drive to said feed mechanism whereby the ground clearance of said spreader at the rear end thereof is determined by the height of said feed mechanism.

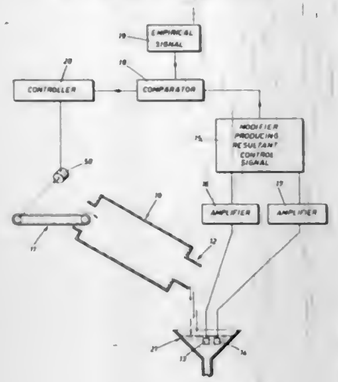
3,358,937
DRY GRINDING OF ALUMINA
Alan Pearson, Brentwood, Mo., and George MacZura, East St. Louis, Ill., assignors to Aluminum Company of America, Pittsburgh, Pa., a corporation of Pennsylvania
No Drawing. Filed Nov. 10, 1965, Ser. No. 507,218
1 Claim. (Cl. 241—15)

The method of producing finely divided alumina particles comprising preparing a mixture composed of alumina particles and at least one alcohol selected from the group composed of ethyl alcohol, methyl alcohol, isopropyl alcohol, n-propyl alcohol, n-octyl alcohol, ethylene glycol, triethylene glycol, ethylene glycol monoethyl ether, 1-amino-2-propanol, monoethanolamine, and triethanolamine in an amount equal to at least 0.05% by weight of the alumina, and dry ball-milling the said mixture.

3,358,938
METHOD OF CONTROL OF PARTICLE SIZE UTILIZING VISCOSITY

Graham Edward Brown, Scarborough, Ontario, Canada, assignor to Union Carbide Canada Limited, Toronto, Ontario, Canada, a company of Canada

Filed July 8, 1965, Ser. No. 470,385
8 Claims. (Cl. 241—21)

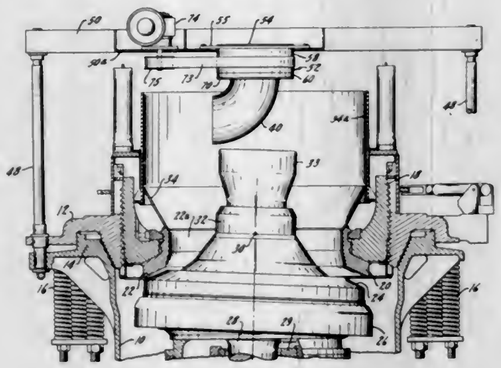


1. A process for automatically controlling the size of particles of solid mineral material derived from particulate material processing equipment which comprises; obtaining a slurry of said particles, producing a signal varying in accordance with the viscosity of said slurry, and using said signal to automatically vary the set control system for maintaining the size of said particles in said processing equipment substantially constant.

3,358,939
FEEDER FOR CONE CRUSHERS AND THE LIKE

Rudolph J. Gasparac, Milwaukee, and Howard M. Zoerb, Cudahy, Wis., assignors to Nordberg Manufacturing Company, Milwaukee, Wis., a corporation of Wisconsin

Filed Aug. 11, 1965, Ser. No. 478,805
12 Claims. (Cl. 241—202)

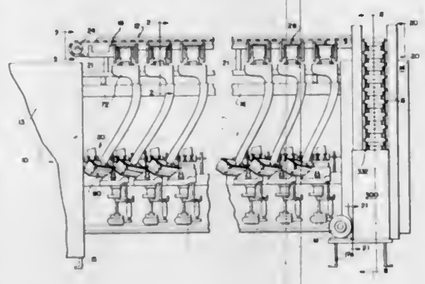


1. In a crusher having a gyrated head, a frame, a bowl mounted on the frame and defining, with the gyrated head, a crushing cavity, means for gyrating the head at a predetermined rate, a feed distribution above the head and generally aligned axially with the head and spaced upwardly from it, said feed distributor including a feed delivery element having an upper intake opening generally concentric with the axis of the head and an outlet spaced substantially downwardly from the intake and radially outwardly from the axis of the head, said feed delivery element having a downwardly and outwardly sloping bottom portion underlying the intake opening and terminating radially outwardly of the circumference of the intake opening, and separate power means for rotating the feed distributor so that material will be fed to the cavity at a rate completely independent of the rate of gyration of the head, and sufficient to cause centrifugal movement of the material outwardly substantially beyond the outlet of the feed delivery element.

3,358,940
BOBBIN CONVEYOR

Walter L. Beckwith, Jr., Alan H. Norris, and Raymond V. Tata, Warwick, R.I., assignors to Leesona Corporation, Warwick, R.I., a corporation of Massachusetts

Filed Sept. 24, 1965, Ser. No. 489,860
14 Claims. (Cl. 242—35.5)



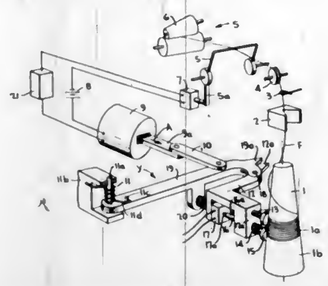
1. For use with an automatic winding machine adapted to wind yarn from an active bobbin to a take-up package, apparatus for continuously replenishing the supply of wound bobbins as their number is depleted comprising: a source of wound bobbins; a first reserve bobbin magazine; a second reserve bobbin magazine spaced from said first magazine and located adjacent the winding mechanism of said machine; means conveying bobbins from said source to said first magazine; bobbin transfer means for guiding bobbins from said first magazine to said second magazine; holding means associated with said first magazine and movable between a first position for retaining bobbins therein and a second position for releasing a bobbin from said first magazine to said transfer means; means mounting said holding means for movement between said first and second positions; and actuating means associated with said second magazine for moving said holding means to said second position when a vacancy occurs in said second magazine.

3,358,941
YARN REMAINDER FEELER

Rudolf Jenny, Thalwil, Switzerland, assignor to Maschinenfabrik Schweiter AG., Horgen, Switzerland, a corporation of Switzerland

Filed June 14, 1965, Ser. No. 463,681
Claims priority, application Switzerland, June 29, 1964, 8,524/64
9 Claims. (Cl. 242—36)

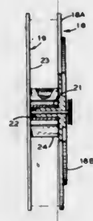
1. Yarn remainder feeler for an automatic winding machine used for testing the yarn remainder available at a delivery bobbin, comprising a bracket member mounted for pivotable movement, a pair of superimposed feeler members carried by said bracket member, one of said feeler members being rigidly connected with said bracket member, the other of said feeler members being movably mounted at said bracket member, switch means carried by said bracket member, said switch means being actuated by said movably mounted feeler member when the latter is in a predetermined position relative to said one feeler member, and actuating means cooperating with said bracket member for displacing said feeler members into a position for testing the yarn remainder available at a delivery bobbin.



3,358,942
DISPOSABLE TYPEWRITER SPOOL

Albert Frumkin, 4705 Topping Road, Rockville, Md. 20853

Filed June 28, 1966, Ser. No. 561,086
2 Claims. (Cl. 242—71.8)



1. For use in a typewriter or the like having a take-up sprocket for effecting the winding of the used carbon ribbon,

an expendable spool comprising

a hub adapted to detachably received on the spindle of a take-up sprocket, said hub having a bore extending thereinto by which it is detachably secured to said spindle by frictional engagement,

flange defining means connected to said hub to extend laterally outwardly therefrom and in spaced relationship to said sprocket in the operative position thereof,

and means connected to said flange to extend laterally inwardly toward said sprocket to define a core about which said ribbon is wound as used, said latter means connected to said flange comprising a finger adapted to be spaced on either side of said hub, and said fingers being arcuate in cross-section, and said hub being provided with longitudinally extending slots to render said hub expandable for use on variably sized spindles.

3,358,943
SPOOL CONSTRUCTION

Ernest Pelson, 41 S. Mountain Ave., Montclair, N.J. 07042

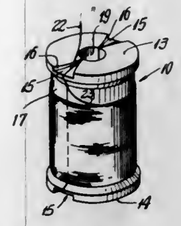
Filed May 9, 1966, Ser. No. 548,709
2 Claims. (Cl. 242—125.2)

1. A spool for receiving the windings of a strand of material comprising,

(a) a plurality of spool segments each having an edge portion adapted to be connected into edge to edge relationship to define the whole spool, the adjacent edges of said segments in assembled position defining a split therebetween,

(b) each of said segments including a body portion defining a portion of the spool core,

(c) and a laterally extending flange connected to the opposed end portions of said body portion,

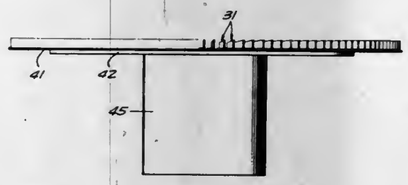


(d) said flange having a portion of its face cut away adjacent the edge thereof to define in the face portion of the flange in the assembled position of said spool segments a guiding notch converging toward the center of said spool for receiving and guiding the free end of the strand material wound about the body portion of said spool to said slit whereby the free end of the strand is secured between the adjacent edges of the assembled spool segments to prohibit unintentional unraveling of said material therefrom.

3,358,944
HELIOTROPIC DEVICE FOR ORIENTING A SPACE VEHICLE

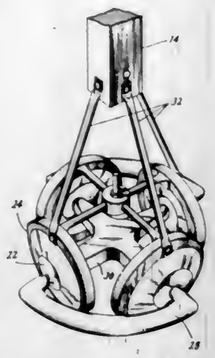
Louis A. Ule, Rolling Hills, Calif., assignor, by mesne assignments, to Globe-Union Inc., Milwaukee, Wis., a corporation of Delaware

Filed Aug. 27, 1962, Ser. No. 219,422
4 Claims. (Cl. 244—1)



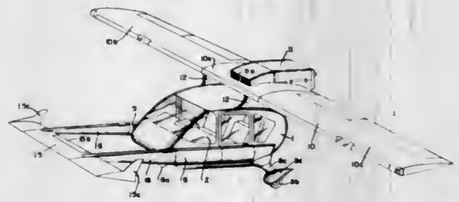
1. Heliotropic apparatus for space vehicles of the type adapted to spin about a given axis, said apparatus comprising support means adapted for coupling to said vehicle, annular means coupled to said support means, the plane of said annular means being normal to said spin axis, a plurality of light reflectors having a base portion and a portion extending upwardly from said annular means, said base portion being mounted on said annular means, said upwardly extending portion having an inside and an outside surface, said inside surface of said upwardly extending portion lying substantially in a radial plane of said annular means, said base portion and said inside and outside surfaces of said upwardly extending portion being mirror-like, each of said reflector means being spaced circumferentially about said annular means and having the inside surfaces of each of said upwardly extending portions facing in the same rotational direction.

3,358,945
ATTITUDE STABILIZING MEANS
George H. Blount, Redwood City, and Stephen H. Marx, Palo Alto, Calif., assignors to Philco-Ford Corporation, a corporation of Delaware
Filed Sept. 21, 1964, Ser. No. 398,010
14 Claims. (Cl. 244—1)



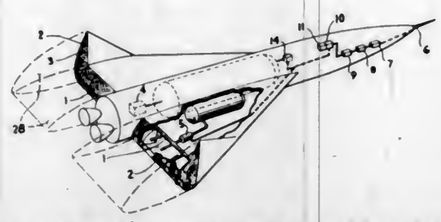
1. An articulate stictionless coupling for interconnecting and maintaining two bodies in predetermined orientation, comprising means associated with one of said bodies providing a magnetic field, and diamagnetic means magnetically suspended in said field and associated with the other of said bodies.

3,358,946
AIRCRAFT
André Jack Sbye, 1336 Charleston Ave., Huntington, W. Va. 25701
Filed May 6, 1966, Ser. No. 548,211
12 Claims. (Cl. 244—13)



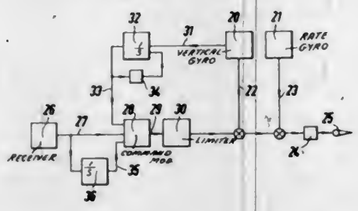
1. A single engine, push type, aircraft comprising a self-contained fuselage containing an instrument panel, flight controls and seats; non-retractable landing gear of tricycle type supported by the fuselage and having a nose wheel, and having side wheels arranged on outwardly and downwardly inclined struts extending from the fuselage; a single mono-type wing comprising a center section and two outboard sections, said wing being disposed above the rear portion of the fuselage; a pair of vertical stabilizers connecting the upper outer sides of the fuselage with the undersides of the wing center section, the aft portions of the stabilizers being hinged on vertical axes to form a pair of rudders which together form a venturi; an engine mounted on the wing center section and disposed above and behind the leading end of the fuselage; a propeller driven by said engine and disposed above the rear center of the fuselage; a pair of booms extending forwardly in parallel relation from opposite sides of the fuselage; and a horizontal stabilizer mounted on said booms forwardly of the fuselage, said horizontal stabilizer having a center section fixed to said booms and carrying a trim tab, and having elevators disposed outboard of the said center section.

3,358,947
BASE DRAG REDUCTION DEVICE
James M. Bowyer, Jr., Manhattan, Kans., and Wilbert V. Carter, La Jolla, Calif., assignors to General Dynamics Corporation, San Diego, Calif., a corporation of Delaware
Filed July 21, 1965, Ser. No. 473,719
16 Claims. (Cl. 244—73)



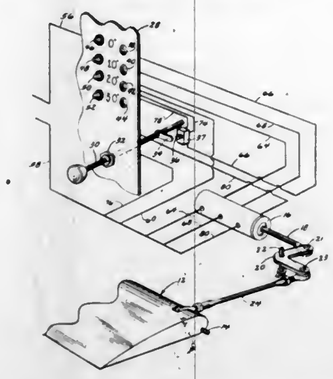
1. A device for controlled reduction of base drag for a blunt-based vehicle for subsonic, transonic and supersonic flight through atmosphere, comprising in combination:
(a) means disposed on said blunt-based vehicle for burning fuel rearwardly of said blunt base;
(b) flight condition sensing means connected with a control means; and
(c) said control means responsive to said flight condition sensing means and adapted to regulate fuel to be burned in said fuel burning means in accordance to said vehicle condition of flight sensed by said flight condition sensing means.

3,358,948
AIRCRAFT TRACK HOLDING SYSTEMS
George Edward Sims, London, England, assignor to Elliott Brothers (London) Limited, London, England, a British company
Filed Oct. 19, 1964, Ser. No. 404,605
Claims priority, application Great Britain, Oct. 21, 1963, 41,441/63
17 Claims. (Cl. 244—77)



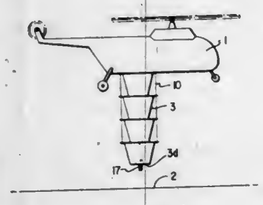
1. In a track holding system for an aircraft, in combination,
receiver means responsive to track-defining beam signals and having an output representing lateral displacement of the aircraft from the center line of the track beam,
control means for banking the aircraft to approach said center line in response to the output of said receiver means,
aircraft attitude reference means having an output indicative of aircraft bank angle,
and circuit means connecting the output of said reference means to said control means, said circuit means including lag means followed by washout means whereby the circuit means has a transfer function $F(s)$ which, for high frequency components, acts like a true integrator i.e. the transfer function tends to $1/s$ as s tends to infinity, while rejecting low frequency components, i.e. $F(s)$ tends to zero as s tends to zero, s being the Laplace operator.

3,358,949
WING FLAP CONTROL DEVICE FOR AIRCRAFT
Lew E. Harrison, Nashau, Iowa 50658
Filed Nov. 17, 1965, Ser. No. 508,327
4 Claims. (Cl. 244—83)



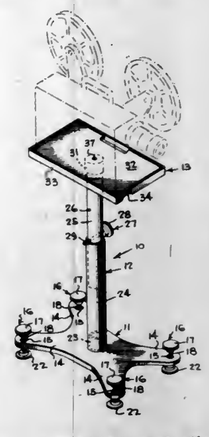
1. In combination with an aircraft having a body, a horizontal wing structure, wing flaps pivotally secured to said wing structure, a power plant for propelling said aircraft, and a throttle for controlling said power plant and movable between positions of reduced power and maximum acceleration, a wing flap control means, comprising, power means operatively secured to said wing flaps for pivoting said wing flaps downwardly from a position of alignment with said wing structure through a first angular increment to give said wing structure additional lift; and thence through a second and greater angular increment which serves to slow the speed of said aircraft, said control means including connecting means between said throttle and said power means to cause said power means to move said flaps from a position in said second angular increment to a position in said first angular increment only when said throttle is moved to a position of substantial maximum acceleration when said wing flaps are in a position within said second increment.

3,358,950
METHODS AND APPARATUS FOR DISCHARGING PERSONNEL AND CARGO FROM VEHICLES
Fred Daniel Welsch, McMullen Bldg., Suite 500, Danville, Ill. 61833, and Clarence F. Carter, Danville, Ill.; said Carter assignor to said Welsch
Filed Sept. 24, 1965, Ser. No. 489,887
12 Claims. (Cl. 244—137)



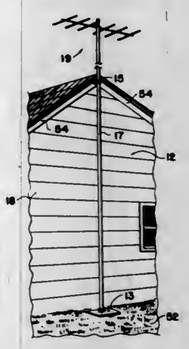
1. A combination comprising:
a hovering aircraft;
first means carried by said aircraft defining an at least partially shielded passage extending generally downward from said hovering aircraft; and
second means carried by said aircraft defining a support disposed at least partially within said passage and extending generally downward from said aircraft.

3,358,951
PORTABLE PROJECTOR STAND
Clarence Carter, 1613 Lando Lane, Orlando, Fla. 32811
Filed Nov. 17, 1965, Ser. No. 508,254
5 Claims. (Cl. 248—11)



3. An easily assembled and disassembled projector stand comprising a base member having a plurality of spaced legs adjustably mounted for movement on said base member, a projector tray dimensioned to be received in flat abutting relation with said base within the area bounded by said legs when said stand is in its disassembled condition, an extensible telescoping support standard removably attachable to both said base member and said tray to extend in tray supporting relation therebetween and clamping means for clamping said base member, said tray and said standard in its disassembled condition.

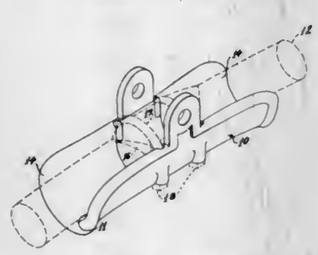
3,358,952
GROUND MOUNTED ANTENNA SUPPORT
Loren D. Burns, Douglass, Kans. 67039
Filed Nov. 29, 1965, Ser. No. 510,176
2 Claims. (Cl. 248—43)



1. A mounting means for use in supporting a vertically extended mast on a ground surface adjacent an upright support structure, comprising:
(a) a base means connectible to the lower end of the mast extending transversely thereof, said base means connectible to said ground surface for lateral stability,
(b) said base means includes a plate member having downwardly extending anchor walls about the outer periphery thereof, and an upwardly extended clamp member,

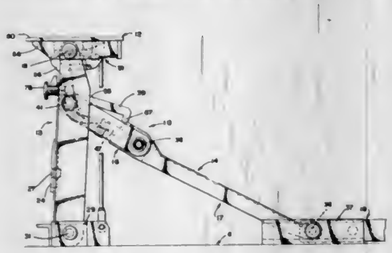
(c) said clamp member including a wall member integral with said plate member and a movable wedge plate,
(d) means connecting said wedge plate to said wall member whereby said wedge plate is movable to clamp the must between said wall member and said wedge plate,
(e) bracket means connectible to an upper portion of a mast to prevent vertical movement of the mast, and
(f) means for securing said bracket means to the support structure whereby the mast is rigidly anchored against vertical and lateral movement by said mounting means.

3,358,953
CONDUCTOR CLAMP
Malcolm Bethea, Jr., P.O. Box 1407, Birmingham, Ala. 35201
Filed Feb. 21, 1966, Ser. No. 528,957
4 Claims. (Cl. 248—74)



1. In a conductor clamp embodying a body having a conductor receiving groove therein with a curved load bearing area adjacent at least one end thereof together with a cooperating keeper disposed to engage a conductor and define a clamping area adjacent said curved load bearing area, the improvement which comprises:
(a) a protective coating of low friction, non-conductive material carried by said load bearing area of said conductor receiving groove, and
(b) there being an uncoated surface on said clamping area disposed to engage a conductor and provide electrical contact therewith.

3,358,954
FOLDABLE STANCHION
Lawrence H. Smith, Bloomfield Hills, and Frederick A. Brawner, Detroit, Mich., assignors to Pullman Incorporated, Chicago, Ill., a corporation of Delaware
Filed Apr. 20, 1966, Ser. No. 543,909
9 Claims. (Cl. 248—119)



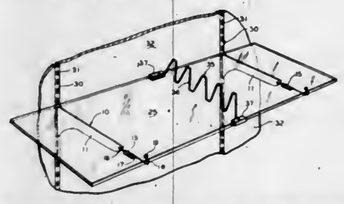
1. A stanchion for use in hitching a semi-trailer on a railway flat car and movable from a collapsed stored position on the car to an erect operative position forming a substantially triangular support, said stanchion comprising an upright strut connected at one end to an upright strut pivot means fixed to said car, a diagonal strut including an upper diagonal strut member and a lower diagonal strut member, pivot means connecting the adjacent ends of said upper and lower diagonal strut members so that said lower diagonal strut member and upper diagonal strut member are folded about said pivot means connecting said adjacent ends in the collapsed position of said stanchion and are turnable to an unfolded linearly aligned position in the erect position of said stanchion, said lower diagonal strut member being connected to a diagonal strut pivot means mounted on said car and spaced lengthwise from said upright strut pivot means, said upper diagonal strut member being pivotally connected relatively to said upright strut, coacting latch means mounted on said adjacent ends of said upper and lower diagonal strut members including keeper means fixed to one of said diagonal strut members and having a slot open to said end of said member, and slidable latch plate means mounted on said adjacent end of the other of said diagonal strut members for sliding movement longitudinally of said member into said slot for latching engagement with said keeper means when said upper and lower diagonal strut members are in said linearly aligned position whereby said upper and lower diagonal strut members are stiffened in said alignment and said stanchion is maintained in said erect position, and a fifth wheel plate mounted on said upright strut.

3,358,955
FOLDABLE STANCHION
Herbert S. Wille, Homewood, and Ray L. Ferris, Thornton, Ill., assignors to Pullman Incorporated, Chicago, Ill., a corporation of Delaware
Filed Apr. 20, 1966, Ser. No. 543,991
9 Claims. (Cl. 248—119)



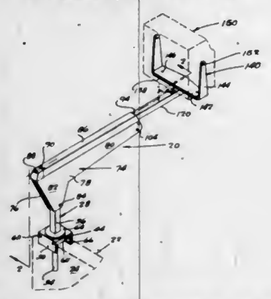
1. A stanchion for use in hitching a semi-trailer on a railway flat car and movable from a collapsed stored position on the car to an erect operative position forming a substantially triangular support, said stanchion comprising an upright strut connected at one end to an upright strut pivot means fixed to said car, a diagonal strut including an upper diagonal strut member and a lower diagonal strut member, pivot means connecting said adjacent ends of said upper and lower diagonal strut members so that said lower diagonal strut member and said upper diagonal strut member are folded about said pivot means connecting said adjacent ends in the collapsed position of said stanchion and are turnable to an unfolded linearly aligned position in the erect position of said stanchion, said lower diagonal strut member being connected to a diagonal strut pivot means mounted on said car and spaced lengthwise from said upright strut pivot means, said upper diagonal strut member being pivotally connected relatively to said upright strut, coacting latch means mounted on said adjacent ends of said upper and lower diagonal strut members including keeper means fixed to one of said diagonal strut members, and slidable latch means mounted on the other of said diagonal strut members for longitudinal sliding movement into latching engagement with said keeper means on said one of said diagonal strut members when said upper and lower diagonal strut members are in said linearly aligned position whereby said stanchion is maintained in said erect position, and a fifth wheel plate mounted on said upright strut, and latch release means turnably mounted on said vertical strut from an inoperative position to a latch releasing position, said latch release including force receiving means projecting outwardly of said upright strut and camming means having a smooth flat surface engageable with said latch means to move said slidable latch means out of latching engagement with said keeper means against the force of said spring means upon the application of a force to said force receiving means causing said latch means to move to said latch releasing position.

3,358,956
SHELF BRACKET STRUCTURE
Lee E. Thornton, Niles, Mich., assignor to Clark Equipment Company, a corporation of Michigan
Filed Sept. 20, 1965, Ser. No. 488,311
4 Claims. (Cl. 248—243)



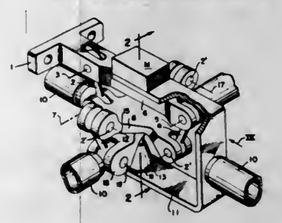
1. A shelf bracket for supporting a shelf panel, comprising an elongated bracket body adapted to extend transversely of the shelf panel and of a length less than the transverse dimensions of the panel, and a coil spring having one end attached to said bracket body and having at the other end a hook-like element integral with said spring for engaging a panel edge portion to apply resilient force thereto in the vertical plane of the bracket.

3,358,957
BEDSTEAD TELEVISION SUPPORT
Peter L. Lindenmuth, Boston, Mass., assignor to Wells Television, Inc., New York, N.Y., a corporation of New York
Filed May 26, 1965, Ser. No. 459,009
4 Claims. (Cl. 248—279)



1. The combination, with a bedstead including a frame having a foot member, the foot member having a vertical disposed opening therein, of a support for a television receiver, the support comprising:
an upstanding bracket assembly, including a substantially cylindrical rod extending into the opening of the foot member and projecting outwardly thereof, a substantially rectangular standard secured to the rod outwardly of the opening, and bracket member of generally inverted U-form, including a bight portion positioned about the standard and fixed thereto and depending arms located on opposite sides of the foot member;
the standard having an upper end with a transverse opening formed therein, the opening having an enlarged and a restricted end;
a hood, including a pair of side members with rear portions, the rear portions being pivotally connected to the standard intermediate its ends;
an elongated top member of substantially rectangular section connected between the side members of the hood, the top member having a longitudinally extending bore therein and having distal and proximal ends;
a cord guide plug having a compound bore therein, secured between the side members and connected to the top member at the rear end thereof, with the compound bore aligned with the top member bore;
an extensible arm telescopically mounted within the bore of the top member and extending outwardly of the distal end thereof, the arm including an outer end with a vertical opening formed therein;
an upright shaft rotatably disposed in the vertical opening of the arm;
a generally U-shaped television receiver mount, including a base and upstanding members, base being secured to the upright shaft;
a television receiving apparatus pivotally suspended between the side members;
a tubular suspension housing secured between the forward end of the side members;
an elongated link extending through the transverse opening of the standard upper end and engaged in the restricted end thereof, and vertically pivotally within the enlarged end thereof, the link extending through the suspension housing and having spring means therein to constantly urge the hood to horizontal position; and
the spring being enclosed within the suspension housing.

3,358,958
VIBRATION ISOLATOR
Joseph La Russa, Crestwood, N.Y., assignor to Farrand Optical Co., Inc., New York, N.Y., a corporation of New York
Filed Apr. 27, 1966, Ser. No. 545,711
5 Claims. (Cl. 248—358)

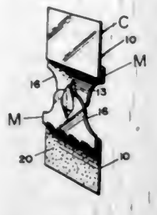


1. Vibration isolating apparatus comprising two series-connected four-bar linkages having crossed planes of oscillation, and means to support a mass to be isolated from the second of those linkages with its center of gravity in a position of stable equilibrium as to each of those linkages adjacent the circles of inflection thereof.

3,358,959
MATING WALL HANGERS
William Saling, Miami, Fla., assignor to Jordan Industries, Inc., Miami, Fla., a corporation of Florida
Filed Nov. 9, 1966, Ser. No. 593,062
4 Claims. (Cl. 248—467)

1. A mating wall hanger comprising a substantially flat sheet material body having opposite edge portions, hook means mounted adjacent one edge portion and extending in the direction of said other edge portion, pliable

means for attaching said body to a surface, said means comprising a flexible sheet having width and end portions, mounted along said other edge portion of said flat body, said other edge portion of said flat body being folded on itself and engaging an end portion of said pliable means,



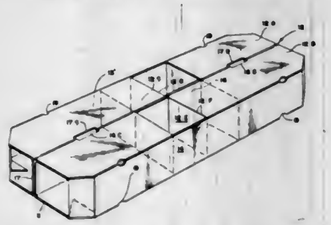
a plurality of tabs struck in proximity of said other edge portion of said flat body, each of said tabs being folded on itself and engaging said other edge portion whereby said pliable means are gripped firmly at said end portion along full width of said pliable means.

3,358,960

CORE INSERT FOR CONCRETE STRUCTURES

David L. Oliver, Palmyra, N.J., and Stephen A. Herbetko, Philadelphia, Pa., assignors to Connelly Containers, Inc., a corporation of Pennsylvania

Filed Oct. 21, 1965, Ser. No. 499,814
21 Claims. (Cl. 249—175)



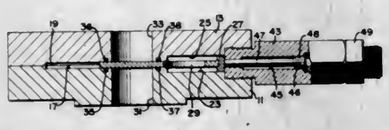
15. A reinforcing insert for a core for cast concrete comprising means defining a generally right parallelepipedal structure having a front face and a rear face, and means for assembling one said insert to an adjacent said insert comprising projection means extending from one said face and cutout means for matingly receiving said projection means at the opposite face thereof.

3,358,961

EXPLOSIVELY DRIVEN SHUTTER TYPE PRESSURE RELEASE APPARATUS

Rayner A. Montgomery and Paul V. Fineran, Silver Spring, and Earl E. Kilmer, College Park, Md., and William D. James, Ames, Iowa, assignors to the United States of America as represented by the Secretary of the Navy

Filed Mar. 5, 1963, Ser. No. 263,084
2 Claims. (Cl. 251—11)



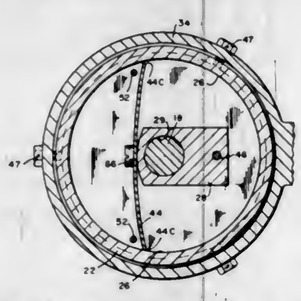
1. An explosively actuated pressure release apparatus comprising: valve body means provided with a cylindrical opening projecting therethrough, said valve body means comprising a pair of plate members provided with recess portions for slidably mounting shutter means therein; shutter means slidably mounted between said recess portions of said plate members so as to divide said cylindrical opening into a first and a second chamber when said shutter means is in a first position, said shutter means defining an aperture therein which is out of alignment with respect to said cylindrical opening when said shutter means is in said first position; a first sealing means and a second sealing means located between said first chamber and said shutter means and between said second chamber and said shutter means, respectively, whereby a pressure seal is provided between said first chamber and said second chamber; and shutter means driving means comprising piston body means mounted on said valve body means and provided with an open cylinder for slidably mounting piston means therein, piston means slidably mounted in said open cylinder in said piston body means and connected to said shutter means for driving said shutter means to a second position in which the aperture in said shutter means is in alignment with respect to said cylindrical opening whereby the pressure seal between said first chamber and said second chamber is broken, explosive charge means mounted in said piston body means adjacent said piston means and electrical detonating means connected to said explosive charge means whereby said shutter means may be driven from said first position to said second position upon energizing said electrical detonating means.

3,358,962

SELF-LOCKING POSITIONING DEVICE

Earl R. Johnson, Tulsa, Okla., assignor to The Dover Corporation, W. C. Norris Division, Tulsa, Okla., a corporation of Delaware

Filed Sept. 8, 1964, Ser. No. 394,883
8 Claims. (Cl. 251—77)



1. A self-locking positioning device comprising, in combination:

a fixed base member having an internal cylindrical wedging surface open at the top and having a smaller diameter axial opening in the bottom;

a coaxially extending shaft rotatably positioned in the smaller diameter opening of the fixed base member;

a substantially flat leaf locking spring affixed to the shaft within the base member, the locking spring substantially forming a chord of the internal cylindrical wedging surface of the fixed base member, the ends of the locking spring resiliently engaging the internal cylindrical wedging surface of the base member to normally prevent the rotation of the shaft relative to the fixed base member;

a cover member rotatably supported to the shaft adjacent the fixed base member, the cover member having spring engaging members extending within the base member adjacent the ends of the locking spring, each end of the spring disengageable from the internal wedging surface of the base member when contacted by a spring engaging member as the cover member is rotated to permit the rotation of the shaft in the same direction of rotation as the cover member; and

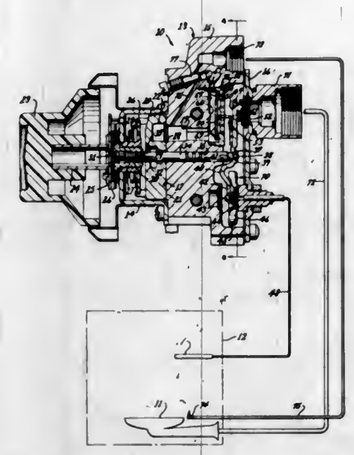
means with the cover member positively engaging the shaft to rotate the shaft with the cover member, said means engaging the shaft subsequent to the engagement of one of the spring engagement members with one end of the spring as the cover member is rotated.

3,358,963

AUTOMATIC FUEL CONTROL VALVE

James R. Willson, Greensburg, Pa., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware

Filed Dec. 2, 1964, Ser. No. 415,531
8 Claims. (Cl. 251—238)



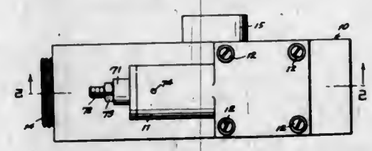
1. A control device having an inlet and an outlet interconnected together by a valve seat, a valve member for opening and closing said valve seat, and a spring means carried by said device and having a plurality of fingers, certain of said fingers being resilient and engaging one side of said valve member to tend to move said valve member against said valve seat, other of said fingers being disposed around said valve member to retain said valve member to said spring means, said spring means having a central plate like portion provided with an aperture passing therethrough and said device having a projection received in said aperture to hold said spring means from sidewise movement relative to said device.

3,358,964

SEAT ASSEMBLY FOR BALANCED PRESSURE REDUCING VALVE

Donald M. Cohen, Fallston, Md., Lester J. O'Brien, South Orange, N.J., and Robert F. Nordhoff, Baltimore, Md., assignors to the United States of America as represented by the Secretary of the Army

Filed Dec. 16, 1964, Ser. No. 418,930
4 Claims. (Cl. 251—324)



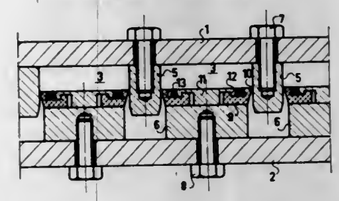
1. In a balanced valve including a cylinder, means mounting a valve head for reciprocal movement in said cylinder; the improvement comprising a seat for said valve having a circumferential groove formed in said cylinder inwardly thereof, said groove having a floor and side walls, said groove being formed with means venting the same, a back-up ring in said groove, said back-up ring being formed with integral projecting means slightly spacing the same from at least one wall of said groove, said back-up ring being formed with axially extending peripheral notches slightly spacing the same from the floor of said groove, said notches and projecting means comprising means for venting said back-up ring, said back-up ring having an inner periphery formed with a circumferential seat having an arcuate cross section, a resilient O-ring seated in said seat, and said O-ring having a portion projecting radially inwardly of said back-up ring and cylinder to provide said seat for said valve head.

3,358,965

TURBINE

Kurt Jassniker, Winterthur, Switzerland, assignor to Sulzer Brothers Limited, Winterthur, Switzerland, a Swiss company

Filed May 10, 1965, Ser. No. 454,586
Claims priority, application Switzerland, May 11, 1964, 6,088/64
4 Claims. (Cl. 253—40)



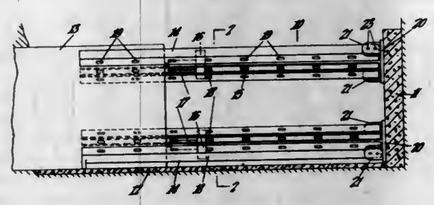
1. A turbine-type machine comprising a plurality of stator blades arranged in an annular array, a first diffuser wall to which said blades are affixed at one axial end of said array, a second diffuser wall adjacent the other axial end of said array, said second wall having an annular recess therein receiving said blades, one of said walls being movable with respect to the other axially of said array, a plurality of filling members disposed in and fastened to the bottom of said recess, said filler members being disposed each between two circumferentially adjacent ones of said blades and being shaped to approximately correspond to the space between adjacent ones of said blades, and sealing means of self-lubricating plastic material fastened to each of said filling members and engaging the adjacent ones of said blades.

3,358,966

APPARATUS FOR USE IN LAYING PIPE LINES

Erik Bergstrom, 34 Arran Gardens, Barassie, Troon, Scotland

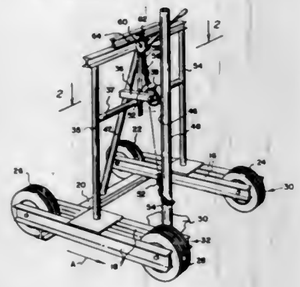
Filed Aug. 18, 1966, Ser. No. 573,414
Claims priority, application Great Britain, Aug. 25, 1965, 36,452/65
3 Claims. (Cl. 254—29)



1. The provision in a thrust pit of means for driving pipe lengths into the ground comprising at least two rails extending from the back of the thrust pit axially of and

along the exterior of the pipe length being driven, a further rail associated with each of said rails and positioned to extend axially along the interior of the pipe length, at least one hydraulic jack carried by each pair of rails and which jacks, when activated, transmit their pressure to the end of the pipe line, and means located at the rear of the jacks to take the back thrust thereof, said means being supported by and adjustable step by step along the rails.

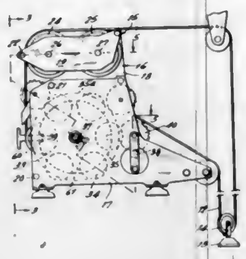
3,358,967
POST EXTRACTOR
Bill A. Harmon, 1821 N. 35th St., Phoenix, Ariz. 85008
Filed Sept. 9, 1966, Ser. No. 578,366
6 Claims. (Cl. 254—30)



1. In a post extractor, the combination of: a frame having forward and rearward ends; a pair of spaced horizontally disposed members; a cross member interconnecting said horizontally disposed members; said horizontally disposed members having free ends projecting toward the forward end of said frame and forwardly from said cross member and thereby providing an unobstructed area extending between said horizontally disposed members and to said free end thereof; first wheels supporting said free ends; second wheels supporting said frame rearwardly relative to said cross member; an upstanding member supported on said cross member and extending upwardly therefrom; a post guide means connected to said upstanding member and projected forwardly and adapted to form a bearing for a post located in said unobstructed area; and means for applying a compressive load to said upstanding member and an upward force to said post, causing it to bear on said post guide to be extracted vertically from the earth, said frame unobstructed above said guide means to permit a post freely to move upwardly as it is extracted vertically from the earth, and while an uppermost portion of said post extends freely above an uppermost portion of said frame.

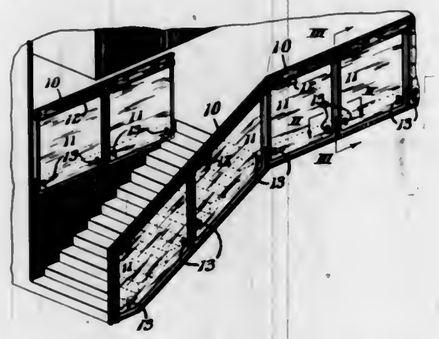
3,358,968
CONTINUOUS LOOP VARIABLE PENETRATION WINCH
Ralph E. Walsh, Long Branch, and Elmer Laky, Cranford, N.J., assignors to Breeze Corporation, Inc., Union, N.J., a corporation of New Jersey
Filed Oct. 27, 1966, Ser. No. 590,018
10 Claims. (Cl. 254—175.3)

1. A continuous loop variable penetration winch comprising a frame, a capstan carried by the frame, a two-part storage reel assembly carried by the frame and spaced from the capstan, each of said parts comprising at least two rotatable cable receiving drum members, a continuous looped cable carried by the capstan and the storage reel assembly, said cable traversing a path through the winch around the capstan, around the drums of the first part of the storage reel, crossing over to the second part of the storage reel, around the drums of the second part of the storage reel in a direction opposite to its travel around the first part of the storage reel and then back to the capstan by way of a loop, means to rotate the storage reel assembly whereby the loop may be



lengthened or shortened to provide the desired depth of penetration, and means to drive the capstan and at least one of the parts of the storage reel assembly.

3,358,969
ORNAMENTAL RAILING
Louis Blum and William J. Horgan, Jr., Pittsburgh, Pa., assignors to Blumcraft of Pittsburgh, Pittsburgh, Pa., a firm
Filed Dec. 13, 1965, Ser. No. 513,261
3 Claims. (Cl. 256—24)

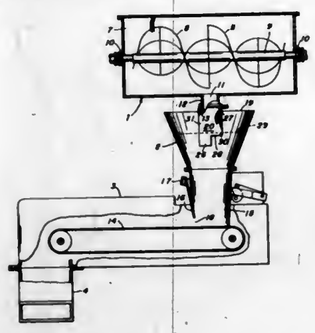


1. An ornamental railing comprising a continuous handrail, railing mounting means for connecting said handrail to a building structure and handrail supporting means connecting said mounting means and said handrails comprising a plurality of aligned glass panels, said glass panels supporting said handrail means, and bracket means rigidly affixed to the building structure retaining said glass panels in substantially rigid spaced relation to said building structure.

3,358,970
AUTOMATIC SHUT-OFF FOR INTERRUPTING FLOW OF GRANULAR MATERIAL TO A SUPPLY HOPPER
John V. Clancy, Neville Township, Allegheny County, and John F. Kearns, Shaler Township, Allegheny County, Pa., assignors to United States Steel Corporation, a corporation of Delaware
Filed June 7, 1966, Ser. No. 555,809
8 Claims. (Cl. 259—45)

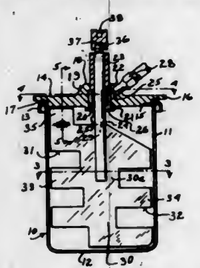
1. In apparatus for controlling the flow of granular material into a hopper from which it is withdrawn intermittently in batches, the combination with said hopper of a vertically extending supply pipe for delivering said material to said hopper, said pipe being located over said hopper and having its lower end terminating at a point

above the material therein, and a flexible sleeve of cylindrical shape extending downwardly from said pipe lower end through which said material flows from said pipe into



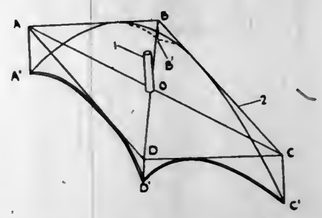
said hopper, said sleeve operating to control the downward movement of the material through said pipe and to maintain the supply of material in said hopper at a predetermined vertical level.

3,358,971
INVESTMENT MIXER
Edmund A. Steinbock, Jr., Louisville, Ky., assignor to Whip-Mix Corporation, Louisville, Ky., a corporation of Kentucky
Filed June 21, 1965, Ser. No. 465,473
6 Claims. (Cl. 259—107)



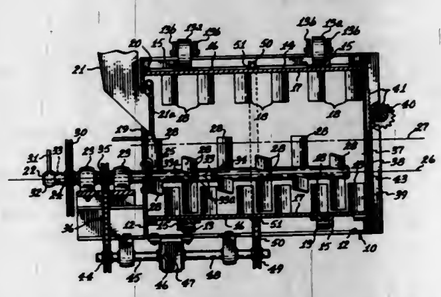
1. In a mixer of the class described the combination of a container having an open upper end, a cover for said container open upper end, said cover having a body portion of sufficient thickness throughout its area for normal operation and including a normal upper and a normal lower surface, a thickened bearing portion substantially axially, centrally of the cover body portion and including an upper portion and a lower portion, respectively, upwardly and downwardly of the normal upper and lower surfaces of the cover body portion with said bearing portion including an upper surface and a lower surface, a mixing paddle or blade shaft rotatably supported by said thickened bearing portion substantially, centrally thereof to depend through the said bearing portion into the interior of the container, a chamber circumferentially and radially, outwardly of the mixing shaft in said thickened bearing portion from the container interior through and upwardly of its lower surface but short of the thickened bearing portion upper surface, a mixing paddle or blade on said shaft within the container for mixing ingredients in said container and thereby releasing air or gas trapped by said ingredients or released by the mixing thereof and which gas or air is collected in the thickened bearing portion chamber, and means connecting said thickened bearing portion chamber to an exhaust pump to exhaust the air and gases within the chamber collected from the interior of the container.

3,358,972
MIXING DEVICES
Robert William Snudden, Dumfries, Scotland, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
Filed Sept. 8, 1965, Ser. No. 485,793
Claims priority, application Great Britain, Sept. 8, 1964, 36,728/64
10 Claims. (Cl. 259—138)



1. An improved stirring device comprising a lamina blade mounted on a shaft, said blade having a shape which, when projected onto a plane that is perpendicular to the axis of the shaft and which passes through the junction of the blade and the shaft, is substantially a parallelogram, the axis of said shaft passing through the point of intersection of the diagonals of said parallelogram, the blade being shaped so that at least two of its opposite corners are displaced from said plane, wherein the improvement resides in said blade having a curved surface conforming to the surface of a cylinder of elliptical cross-section, said blade being shaped so that only one pair of opposite corners of the blade is displaced from the plane which is perpendicular to the axis of the shaft and which passes through the junction of the blade and the shaft.

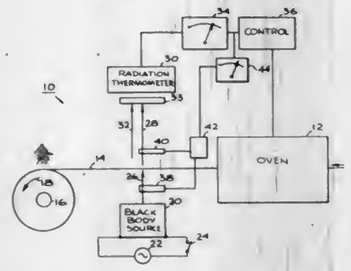
3,358,973
MIXING APPARATUS
Jack M. Mitchell, 642 N. 17th Ave. 85007, and Clarence D. Hess, 1819 E. Meadowbrook Ave. 85016, both of Phoenix, Ariz.
Filed Sept. 26, 1966, Ser. No. 581,959
6 Claims. (Cl. 259—177)



1. A mixing apparatus comprising in combination:
(A) a frame,
(B) a drum journaled to rotate on said frame,
(C) a plurality of radially inwardly pitched paddles fixed to the inside of said drum,
(D) a mixing element including a shaft projecting into said drum with its axis eccentric to the axis of said drum,
(E) a plurality of radially outwardly pitched paddles fixed on said shaft and revolved by said shaft between said paddles inside of said drum,
(F) power means on said frame for simultaneously rotating said drum and said shaft,
(G) a longitudinal passageway within said shaft,

(H) radially disposed outlets intermediate its ends,
(I) and a source of oil connected to said passageway of said shaft for distributing oil to material being mixed in said drum.

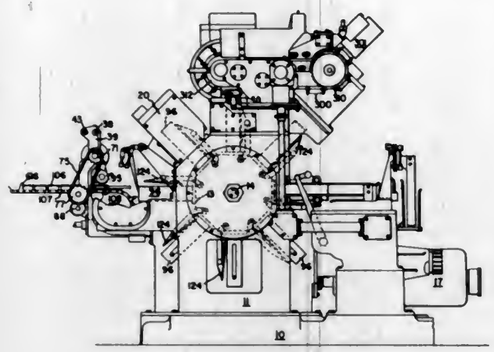
3,358,974
TEMPERATURE CONTROL ARRANGEMENT
Burton Bernard, Santa Barbara, Calif., assignor to Electro Optical Industries, Inc., a corporation of California
Filed Feb. 21, 1966, Ser. No. 529,045
10 Claims. (Cl. 263—3)



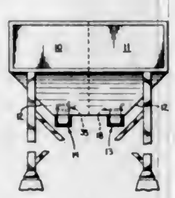
1. A temperature control arrangement comprising, in combination:
a black body radiation source maintained at a preselected temperature for emitting substantially black body electromagnetic radiation in a first direction and said electromagnetic radiation having energy in at least one preselected wavelength bandwidth;
a radiation thermometer aligned in said direction for receiving said substantially black body electromagnetic radiation and spaced apart from said black body source, and said radiation thermometer responsive to said at least one preselected wavelength bandwidth for generating an information signal having a magnitude proportional to a function of the magnitude of the incident electromagnetic radiation in said at least one preselected wavelength bandwidth;
a temperature controlled material adapted to pass intermediate said black body radiation source to be maintained at said preselected temperature, and said temperature controlled medium emitting electromagnetic radiation having energy in said at least one preselected wavelength bandwidth and in said direction, and said radiation thermometer aligned to receive said electromagnetic radiation emitted from said temperature controlled material;
heating means for heating said temperature controlled material;
and control means coupled to said radiation thermometer and said heating means for receiving said information signal and generating an error signal in response thereto for controlling the temperature of said heating means to control the temperature of said temperature controlled material at said preselected temperature.

3,358,975
BLANK HEATING MECHANISM
Isaac L. Wilcox and Ronald M. Wells, Fulton, N.Y., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed May 19, 1965. Ser. No. 457,082
2 Claims. (Cl. 263—6)

1. Apparatus for heating a restricted selected area extending across a flat blank having a thermoplastic surface, a continuously running conveyor for advancing a procession of said blanks, an elongated heater extending transversely of the conveyor above the same out of heat exchanging relation with said blanks, means operable to move said heater downwardly into heat exchanging relation to said area only of each blank in said procession during the advancement thereof for a predetermined distance and thereupon moving said heater upwardly.



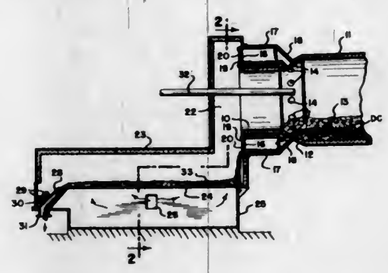
3,358,976
APPARATUS FOR HEATING CONCRETE INGREDIENTS
Conrad Y. Siktberg, 420 S. Berkley Road, Kokomo, Ind. 46901
Filed Mar. 15, 1965, Ser. No. 439,876
5 Claims. (Cl. 263—29)



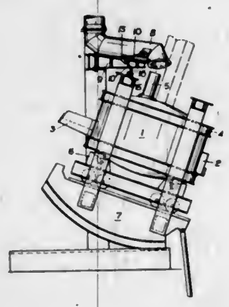
5. An assembly for heating fine material moving out of a bin, said assembly comprising a bin discharge gate of the type having a body of generally rectangular cross-section, gate closure members movable across one end of the gate body toward and away from a transverse axis bisecting the area enclosed by said one end of the gate body, said assembly including a grid structure disposed above and adjacent to the other end of said gate body, said grid structure including tubes extending parallel to said transverse axis defining the terminus of motion of said gate closure members, one of said tubes being adapted to receive steam applied thereto for distribution within said grid structure, said tubes having steam discharge apertures therein, whereby the material in the bin moving toward the discharge gate sweeps said tubes and is heated by steam issuing from said tube apertures.

3,358,977
ROTARY KILN INSTALLATIONS
Flemming Edvin Jensen, Copenhagen-Valby, Denmark, assignor to F. L. Smidth & Co., New York, N.Y., a corporation of Delaware
Filed Aug. 5, 1965, Ser. No. 477,365
9 Claims. (Cl. 263—32)

1. A kiln installation which comprises a rotary kiln supported at an angle to the horizontal and having a central opening in its lower end for intake of air and a plurality of material outlet openings in a circumferential series at its lower end, a stationary casing in communication with the interior of the kiln through its central opening, a transversely horizontal grate inside the casing, means for depositing material issuing through the kiln outlet openings upon the grate to form a bed of substantially uniform thickness across the grate, the depositing means including reservoirs mounted on the kiln to extend lengthwise thereof and connected at one end to respective outlet openings to receive material through the openings and means partially closing the other end of each reservoir and defining a discharge opening for directly discharging material into the casing to fall upon the grate as the kiln rotates, means for advancing the bed, and means for passing air through the grate from beneath to cool the material in the bed and heat the air.

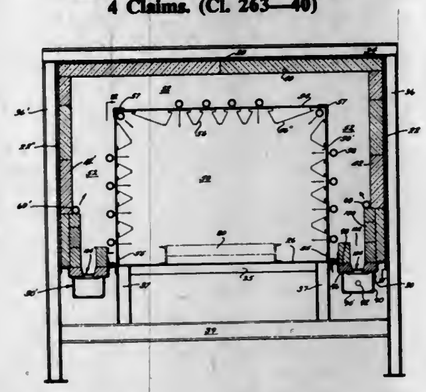


3,358,978
WASTE GAS MAIN FOR ELECTRIC FURNACES, PARTICULARLY ARC FURNACES
Josef Lambrecht, Ansfelden, Haid, and Franz Egleer, Linz, Austria, assignors to Vereinigte Osterreichische Eisen- und Stahlwerke Aktiengesellschaft, Linz, Austria, a company of Austria
Filed Aug. 19, 1965, Ser. No. 480,926
Claims priority, application Austria, Sept. 2, 1964, A 7,574/64
5 Claims. (Cl. 263—33)



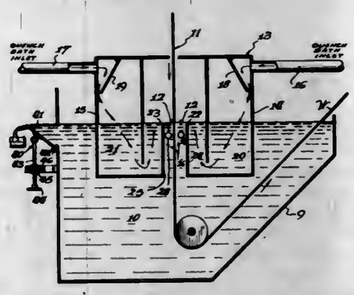
1. A waste gas main for tiltable electric furnaces, comprising a waste gas socket in the furnace cover, a waste gas conduit having a mouth for receiving waste gases from said socket, means supporting said waste gas conduit for slewing movement in a horizontal plane and an articulated linkage interposed between and connecting the slewable waste gas conduit and the tiltable furnace for guiding said waste gas conduit so that the mouth thereof is positioned vis-à-vis to the mouth of the waste gas socket in any position of said tiltable electric furnace in order to take up the waste gases.

3,358,979
DYNAMIC FLOW OVEN
Charles S. Flynn, 2991 Sherwood Court, Muskegon, Mich. 49441
Filed Oct. 21, 1965, Ser. No. 499,151
4 Claims. (Cl. 263—40)



1. A dynamic flow, hot gas, convection heating apparatus, comprising: a plurality of peripheral wall means forming a heating chamber; at least one of said wall means including an outer closure wall, and inner baffle means spaced from said outer wall to form a plenum therebetween; hot gas burner means in said plenum to eject hot gases into said plenum comprising high volume individual burners arranged in row fashion and each formed of a housing with gas inlet means thereto and with an open side covered by porous ceramic felt and screen retention means to form a combustion surface; said baffle means including a plurality of elongated spaced baffle elements forming elongated restricted slots therebetween; pressurized air manifold means including a plurality of elongated conduits aligned with and along said slots, said conduits having outlet orifice means oriented to eject pressurized air through said slots into said chamber, and thereby cause dynamic hot gas flow into said chamber by drawing the high volume of hot gases from said plenum into said heating chamber by Venturi action.

3,358,980
APPARATUS FOR QUENCHING WEB MATERIAL
Harold L. Taylor, Hammond, Ind., assignor to Inland Steel Company, Chicago, Ill., a corporation of Delaware
Continuation of application Ser. No. 153,834, Nov. 21, 1961. This application Jan. 21, 1965, Ser. No. 426,988
30 Claims. (Cl. 266—3)



19. A method for quenching a web of material in a bath of liquid quenching medium, said method comprising the steps of:
introducing said web into said bath of liquid quenching medium;

introducing additional liquid quenching medium into said bath;

contacting a surface of said web with said additional liquid quenching medium, initially at substantially the location where the web enters the bath;

and moving said additional liquid quenching medium, from the time it enters the region of initial contact, inwardly into said bath away from the surface of the bath along a path extending alongside said web and in a direction substantially the same as that in which the web moves.

27. Apparatus for quenching a moving web of material in a bath of liquid quenching medium, said apparatus comprising:

means for containing said bath of liquid quenching medium;

means for introducing said web into said bath;

means for introducing additional liquid quenching medium into said bath;

means for contacting a surface of said web with said additional liquid quenching medium, initially at substantially the location where the web enters the bath;

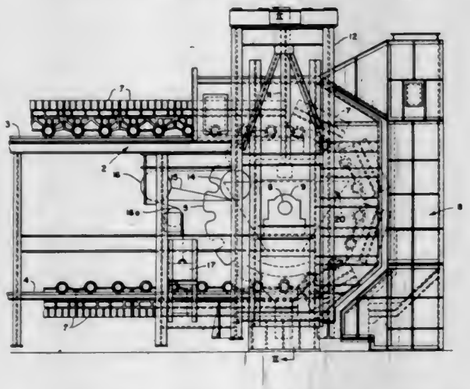
and means cooperable with said moving web to direct said additional liquid quenching medium, from the time it enters the region of initial contact, inwardly into said bath away from the surface of the bath along a path extending alongside said web and in a direction substantially the same as that in which the web moves.

3,358,981

SPILLAGE CHUTE FOR TRAVELING GRATE MACHINE

John F. Oyler, Mount Lebanon Township, Allegheny County, Pa., assignor to Dravo Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Aug. 31, 1965, Ser. No. 484,035
3 Claims. (Cl. 266—21)



1. In a traveling grate machine having a frame supporting a generally horizontal upper track terminating at a discharge end and along which pallets progressively travel toward the discharge end, the machine having a pair of idler sprocket wheels carried on a common shaft at the discharge end for dumping the pallets and transferring them to a return track with means for supporting the idler sprocket wheels and shaft for movement lengthwise of the machine relative to the frame and upper track, the invention comprising:

a spillage chute assembly in the discharge end of the machine between the sprocket wheels arranged to receive spillage from the pallets as they start to move into the dumping position,

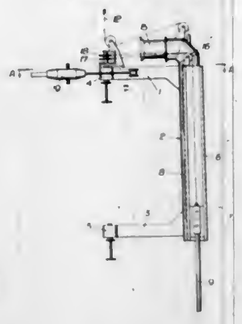
said spillage chute being supported in the machine for movement with the sprocket wheels and shaft.

3,358,982

BLOWING DEVICE FOR CARRYING OUT TOP BLOWING PROCESSES

Franz Penn, Linz, Austria, assignor to Vereinigte Osterreichische Eisen- und Stahlwerke Aktiengesellschaft, Linz, Austria, a company of Austria

Filed July 28, 1964, Ser. No. 385,714
Claims priority, application Austria, Aug. 26, 1963, A 6,850/63
1 Claim. (Cl. 266—34)



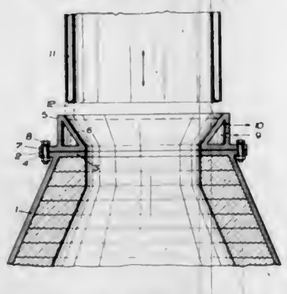
A blowing device for carrying out top blowing processes comprising a frame having a first substantially vertical tube and laterally extending arms adjacent to opposite ends of said tube, means pivotally supporting said tube for slewing of said frame in a circular path above a steelmaking converter having a mouth at its top, two lance guides mounted on opposite sides of said tube, two lances slidably mounted in said lance guides for vertical movement, said lance guides being spaced apart a distance such that when one lance is aligned with the axis of the converter the other lance is disposed outside of said converter, a second vertical tube arranged coaxially within said first tube and telescopically displaceable relative to said first tube, a hoist for displacing said second tube in said first tube, annular sealing members sealing said second tube to said first tube, and means for connecting said first tube to an air blast source.

3,358,983

WATER-COOLED SEALING RING FOR CONVERTER

Alfred Wegscheider, Linz, and Roland Kemmetmueller, Vienna, Austria, assignors to Bot Brassert Oxygen Technik AG., Zurich, Switzerland, a company of Switzerland

Filed May 15, 1964, Ser. No. 367,621
Claims priority, application Austria, May 30, 1963, A 4,395/63
2 Claims. (Cl. 266—35)



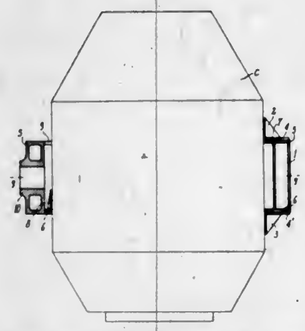
1. A crucible assembly for carrying out top blowing processes, comprising a crucible having a mouth substantially at the top thereof, a vertically displaceable chimney portion for connecting said crucible mouth with a flue, and a hallow sealing ring on said crucible mouth, said sealing ring having a substantially triangular cross section so as to include a cavity and define an inner surface which is inclined towards the interior of said crucible, said vertically displaceable chimney portion being moveable into sealing engagement with said inclined inner surface of said sealing ring and out of engagement therewith, said cavity of said sealing ring communicating with a coolant supply conduit.

3,358,984

SUPPORTING STRUCTURE FOR STEELMAKING CONVERTER VESSELS

Henri Grassin, St. Etienne, and Pierre Meynard, St. Chamond, France, assignors to Compagnie des Ateliers et Forges de la Loire (St. Chamond, Firminy, St. Etienne, Jacob-Holtzer), Paris, France

Filed Feb. 5, 1964, Ser. No. 342,637
Claims priority, application France, Feb. 15, 1963, 925,069, Patent 1,378,826
3 Claims. (Cl. 266—36)



1. A converter structure including a steelmaking converter vessel, an annular frame coaxially surrounding a cylindrical portion of the vessel in spaced relation therewith, means for pivoting the frame about a generally horizontal axis, means for supporting said vessel from said frame, said supporting means comprising lateral surfaces on said frame, a first lower circumferential series of angle brackets having their one flanges secured around said converter vessel parallel with the vessel axis and having their other flanges arranged radially of said cylindrical portion of said vessel and formed with complementary lateral surfaces engaging said lateral surfaces formed on said frame, a lower wall element on said frame, a second lower circumferential series of angle brackets having their one flanges secured on the periphery of said vessel parallel with said vessel axis so that the under surfaces of the radially projecting other flanges of said second series of brackets rest on the upper surface of said lower wall element of said annular frame, the distance between said other flanges of said first lower series of brackets and said second series of brackets being of such a length that thermal expansions and contractions of said converter vessel in the axial direction will not exert any substantial influence thereon.

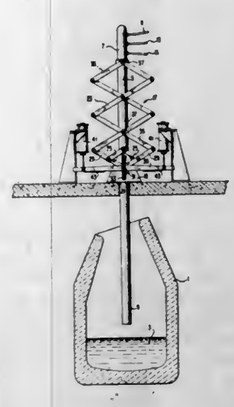
3,358,985

APPARATUS FOR CONVEYING FLUID TOWARD A REGION OF HIGH TEMPERATURE

Wilbur E. Cooper, Steubenville, Ohio, assignor to National Steel Corporation, a corporation of Delaware

Filed Apr. 17, 1964, Ser. No. 360,559
4 Claims. (Cl. 266—41)

1. In combination with a metallurgical furnace, apparatus for supplying fluid to the furnace, comprising an elongated fluid-supplying lance having a longitudinal axis, means mounting the lance for extension in a direction into the furnace and retraction in a direction out of the furnace, said means including lazy tongs linkage for movement in a direction parallel to the longitudinal axis of the lance disposed outside the furnace and having at least one part secured to the fluid-supplying



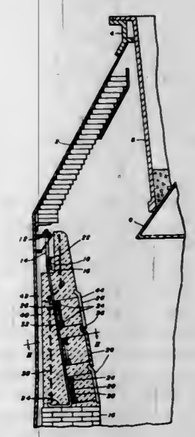
lance restrained against movement axially of the lance and at least one other part secured to the lance for reciprocal movement with the lance toward and away from the furnace, and power means operatively connected to the lazy tongs linkage for moving such linkage to control movement of the fluid supply lance into and out of the metallurgical furnace.

3,358,986

STOCKLINE LINING FOR A BLAST FURNACE

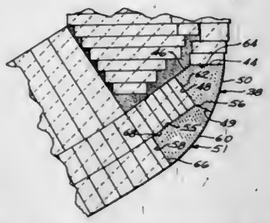
Oscar B. Anderson, Hobart, and James M. Mundell, Gary, Ind., assignors to United States Steel Corporation, a corporation of Delaware

Filed Sept. 10, 1964, Ser. No. 395,487
8 Claims. (Cl. 266—43)



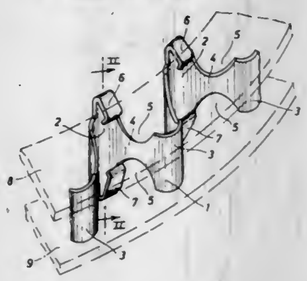
1. A stockline lining for a blast furnace having an outer metal shell, comprising a generally horizontal ring secured to the outer shell above the stockline, a supporting structure suspended from said ring, wear plates supported by said supporting structure, and a refractory lining supported by said supporting structure.

3,358,987
BASIC OXYGEN FURNACE CONSTRUCTION
Neil T. Crichton, Detroit, Mich., assignor to Harbison-Walker Refractories Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 17, 1965, Ser. No. 480,346
6 Claims. (Cl. 266—43)



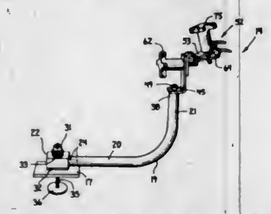
5. At least a pair of refractory shapes suitable for use as a portion of a refractory lining in a basic oxygen vessel adjacent the arc at its bottom, one of said pair of shapes being seven-sided, at least one of the sides being arcuate in vertical cross-section, the other of said pair being a single skew end shape also having an arcuate side in vertical cross-section, said pair being disposed so that the arcuate sides are in alignment to form a common curve and the skew end of the latter shape is contiguous with a side of said seven-sided shape which intersects the arcuate side thereof.

3,358,988
TENSIONING SPRING FOR PISTON RINGS
Paul Vossieck, Burscheid, Cologne, Germany, assignor to Goetzewerke Friedrich Goetze A.G., Dusseldorf, Germany
Filed Jan. 5, 1965, Ser. No. 423,515
Claims priority, application Germany, Apr. 2, 1964, G 40,252
1 Claim. (Cl. 267—1.5)



A spring ring for mounting in the groove of a piston for supporting radially narrow and axially thin oil stripping rings in said groove at the top and the bottom thereof, while resiliently urging the oil stripping rings into engagement with the wall of a cylinder in which the piston is mounted comprising: a resilient band formed substantially into a circle and having radially inner and outer convolutions therein extending in the radial direction, and axial lugs on the top and bottom of the peak portions of said radially inner convolutions, each said lug having a bend therein near the juncture of the lug and spring ring, and the portion of each lug disposed on the opposite side of the bend therein from the spring ring having a straight surface and extending radially outwardly and axially inwardly at an angle toward the lateral central plane of the spring ring so that said portions of the lugs on the opposite ends of each inner convolution of the spring ring converge in the radially outward direction of the spring ring, the bends in the lugs on each side of the ring being disposed in respective common planes which are parallel and axially spaced a distance about equal to the axial extent of said groove, the said angle at which each said portion of each lug extends toward the lateral central plane of the spring ring being the same for all of the said portions, said portions of the lugs on the opposite ends of each radially inner convolution including an angle of from about 20° to about 60° between said straight surface and said inner convolution, said radially outer convolutions of the spring ring having an axial length of about equal to the axial length of said groove minus the combined axial thickness of the two oil stripping rings; and portions of the spring ring connecting adjacent convolutions being notched out on at least one of the top and bottom sides to provide oil passage means whereby axially thin oil stripping rings disposed in opposite ends of the groove will be engaged by said straight surface of said lugs at a plurality of points about the inner peripheries thereof at the side of each oil stripping ring which faces the other oil stripping ring.

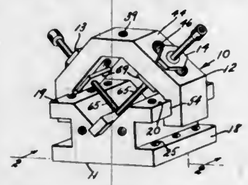
3,358,989
UNIVERSAL ACTION WORK SUPPORT
Alexander F. Zybak and Cedric C. Stack, Madison County, Ind., assignors, by mesne assignments, to Alexander F. Zybak, Elwood, Ind.
Filed May 13, 1965, Ser. No. 455,492
6 Claims. (Cl. 269—71)



1. A device of the class described comprising a base, an L-shaped arm swivel mounted at its proximal end on said base, a bracket swivel mounted at the distal end of said arm, and clamp means adjustably secured to said bracket, said clamp means comprising a rigid leaf extending away from said bracket at an obtuse angle and formed to provide a table spaced from said bracket, an inclined portion interposed between said bracket and said table, an oppositely-inclined portion at the end of said table remote from said bracket, and a tail portion extending substantially perpendicularly from said oppositely-inclined portion away from said table, a mating member formed to provide an intermediate portion for mating association with said leaf table and formed at one end with an inclined portion and a tail portion conforming to said leaf oppositely-inclined portion and tail portion, the opposite end of said mating member being hingedly connected to said leaf between said bracket and said leaf table, and screw means cooperatively engaging said leaf and said mating member and operative to move said inclined portion and tail portion of said mating member into and out of clamping relation with said oppositely-inclined portion and tail portion of said leaf.

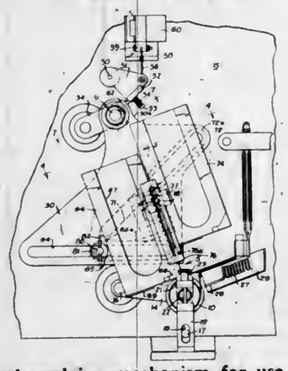
3,358,990
V-BLOCK CLAMP CONSTRUCTION
Joe Anton, Flushing Meadows, N.Y. (1226 Flushing Ave., Brooklyn, N.Y. 11237)
Filed May 21, 1965, Ser. No. 457,661
1 Claim. (Cl. 269—118)

In a V-block clamp construction, including a V-block base element having a pair of surfaces defining a V-shaped recess for supporting a clamped object, said base having a pair of oppositely disposed projecting flanges extending outwardly therefrom on either side of said V-shaped recess, a clamp mount element of polygonal configuration and including a bridge portion, a pair of angularly disposed arm portions connected to said bridge portion, and a pair of channel-forming portions interconnected by said bridge portion and angularly disposed arm portions, the channel-forming members having a pair of oppositely disposed channels therein corresponding in dimensions and mutual distance to said flanges on said base element, and being slidably disposed thereon, the improvement comprising: at least one of said angularly disposed arm portions having an elongated slot therein; and a threaded



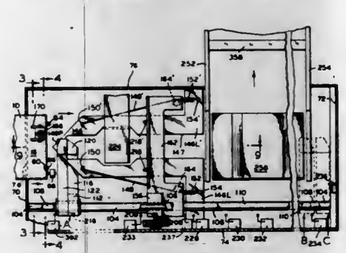
clamp element adjustably engaged within said elongated slot, said clamp element including first and second threaded nut members, said first threaded nut member having a principal axis and an axially disposed threaded bore extending therethrough, a head portion of dimensions longer than the smaller dimension of said elongated slot, a first shank portion having parallel planar surfaces corresponding to the smaller dimension of said elongated slot, and a second externally threaded shank portion; said second member having an internally threaded shank portion; said second member having an internally threaded bore engaged upon said second shank portion, said first shank portion being disposed within said elongated slot.

3,358,991
LABEL APPLYING MECHANISM
Hans A. Jensen and Augustus H. Eberman, Madison, Wis., assignors to Oscar Mayer & Co., Inc., Chicago, Ill., a corporation of Illinois
Filed Sept. 20, 1965, Ser. No. 488,575
11 Claims. (Cl. 271—61)



7. A label applying mechanism for use with a label transfer roller, which roller is mounted for rotation about a generally horizontal axis, said mechanism comprising, guide means mounting a first pin in parallel relation with said axis in generally vertically spaced relation above said roller, which guide means guide said first pin for reciprocal movement along a generally vertically extending path, a vertically disposed carrier plate connected with said pin and thereby being pivotally connected with said guide means, drive means mounting a second pin generally intermediate said first pin and said roller and in parallel relation with said axis, said drive means being adapted to drive said second pin in a circular path in a vertical plane, a slide member connected with said second pin and thereby being pivotally connected with said drive means, said carrier plate including guideway means slidably receiving said slide member, which guideway means confine said slide member for reciprocal movement, relative to the carrier plate, along a generally vertically extending path, a label magazine mounted on said carrier plate in generally vertical disposition and having its lower end adapted for discharge of labels therefrom, said magazine being arranged on said carrier plate so that when said pins are in positions adjacent their lowermost positions said end is in close proximity with the periphery of said roller thereby to allow the latter to withdraw a label from the magazine, releasable means mounted adjacent said guide means and being adapted in one position to limit movement of said first pin thereby to prevent said end from coming into close proximity with said roller upon movement of said second pin in its circular path.

3,358,992
DEPOSITORY MACHINE
Luther G. Simjian, Greenwich, Conn., assignor to Universal Match Corporation, St. Louis, Mo., a corporation of Delaware
Original application Oct. 9, 1963, Ser. No. 315,016, now Patent No. 3,295,139, dated Dec. 27, 1966. Divided and this application Sept. 13, 1966. Ser. No. 590,452
14 Claims. (Cl. 271—10)

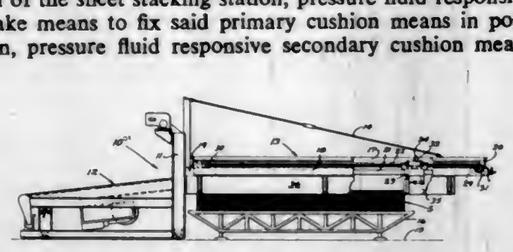


1. A document handling apparatus comprising:
means for receiving a plurality of documents disposed as a stack;
means for serially removing each document from the stack;
means for serially conveying each removed document including
first and second rotating friction means, biased into surface interengagement, and adapted to pass a document therebetween,
braking means coupled to said second means for braking the rotation of said second means, and
actuating means, coupled to said braking means, and adapted to sense the approach of the removed document towards said first and said second means, and in response to sensing said approach causing said braking means to brake said second means, whereby said first means has a surface speed greater than the surface speed of said second means.

3,358,993
SHEET IMPACT CUSHION DEVICE
George F. Lytle, St. Louis, Mo., assignor to Alvey Conveyor Manufacturing Company, St. Louis, Mo., a corporation of Missouri
Filed Sept. 23, 1965, Ser. No. 489,508
6 Claims. (Cl. 271—86)

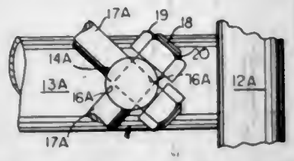
1. In an impact cushion system for sheet stacking apparatus having sheet feeding means to deliver successive sheets to a stacking station, the improvement of primary

cushion means carried by the apparatus at a limiting margin of the sheet stacking station, pressure fluid responsive brake means to fix said primary cushion means in position, pressure fluid responsive secondary cushion means



connected to said primary cushion means, a source of pressure fluid connected to both said brake means and secondary cushion means, and separate pressure controlling means in said pressure fluid connections to said brake means and secondary cushion means.

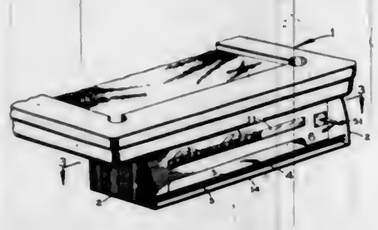
3,358,994
SUPPORT STRUCTURE FOR BASKETBALL BACKSTOPS
Joseph N. Miller, Overland, Mo., assignor to Jackes-Evans Manufacturing Company, St. Louis, Mo., a corporation of Missouri
Filed Mar. 1, 1965, Ser. No. 436,127
2 Claims. (Cl. 273—1.5)



1. In a backstop assembly including a basketball backboard and a drop frame fastened to the back side thereof comprising a frame of longitudinal members and lateral members, the improvement comprising smooth shanked anchor pins provided with openings adjacent to one of their ends, said pins being slidably positioned through diagonally opposed frame members, and diagonal straight rod struts slidably positioned in the pin openings, each of said struts having at least one of its ends threaded and a tightening nut positioned on the threaded end, at least some of the pins have more than one opening therethrough, the openings being spaced along the length of the pin and angularly disposed with respect to each other and receiving at least two diagonal rod struts in the openings.

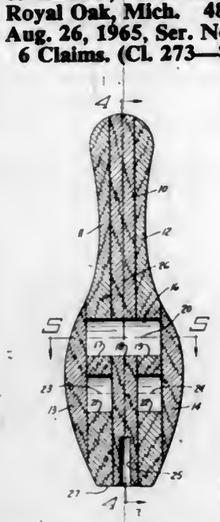
3,358,995
COIN CONTROL FOR POOL TABLES
David H. Braun, Miami, and Harvey Heiss, North Miami, Fla., assignors to All Tech Industries, Inc., Hialeah, Fla., a corporation of Florida
Filed Mar. 17, 1965, Ser. No. 440,409
3 Claims. (Cl. 273—11)

1. A coin control means for a pool table including
a passageway means therein for conducting all pocketed balls for sequential gravity descent from a single outlet therein comprising a casing secured under said table and said outlet for retaining said control means,
a sloping linear holding runway secured in said casing with the upper end positioned under said outlet for receiving said balls and sequentially conducting same by gravity in one direction,
a second runway means connected to and sloping downward from a junction with the lower end of said holding runway and terminating in an open compartment holding therein said balls for manual removal when propelled thereto by gravity from said second runway,
a spring energized timer means in said casing including a winding means movable through a predetermined range from a rest to a wound position corresponding to operation for a said predetermined time period,
said timer means including an operating member for the displacement through said range when said timer means is wound and for the continuous return displacement thereof at a substantially constant rate during the said time period,
a coin actuator means in said casing including a manual coin released member movable from an idle to an operated position and vice versa upon the deposit therein of a predetermined coin for operatively engaging said winding means and moving same through said range when said coin member is moved from said idle to said operated position,
a first barrier means journalled for reciprocation in said casing from a normal position with one end portion thereof intersecting said junction for holding said balls on said holding runway to a release position withdrawn from said junction,
spring means biased between said casing and said first barrier means for normally urging the latter into said normal position,
the opposite end portion of said first barrier means positioned for bi-lateral movement and temporary engagement with said operating member of said timer means for withdrawing said final barrier means from said junction when said timer means is wound,



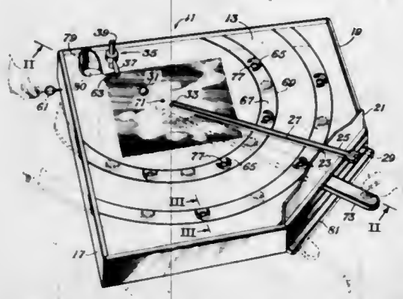
a lever pivoted on said casing having one end thereof positioned for engagement with said first barrier means including an abutment on the opposite end of said lever for engagement by said coin member when the latter is moved into its operated position for laterally moving and engaging said opposite end portion of said first barrier means with said operating member of said timer means,
a second barrier means journalled for reciprocation in said casing from a normal position with an end portion thereof in a withdrawn position from said junction to a position intersecting said junction when operated for holding said balls on said holding runway when said first barrier means is withdrawn from said junction,
spring means biased between said casing and said second barrier means for normally urging the latter with the end portion thereof into said withdrawn position,
a crank means pivoted on said frame and to said second barrier means positioned for movement by said coin member when moved from said rest to said operated position for moving the said second barrier means with the end portion thereof intersecting said junction whereby the movement of said coin member from idle to said operating position will project the outer end of said second barrier means to intersect said junction and simultaneously withdraw the said end portion of said first barrier means therefrom to prevent said balls from gravitating into said compartment whereby the end portion of said second barrier means will be withdrawn from said junction by said spring means when said coin member is moved to its said idle position.

3,358,996
LAMINATED BOWLING PIN WITH WEIGHT CONTROL HOLES
John J. Jinkner, 4324 Arden Place, Royal Oak, Mich. 48072
Filed Aug. 26, 1965, Ser. No. 482,755
6 Claims. (Cl. 273—82)



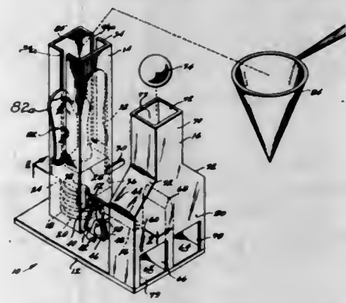
1. In a laminated bowling pin, the combination comprising:
(a) a pluralty of longitudinally disposed laminations secured together to form the belly portion, the neck and the head of the bowling pin;
(b) said plurality of laminations including at least one central lamination forming the head, neck, and part of the belly portion of the pin, and at least two side laminations on the belly portion;
(c) an upper control weight hole formed in the belly portion of the pin; and
(d) a pair of axially aligned, lower, laterally spaced apart control weight holes formed in the belly portion of the pin in positions spaced below said upper control weight hole and in vertical alignment therewith.

3,358,997
MECHANICALLY BATTED TOY BASEBALL GAME
Franklin D. Belz, 2102 Ave. E., Brownwood, Tex. 76801
Filed Apr. 22, 1965, Ser. No. 450,106
6 Claims. (Cl. 273—89)



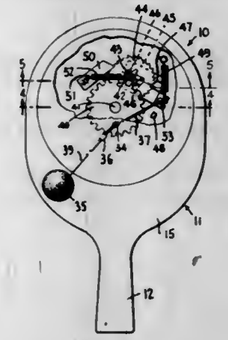
3. In a toy ball game of the type having a game board that represents a baseball field, the combination therewith of: a batter mechanism having a portion extending upward from the game board to support a substantially horizontal bat spaced above the game board; means associated with the batter mechanism for selectively rotating the bat about a substantially vertical axis above said game board; ball delivery means carried by the game board to roll a ball toward the batter mechanism at a controlled velocity; and ball elevating means project a delivered ball above the home plat ball elevating means comprising a protrusion strike zone having a height less than one hal eter of the ball, said protrusion extending tra the direction of ball travel from the ball deli forward of said batter mechanism, with a length approximating proportionately the wid ventional home plate and having abrupt termi defining its ends to deflect the ball to one sid indicate when the strike zone is missed.

3,358,998
ANIMATED ACTION TOY
Adolph E. Goldfarb, 7427 Varna North Hollywood, Calif. 91605
Filed Nov. 24, 1964, Ser. No. 413,5
15 Claims. (Cl. 273—95)



1. In combination, a toy game device, co
catapult means for hiding a game piece fr
ejecting the game piece into the air when
device is released;
a game piece mounted on said catapult de
tion thereby;
catching means for catching a game piec
said catapult means;
trigger means connected to said catapult d
leasing it; and
chance means for releasing said trigger.

3,358,999
PADDLE TOY WITH FLY-BACK C
George Lerner, 12 Prospect Court, Freeport, and Julius Ellman, 1672 E. 7th St., Br 11230
Filed Jan. 7, 1964, Ser. No. 336,2
1 Claim. (Cl. 273—98)



A plaything comprising a hollow paddle
a hitting face, a handle extending from
counting mechanism mounted in the hollow
a flexible resilient elongate element having
nected to said counting mechanism interiorly
and extending slidably outward through sai

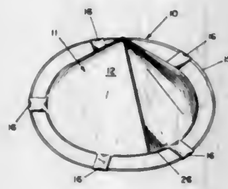
for actuation of said counting mechanism from exteriorly of said body, a ball connected to the outer end of said elongate element for repeated hitting by and return to said hitting face, and indicating means exteriorly of said body on the non-hitting face thereof and connected to said counting mechanism for operation thereby to indicate the number of hits, said indicating means comprising a pivotal pointer, the non-hitting face of said body being provided with numerical markings associated with said pointer, said counting mechanism comprising a rotary ratchet wheel in driving relation with said pointer, and an oscillatory pawl engageable with said ratchet wheel to step the latter in one direction, said elongate element being connected to said pawl for oscillating the latter, means mounting said pawl for rotation and translation, whereby said pawl drives said wheel in one direction of oscillation and rises over said wheel in the other direction of oscillation, said mounting means comprising an arm having a slot at one end, said pawl being carried at the other end of said arm, and a pivot pin mounting said ratchet wheel, said slot receiving said pivot pin to mount said arm for said rotation and translation.

3,359,000

FLYING ARCHERY TARGET

Richard A. Schreiber, Plainfield, Wis.
(711 Pflaum Road, Madison, Wis. 53716)

Filed Apr. 8, 1965, Ser. No. 446,609
5 Claims. (Cl. 273—105.4)



1. A flying archery target comprising:
(a) a body portion having substantially identical conical top and bottom portions enclosing filler material for absorbing the impact of an arrow, and
(b) a landing guard spaced outwardly about the periphery of and attached to said body portion by a plurality of outwardly extending connecting portions.

3,359,001

FRANGIBLE TARGET COMPACTED OF PARTICULATE ICE OR CARBON DIOXIDE

Joseph W. Silva, New Haven, Conn., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia

Filed Mar. 9, 1964, Ser. No. 350,296
2 Claims. (Cl. 273—105.4)



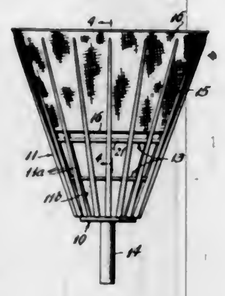
1. A projectable, frangible target useful in shooting games such as trap or skeet comprising a substantially saucer-shaped body composed of particulate, compacted, artificial water ice, said compacted body being formed by reconstituting finely divided artificial water ice by means of pressure in a closed cavity in substantially instantaneous fashion.

3,359,002

VANE ELEMENT FOR SHUTTLECOCKS

James E. Wolf, Altoona, Pa., assignor to R.S.L. Shuttlecocks Co., Ltd., Altoona, Pa., a corporation of Pennsylvania

Filed June 16, 1964, Ser. No. 375,449
4 Claims. (Cl. 273—106)



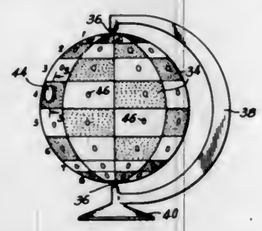
1. A vane element adapted to be secured to a head to form a shuttlecock, comprising a frusto conical band of thermoplastic material having interstices therein, a base to be secured to the head and a plurality of plastic stems extending outwardly and upwardly from the base, said stems having portions disposed on each side of the band and having portions extending through and interlocking with the interstices in said band.

3,359,003

GAME BOARD FOR CHECKERS OR CHESS HAVING NO SIDE BORDERS

David Kass, Roosevelt, N.Y., assignor to Original Toy Corporation, Brooklyn, N.Y., a corporation of New York

Filed May 5, 1965, Ser. No. 453,327
6 Claims. (Cl. 273—131)



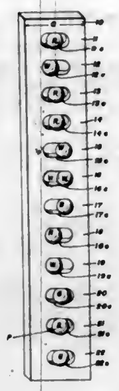
1. A game apparatus comprising a set of game pieces, and a globe having a playing surface marked with sixty-four playing positions divided into eight ranks, and eight files which for identification may be considered lettered A to H, with file A disposed adjacent file H in such fashion that there are no side borders, the files being in the direction of meridians, and the ranks being in the direction of latitudes, whereby one player plays from the region of the North Pole toward the South Pole, and the other player plays from the region of the South Pole toward the North Pole.

3,359,004

PUZZLE GAME APPARATUS

Lonnie T. Ellis, Rte. 4, Box 32–A, Orange, Tex. 77630

Filed Aug. 30, 1966, Ser. No. 575,992
1 Claim. (Cl. 273—153)



A puzzle game comprising, in combination:
(a) a quantity of playing pieces, said quantity consisting of a whole number multiple of twelve;
(b) a playing board;
(c) said quantity of playing pieces consisting of three groups of playing pieces said groups being equal in size;
(d) each group of said groups of playing pieces having means including a characteristic distinguishing each member of said group from the members of the other groups and identifying the members of said group with each other;
(e) said playing board having serially arranged means for contacting said pieces individually including multiple receiving positions, said receiving positions being equal in number to the number of said playing pieces;
(f) each of said playing pieces having contact means;
(g) each of said receiving positions having lateral dimensions at least as great as the combined lateral dimensions of said contact means of any two of said playing pieces;
(h) said playing pieces being removably mounted in said receiving positions of said playing board;
(i) said playing pieces comprising twelve spherical bodies;
(j) said receiving positions including twelve slots disposed in spaced relation along the length of said playing board, said slots having lateral dimension at least as great as twice the lateral dimension of the contact means of said spherical bodies; and
(k) said characteristic comprising a different color marking.

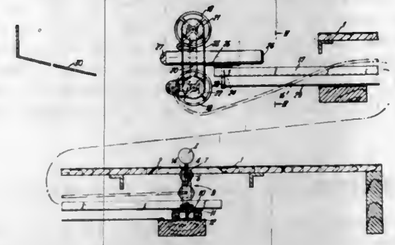
3,359,005

IMAGE PROJECTOR ACTUABLE BY GOLF BALL ROTATION TO INDICATE DIRECTION AND INTENSITY OF GOLF STROKE

Alexander Cameron, 35 Warden Road, Glasgow W. 3, Scotland

Filed Feb. 25, 1964, Ser. No. 347,234
Claims priority, application Great Britain, Feb. 26, 1963, 7,564/63
6 Claims. (Cl. 273—185)

1. A golf game comprising a golf ball adapted to be struck by a player, a mounting for said ball permitting angular rotation of the ball about a substantially horizontal axis spaced from the ball and simultaneous rotation about a substantially vertical axis, the rotations about both axes being dependent upon the direction and intensity of a blow struck on said ball and means including a



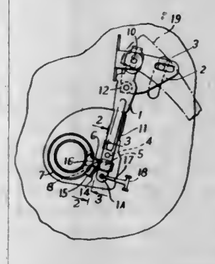
film projector operatively connected to the mounting such that an image may be projected by said projector to indicate the direction and intensity of said blow in response to rotation of said ball about said axes.

3,359,006

AUTOMATIC TRIP MECHANISM FOR GRAMOPHONES

Edmund Walter Mortimer, Swindon, England, assignor to Garrard Engineering Limited, Swindon, England, a British company

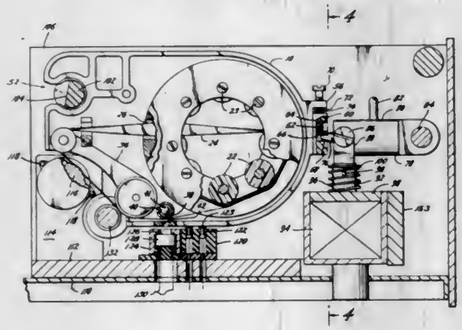
Filed Feb. 12, 1965, Ser. No. 432,169
Claims priority, application Great Britain, Feb. 21, 1964, 7,357/64
3 Claims. (Cl. 274—1.11)



1. In a disc-record player having a rotatable turntable for supporting a grooved disc record to be played, driving means for rotating said turntable about an axis, and a pickup device movable from a starting position towards the turntable axis in co-operation with the groove of such record, the combination comprising an abutment arranged for joint movement with the turntable about said axis and spaced from said axis, and means operable by said abutment to arrest said turntable-driving means, said arresting means being movable from a normal position clear of the path of said abutment into an operating position in the path of said abutment, frictional coupling means operative, at least during a terminal part of such movement of the pick-up device, to yieldingly move said arresting means towards its operative position, a first magnet element participating in such movement of the arresting means towards its operative position, and a second magnet element participating in the movement of the abutment about the turntable axis, said magnet elements being so arranged as to return by magnet repulsion, when meeting each other after the arresting means has approached the operative position beyond a predetermined distance, said arresting means to the said distance f...n the operative

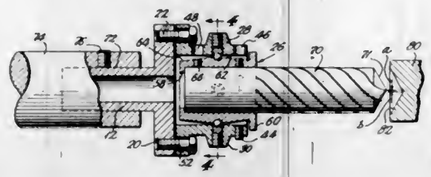
position, said distance being greater than the amount of the approach movement of the arresting means towards the operative position produced by one turn of a standard recording groove but less than that produced by a turn of a standard running-out groove, and the angular position of said second magnet element relative to said abutment means about the turntable axis being such as to ensure, when the arresting means is in its operative position, engagement thereof with said abutment to arrest the drive before the mutual approach of the magnet elements is sufficient to produce such repulsion of the arresting means.

3,359,007
MULTIDECK MAGNETIC RECORDING APPARATUS
Pierre Perreau, Paris, France, assignor, by mesne assignments, to Societe d'Instrumentation Schlumberger, Paris, France, a corporation of France
Filed July 22, 1964, Ser. No. 384,449
Claims priority, application France, July 25, 1963, 942,733, Patent 1,375,115
6 Claims. (Cl. 274—4)



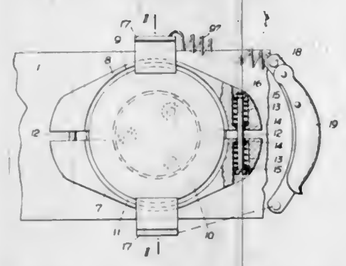
1. A recording and reproducing apparatus comprising a chassis, a driving shaft rotatably mounted in said chassis; means driving said shaft at a constant speed; a pivot on said chassis; at least one magnetic cassette having a casing; said casing having an eye, said eye engaging said pivot to pivotally mount said cassette on said chassis; an idle roller and a driven roller driven by said driving shaft; means mounting said rollers on said casing for rotation about a fixed axis on said casing; tape storage means carried by said casing; a magnetic tape in said storage means, said tape having a portion extending around said idle roller and said driven roller; at least one magnetic head mounted on said chassis adjacent to and opposite said portion of said tape and engageable with a surface of said portion of the tape; actuating means on said chassis; connecting means connecting said cassette to said actuating means; said cassette being movable about said pivot from an inactive position in which said tape is spaced from said magnetic head and said driving shaft is disengaged from said driven roller to an active position in which said surface of said tape is engaged by said magnetic head and said driving shaft drivingly engages said driven roller; said connecting means comprising an engaging device on said casing, and a coupling assembly on said chassis; said engaging device having a notch preceded by an access ramp; means adjustably mounting said engaging device on said casing in opposed relation to said coupling assembly; said coupling assembly including a body and a latch finger mounted on said body for movement therewith; means resiliently urging said latch finger into said notch; means mounting said body for movement from a first position in which said casing is maintained in said inactive position by said finger, to a second position in which said casing is maintained in said active position, by said finger; operating means to operate said actuating means to move said body from one of said positions to the other; and cooperating means on at least one of said eye and said pivot to permit disengaging said casing from said pivot upon pivotal movement of the casing to a predetermined position.

3,359,008
BORING TOOL HOLDER FOR DRILLING AND REAMING OPERATIONS
Robert H. Stimmerman, 957 Sebring Ave., R.D. 1, Pine City, N.Y. 14871
Filed Oct. 22, 1965, Ser. No. 500,935
8 Claims. (Cl. 279—16)



1. A misalignment correcting boring tool holder for mounting on a tool spindle between the same and a work spindle; comprising a head part, means for securing the head part in operative position on a tool spindle, a bushing for receiving the shank of a tool, a body part forming a housing for and enclosing the bushing, means for mounting said housing on said head part, said last named means permitting relative radial movement between said housing and said head part, and ball-and-socket coupling means between said bushing and housing and circumscribing said bushing in a plane perpendicular to the longitudinal axis of the latter and functioning to permit a substantially friction-free universal floating non-rotating movement of the bushing in and relative to the housing.

3,359,009
SKI BINDING
Hans Hinterholzer, 35 Saalbach, Salzburg, Austria
Filed Apr. 7, 1964, Ser. No. 357,880
6 Claims. (Cl. 280—11.35)



1. A ski binding comprising a heel-supporting member having a fastening means for attaching same to the boot of a skier, a base member adapted to be fixedly secured to a ski, a pair of clamping jaws connected with one of said members, guide means interconnecting said jaws for relative motion in a horizontal plane, a resilient means adjacent said guide means urging said jaws toward each other, and a co-operating element on the other of the members releasably embraced by said jaws at a location offset from said guide means, said jaws and said element being provided with co-acting camming formations enabling upward separation of said jaws from said element upon a spreading of said jaws against the force of said resilient means, said guide means comprising a pair of parallel pins engaging said jaws at opposite sides of said element for enabling relative translatory motion of said jaws, said resilient means including compression springs surrounding said pins.

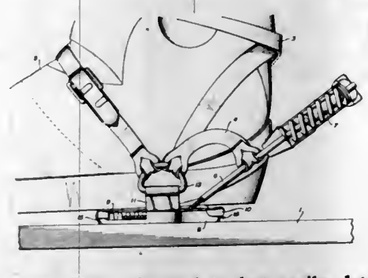
3,359,010
RELEASE BINDING STRUCTURE
Paul E. Wick, 321 Woodland Ave., Springfield, Pa. 19064
Filed May 7, 1965, Ser. No. 453,955
2 Claims. (Cl. 280—11.35)



1. In a releasable ski binding for a boot which may be fitted with long thongs for strapping down the heel of said boot to provide improved ski control, but which is nevertheless releasable in the event of a fall forwardly with respect to the ski, the combination which comprises a forward anchoring member secured to and extending transversely of the ski and having a rearwardly facing surface which consists entirely of a curved bearing surface thereon, said curve having an arc of less than half a circle and thus forming an open bearing, a base plate arranged on said ski rearwardly of said anchoring member, said base plate having at its forward end a forwardly facing surface consisting entirely of a mating curved bearing surface having a swingable relationship with said anchoring member but being separable from the curved surface of said anchoring member, whereby the rear portion of said base plate is free to swing upwardly and forwardly relative to said ski by frictional movement between said curved surfaces with substantially pure revolving movement about the center of curvature of the curved surface of said anchoring member and to separate completely therefrom, said curved surfaces mating about a center of rotation which is spaced above the upper surface of the ski by a distance equal to approximately half the thickness of said forward anchoring member, and releasable retaining means operative and effective upon said base plate at a position located rearwardly of said bearing member, said retaining means including a yieldable member which is yieldable in response to the forces generated in a forward fall to release said retaining means.

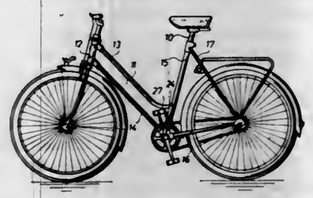
3,359,011
HEEL-CLAMPING DEVICE FOR SAFETY SKI BINDINGS
Hermann Scheib, Garmisch-Partenkirchen, Germany, assignor to Hannes Marker, Garmisch-Partenkirchen, Germany
Filed Sept. 14, 1965, Ser. No. 487,186
Claims priority, application Germany, July 5, 1965, M 65,816
4 Claims. (Cl. 280—11.35)

1. A heel-clamping device for safety ski bindings, comprising in combination:
(a) a rotatable but undetachable turntable fastened on the ski in the vicinity of the heel,
(b) a safety heel tightener fastened on the turntable, said heel tightener pressing the foot forward against a front abutment of the binding by means of a thrust element engaging in the heel groove but releasing the foot under an excessive pull in a direction approximately vertical to the ski surface



(c) a cover plate, clamped to but easily detachable from the turntable, and
(d) a longthong fastened to the cover plate.

3,359,012
TWO-WHEEL VEHICLE HAVING SEPARABLE FRAME PARTS
Walter Westerheide, 16 Flensburger Strasse, Bielefeld, Germany
Filed Nov. 20, 1964, Ser. No. 412,805
Claims priority, application Germany, Feb. 5, 1964, W 32,071
19 Claims. (Cl. 280—287)



1. A two-part wheeled vehicle comprising a frame, said frame being formed by leading and trailing frame halves, said leading frame half including two down tubes, said trailing frame half including a seat tube, a bottom bracket bearing housing at a lower end portion of the down tube, recess means in the bottom bracket bearing housing, means coupling said frame halves, said coupling means including a coupling member carried by the leading frame half and is of a segmental semi-circular cross-section for engagement around the bottom bracket bearing housing, a locking nose provided at a lower portion of the coupling member, said locking nose being engaged with said recess means, said coupling member being formed by a semi-circular wall, said locking nose extending radially away from said wall and is bent into an interior of said coupling member, a clamping member arranged above and integral with the coupling member, and said clamping member connects the two down tubes of the frame and opens toward the seat tube.

3,359,013
DEEP WELL CASING JOINT
Granville S. Knox, Fallbrook, and Melvin D. MacArthur, Glendale, Calif., assignors to Hydril Company, Los Angeles, Calif., a corporation of Ohio
Filed Sept. 3, 1965, Ser. No. 484,953
4 Claims. (Cl. 285—13)

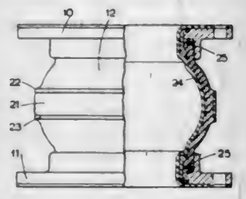
1. In a well casing joint, pin and box members having a common longitudinally extending central axis, said pin and box members having interfitting threads between

which fluid under pressure from the joint interior may pass, the box member having a forward terminal end with radially inner and outer annular portions, the pin member and said radially outer annular portion having load transfer shoulders interfitting along a radially outer generally frusto-conical locus tapering forwardly and radially inwardly, the pin member and said radially inner annular portion having sealing shoulders sealingly interfitting along an inner radially generally frusto-conical locus tapering rearwardly and radially inwardly, and said pin



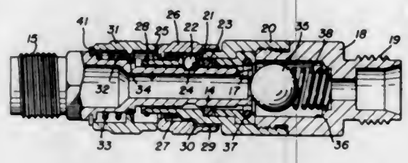
member and radially outer annular portion having means therein defining a local clearance path for fluid under pressure to leak between said load transfer shoulders, said interfitting threads and both of said shoulders being so constructed and arranged that if the fluid within said members approaches a pressure which would rupture said box member, the fluid under pressure will escape past the interfitting threads, sealing surfaces and load transfer shoulders and out through said clearance path thereby relieving the excessive pressure on the fluid.

3,359,014
PIPE COUPLINGS
Henry Clements, Leatherhead, England, assignor to Andre Rubber Company Limited, Surbiton, Surrey, England
Filed Apr. 14, 1966, Ser. No. 542,581
Claims priority, application Great Britain, Apr. 15, 1965, 16,236/65
5 Claims. (Cl. 285—55)



1. A pipe coupling comprising rigid end members each having flange portion and a tube portion whose axis is perpendicular to said flange portion, rigid tubes, and a central flexible section formed of an elastomeric material and having an enlarged retaining bead at each end thereof, each of said beads being retained between the inner surface of said tube portion of one of said end members and the outer surface of one of said rigid tubes which is positioned with its axis coinciding with the axis of said tube portion, both ends of each of said tubes having a belled-out shape whereby to retain the tube with respect to the flange portion of one of said end members and to retain the neck of one of said beads between one end of said tube and the annular rim of the tube portion of said end member.

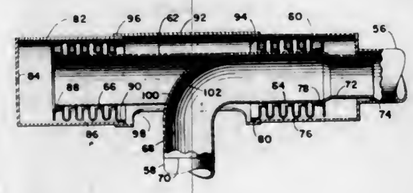
3,359,015
QUICK CONNECT TUBE COUPLING
Emery J. Zahuranec, Solon, Ohio, assignor to Crawford Fitting Company, Cleveland, Ohio, a corporation of Ohio
Filed June 14, 1965, Ser. No. 463,588
2 Claims. (Cl. 285—89)



1. A coupling comprising:
a female socket member having an open end;
detent means carried by said socket member and being movable between a position extending into the interior of said socket member and a position withdrawn from the interior of said socket member;
a first sleeve slidably carried by said socket member having detent confining and detent releasing positions;
a first spring interposed between said socket member and sleeve biasing said sleeve towards a detent releasing position;
a male member having a forward end receivable in said open end of said female socket member and including means adapted to receive said detent means;
a second sleeve slidably carried by said male member and movable between an extended position and a retracted position;
said second sleeve including a surface adapted to abut said first sleeve;
a second spring of greater strength than said first spring interposed between said male member and said second sleeve and biasing said second sleeve to an extended position whereby said second sleeve is in engagement with said first sleeve and holds said first sleeve in said detent confining position when said male member is received in said female socket member and said detent receiving means on said male member receives said detents;
releasable lock means on said male member spaced from the rear end of said second sleeve when said second sleeve is in engagement with said first sleeve a distance less than the distance between said detent confining and detent releasing positions of said first sleeve;
said lock means being in the path of travel of said second sleeve whereby retraction of said second sleeve against the bias of said second spring sufficient to uncouple said male member from said female socket member is prevented;
said lock means being carried by said male member such that said lock means may be readily detached from said male member whereby said second sleeve may be retracted against the bias of said second spring;
said lock means includes a groove formed in said male member and further includes a snap ring received in said groove;

said snap ring being resilient and generally U-shaped with an outer diameter greater than the inner diameter of said second sleeve;
said snap ring having terminal ends which are spaced apart a distance less than the diameter of said groove such that upon insertion and removal of said snap ring from said groove said terminal ends must resiliently spring apart;
the dimensional interrelationship of said ring and groove retaining said ring in said groove and also permitting the ready removal of said ring from said groove.

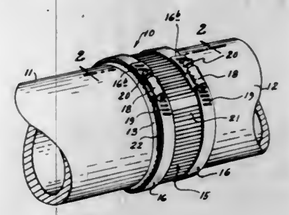
3,359,016
PRESSURE BALANCED FLEXIBLE JOINT
Edward C. Sarlls, Jr., Grand Prairie, Tex., assignor to LTV Aerospace Corporation, Dallas, Tex.
Filed Oct. 11, 1965, Ser. No. 494,711
1 Claim. (Cl. 285—228)



A flexible joint comprising:
first and second duct sections of given diameter for transporting pressurized fluid mounted with the ends of said duct section adjacent each other;
a cylindrical terminal portion provided on the end of said first duct section and having a diameter greater than said given diameter;
a balance tube having first and second aligned portions and a tubular offset portion, said first aligned portion extending into said terminal portion and said offset portion connecting with the end of said second duct section;
a cup member having one open end and formed with dimensions similar to those of said terminal portion overlying said second aligned portion;
a first bellows connecting said first aligned portion with the free end of said terminal portion;
a second bellows connecting said second aligned portion with the open end of said cup member;
a tension tube connecting said open end of said cup member with the free end of said terminal portion and having an opening therein with the ambient pressure to the internal surfaces of both of said bellows;
said offset portion of said balance tube forming an angle with the longitudinal axis of said tension tube and extending freely through said opening; and
means for applying fluid from said duct sections to the external surfaces of said first and second bellows.

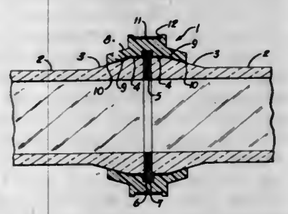
3,359,017
PIPE COUPLING OF CORRUGATED SHIELD TYPE
Erwin L. Schaub, Middle Village, N.Y., assignor to Ideal Corporation, Brooklyn, N.Y., a corporation of New York
Filed Mar. 1, 1967, Ser. No. 619,660
5 Claims. (Cl. 285—236)

1. An improved pipe coupling of the type comprising an annular gasket to fit over adjacent pipe ends, a shield of corrugated sheet material to encompass said gasket with ends of the shield overlapping, the shield corrugations extending in axial direction, and clamping means including bands encircling said shield at axially spaced locations thereon and each carrying on one end portion of the band a tightening device receiving and for drawing the other end of the band therethrough in lapping relation to said one end whereby the bands are contractible circumferentially to contract the shield so that it will compress and seal the gasket against the pipe ends, wherein the lapping end of said shield leads over the lapped end



thereof in the direction in which said other ends of the bands lap over said one ends of the bands, and said bands are fixed on said shield with said other ends of the bands extending substantially beyond said lapping end of the shield and with said lapped end of the shield extending substantially beyond said one ends of the bands, whereby to substantially reduce the frictional resistance of contacting bands and shield surfaces to contraction of the shield upon the gasket on the pipe ends.

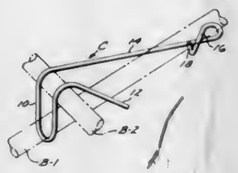
3,359,018
PIPE COUPLING
Clifford G. Simons, Delavan, Wis., assignor to Sta-Rite Industries, Inc., Delavan, Wis., a corporation of Wisconsin
Filed June 24, 1965, Ser. No. 466,614
2 Claims. (Cl. 285—367)



1. A pipe coupling, comprising a pair of pipe sections disposed in confronting end-to-end relation, each pipe section having an annular tapered external surface located adjacent the confronting end, a generally flat annular seal located between the confronting ends of the pipe sections with the inner edge of the seal being substantially flush with the internal surfaces of the pipe sections and the outer edge of the seal projecting beyond the outer surfaces of said pipe sections, an expandable coupling member disposed around the pipe sections and having an internal groove to receive the projecting outer edge of the seal, the axial width of said groove being slightly larger than the thickness of said seal, said coupling member having a pair of annular edge extremities straddling the groove and disposed in engagement with the respective tapered surfaces on said pipe sections along a substantial line contact, and clamping means disposed around the coupling member and disposed to contact the coupling member and force the annular edges inwardly against the tapered sur-

faces to thereby move the pipe sections axially toward each other to compress the seal between said confronting ends by a wedging action whereby the outer periphery of the seal engages the bottom of said groove and centers the seal with respect to the pipe sections.

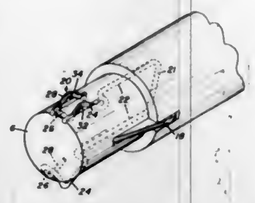
3,359,019
BAR CLIP
Charles C. Pinkney, Palos Verdes Peninsula, Calif., assignor to Wire King Products, Inc., Federal Way, Wash., a corporation of Washington
Filed Oct. 13, 1966, Ser. No. 586,417
2 Claims. (Cl. 287—50)



1. A spring wire clip for temporarily securing two bars together at the intersection of said bars, the second of said bars overlying the first of said bars, comprising:
- a generally U-shaped nose formed at the front of said clip;
- a rearwardly and downwardly extending finger that extends away from the upper end of one side of said nose generally normal to the plane of said nose, the upper portion of said finger being curved;
- a rearwardly and downwardly extending leg that extends away from the upper end of the other side of said nose at a greater angle than that of said finger;
- a generally laterally extending retainer formed at the rear of said leg, said retainer extending across the space behind said nose, with longitudinally spaced points on said first bar being received within the lower portion of said nose and between the upper surface of said retainer, while longitudinally spaced points on said second bar are received between the upper portion of said finger and the front portion of said leg just rearwardly of said nose;
- and the dimensions of said clip being so chosen that it is temporarily flexed out of its normal configuration when it is applied to said intersecting bars to thereby retain said bars against relative movement, the end of said leg being formed with a closed loop portion which terminates in an upwardly extending hood that is normal to the plane of said looped portion and is dimensioned so that the looped portion serves as a support for said first bar and the hook serves as a stop to limit movement of said first bar relative to said second bar.

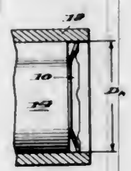
3,359,020
SPINDLE DETENT
Miles C. O'Donnell, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Mar. 7, 1966, Ser. No. 532,432
4 Claims. (Cl. 287—53)

1. Means for releasably holding a member having a hub on a spindle, said spindle having an axially extending bore adjacent one end thereof, means at least partially closing said bore at said one end and diametrically opposed slots formed in the spindle walls at said one end, said holding means comprising a substantially U-shaped device of resilient material movably disposed within said bore, said device having a bight extending substantially transverse to the axis of said bore, and substantially parallel legs extending from said bight toward said bore closing means, each of said legs having a portion thereof



projecting radially outwardly through one of said slots, said legs terminating interiorly of said bore and adapted to engage said bore closure means with the terminal ends thereof.

3,359,021
SELF-LOCKING RETAINING RINGS
Hugo Wurzel, Bronx, and Howard Roberts, Great Neck, N.Y., assignors to Waldes Kohinoor, Inc., Long Island City, N.Y., a corporation of New York
Filed June 3, 1965, Ser. No. 461,061
3 Claims. (Cl. 287—126)

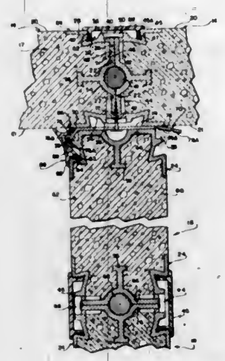


1. A retaining ring assembly comprising a housing having a bore, a machine part disposed in said bore, and a self-locking retaining ring engaged with the bore surface along its outer edge and abutting against a radial face of said machine part along its inner edge, thereby providing in said bore an artificial shoulder for axially locating the machine part therein, said retaining ring comprising an annular, initially planar, closed ring body having an unstressed external diameter greater than that of said bore by a predetermined amount but being in a radially confined and thereby stressed state within the bore and having the frusto-conical configuration of a Belleville spring washer of external diameter equal to that of said bore and a coning angle such that the tangent of said angle is smaller than the friction coefficient between the outer edge of the ring and the housing bore surface, said ring body being secured in place within the bore solely by friction exerted by its outer edge on the bore surface consequent to the ring body tending to return to its initial planar shape and which increases as the ring tends to deflect under a load applied in the same direction as its return-movement tendency by said machine part.

3,359,022
PANEL JOINT
Gordon C. Russell, Studio City, Calif., assignor to Lockheed Aircraft Corporation, Burbank, Calif.
Filed Feb. 18, 1966, Ser. No. 528,423
14 Claims. (Cl. 287—189.36)

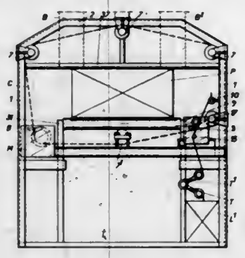
1. An architectural joint used to engage an outside load-bearing first panel to an interior nonload bearing second panel with the second panel at right angles to the

first panel and each panel having ends and side walls, comprising:
- an elongated locking band being secured to the nonload bearing second panel,
- the locking band having a base abutting the panel end and a pair of parallel flanges extending at right angles from the locking band base and coplanar with the panel walls,
- the locking band flanges each having an elongated depression therein,



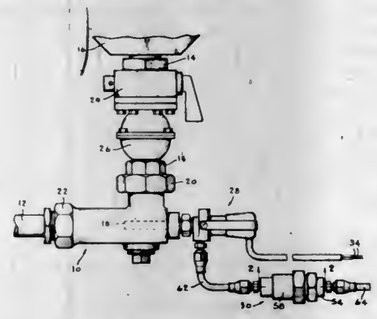
means for aligning the second panel relative to the first panel with the aligning means of the second panel having a first end extending within the aligning means; and
- means for preventing lateral movement of the second panel and abutting a second end of the second panel.

3,359,023
AUTOMATIC MACHINE FOR BINDING CASES AND PACKAGES
Francois Aubery, 18 Rue Colbert, Valence, France
Filed Sept. 15, 1965, Ser. No. 487,419
Claims priority, application France, Sept. 22, 1964, 9,009
11 Claims. (Cl. 289—2)



1. Apparatus for binding packages with an elongated binder, said apparatus comprising:
- a frame,
- support means for supporting packages to be bound,
- endless conveyor means arranged around said support means,
- gripper means mounted on said endless conveyor means for engaging a length of elongated binder,
- drive means for driving said endless conveyor means and said gripper means around a package located on said support means,
- guide means mounted on said frame for guiding said endless conveyor means around the package, and
- a knotter device operatively associated with said gripper means for knotting the binder subsequent to its guiding around the package, said gripper comprising:
  - a first member mounted on said endless conveyor means,
  - spigot means mounted on, and projecting from, said first member,
  - a second member mounted for displacement longitudinally of said spigot means,
  - stop means mounted on said spigot means, and
  - resilient means mounted between said stop means and said second member for urging said second member towards said first member.

3,359,024
FLUID ACTUATED TRACK SANDING MECHANISM
James I. Morgan, Hales Corners, Wis., assignor to The Prime Manufacturing Company, Milwaukee, Wis., a corporation of Wisconsin
Filed May 6, 1963, Ser. No. 278,072
18 Claims. (Cl. 291—3)

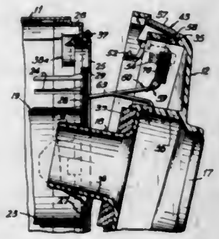


1. A sanding system comprising a sander, a discharge pipe leading from such sander, means for alternately applying high pressure clean-out and low pressure sanding air to said discharge pipe, means for sensing a clogging condition in said pipe, and means responsive to said sensing means for applying clean-out air to said pipe to remove said condition.

3,359,025
VACUUM CLEANER COVER LATCH CONTROL
Bengt Erik Nilsson, Hagersten, Sweden, assignor to Aktiebolaget Electrolux, Stockholm, Sweden, a corporation of Sweden
Filed Oct. 7, 1965, Ser. No. 493,742
6 Claims. (Cl. 292—117)

1. In a vacuum cleaner of the type including a casing having an opening for the insertion and removal of a dust bag and a cover for said opening hinged on said casing for pivotal movement to and from a closed position, a latching mechanism operative when a dust bag is disposed in the casing to releasably secure the cover in said closed position, said mechanism comprising two spaced apart keepers on said casing which are substantially equally spaced from the hinged axis of said cover, a latch member having a pair of generally parallel latch elements and an integral connecting bar extending between said latch elements and spacing apart the latter by a distance equal to the distance between said keepers, said latch elements each having a mounting lug at one end and a latching nose at the other end, means on said cover defining spaced sockets which loosely receive said mounting lugs and thereby mount said latch member for

rocking relative to said cover about an axis parallel to said hinge axis, first spring means urging said latch member to rock to a latched position in which said latching noses are engageable with said keepers for holding said cover in its closed position, a latch deactivating member pivoted on said cover and being engageable against said latch member, and second spring means acting on said deactivating member to pivot the latter in a first direction for rocking said latch member away from said



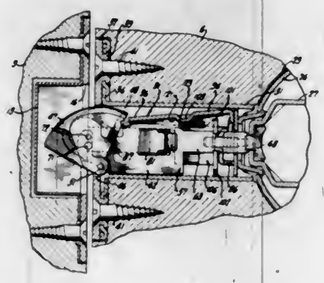
latched position so as to prevent engagement of said noses with said keepers, said second spring means being of sufficient strength to overcome said first spring means, said deactivating member including a projecting portion engageable by a dust bag when the latter is disposed in the casing to pivot said deactivating member in a second direction against the action of said second spring means in response to movement of said cover to its closed position, thereby to permit the latching noses to engage the keepers.

3,359,026
VEHICLE DOOR LATCH
Harry J. Shay, Rockford, Ill., assignor to L. W. Menzimer, as trustee, Rockford, Ill.
Continuation of application Ser. No. 385,171, July 27, 1964. This application Dec. 29, 1966, Ser. No. 613,375
9 Claims. (Cl. 292—198)



4. In a door latch, the combination of, a support, a latching member rotatably mounted on said support to turn between latched and unlatched positions, mechanism selectively operable to hold said latching member in said latched position and to release the member for turning to the unlatched position, means including a locking lever fulcrumed on said support to turn between locked and unlocked positions and operable when in the locked position to maintain the latching member in the latched position and operable when in the unlocked position to permit release of the latching member, said mechanism including an abutment carried by said lever, movable detent means operable when said latching member is in the unlatched position to engage said abutment and hold said locking lever in an intermediate position as the lever is moved away from the unlocked position, a first manual element operable to turn said locking lever away from the unlocked position and move said abutment against said detent means, and a second manual element subsequently operable to move said detent means out of the path of said abutment and release said locking lever for movement to the locked position whereby the sequential operation of said elements places the latch in a locked condition.

3,359,027
SWINGING BOLT DOOR LATCH
Ernest L. Schlage, Burlingame, and Ralph E. Neary, San Francisco, Calif., assignors to Schlage Lock Company, a corporation
Filed Apr. 21, 1965, Ser. No. 449,810
10 Claims. (Cl. 292—222)

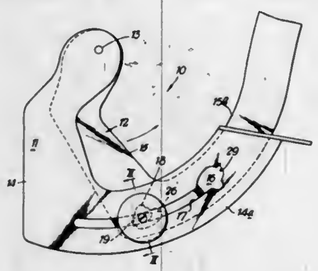


1. A swinging bolt door latch comprising a face plate having an opening therein, a housing connected to said face plate, a latch bolt, means for mounting said latch bolt on said housing to swing about a fulcrum for movement through said opening between a retracted position and a projected position, an operating bar, means for mounting said operating bar for translation in said housing, a hook at one end of said operating bar, having oppositely disposed engagement walls spaced apart a predetermined distance when measured in one direction, and means on said latch bolt extending between said walls and having when measured in said direction a dimension substantially less than said predetermined distance to afford lost motion between said surfaces and said means and having when measured in another direction a dimension at least equal to said predetermined distance to preclude lost motion between said surfaces and said means.

3,359,028
LOCKING STAY
Clifford Alexander Seckerson, Iver Heath, England, assignor to United-Carr Incorporated, Boston, Mass., a corporation of Delaware
Filed Nov. 12, 1965, Ser. No. 507,366
Claims priority, application Great Britain, Nov. 11, 1964, 45,967/64
3 Claims. (Cl. 292—263)

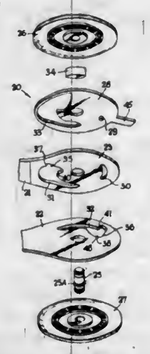
1. A locking stay comprising a first member and a second member connected together for pivotal movement in a forward and a reverse direction, each member being generally flat and formed with a surface overlying a surface of the other member and movable thereover during relative movement of the two members and with a through slot spaced a substantial distance from the pivotal axis of the two members partially overlying the through slot in the other member and there being provided a double ended pawl having its thickness extending partly through each slot and held therein by a first flange from which the pawl extends and with which it is integral, and a second flange having means of extending therefrom, from engaging said pawl and preventing rotation therewith, and

said flanges each bearing against a member so as to constrain the pawl to normally maintain its orientation in the slots, the slots being formed with bounding walls so shaped that on successive relative movements of the members alternately in the forward direction and in the reverse direction the pawl is cammed by the walls successively into progressively rotated positions, the pawl being engaged by the walls of the two slots, in a first and a third of said rotated positions, to prevent further relative movement of the members in the forward direction and, in the second of said rotated positions, to prevent further relative movement in the reverse direction, and the pawl, in



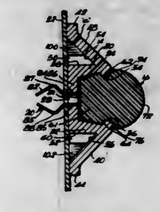
the fourth of its said rotated positions, being generally aligned with the permitted direction of relative movement and with an extension in that direction of at least one of the slots, said extension being aligned on an arc centered on the pivot point of the two members thereby permitting movement of the extended slot and of the associated member, relative to the aligned pawl and the other member, in the reverse direction to a relative position of the members which is substantially displaced, in the reverse direction of relative movement, from their relative position as limited, in that direction by the pawl in its said second rotated position.

3,359,029
LOCKING STAY
Paul Carl Roger Fernberg, Farnham Common, England, assignor to United-Carr Incorporated, Boston, Mass., a corporation of Delaware
Filed Nov. 12, 1965, Ser. No. 507,436
Claims priority, application Great Britain, Nov. 12, 1964, 46,150/64
6 Claims. (Cl. 292—263)



1. In a locking stay of the type comprising two relatively movable members each formed with a surface overlying a surface of the other member, a slot in each surface partially overlying and in register with a slot in the other surface and a pawl having a part of its thickness accommodated in one slot and a part of its thickness accommodated in the other slot and in which the bounding walls of the slots are so shaped that on successive relative movement of the members alternately in a forward and an opposite reverse direction the pawl is progressively rotated in the slots into a first rotated position in which further forward movement is prevented, into a second rotated position in which further reverse movement is prevented, into a third rotated position in which further forward movement is prevented and into a fourth position in which reverse movement beyond the second limited position is allowed, a catch plate in superposed proximate relation to one of said movable members and having a slot with abutment means projecting therein for preventing the bounding walls of the slots from camming the pawl into the third rotated position and thereby preventing reverse movement of the members beyond the second limiting position.

3,359,030
BUMPER GUARD ASSEMBLY
George Newman, 1805 NE. 117th Road, Miami, Fla. 33161
Filed Dec. 16, 1966, Ser. No. 602,201
4 Claims. (Cl. 293—1)

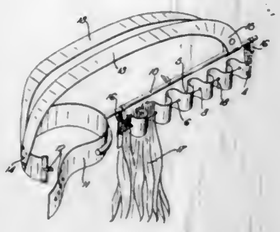


1. In combination, an elongated holder member of uniform cross section, said holder including a lower web having a substantially planar under surface, spaced walls extending out of the plane of said web and defining therebetween an elongated channel, said walls having ledges projecting into said channel and confronting each other in spaced relationship, said walls having flanges projecting laterally therefrom and extending to the lower plane of said web and defining downwardly-opening slots flanking opposite sides of said walls; an elongated bumper body of a substantially yieldable material and having a uniform cross section, said bumper body having a lower base substantially conforming to the cross section of said holder groove and snugly received therein, said bumper body including laterally opening recesses received on said confronting ledges, said bumper body including an enlarged, central, dome-shaped crown including undercut shoulders extending the length thereof and abuttingly engaged on the outer surface of said holder walls; fastening means extending through said web for attaching the lower surface of said web and said flanges in substantially flush engagement upon a surface upon which the holder is mounted; and at least one end cap connected to one end of said holder and including portions frictionally received in said slots flanking opposite sides of said walls.

3,359,031
TOBACCO TYING DEVICES
Richard George Werrett, Bindura, Southern Rhodesia, assignor to Werrett Enterprises (Private) Limited, Bindura, Southern Rhodesia, a corporation of Rhodesia
Filed Oct. 4, 1965, Ser. No. 492,726
Claims priority, application Southern Rhodesia, Oct. 5, 1964, 319/64
4 Claims. (Cl. 294—5.5)

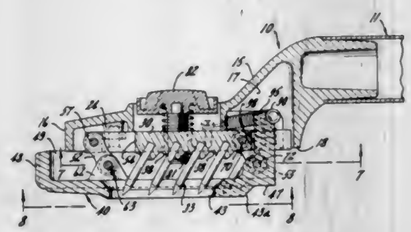
1. A tobacco tying device comprising an elongated member having crests and troughs to form a plurality of formations disposed transversely of the length of said

member for receiving tobacco leaf butts, said member having holes located at points approximately mid-way between said crests and troughs of said formations and



a resiliently deformable element to retain the tobacco leaf butts in said formations extending substantially parallel to the longitudinal axis of said member and passing through said holes.

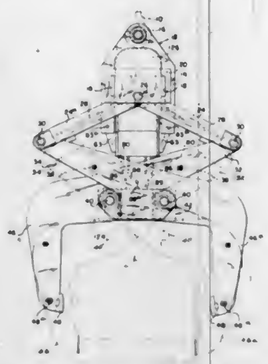
3,359,032
CARPET STRETCHER
George A. Kochanowski, Chicago, Ill., assignor to Kinkead Industries, Incorporated, Chicago, Ill., a corporation of Illinois
Filed Nov. 15, 1965, Ser. No. 507,936
9 Claims. (Cl. 294—8.6)



1. In a stretcher for stretching carpet having a pile and a backing, the combination comprising a frame having a pin plate mounting a set of sharpened carpet-engaging pins arranged side by side at an angle to the plate and rigidly secured thereto with the tips thereof lying substantially in a horizontal plane, a guard plate arranged below the pin plate, said guard plate being at least substantially coextensive with the pin plate and having openings for clearing the pins, means for coupling the guard plate with respect to the frame for broadwise movement of the plate relative to the plane of the tips, means including an adjustable stop interposed between the frame and the guard plate for limiting the degree of relative extension of the pins beyond the guard plate when the guard plate is seated on the carpet thereby to determine the degree of penetration of the pins into the carpet for engagement with the carpet backing, and means for applying combined longitudinal and downward force to the frame.

3,359,033
FLUID POWERED TONGS
William I. Curtis, Middleburg Heights, Ohio, assignor to The Hill Acme Company, Cleveland, Ohio, a corporation of Ohio
Filed Feb. 16, 1966, Ser. No. 527,690
7 Claims. (Cl. 294—88)

1. In an adjustable tongs comprising a support, tong arms movably mounted on said support for opening and closing movement, hoist mechanism including a single-acting reciprocating cylinder and piston motor mounted on said support and having a piston rod extending therefrom, pressure fluid power means having an operative connection with said cylinder at the piston end thereof for actuating said motor in tong-opening direction only, said hoist mechanism including an elongated flexible element connected between said support and said tong arms, means operatively connected with said piston rod and said flexible element for tensioning the latter for causing said opening movement of said tongs, the weight of said tongs effective upon said flexible element and said last named operatively connected means for causing return movement



of the piston of said motor toward the piston end thereof when said pressure fluid power means is inoperative, a fluid reservoir associated with said pressure fluid power means, a fluid flow line from the piston end of said cylinder to said reservoir for return of fluid to said reservoir during tong-closing movement of said piston, and pressure fluid relief means communicating with said pressure fluid power means in operative connection with said cylinder during tong-opening movement of said piston and communicating with said return fluid flow line during tong-closing movement of said piston, whereby excessive pressure of said pressure fluid is prevented at all times.

3,359,034
RECLINING CHAIR
Frank M. Re, Holyoke, Mass., assignor to Dual Manufacturing & Engineering, Incorporated, Holyoke, Mass., a corporation
Filed Jan. 9, 1967, Ser. No. 608,133
2 Claims. (Cl. 297—75)

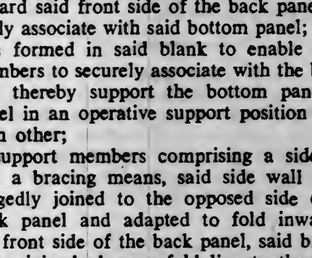
1. A reclining article of furniture having a stationary frame, a body-supporting unit including a back-rest and a seat pivotal relative to said frame and pivotal each relative to the other, means mounting said body-supporting unit for movement relative to said frame successively between a sitting position and an intermediate resting position and a fully reclined position and positions therebetween,
a two-part leg rest formed of a major portion and minor portion hingedly interconnected for turning movement relative to each other,
and a control linkage mounting said leg rest on the seat and guiding said leg rest between retracted position with the main portion of said leg rest disposed in a substantially vertical position beneath the seat and with the auxiliary portion of said leg rest disposed in an inverted substantially horizontal position beneath the seat and a plurality of extended positions forwardly of the seat,
said control linkage constituted by a pair of spaced links with one of the spaced links of said pair thereof being pivotally connected to the main portion of said leg rest and the other of the spaced links of said pair thereof being pivotally connected to the auxiliary portion of said leg rest and a control link pivotally interconnecting between the main portion of said leg rest and the one of the spaced links of said pair thereof pivotally connected to the auxiliary portion of said leg rest for effecting a rotative movement of the auxiliary portion of said leg rest relative to the main portion of said leg rest,
actuating means connecting between the seat and frame and connected to said control linkage for actuating said control linkage to move said leg rest responsively to movement of the body supporting member with the main portion of said leg rest being projected between the retracted position and one of a plurality of extended positions with the auxiliary portion of said leg rest being turned in coordinated movement relative to the main portion of said leg rest,
said actuating means comprising a first actuator link pivotally connected to the seat and to said one of said spaced links connected to the main portion of the leg-rest,



a first lifter link pivotally connected to said pair of spaced links,
a second actuator link pivotally connected to said first lifter link,
and to said first actuator link,
a third actuator link pivotally connected to said second actuator link and to the seat,
a rise bar,
an impeller link pivotally connected to said third actuator link and to said rise bar,
means pivotally connecting said rise bar to said seat and to said frame,
a friction plate pivoted to said rise bar and pivotally connected to said seat,
a limit link extending between said friction plate and said frame, and adjustable brake means integral with said rise bar in frictional contact with said friction plate,
said adjustable brake means in combination with said friction plate and said limit link adapted to control the ease and range and rate of reclining movement of said body-supporting unit.

3,359,035
INFANT'S CONVERTIBLE CHAIR BED
Bernard Schiffman, Riverdale, N.Y., assignor of one-half to Zelda Schiffman, New York, N.Y.
Filed Nov. 12, 1963, Ser. No. 322,798
2 Claims. (Cl. 297—317)

1. A convertible chair bed comprising
two side panels,
a back panel and a seat panel, said back and seat panels being adjustably disposed between said side panels,
hinge means disposed between one end of said back panel and a proximate end of said seat panel and arranged in a plane perpendicular to said side panels, so that said back and seat panels can assume selectively a coplanar position and a position angularly related to each other, respectively,
means for firmly maintaining said side panels at a predetermined distance from each other, comprising two spaced brackets rigidly secured to, and each having a single cross member disposed between, said side panels one below each of said back and seat panels, said cross members simultaneously serving as the means to firmly space the side panels and each to support one of said back and seat panels for slidable and pivotable motion thereon,

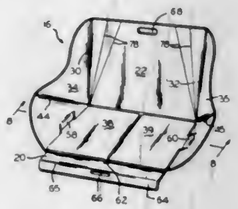


means secured to the bottom of each of said back and seat panels and crossing each of said cross-members such that each of the latter is disposed between one of said last preceding means and the bottom face of one of said back and seat panels in a relation permitting said slidable and pivotable motion and to limit said slidable motion, and
means in conjunction with said last named means for limiting the movement of and holding said back and seat panels in each of said coplanar and angular relations to each other.

3,359,036
ALL-PURPOSE BACK-REST
Joseph S. Druth, Chicago, and Michael F. Notko, North Riverside, Ill., assignors to Druth Packaging Corp., Chicago, Ill., a corporation of Illinois
Filed Aug. 29, 1966, Ser. No. 575,833
7 Claims. (Cl. 297—352)

1. A back-rest formed from a single blank of substantially flat sheet material comprising:
a back panel;
a bottom panel joined along a fold area to the lower edge of said back panel and adapted to fold toward the front side of the back panel;
a pair of support members hingedly connected to opposed side edges of said back panel to fold inwardly toward said front side of the back panel and operatively associate with said bottom panel;
means formed in said blank to enable said support members to securely associate with the bottom panel and thereby support the bottom panel and back panel in an operative support position spaced from each other;
said support members comprising a side wall panel and a bracing means, said side wall panels being hingedly joined to the opposed side edges of the back panel and adapted to fold inwardly toward the front side of the back panel, said bracing means being joined along a fold line to the bottom edge of said side wall panel and being bendable along the fold line at the bottom edge of the side wall panel to position at least a portion thereof underneath the bottom panel when said back and bottom panels are in said operative position, said first-mentioned means cooperating with said bracing means to maintain said portion underneath said bottom panel;
said bracing means comprising an inner brace panel and an outer brace panel, said inner brace panel being joined at the upper edge to said side wall

panel along said fold line at the bottom of the side wall panel, said inner brace panel being joined along a fold area at the bottom edge thereof to the outer brace panel, said first-mentioned means including at least one notch formed in the bottom panel, each of said bracing means operatively extending through said notch and folding over at said fold area whereby said inner brace panel lies contiguous with the lower side of the bottom panel and said outer brace panel lies contiguous with the upper side of the bottom panel;



the outer edge of each of said outer brace panels includes a tab;

a recess is formed in each of said side wall panels; and

retaining flaps are hingedly disposed within said recesses, said retaining flaps maintaining the tabs within said recesses when the outer brace panels are operatively disposed on the upper side of the bottom panel.

3,359,037

PHOSPHATE SLURRY MINING PROCESS

Richard L. Every and Ralph C. Hughes, Ponca City, Okla., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware

No Drawing. Filed Mar. 30, 1966, Ser. No. 538,572
6 Claims. (Cl. 299—4)

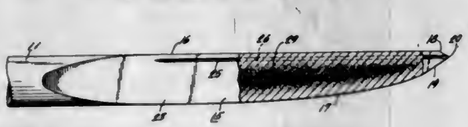
1. The method of removing phosphatic material from an underground deposit thereof, said deposit comprising an agglomerate of discrete phosphatic particles cemented together by nonphosphatic materials, which comprises passing into contact with said deposit in situ a solution of a mineral acid, maintaining said contact for a time sufficient to effect physical disintegration of a portion of said nonphosphatic material, and withdrawing acid from said contact at a velocity sufficient to effect suspension of solid phosphatic particles therein.

3,359,038

BREAKER TOOL

Sylvan N. Levy, Hockessin, and William B. Levy, Wilmington, Del., assignors to Delaware Tool Steel Corporation, Wilmington, Del., a corporation of Delaware

Filed Feb. 9, 1966, Ser. No. 526,084
10 Claims. (Cl. 299—94)



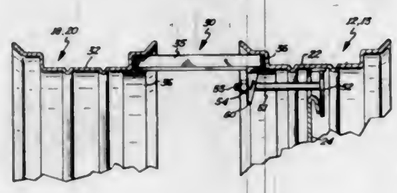
5. A tool for masonry demolition comprising an elongated body portion having a shank at one end and a working bit at the other end, said working bit having a flat upper surface disposed substantially parallel to the central longitudinal axis of the tool; an arcuate bottom surface converging gradually toward said upper surface; and side surfaces; said top and bottom surfaces terminating in beveled portions which meet in a cutting edge positioned in the outer marginal portion of the cross-section of said tool; said tool being hardened to a maximum degree in the marginal portion of its cross-section surrounding the softer central core thereof whereby said cutting edge is disposed in said hardened portion of the tool; said side surfaces of the working end of the tool being provided with indicia means defining lines extending parallel to said upper surface rearwardly from said cutting edge on said side surfaces.

3,359,039

DUAL WHEEL ATTACHMENT FOR TRACTORS

Leon A. Theissen, St. Peter, and Bernard E. Hogan, Jr., North Mankato, Minn., assignors to Miller Motors, Inc., Mankato, Minn., a corporation of Minnesota

Filed July 18, 1966, Ser. No. 565,985
8 Claims. (Cl. 301—39)



1. A dual wheel assembly comprising, an inboard wheel including a rim upon which a tire is adapted to be mounted and a connecting plate structure mounting the rim and adapted to mount the wheel to an axle of a vehicle for supporting the vehicle, said connecting plate having means at the central portion thereof to connect to the vehicle axle and spaced apertures therein near the peripheral edge of the same adjacent the rim, an outboard wheel including a rim which is adapted to have a second tire for supporting the vehicle mounted thereon, said outboard wheel having a supporting circumferential web structure integral therewith and extending to one side of the rim, said web structure having an annular band remote from the rim of the outboard wheel, a plurality of bolt members having a connecting portion at one extremity adapted to fit into the spaced apertures in the connecting plate structure of the inboard wheel, removable flange members for said bolt members having a passage therein through which the other extremity of the bolt members extend with said removable flange members having a connecting portion thereon adapted to fit around a surface of the annular band of the supporting web structure, and nut means threaded over said other extremity of said bolt members and against the flange members to draw the outboard wheel against the rim of the inboard wheel at the supporting web structure with the connecting portion of the bolt members being retained through the apertures in the connecting plate structure on the inner wheel to hold the dual wheel assembly in assembled relationship.

3,359,040

PIPELINING OF SOLIDS

Richard L. Every and Ralph C. Hughes, Ponca City, Okla., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware

No Drawing. Filed Jan. 6, 1966, Ser. No. 532,413
13 claims. (Cl. 302—14)

1. A method for transporting particulate solids selected from the group consisting of coke and phosphate rock through a pipeline with a hydrocarbon carried liquid which comprises the steps of:

(a) wetting said solids solely with water;

(b) mixing the water-wet solids with said carried liquid to form a slurry; and

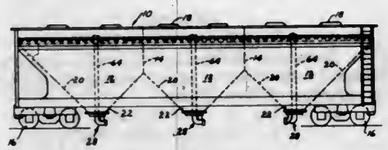
(c) moving said slurry through said pipeline.

3,359,041

APPARATUS FOR A LIQUID DISCHARGE OF LADING

Donald Corbett-Smith, St. Charles, and Willard E. Kemp, Bridgeton, Mo., assignors to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey

Filed May 24, 1966, Ser. No. 552,545
12 Claims. (Cl. 302—16)



1. In apparatus for unloading substantially dry particulate material from a hopper structure having a plurality of connected hopper walls, a bottom outlet structure secured beneath said hopper structure to receive particulate material therefrom and having a liquid pressure chamber, a liquid inlet pipe connected to said pressure chamber for supplying liquid under pressure to said pressure chamber, an upper plate forming at least a portion of the upper wall of said liquid pressure chamber on which particulate material is supported, said upper plate having openings therein to permit a flow of liquid from the liquid pressure chamber into the superjacent particulate material to form a mixture of liquid and particulate material, said pressure chamber being filled with liquid upon the flow of liquid into the particulate material with a supply of liquid flowing into the pressure chamber from the inlet pipe, a first outlet conduit adjacent said plate adapted to receive the mixture of liquid and particulate material from the hopper structure to unload the mixture, a second outlet conduit spaced from said first outlet conduit and extending upwardly in the hopper structure through the liquid pressure chamber to a position above the upper plate and having a liquid entrance port adjacent its upper end to permit the entry of said mixture of liquid and particulate material, and means permitting a discharge of said mixture from either of said outlet conduits.

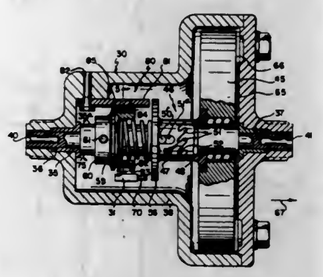
3,359,042

CONTROL MECHANISM

Sharad M. Dave, Detroit, Mich., assignor to Eaton Yale & Towne Inc., a corporation of Ohio

Filed Oct. 22, 1965, Ser. No. 501,265
9 Claims. (Cl. 303—21)

1. A control mechanism comprising a rotatable shaft member rotatable in response to a first condition, a flywheel supported for axial shifting movement in response to a second condition, a drive connection for transmitting rotary movement of the shaft member to said flywheel, said drive connection being a one-way clutch and including a first clutch member fixedly connected with said flywheel and a second clutch member axially slidable relative to said shaft member and driven thereby, said clutch members having a plurality of projecting interdigitated drive elements which are cooperable to drive said flywheel in one direction, and to move said second clutch member axially when said flywheel rotates relative to said shaft member, spring means biasing said second clutch member axially into driving engagement with said first clutch member, and switch means actuated in response to axial movement of said second clutch member to produce a control signal.

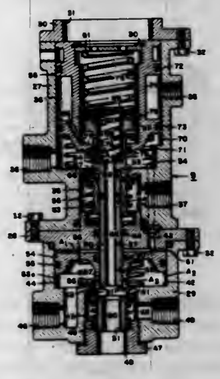


3,359,043

CONTROL VALVE

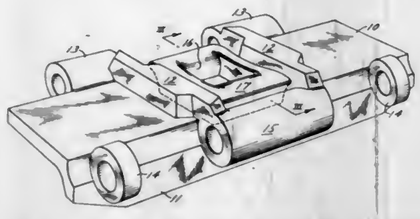
Joseph E. Papin, Florissant, Mo., assignor, by mesne assignments, to Tung-Sol Electric Inc., Newark, N.J., a corporation of Delaware

Filed Aug. 24, 1966, Ser. No. 574,634
11 Claims. (Cl. 303—52)



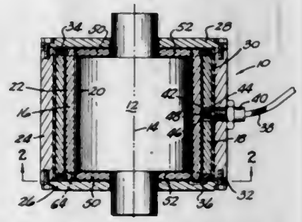
1. A control valve comprising a housing having a pair of pressure fluid flow passages therein, a pair of application means movable in said housing and controlling said flow passages, one of said application means being movable in response to an applied force toward a position in one of said flow passages establishing pressure fluid flow therethrough and the other of said application means being movable in response to the established fluid pressure in said one flow passage toward a position in the other of said flow passages establishing pressure fluid flow therethrough, and other means movable through said other application means and completely independently thereof to also control said other flow passage including a driven connection with said one application means, said other means being driven independently of said other application means in response to the applied force movement of said one application means toward a position in said other flow passage also establishing pressure fluid flow therethrough in the event of fluid pressure failure in said one flow passage.

3,359,044
TRACTOR TRACK SHOE WITH REPLACEABLE WEAR PLATE
Roger L. Boggs, East Peoria, Ill., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Jan. 17, 1966, Ser. No. 521,050
2 Claims. (Cl. 305—57)



1. A track shoe of generally rectangular configuration having pivot means on two edges and having two spaced upstanding rail surface parts arranged centrally thereof, a rectangular recess between said parts, and a rectangular replaceable perforate member fitting within said recess and providing a wear surface for a sprocket tooth which imparts driving motion to said track shoe, and means securing said member in place within the recess.

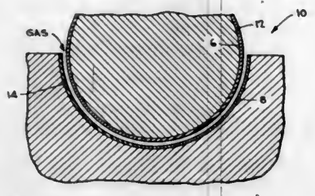
3,359,045
SQUEEZE FILM BEARING
Stephen K. Hsu, Ann Arbor, Mich., assignor to The Bendix Corporation, a corporation of Delaware
Filed May 20, 1966, Ser. No. 551,589
5 Claims. (Cl. 308—1)



1. A bearing assembly comprising a fixed hollow base having an inner surface, a tubular strain producing member located within and in a closely spaced relation with said base inner surface, a rotatable member disposed coaxially within said strain producing member in a closely spaced relation with the inner surface thereof, and means coupled to said strain producing member for vibrating it at high frequency and low amplitude in a radial direction to thereby provide a first gas film between said rotatable member and the inner surface of said strain producing member on which said rotatable member is supported and a second gas film between the strain producing member and said base inner surface on which said strain producing member is supported.

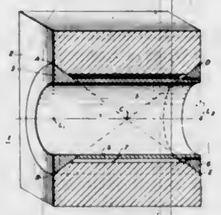
3,359,046
BISMUTH-LEAD COATINGS FOR GAS BEARINGS USED IN ATMOSPHERIC ENVIRONMENTS AND VACUUM CHAMBERS
Hugh L. Dryden, Deputy Administrator of the National Aeronautics and Space Administration, with respect to an invention of Luke J. Gabrovic and Harold M. Lampert, both of Dickinson, Tex.
Filed Oct. 22, 1965, Ser. No. 502,693
11 Claims. (Cl. 308—9)

1. In a gas bearing including mating seat and ball surfaces, the coating of one of the surfaces with a thin smooth film of bismuth and the other of the surfaces with a thin



smooth film of lead whereby contact between the two surfaces is non-galling.

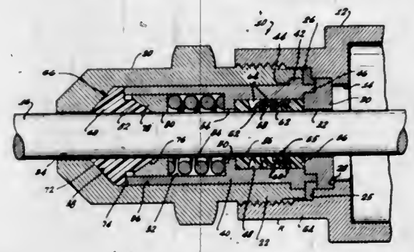
3,359,047
BEARING STRUCTURE
Johan R. Andersen, Bloomingdale, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed May 28, 1965, Ser. No. 459,835
1 Claim. (Cl. 308—36)



A thermal expansion compensation bearing adapted to be subjected to temperature variations,
said bearing comprising a lining member and a backing member each having respectively different coefficients of expansion,
said lining member including a body portion having a cylindrical hole of uniform diameter therethrough and of the same length as the outside length of said body portion and adapted for supporting a workpiece therein, said body portion having an intermediate portion of uniform outside diameter;
said backing member having means defining a bore which has a length that is the same as the length of said lining member and which is adapted to receive therein said body portion,
and thermal expansion compensation means for compensating for the difference between the respective thermal expansion coefficients of said lining member and said backing member,
said thermal compensation means including a bulging portion at each end of said body portion of said lining member and of greater diameter than said diameter of said intermediate portion,
each of said bulging portions having an annular cross-section with an inner diameter equal to that of said hole in said lining member and an outer diameter greater than that of said intermediate portion,
each of said bulging portions having an outer diameter which is at a maximum at the respectively associated end of said body portion and which progressively diminishes in a direction toward said intermediate portion for forming a declining contour having a slope which is the ratio of the length of said lining member divided by the length of one of said maximum diameters,

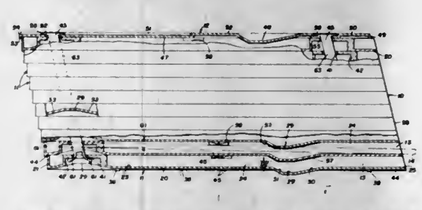
said bore in said backing member having an intermediate portion of uniform diameter slightly in excess of said uniform diameter of said hole in said lining member,
said bore having end portions of greater diameter than said uniform diameter of said intermediate portion of said bore,
each of said end portions of said bore having a diameter which is at a maximum at the respectively associated end of said bore and which progressively diminishes in a direction toward said intermediate portion of said bore at a rate determined by said slope ratio of said bulging portions,
and said maximum diameter of each of said end portions of said bore being equal to said maximum diameter of each of said bulging portions.

3,359,048
DYNAMIC SHAFT SEALING DEVICE AND BUSHING THEREFOR
Edwin C. Lowe, Van Nuys, Calif., assignor to Robbins Aviation, Inc., Vernon, Calif., a corporation of California
Filed Oct. 20, 1965, Ser. No. 502,774
Claims priority, application Japan, Nov. 2, 1964, 39/61,859
8 Claims. (Cl. 308—36.1)



1. The combination of a dynamic shaft sealing device and shaft-centering bearing bushing comprising
a housing means having an axial cylindrical shaft-receiving bore therethrough for receiving said shaft with clearance, said bore having an enlarged cylindrical seal-seleeve-receiving portion coaxial with its axis;
a resilient plastic, circumferentially corrugated seal sleeve, confined under axial compression in said enlarged portion of said bore and having outwardly and inwardly directed corrugations bearing against the defining surfaces of said portion of said bore and said shaft, respectively;
a resilient plastic bushing, for said shaft, said bushing being confined in said housing in a cavity therein around said shaft bore in axial alignment with said enlarged cylindrical portion of said bore for said shaft, said bushing having a smooth cylindrical axial bearing bore therethrough for said shaft, one end of said bushing being in abutting engagement with a coaxial inner annular surface of the housing means;
a pressure ring additionally mounted in said housing means having a bore for receiving the shaft and having a coaxial annular surface for engaging the opposite end of the bushing;
a spring acting between the housing means and the pressure ring for urging it axially against the bushing to produce a yieldable compression force against the bushing, at least one end of said bushing being conically tapered towards its extremity and said annular surface engaged by said end of the bushing being correspondingly conical in form, such that the compressive force exerted against said bushing by said spring develops a component of radially inwardly directed compressive force all around the bushing, whereby the bushing is adapted to radially expand and contract in operation in response to radial thermal expansion and contraction of the shaft throughout a substantial range of operating temperatures, so as to support said shaft in alignment with the axis of said enlarged bore and of said sealing sleeve therein throughout said range of operating temperatures.

3,359,049
MULTIPLE-COMPARTMENT RECEPTACLE
Edward B. Schoonmaker, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed May 6, 1965, Ser. No. 453,773
7 Claims. (Cl. 312—111)

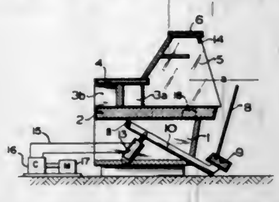


2. A multiple-compartment receptacle for storing a plurality of elongated strip-holders, comprising in combination:
a plurality of tray modules, each of which comprises a substantially rectangular plate having a front edge, a rear wall, a pair of side walls and a plurality of parallel partitions spaced from said side walls and from each other by a distance greater than the width of one of said strip-holders and extending from one surface of said plate a distance greater than the thickness of one of said strip-holders, said tray modules being positionable in an assembled relation contiguous to one another with the other surface of each plate engaging the walls and partitions of an adjoining tray module to provide an array of compartments having open ends at said front edge;
means for holding said plurality of tray modules in said assembled relation; and
means respectively formed on said other surfaces of the plates of said modules for bowing and frictionally engaging a strip-holder inserted into a compartment in the next contiguous module so as to retain said strip-holder in that compartment.

3,359,050
REFRIGERATION COUNTER FOR USE IN RETAIL STORES
Willi Dongus, Deckenpfronn, Kreis Calw, Wurttemberg, Germany
Filed July 12, 1965, Ser. No. 471,309
Claims priority, application Germany, July 14, 1964, D 44,931
8 Claims. (Cl. 312—138)

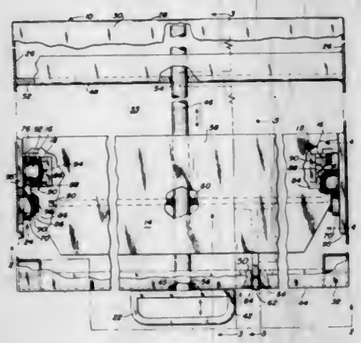
1. In a refrigeration counter for use in retail stores having a refrigeration space having a floor, said counter having end walls and a front wall, the combination with a slightly rearwardly inclined transparent pane constituting the upper part of said front wall, said pane movably arranged for cleaning the inner face thereof and for filling said refrigeration space, of a bar longitudinally extending along said counter, said bar being adapted for the use of supporting shopping bags, said bar having the lower edge of said transparent pane firmly attached thereto, at least two lever arms extending rearwardly underneath said bottom, the free ends of said lever arms carrying said

bar, studs attached to said end walls, said studs pivotally supporting said lever arms, and power driven means for



swinging said lever arms in vertical direction, said lever arms extending through slots in said front wall.

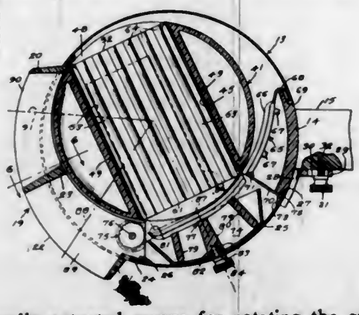
3,359,051
LOCKING DEVICE FOR CONTAINERS
Russell S. Waller, 2302 Jameson St., Hillcrest Heights, Md. 20031
Filed Aug. 31, 1964, Ser. No. 393,454
6 Claims. (Cl. 312—218)



1. A locking device for a container having a sliding unit adapted to extend from the container in the open position and to be within the container in the closed position, comprising control means reciprocal in the horizontal position which are operable from without the container and extend thereinto, a locking bar within the container reciprocally operable in the vertical direction by said control means for locking and unlocking the sliding unit, said unit and locking bar having cooperating means for engagement to prevent further movement of the sliding unit only when the unit is in its closed position and the locking bar is moved in one vertical direction, cam means connected to the internal locking bar and control means for translating the horizontal movement of the control means to the vertical movement of said locking bar, said cam means rotatable about a changing pivot to maintain the horizontal movement of the control means, said control means moveable in one horizontal direction to cause the rotatable cam means to move said locking bar in one vertical direction to effectuate engagement of the cooperating means on the locking bar and sliding unit for locking the sliding unit, and said control means moveable in a second horizontal direction to move said locking bar in the opposite vertical direction to effectuate disengagement between said cooperating means for unlocking the sliding unit.

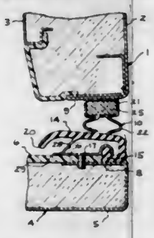
3,359,052
SOAP CAKE HOLDER AND DISPENSER
Harry Pennell, P.O. Box 584, Oakland, Calif. 94604
Filed Mar. 11, 1966, Ser. No. 533,492
8 Claims. (Cl. 312—229)

1. A soap cake holder and dispenser comprising a casing, a cylinder mounted for rotation in said casing about a substantially horizontal axis, said cylinder having a recess opening radially outward thereof and adapted to contain a cake of soap, said casing having an outwardly and downwardly inclined discharge opening disposed to align with the recess in one position of rotation of the cylinder and a loading opening disposed above the discharge open-



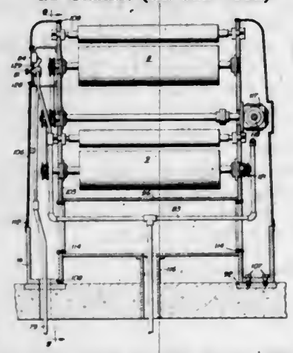
ing, manually actuated means for rotating the cylinder to move the recess into alignment with the discharge opening for gravity discharging the soap cake from the cylinder through the discharge opening and for thereafter turning the cylinder to bring the recess into registration with the loading opening to permit return of the soap cake to the recess.

3,359,053
REFRIGERATOR DOOR SEAL
Willem J. Hagendoorn, Louisville, Ky., assignor to General Electric Company, a corporation of New York
Filed Jan. 17, 1966, Ser. No. 520,977
2 Claims. (Cl. 312—296)



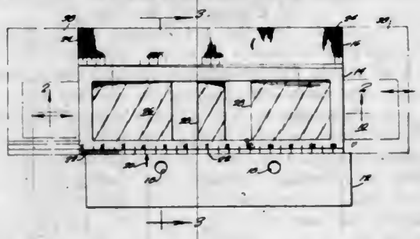
1. A refrigerator cabinet comprising:
a storage compartment having an access opening surrounded by a face portion comprising an area composed of magnetic material,
a door hingedly mounted on said cabinet along one edge thereof for closing said access opening, said door comprising an outer metal panel having an inwardly turned flange extending about the periphery thereof and a plastic inner panel having a peripheral edge overlying and joined to said flange,
a sealing gasket of resilient material mounted on said door adjacent the peripheral edges thereof and including a base portion overlying said peripheral edge of said inner panel and a cabinet engaging portion integrally joined to said base portion and comprising a magnet means attracted to said area of magnetic material and providing the sole means for holding the door in a closed position,
said base portion being of an arched cross-section and including an outer edge engaging said flange and an inner edge overlying said inner panel,
means positioned between the inner and outer edges of said gasket securing only said outer edge to said door,
said base portion being sufficiently rigid to normally maintain said inner edge thereof in contact with said inner panel about substantially the entire periphery of said door when said door is held in a closed position by said magnet thereby forming a dead air space beneath said base portion,
and a flap thinner than said base position and extending at an angle from the bottom surface of said base portion of a length and flexibility such that it engages said inner panel without affecting the normal contact of said inner edge of said base portion with said inner panel and contacts said inner panel at all points about the periphery thereof along a line between the edges of said base portion under all conditions including temperature conditions causing sections of said inner edge of said base portion to pull away from said inner panel.

3,359,054
MACHINE FRAME STRUCTURE
David Noel Obenshain, Luke, Md., assignor to West Virginia Pulp and Paper Company, New York, N.Y., a corporation of Delaware
Filed June 17, 1966, Ser. No. 558,509
11 Claims. (Cl. 312—352)



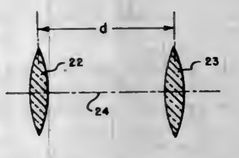
1. An article of manufacture comprising an improved machine frame structure including:
(a) a base member,
(b) a flat upright plate member fully machined for mounting machine elements thereon fixedly attached to the base member, and
(c) an enclosing cover member releasably attached to both said base member and said plate member to form a first frame pedestal with one face of the plate member exposed, and with the cover easily removable for access to the inside of the pedestal.

3,359,055
MICROSCOPE SLIDE PLATFORM USING REFERENCE WEDGE FOR AUTOMATIC REFOCUSING
Bjorn O. Krause, 227 Indian Road, Wayne, N.J. 07470
Filed Dec. 16, 1963, Ser. No. 336,093
4 Claims. (Cl. 350—92)



1. An automatic focusing device for use with a microscope having a stage thereon for receiving a slide comprising a setting plate adapted for being clamped to the stage of the microscope, a generally rectangular slide platform with an upper surface and having a plurality of graduations along one edge thereof, and a focusing wedge including a plurality of marks on an upper surface thereof secured at the opposite edge from said one edge of said platform, said setting plate including an indicator at an edge of said setting plate for providing a reference with respect to the graduations along the edge of said slide platform, said platform disposed for receiving a slide, said platform and wedge being free to move on the stage relative to said setting plate from a position of having the slide disposed in a line with the microscope to a position of having the wedge disposed in a line with the microscope wherein the graduations are in reference indicating position with respect to the indicator.

3,359,056
STABLE CYLINDRICAL LENS SYSTEMS
Abe Offner, Darien, Conn., assignor to The Perkin-Elmer Corporation, Norwalk, Conn., a corporation of New York
Filed Sept. 21, 1964, Ser. No. 397,845
6 Claims. (Cl. 350—181)

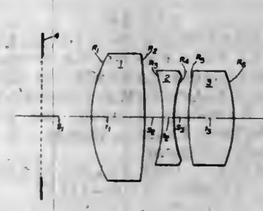


1. A cylindrical lens system having substantially the same equivalent focal length for rays in a plane normal to the cylinder axes and for rays in an inclined plane at an angle to the normal plane with a normal to the inclined plane lying in the optical plane of the system, which comprises a pair of cylindrical lenses spaced along the optical plane of the system with the axes of the lenses effectively substantially parallel, the spacing d of said lenses being substantially equal to

$$(f_1M_2+f_2M_1)/(M_1+M_2)$$

where f_1 and f_2 are the focal lengths of the respective lenses and M_1 and M_2 are equal to $(N_1+1)/N_1$ and $(N_2+1)/N_2$, respectively, N_1 and N_2 being the refractive indices of the respective lenses.

3,359,057
PHOTOGRAPHIC OBJECTIVE OF THE COOKE TRIPLET TYPE
Muriel D. Ackroyd, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Dec. 14, 1964, Ser. No. 417,994
1 Claim. (Cl. 350—206)



A photographic objective for placement entirely to the rear of a diaphragm comprising from front to rear a double convex element, a double concave element and a

double convex element which complies with the following specifications:

Focal Length=100; f/1.9

Lens Element (diaphragm)	N^1–N^3	V^1–V^3	Radius (mm.)	Thickness or Separation (mm.)
				S^1=22.0
1	1.70	56	R^1= 57.4	t^1=25.5
			R^2=−351.0	S^2= 7.7
			R^3= −63.3	t^2= 4.5
2	1.67	32	R^4= 48.6	S^3= 6.6
			R^5= 119.0	t^3=19.7
3	1.70	56	R^6= −53.5	

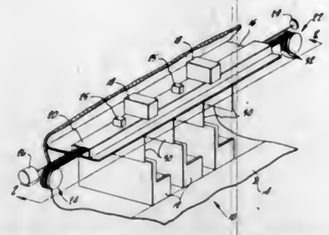
wherein R_1 to R_6 are the radii of curvature, t_1 to t_3 are the thicknesses, S_1 to S_3 are the air separations, N_1 to N_3 are the indexes of refraction for the D line of the spectrum, and wherein V_1 to V_3 are the dispersive indexes.

3,359,058
INFORMATION DISPLAY SYSTEM

Joseph H. Lancor, Jr., Arcadia, Calif., assignor to Consolidated Electrodynamics Corporation, Pasadena, Calif., a corporation of California

FIed Jan. 29, 1965, Ser. No. 429,091
2 Claims. (Cl. 352—6)

1. A system for providing a selection of motion picture film presentations comprising:
a motion picture film projector,
a film supply,
a film takeup,
means for conducting film from the supply to the takeup through the projector,
a first plurality of motion picture presentations, each of said presentations being recorded on a film strip, said films being arranged for transport from the supply through the projector to the takeup in parallel,



a magnetic tape having a second plurality of audio channels with recording therein, the number of channels in the second plurality being at least equal to the number of presentations in the first plurality, said tape being cowound and interleaved with one of said film strips at the supply,
means for withdrawing the film and tape from the supply and for directing the film and tape to visual and audio reproduction means respectively,
projection means associated with the projector selectively alignable with each one of the plurality of presentations,
means associated with the audio reproduction means for selecting the desired channel on the tape, and
means for presenting the selected presentation and channel at a viewing location.

CHEMICAL

3,359,059
PROCESSES FOR ORNAMENTING BY LOCALIZED COLORING OF PREFORMED CONTINUOUS WEBS FORMED OF SOLID POLYOLEFINS

Domenick Donald Gagliardi, 185 Howland Road, East Greenwich, R.I. 02818

No Drawing. Filed Oct. 16, 1963, Ser. No. 316,539
The portion of the term of the patent subsequent to July 23, 1980, has been disclaimed
1 Claim. (Cl. 8—72)

A printing paste for use in the variegated coloring of fabrics formed of polyolefin fibers consisting essentially of an aqueous solution of pasty consistency of the following ingredients in the specified parts by weight:

	Parts
(a) Hydroxyethyl cellulose	37.5
(b) Water	57.5
(c) Alpha-sulfolauric acid	5

3,359,060
DRY HEAT TREATMENT INCLUDED IN CONVENTIONAL WET PROCESSING OF WOOL-ACRYLONITRILE BLENDED FABRICS TO EFFECT SETTING OF ACRYLONITRILE COMPONENT

Arthur David Rosenberg, London, and Brindley Jack Brown, Altrincham, England, assignors to Chemstrand Limited, London, England

Filed Oct. 7, 1963, Ser. No. 314,445
7 Claims. (Cl. 8—115.7)

1. A method of finishing textile fabrics composed of blends of wool and fibers of acrylonitrile polymers, comprising the steps of subjecting the fabric to a scouring operation in a hot dilute alkaline soap solution, rinsing the scoured fabric in a hot aqueous solution, gradually cooling the fabric after rinsing, treating the cooled fabric in a hydro-extractor and drying the fabric; thereafter subjecting the fabric to hot-air treatment at a temperature in the range of 195°–200° C. for a period of up to 25 seconds to set the polyacrylonitrile component of the fabric, cooling the fabric and rinsing it in a hot solution of a softening agent, allowing the rinsed fabric to cool gradually and thereafter treating the cold fabric in a hydro-extractor and drying the fabric, blowing steam onto the dry fabric and finally applying to the fabric a dry finishing treatment.

3,359,061
PROCESS FOR MAKING ALKOXYETHYLSULFONYLETHYL ETHERS OF CELLULOSE

Clark M. Welch, New Orleans, La., assignor to the United States of America as represented by the Secretary of Agriculture

No Drawing. Filed Dec. 19, 1961, Ser. No. 160,673
12 Claims. (Cl. 8—120)

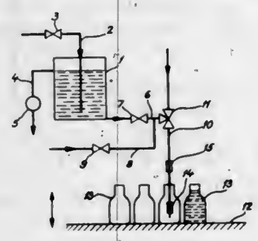
1. A process for the preparation of a crosslinked alkoxyethylsulfonylethyl ether of cellulose that in the form of textile fabrics exhibit wet and dry wrinkle resistance and enhanced dimensional stability which process comprises wetting the cellulose with a solution that contains from about 0.5% to about 30% by weight of an alkaline cataylst, an alcohol selected from the group consisting of glycerol, sorbitol, and pentaerythritol and divinyl sulfone, the alcohol and the divinyl sulfone being present in a mole ratio less than 3:1, and subsequently keeping the wetted cellulose at a temperature of from 20 to 170° C. for 0.5 to 30 minutes to produce a crosslinked alkoxyethylsulfonylethyl ether of cellulose.

5. A process for the preparation of a crosslinked alkoxyethylsulfonylethyl ether of cellulose that in the form of textile fabrics exhibit wet and dry wrinkle resistance and enhanced dimensional stability, which process comprises wetting the cellulose with a solution that contains from about 0.5% to about 30% by weight of an alkaline catalyst together with the adduct of divinyl sulfone with an alcohol selected from the group consisting of t-butyl alcohol, n-octadecyl alcohol, and glycerol wherein the mole ratio of divinyl sulfone and the alcohol in combination in the adduct is 1:1, and keeping the wetted cellulose at a temperature of from 20 to 170° C. for from 0.5 to 30 minutes to produce a crosslinked alkoxyethylsulfonylethyl ether of cellulose.

3,359,062
METHOD FOR STERILIZING THE FILLING PIPE OF A FILLING MACHINE

Bengt Arne Palm, Nylyckevagen, Genarp, Sweden, assignor to Aktiebolaget Separator, Stockholm, Sweden, a corporation of Sweden

Filed Jan. 10, 1964, Ser. No. 336,923
Claims priority, application Sweden, Jan. 14, 1963, 396/63
6 Claims. (Cl. 21—56)



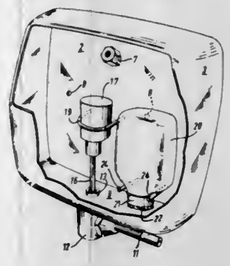
1. A method for sterilizing the filling pipe of a filling machine comprising providing an open-ended filling pipe having a valve in its open end which when seated allows only slight discharge from the pipe, said filling pipe having its other end connected to sources of a liquid to be filled into vessels presented to the filling pipe, water maintained in a liquid state at a temperature above 100° C., and a hot sterilizing medium, unseating the valve in the open end of the filling pipe and passing liquid from the source of liquid to be filled into vessels presented to the filling pipe through the filling pipe into such vessels, completing the filling operation, then passing water from the source of water maintained in a liquid state at a temperature above 100° C. through the filling pipe while the valve is unseated to generate steam in the pipe, thereby flushing the pipe clean, thereafter seating the valve in the open end of the pipe and passing hot sterilizing medium from the source of such medium through the filling pipe while the valve is seated, resulting in slight discharge of the hot sterilizing medium from the open end of the pipe and sterilization of the pipe.

3,359,063
MAINTENANCE OF URINALS, WATER CLOSET BASINS AND THE LIKE

Edward Maude, Nantwich, England, assignor to Calmic Limited, Crewe, England, a British company

Filed May 20, 1964, Ser. No. 368,867
Claims priority, application Great Britain, May 28, 1963, 21,196/63
9 Claims. (Cl. 21—58)

1. A method of maintaining flushed conveniences such as urnials and water closet basins in a relatively clean, odor-free and sanitary condition which comprises forming, during an interval between flushes, a relatively concentrated aqueous disinfectant solution by holding a viscous, slowly mobile disinfectant composition in contact



with one face of a wad of foraminous material, the opposite face of which is in contact with a relatively small quantity of still water, diluting the concentrated solution during a flush and discharging the diluted solution into the convenience at the end of the flush.

3,359,064
PROCESS FOR SEPARATING BERYLLIUM VALUES FROM AQUEOUS SOLUTIONS

David J. Crouse, Jr., and Forest G. Seeley, Oak Ridge, Tenn., assignors to the United States of America as represented by the United States Atomic Energy Commission

No Drawing. Filed Nov. 13, 1964, Ser. No. 411,167
6 Claims. (Cl. 23—23)

1. A method for separating beryllium values from an aqueous sulfuric acid solution containing said values together with extraneous values and 0.1 to 2 molar in sulfate comprising the steps of contacting said aqueous solution with a substantially water-immiscible organic solution comprising an organic diluent and a primary amine containing from 15 to 25 carbon atoms and having the structure

$$R_2\text{—}CH\text{—}NH_2$$
$$\quad\quad|$$
$$\quad\quad R_1$$

where R_1 and R_2 are selected from alkyl radicals having from 4 to 12 carbon atoms, said amine being present in said organic solution in a concentration high enough to extract beryllium values, and separating the resulting beryllium-containing organic solution from the beryllium-depleted aqueous phase.

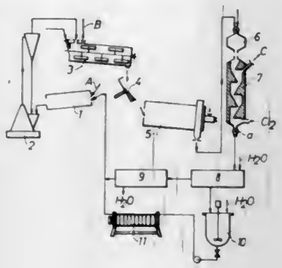
3,359,065
PROCESS FOR THE PRODUCTION OF TITANIUM TETRACHLORIDE

Hans Zirngibl, Duisburg, and Jakob Rademachers, Krefeld, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

Filed Apr. 14, 1964, Ser. No. 359,709
Claims priority, application Germany, Apr. 24, 1963, F 39,562
8 Claims. (Cl. 23—87)

1. Process for the production of titanium tetrachloride from oxygenic titanium-containing materials which comprises coking at a temperature substantially between about 700 and 900° C. granules having a diameter of substantially between about 2 and 30 mm. formed from such oxygenic titanium-containing material, coke, binder and cokable carbonaceous material and in which the carbon component of such cokable material is present in at least

the stoichiometrical quantity required for conversion of the titanium dioxide but at most 50% by weight of the total carbon content, the remainder of such total carbon content thereby providing an excess of carbon over that required for such conversion, subjecting the resulting coke granules to counterflow chlorination with upwardly passing chlorine gas at a temperature substantially between about 600 and 1000° C. in a shaft furnace having inclined surfaces in a zigzag path which guide such granules loose-



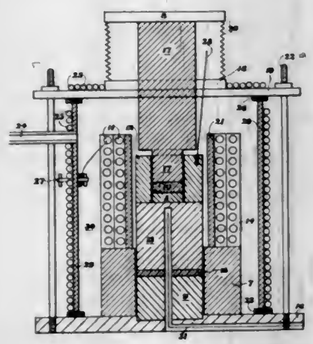
ly through said furnace in thin layers, whereby said excess of carbon takes up molten chlorides formed as by-products during chlorination, and collecting the titanium tetrachloride thereby produced from the top of said shaft furnace and the resulting solid residue containing excess coke and said by-products from the bottom of said furnace.

3,359,066

CALCIUM FLUORIDE OPTICAL ELEMENTS AND METHOD FOR MAKING SAME

Sherley E. Hatch and Robert J. Weagley, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed July 27, 1961, Ser. No. 127,209
2 Claims. (Cl. 23—88)



1. An article of manufacture consisting of a homogeneous unitary solid of polycrystalline calcium fluoride hot pressed from particles of powder size, said article having specular transmission in the visible and infrared region of the electromagnetic spectrum and a density in the range of at least 99% up to and including theoretical density, said article of manufacture being characterized by specular transmission such that a sample 0.56 cm. thick exhibits transmission in the range of 1 to 7 microns greater than 90% without correction for reflection losses.

3,359,067

METHOD FOR THE RECOVERY OF CALCIUM PHOSPHATES FROM HIGH LIME CONTENT PHOSPHATE ORES

Angus V. Henrickson, Golden, and Enzo L. Coltrinari, Arvada, Colo., assignors, by mesne assignments, to Susquehanna Western, Inc., Denver, Colo., a corporation of Wisconsin

No Drawing. Filed Dec. 17, 1962, Ser. No. 244,930
11 Claims. (Cl. 23—109)

1. The process for recovering phosphate values from phosphate ores which comprises: forming a water slurry of the ore in which the ratio of water to ore by weight is greater than about 10 parts of water to 1 part of ore, leaching the slurry at a temperature between the freezing temperature of the slurry and about 10° C. with concentrated sulphur dioxide at a pH between about 1 and 1.5 to maintain the leach solution at a high concentration of sulfurous acid and form a solution containing calcium sulphites, calcium phosphates and phosphoric acid, recovering sulphur dioxide from the sulphites and recycling it for reuse in the process, and selectively removing the sulphites, phosphates and phosphoric acid from the slurry.

3,359,068

PREPARATION OF CRYSTALLINE ZEOLITE PARTICLES

Edward Michalko, Chicago, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Apr. 13, 1964, Ser. No. 359,414
5 Claims. (Cl. 23—112)

1. A method for preparing a synthetic crystalline zeolite particle of substantially spherical shape which comprises:
preparing a silica sol;
dropping said sol through a bath of forming oil to form a spherical silica particle;
calcining said particle by heating at an elevated temperature;
bringing the resulting calcined spherical particle into contact with an aqueous treating solution containing alkali metal aluminate and having a pH greater than about 11;
reacting said particle with said treating solution while substantially preserving its sphericity until it is substantially converted to a crystalline zeolite of approximately said spherical shape;
and separating the zeolite particle from the treating solution.

3,359,069

PROCESS FOR PRODUCTION OF SULFUR DIOXIDE CONTAINING GASES FROM WASTE PRODUCTS CONTAINING AMMONIUM SALTS OF SULFUR ACIDS

Herbert Furkert, Junkersdorf, and Hermann Röhl, Marl, Germany, assignors to Chemische Werke Huls Aktiengesellschaft, Recklinghausen, and Chemiebau Dr. A. Zieren G.m.b.H., Cologne, Germany

No Drawing. Filed July 2, 1964, Ser. No. 380,016
Claims priority, application Germany, July 10, 1963, C 30,404; May 22, 1964, C 32,948
14 Claims. (Cl. 23—178)

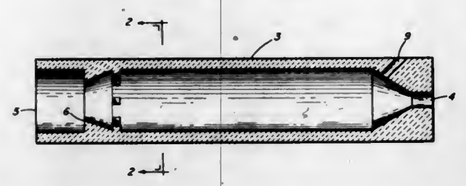
1. In a process for the production of a sulfur dioxide-containing gas suitable for use in the manufacture of sulfuric acid, the steps of finely atomizing a waste liquor comprising a sulfur acid and a substantial amount of an ammonium salt into a reaction chamber, and heating the resultant waste liquor therein to a temperature of from 800 to 1200° C. for a period of 0.3 to 15 seconds in the presence of from 3–10% by volume of molecular oxygen, based on the gases in the reaction chamber, to obtain an SO_2-containing gas essentially free of nitrogen oxides.

3,359,070

PROCESS FOR TiO_2 PIGMENT PRODUCTION IN CONTROLLED CALCINATION OF BASIC TITANIUM SULFATE

George Leathwhite Roberts, Lynchburg, Va., Harold Ewald Hoelscher, Baltimore, Md., and Winfred Joseph Cauwenberg, Amherst, Va., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

Filed Sept. 24, 1964, Ser. No. 399,054
4 Claims. (Cl. 23—202)



1. A calcination process for the production of rutile pigment which comprises an elongated rotating calcination zone which is inclined at an angle of about 0.5 to 10° from a horizontal position to facilitate the downward flow of basic titanium sulfate being treated therein as a shallow flowing bed, said cancination zone comprising an upper drying section, a middle crystal transformation section and a lower crystal growth section, introducing basic titanium sulfate into the upper end of the calcination zone, passing hot gases into the lower end of the calcination zone for countercurrent flow with the said basic titanium sulfate, a zone of reduced cross-sectional area being positioned in the crystal transformation zone and having about 60 to 90% of the cross-sectional area of the calcination zone whereby the residence time of the solids in the said crystal transformation zone is increased.

3,359,071

METHOD OF PRODUCING HYPERPURE ARSENIC

Hans Merkel, Joachim Drabner, and Wolfgang Krause, Erlangen, Germany, assignors to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, a corporation of Germany

No Drawing. Filed Dec. 12, 1963, Ser. No. 329,960
Claims priority, application Germany, Dec. 24, 1962, S 83,054
5 Claims. (Cl. 23—209)

1. The method of producing pure arsenic from impure arsenic trichloride containing sulfur chloride impurities, which comprises mixing with the chloride a small quantity of water just sufficient to hydrolyze the sulfur chloride impurities of the arsenic trichloride but less than that which will react with the latter to form arsenic trioxide, thereafter separating the pure trichloride by distillation from the dissociation products, and reducing the separated pure arsenic trichloride with purified hydrogen to obtain arsenic.

3,359,072

METHOD OF MAKING AND USING DIAGNOSTIC AID FOR DETERMINATION OF ALBUMIN IN BIOLOGICAL FLUIDS

Hans-Georg Rey, Mannheim, and Peter Rieckmann, Mannheim-Waldhof, Germany, assignors to C. F. Boehringer & Soehne G.m.b.H., Mannheim-Waldhof, Germany, a corporation of Germany

No Drawing. Filed Dec. 24, 1963, Ser. No. 333,178
Claims priority, application Germany, Jan. 18, 1963, B 70,383
8 Claims. (Cl. 23—230)

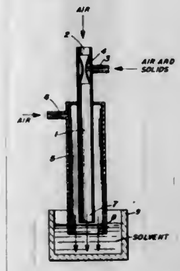
8.A method of carrying out an analytical test for the presence of albumin in biological fluids which comprises immersing an analytical test paper comprising a substantially plane paper sheet having a wettable surface which has been impregnated with an acid buffer solution, thereafter dried and then impregnated with a solution of an indicator dye exhibiting the so-called "protein error," said solution of acid buffer having a pH value below 7 and regulated for maintaining the indicator dye at a pH on the alkaline side of the acid-to-base color change point thereof, and thereafter drying the thusly impregnated sheet, into a liquid to be tested whereby said liquid to be tested is drawn upwardly and is spread over said paper surface and examining said test paper for visual evidence of the presence of albumin in said liquid.

3,359,073

APPARATUS FOR DISSOLVING POLYMER PARTICLES

Clyde Stephen Scanley, Stamford, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

Original application Oct. 13, 1964, Ser. No. 403,543. Divided and this application Oct. 28, 1966, Ser. No. 590,420
1 Claim. (Cl. 23—269)



An apparatus for the dissolution of dry, finely-divided, solid polymer particles having a size ranging from about 0.002 millimeter to about 3.0 millimeters which comprises a central conduit open at both ends and having a first section, a substantially horizontal second section, and a third section with a substantially vertical leg, means for supplying air to said first section, a venturi restriction in the second section, rotatable friction bearings separating the second section from the first and third sections, a hopper permanently affixed to said second section, a solids conduit opening directly into said venturi restriction from said hopper, a gas conduit passing from the first section end of said second section to said hopper, a valve in said gas conduit, a substantially vertical sleeve encasing and axially aligned with a substantial portion of the vertical leg of said third section, one end of said sleeve being closed and permanently attached to said third section and the other end of said sleeve extending beyond the terminal end of said third section, a tank for holding solvent situated about the open end of said sleeve and of the vertical leg, a second gas inlet in upper portion of said sleeve.

3,359,074

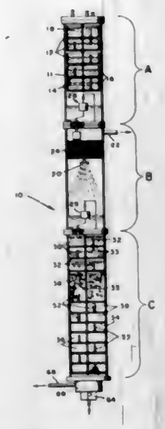
POLYCONDENSATION APPARATUS

Emerick J. Dobo, Cary, N.C., assignor to Monsanto Company, a corporation of Delaware

Filed June 11, 1963, Ser. No. 287,065
4 Claims. (Cl. 23—283)

1. A polycondensation system comprising a single, vertically extending column, said column being transversely partitioned to define, in descending order, a reactor chamber, an evaporator chamber and a finisher chamber, each of said chambers being fully enclosed with-

in said single column and having inlet and outlet means disposed, respectively, at the upper and lower end regions, said evaporator chamber fluidly interconnecting said reactor chamber with said finisher chamber, chamber level control means disposed adacent each of the lower, outlet ends of said reactor and evaporator chambers and operative to continuously monitor the fluid levels within the lower regions of said reactor and evaporator chambers to automatically regulate discharge therefrom in such



manner as to maintain reactor and evaporator chamber fluid levels within predetermined ranges, throttling means disposed within said evaporator chamber and having fluid communication with said reactor chamber level control means, whereby reactor chamber discharge supplied by way of said reactor chamber level control means is throttled to such degree as to effect substantial vaporization of the relatively more volatile by-products to thereby facilitate by-product removal.

3,359,075

CRYSTALLIZATION APPARATUS FOR THE PRODUCTION OF HEXAMETHYLENE TETRAMINE

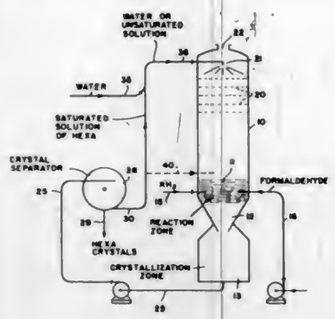
Andre G. F. Lefebvre, Liege, Roger D. G. Englebert, Angleur, and Arthur V. J. Geukenne, Brussels, Belgium, assignors to Societe Belge de l'Azote et des Produits Chimiques du Marly, Liege, Belgium

Original application Mar. 4, 1963, Ser. No. 262,413, now Patent No. 3,288,790, dated Nov. 29, 1966. Divided and this application Dec. 28, 1965, Ser. No. 529,898

Claims priority, application Great Britain, Mar. 5, 1962, 8,475/62

4 Claims. (Cl. 23—285)

1. In a system of apparatus for synthesizing hexamethylene tetramine by reaction of formaldehyde and ammonia, the combination which comprises a reaction vessel having in the lower portion thereof a reaction zone for retaining a quantity of hexamethylene tetramine solution in which said reaction is effected and a gas washing zone in the upper portion of said vessel, means for continuously feeding into said reaction zone anhydrous ammonia and gaseous formaldehyde admixed with other gases for reaction in said solution to form hexamethylene tetramine crystals, means for continuously withdrawing from said reaction zone portion of said vessel saturated hexamethylene tetramine solution with said crystals therein, means for separating said crystals from said solution, means for recycling said solution after separation from said crystals through said reaction zone in said vessel as a diluted and less saturated solution, a gas outlet in the upper portion of said vessel for escape of said other gases introduced into said reaction zone with said formaldehyde as a stream of gases entraining therewith water vapor from said reaction zone, and gas washing means in the upper portion of said vessel for washing from



said escaping gases ammonia and formaldehyde entrained therewith for return to said reaction zone for reaction therein.

3,359,076

PRECIPITATION OF POTASSIUM HALIDES FROM MIXED BRINES USING ORGANIC SOLVENTS

Remigius A. Gaska, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Jan. 31, 1964, Ser. No. 341,731

5 Claims. (Cl. 23—300)

1. In a method for separating potassium halides from an aqueous solution containing potassium halides, sodium halides and at least one of the chlorides of the group consisting of calcium chloride and magnesium chloride by contacting said solution with a low molecular weight, polar, Lewis base-type solvent selected from the group consisting of methanol, ethanol, acetone, dimethyl formamide and ethylene glycol, the improvement which comprises:

(a) adding said aqueous solution to said solvent in an amount to provide a system wherein the solvent ranges from about 20 to about 50 percent of the weight of said aqueous solution, said solvent being at least partially miscible with said aqueous solution, thereby to precipitate the potassium halides having low amounts of sodium halides impurities associated therewith; and

(b) separating the so-precipitated potassium halides containing low amounts of sodium halides from said solution.

3,359,077

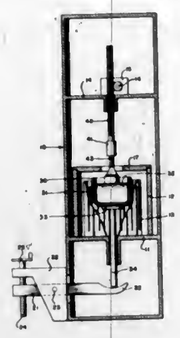
METHOD OF GROWING A CRYSTAL

Margreth C. Arst, Van Nuys, Calif., assignor, by mesne assignments, to Globe-Union Inc., Milwaukee, Wis., a corporation of Delaware

Filed May 25, 1964, Ser. No. 371,874

2 Claims. (Cl. 23—301)

1. A method of growing a crystal of an element selected from the group consisting of silicon and germanium, comprising the steps of: placing a crucible containing a melt of said element within a heater having an increasing temperature gradient region and a contiguous constant temperature region, positioning said crucible so that the upper portion of said melt is in said increasing temperature gradient region of said heater and the lower portion of said melt is in said constant temperature region of said heater, placing a crystal-growing seed in contact with the upper surface of said melt, and decreasing the power input to said heater at a constant rate while slowly withdrawing said seed from said melt at a constant rate so that a single crystal having head, sloping shoulder, and straight



body regions is grown onto said seed without either of said rates being changed.

3,359,078

IRRADIATED NUCLEAR FUEL RECOVERY

Henry Ward Alter, Danville, and Cleve R. Anderson, Portola Valley, Calif., assignors to General Electric Company, a corporation of New York

Filed Feb. 10, 1965, Ser. No. 431,684

11 Claims. (Cl. 23—326)

1. A method for treating an aqueous solution of irradiated nuclear reactor fuel which comprises:

(A) Subjecting said solution to a single cycle extraction with an organic solvent comprising an organic amine salt selected from the class consisting of tertiary and quaternary amine salts dissolved in an inert organic diluent to produce an organic extract stream containing substantially all of the plutonium in tetravalent form and an aqueous raffinate containing substantially all of the uranium and fission products;

(B) Stripping said organic extract with an aqueous stripping agent to reduce plutonium to trivalent form and remove substantially all of said plutonium and trace of fission products as an aqueous extract;

(C) Dehydrating said aqueous raffinate stream to form substantially plutonium-free anhydrous solids,

(1) Fluorinating said solids by reaction with elemental fluorine to form the corresponding fluorides, and

(2) Separating the uranium fluoride in the absence of plutonium fluorides from the fission product fluorides.

3,359,079

PROCESS FOR THE STRIPPING OF ACTINIDES CONTAINED IN ORGANIC SOLVENTS WITH NITROUS ACID

André Bathellier, Sceaux, Hauts-de-Seine, France, assignor to Commissariat à l'Energie Atomique, Paris, France

Filed Sept. 8, 1966, Ser. No. 577,879

Claims priority, application France, Sept. 17, 1965, 31,858

3 Claims. (Cl. 23—339)

1. In a process for stripping actinides and especially uranium valence VI, plutonium valence IV and at a pH less than 1.4 and neptunium valence IV contained in organic solvents tributyl phosphate or trilaurylamine diluted in an inert solvent into which they have been extracted by contacting their nitric acid solutions with said solvents, the step of stripping said actinides by nitrous acid.

3,359,080

PREPARATION OF PHOSPHONITRILIC CHLORIDE POLYMERS

Frederick Arthur Ridgway, Stourbridge, and Harold Trevor Searle, Sutton Coldfield, England, assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Filed Aug. 7, 1962, Ser. No. 215,281

Claims priority, application Great Britain, Aug. 14, 1961, 29,280/61

4 Claims. (Cl. 23—357)

1. A process for the production of cyclic phosphonitrilic chloride polymers which comprises bringing into contact elemental chlorine, phosphorus trichloride and ammonium chloride in an inert solvent selected from the group consisting of symmetrical tetrachloroethane, monochlorobenzene, o-dichlorobenzene, benzyl chloride and phosphorus oxychloride at reflux temperature, the ammonium chloride being present at any time during the reaction in a proportion which is in a molecular excess of at least 10 percent of the phosphorus trichloride and in a state of division such that its specific surface is at least 1,000 square centimeters per gram, and wherein the phosphorus trichloride is present initially in the ammonium chloride solvent mixture.

3,359,081

PROCESSES AND PRODUCTS

Charles W. Tullock, Chadds Ford, and Donald D. Coffman, West Chester, Pa., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Apr. 26, 1963, Ser. No. 276,066

12 Claims. (Cl. 23—367)

2. $SF_4 \cdot CsF$.

7. A process of preparing SF_5Cl comprising contacting sulfur tetrafluoride with a compound of the formula MF, wherein M is a univalent Group I metal of atomic number 11–55, at a temperature of 0–500° C. and contacting the product thereby obtained with chlorine at 0–500° C.

12. The process of preparing $SF_4 \cdot CsF$ which comprises contacting SF_4 with CsF at a temperature of 25 to 350° C.

3,359,082

DUCTILE TUNGSTEN ALLOYS

Clayton D. Dickinson, Port Washington, N.Y., and Edmund N. Mazza, Englewood Cliffs, N.J., assignors to General Telephone and Electronics Laboratories, Inc., a corporation of Delaware

No Drawing. Filed Apr. 6, 1965, Ser. No. 446,097

4 Claims. (Cl. 29—182)

1. A sintered alloy characterized by high strength at elevated temperatures and a low ductile-to-brittle transition temperature in the range −5° C. to +35° C. consisting essentially of up to 1 weight percent rhenium, between 1 and 35 parts per million manganese, and the balance tungsten.

3,359,083

COMPOSITE STRUCTURAL METAL MEMBERS WITH IMPROVED FRACTURE TOUGHNESS

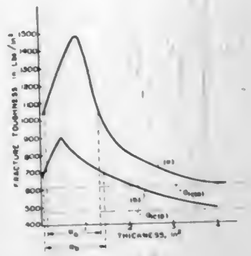
Herbert L. Leichter, Castro Valley, Calif., assignor to the United States of America as represented by the United States Atomic Energy Commission

Filed June 14, 1965, Ser. No. 463,973

8 Claims. (Cl. 29—183.5)

3. A composite structural body of improved fracture toughness, comprising: a plurality of laminar sheets of maraging steel of a combined thickness substantially greater than the thickness range in which the fracture toughness of said steel is at a maximum, said sheets individually having a thickness in the range of about 0.01 to 0.15 inch wherein said steel exhibits an enhanced fracture

toughness, said laminar sheets being disposed in contiguous face-to-face relation and bonding means joining said



laminar sheets in said contiguous face-to-face relation to provide a structural body of improved fracture toughness.

3,359,084

COATED MANGANESE-CONTAINING ALLOYS

Arthur T. Cape, Monterey, Calif., assignor to Coast Metals, Inc., Little Ferry, N.J., a corporation of Delaware

No Drawing. Filed May 26, 1965, Ser. No. 459,086
2 Claims. (Cl. 29—194)

1. As an article of commerce, a copper-manganese alloy, in the form of powder, strip, foil, wire or the like, and consisting of from about 40% to about 75% copper, and from about 25% to about 60% manganese, said alloy having a coating thereon, of nickel and/or cobalt, in an amount sufficient to provide a nickel and/or cobalt content of from about 3% to about 18% in the alloy, when the coated copper-manganese alloy is melted.

3,359,085

ALUMINUM-MAGNESIUM ALLOY SHEET

William A. Anderson, Verona, Pa., assignor to Aluminum Company of America, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed June 2, 1964, Ser. No. 372,095
9 Claims. (Cl. 29—197.5)

2. A work hardened clad sheet having at least one surface of an aluminous metal cladding which comprises from 2½% to 15% of the total clad sheet thickness for each surface clad, said clad being metallurgically bonded to a core sheet, said core sheet being an aluminum-magnesium alloy sheet of 0.004 inch to 0.032 inch in thickness that has received a reduction in thickness of not less than 85% by cold rolling from the fully recrystallized state, said aluminum-magnesium alloy consisting of 4.2% to 4.8% magnesium, the balance being aluminum and a total of at least 0.1% impurities, the maximum amounts of said impurities being as follows: 0.05% chromium, 0.10% manganese, 0.05% iron, 0.25% copper, 0.3% silicon, 0.5% zinc, 0.1% titanium, 0.2% zirconium, and all other impurities being limited to 0.05% each and 0.15% total, the combined total of all the impurities, excluding zinc and copper, not exceeding 1% said core sheet being characterized by a yield strength of at least 47,000 p.s.i. in the original work hardened level and exhibiting a steady relation between exposure temperature and resultant yield strength such that when the said core sheet is exposed to temperatures of from 200° F. to 475° F. its strength is decreased to a level between the original work hardened level and a second level characterized by a yield strength of at least 45% of that of the initial level, the said resultant yield strength being substantially directly related to the exposure time and temperature in a highly continuous, steady and repeatable manner.

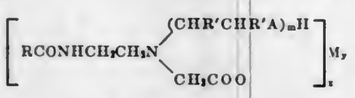
3,359,086

METHOD OF PREVENTING ELECTRIC CHARGING OF LIQUID HYDROCARBONS

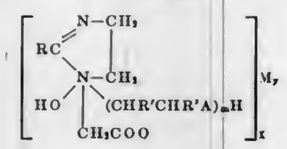
Hideo Marumo, Morio Ninomiya, and Yasushi Matsuzaki, Tokyo, and Makoto Takai, Chiba, Japan, assignors to Lion Yushi Kabushiki Kaisha

No Drawing. Filed Feb. 1, 1965, Ser. No. 429,628
6 Claims. (Cl. 44—63)

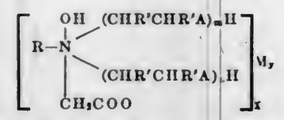
1. An inflammable organic liquid hydrocarbon composition having antistatic properties comprising an inflammable organic liquid hydrocarbon and effective antistatic amounts of at least one metallic salt of a nonalkaline metal which is an amphoteric surface active agent with respect to said liquid and is selected from the group consisting of:



(I)



(II



(III)

where R is a hydrocarbon group with 8 to 20 carbon atoms; R' is selected from the group consisting of hydrogen and a lower alkyl; A is selected from the group consisting of oxygen and an imino; M is a nonalkaline metal; *m* and *n* are integers; and *x* and *y* are integers dependent on the valence of the nonalkaline metal which bring the bracketed group and the metal into stoichiometric proportion.

3,359,087

MOTOR FUEL CONTAINING AN OCTANE APPRECIATOR

John H. Estes, Wappingers Falls, Howard V. Hess, Glenham, and George W. Eckert, Wappingers Falls, N.Y., assignors to Texaco Inc., a corporation of Delaware

No Drawing. Filed Jan. 6, 1959, Ser. No. 785,137
10 Claims. (Cl. 44—69)

1. A hydrocarbon fuel in the gasoline boiling range containing an organo-lead anti-knock agent, at least 10 volume percent of high octane components selected from the group consisting of olefinic hydrocarbons, aromatic hydrocarbons and mixtures thereof and an aldehyde dialkanoate in a concentration of 0.1 to 5.0 volume percent, said concentration being sufficient to effect substantial improvement of the octane rating of said hydrocarbon fuel said aldehyde dialkanoate having the general formula:

$$RCH{=}(OOCR')_2$$

wherein R is selected from the group consisting of a hydrocarbyl radical containing 1–12 carbon atoms and the furyl radical and R' is an aliphatic hydrocarbyl radical containing 1–12 and preferably 1–8 carbon atoms.

3,359,088

MOTOR FUEL COMPOSITION

Ronald W. Von Allmen, Hopewell Junction, N.Y., assignor to Texaco Inc., New York, N.Y., a corporation of Delaware

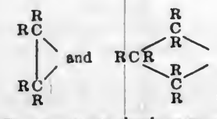
No Drawing. Filed Dec. 20, 1965, Ser. No. 515,178
5 Claims. (Cl. 44—72)

1. A motor fuel composition comprising a mixture of hydrocarbons boiling in the gasoline boiling range containing an effective anti-icing, anti-stalling amount of a

salt of phosphinic acid and a hydrocarbyl amine corresponding to the formula



in which Y represents a radical selected from the group consisting of



in which each R represents hydrogen or a hydrocarbyl radical having from 1 to 12 carbon atoms and the sum of the carbon atoms in Y is from 6 to 20, and R_1 is a hydrocarbyl radical having from 6 to 18 carbon atoms.

3,359,089

METHOD AND APPARATUS FOR ELIMINATING ARCING IN GAS-ELECTRIC SEALING OF TV BULBS

Narain S. Gidwani, Columbus, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio

Filed July 7, 1964, Ser. No. 380,799
7 Claims. (Cl. 65—40)

1. In a sealing machine for joining a pair of juxtaposed glass edges during rotation thereof about a common center,

a pair of gas burners disposed to impinge a flame during a sealing cycle from each upon opposite portions of said glass edges during rotation thereof,

a source of A.C. power,

a transformer primary winding connected to said source,

a transformer secondary winding connected to impress an output voltage between said burners,

transformer core means coupling said windings to transfer A.C. voltages approaching but not exceeding 1800 volts from said source to said burners in proportion to the ratio of turns of said windings at temperatures substantially less than the melting temperature of said glass,

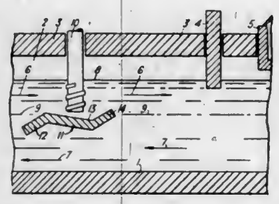
said core means having limited flux capacity whereby the transformer output power is limited to a predetermined value when the glass resistance between said burners falls as the temperature of the glass approaches the melting point.

3,359,090

HOMOGENISATION OF MOLTEN GLASS WITH A FLOW SEPARATOR

William Christie Hynd, Liverpool, England, assignor to Pilkington Brothers Limited, Liverpool, England, a corporation of Great Britain

Filed July 24, 1964, Ser. No. 384,932
Claims priority, application Great Britain, July 29, 1963, 30,046/63
4 Claims. (Cl. 65—178)



1. Glass manufacturing apparatus including a channel for conducting an upper forward flow of molten glass over a return flow at the bottom of the channel, and an agitating means positioned across the upper part of that channel for agitating said upper forward flow, wherein there is provided a dividing vane mounted between the side walls of the channel underneath the agitating means and extending across the whole width of the channel between the forward flow and the return flow in the region of the agitating means.

3,359,091

METHOD OF MAKING A SOIL SUPPLEMENT BY REACTING MINE TAILINGS WITH SULFURIC ACID

Galen W. Clevenger, Prescott, Ariz., assignor to Shattuck Denn Mining Corporation, Humboldt, Ariz., a corporation of Delaware

No Drawing. Continuation of application Ser. No. 197,603, May 25, 1962. This application Dec. 2, 1966, Ser. No. 598,598
1 Claim. (Cl. 71—63)

The method of producing a soil supplement which comprises treating a given weight of air-dried mine tailings containing substantial amounts of iron sulphides and smaller amounts of zinc sulphide, copper sulphide and manganese sulphide with concentrated sulfuric acid in an amount approximately one quarter of the weight of the tailings, drying and heating the resulting product to a temperature of not less than 200° C. and below that at which SO_2 is evolved for about two hours, and thereafter passing ammonia gas therethrough in an amount sufficient to harden the resulting product.

3,359,092

PROCESS FOR PLANT DEFOLIATION

Milton L. Dunham, Jr., Tonawanda, and Francis M. O'Connor, Kenmore, N.Y., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Original application Sept. 20, 1961, Ser. No. 139,370, now Patent No. 3,234,028, dated Feb. 8, 1966. Divided and this application Feb. 2, 1966, Ser. No. 538,879
2 Claims. (Cl. 71—70)

1. A process for plant defoliation of a plant susceptible to defoliation by contact with ethylene comprising the steps of adsorbing ethylene on dehydrated crystalline zeolitic molecular sieve, contacting a defoliating amount of the ethylene-containing molecular sieve with moisture-containing air in the immediate proximity of said plant thereby controllably releasing substantially all of said ethylene from said molecular sieve for contact with and defoliation of said plant.

3,359,093

DIRECT PRODUCTION PROCESS OF HIGH HARDNESS TITANIUM SPONGE

Kizashi Takahashi, Nishinomiya, and Kimiyoshi Ono, Toyonaka, Japan, assignors to Osaka Titanium Company Limited, Amagasaki, Japan, a corporation of Japan

No Drawing. Filed Sept. 24, 1964, Ser. No. 399,099
Claims priority, application Japan, Oct. 2, 1963, 38/53,247
1 Claim. (Cl. 75—84.5)

A direct process for producing a high hardness titanium sponge useful as a raw material for high strength titanium mill products comprising the steps of

preparing titanic acid,

adding said titanic acid to pure titanium tetrachloride to provide a reaction mixture comprising titanium tetrachloride and dissolved oxygen,

regulating the temperature of said reaction mixture, said temperature being increased to increase the oxygen content of said reaction mixture and decreased to reduce the oxygen content of said reaction mixture, and

reducing said reaction mixture to produce titanium sponge of controlled high hardness.

3,359,094

FERROUS ALLOYS OF EXCEPTIONALLY HIGH STRENGTH

Clarence G. Bieber, Ramsey, and John R. Mihalisin, North Caldwell, N.J., assignors to The International Nickel Company, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed May 20, 1965, Ser. No. 457,494
32 Claims. (Cl. 75—123)

11. An iron-base alloy consisting essentially of from 5% to about 16.5% nickel, about 7% to about 16% molybdenum, about 8% to about 30% cobalt, the sum of the molybdenum plus cobalt being at least about 20%, up to 2.5% titanium, up to 2.5% aluminum, the sum of the titanium plus aluminum not exceeding about 3%, up to 1% carbon, up to 2% columbium, up to 4% tantalum, up to 0.1% boron, up to 0.25% zirconium, up to 8% chromium, up to 2% vanadium, up to 0.5% silicon, up to 0.5% manganese, up to 1% beryllium, up to 4% copper, up to 0.1% calcium, the total amount of columbium, tantalum, boron, zirconium, chromium, vanadium, silicon, manganese, beryllium, copper and calcium being not more than 10%, and the balance essentially iron.

3,359,095

SINTERING OF LOOSE PARTICULATE ALUMINUM METAL

George S. Foerster and Garth D. Lawrence, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Feb. 19, 1964, Ser. No. 345,847
13 Claims. (Cl. 75—200)

1. The method of making a rigid aluminum metal article which comprises: heating a charge consisting essentially of loose, particulate aluminum metal in a mold in a closed gas-imprevious container to a temperature and for a time at which from about 15 to 70 percent by weight of the charge becomes molten, the particles of said loose particulate aluminum metal being substantially free of oxide films thicker than about 700 Angstroms.

3,359,096

MANUFACTURE OF COATED WIRE

Ernest M. Jost, Plainville, Mass., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed May 11, 1966, Ser. No. 549,327
4 Claims. (Cl. 75—201)

1. The continuous single-pass method of manufacturing coated wire comprising,

coating a core-forming wire with a wet viscous coating comprising a binding compound, a liquid and particles of metal in powder form, by moving the core wire first through a pool of slurry containing the coating materials,

stripping any excess coating from the wire immediately after the coating has been applied to the wire and while the coating is still wet and viscous thereby to regulate the thickness of the coating around the wire, heating the coated wire in a reducing atmosphere to dry the coating and to drive off substantially all of the binding compound and other liquids from the coating to leave a dry coating on the wire comprising particles of metal from the slurry,

further heating the coating to sinter metal particles of the dry coating to each other and to the core wire thereby firmly bonding the dry coating and core wire to each other, and

under pressure reducing the thickness of the dried and sintered coating to a substantially uniform thickness around the wire, thereby providing a firmly bonded homogenous dense coating of metal around the core wire throughout its circumference.

3,359,097

METHOD OF PRODUCING THERMOELECTRIC BODIES

Emil R. Beaver, Jr., Tipp City, Ohio, assignor to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed June 28, 1965, Ser. No. 467,701
11 Claims. (Cl. 75—203)

1. A method of preparing a shaped body having thermoelectric property comprising the steps of (A) placing in a die a finely comminuted charge consisting essentially of (1) a siliceous material selected from the class consisting of silicon carbide and a mixture of silicon and carbon having a silicon content of from 65 to 75 percent by weight with the balance being carbon, in admixture with from 2 to 20 percent by weight of the total weight of the charge with (2) an additive selected from the class consisting of cobalt, thorium, the oxides, nitrides, carbides and silicides of cobalt, thorium, nickel, nobium, osmium, the alkaline earth metals, the rare earths of the lanthanide series and mixtures thereof, and wherein the silicon nitride and the alkaline earth compound are present only when in admixture with at least one of the other of said additives, (B) increasing the temperature of the charge at a predetermined rate to a first maximum temperature of 1200°–1500° C. while gradually increasing mechanical pressure on the charge to obtain, upon reaching said first maximum temperature, consolidation of the charge and compacting of the consolidated charge to from 90 to 100 percent theoretical density, (C) continue increasing the temperature of the resulting compact at substantially said predetermined rate to a second maximum temperature of 1900° C., to 2400° C., without substantially varying the pressure, and (D) then gradually releasing the pressure as the temperature of the compact decreases to room temperature.

3,359,098

CONSOLIDATION BY CHEMICAL SINTERING

Earl Q. Teaford, Columbus, Ohio, assignor, by mesne assignments, to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Feb. 17, 1965, Ser. No. 433,475
6 Claims. (Cl. 75—208)

1. The process of producing a chemically sintered, rigid body, which process comprises: maintaining a predetermined shape of loosely packed, refractory metal particles at gradient temperatures of about 300° to 700° C., with a temperature differential of at least 50° C. between the lowest and the highest temperature portion and with progressively higher temperatures maintained in said shape in the direction of hydrogen gas and tungsten hexafluoride vapor concurrently flowing through interstices of said predetermined shape.

3,359,099

METHOD OF PRODUCING A POROUS ELECTRODE MATERIAL

Olle Lindström, Vasteras, Sweden, assignor to Allmänna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a corporation of Sweden

Filed Feb. 16, 1965, Ser. No. 433,028
Claims priority, application Sweden, Feb. 21, 1964, 2,105/64
16 Claims. (Cl. 75—211)

1. In the manufacture of a fuel cell having electrodes in contact with an electrolyte, the steps of treating a powder with an alkali to remove at least the main part of an alkali soluble element in said powder, said powder comprising an alloy comprising at least one catalytically active metal with slight solubility in alkali and at least one alkali-soluble solid element having the property of activating the catalytically active metal forming a coherent electrode body from the particulate material comprising the residue of the powder and sintering while protecting the residue of the powder from the influence of oxygen of the air.

3,359,100

PRODUCTION OF WELDING STEEL

Kurt Claus, Metzkausen, Eckard Gehring, Dusseldorf, Kaiserswerth, Ulf Geier, Osterath-Bovert, Werner Marx, Dusseldorf, and Oswald Kaiser, Lintorf, near Dusseldorf, Germany, assignors to Schloemann Aktiengesellschaft, Dusseldorf, Germany, a German company

Filed Oct. 11, 1965, Ser. No. 494,839

Claims priority, application Germany, Oct. 22, 1964, Sch 35,997; Jan. 19, 1965, Sch 36,408, Sch 36,409; Mar. 17, 1965, Sch 36,719; Apr. 14, 1965, Sch 36,882; Apr. 17, 1965, Sch 36,901

18 Claims. (Cl. 75—214)

1. A method for the production of steel strip, comprising

(a) providing steel particles which have a mesh size of at least 0.2 mm. and are at a temperature of about 600° to 950° C.; and

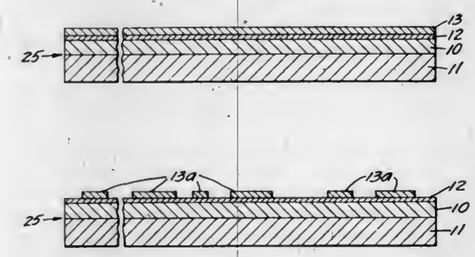
(b) rolling the heated particles in a rolling mill with a peripheral roll speed greater than about 0.4 meter per second to provide a substantially fully densified steel strip in one roll pass.

3,359,101

PRE-ELECTROSENSITIVE PRINTING PLATE AND NOVEL METHODS OF ELECTRO-DEFINING IMAGES

Jack J. Ito, Roseville, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Filed Oct. 12, 1963, Ser. No. 317,450
8 Claims. (Cl. 96—1)



1. A pre-electrosensitive printing plate comprising a flexible planar conductive base having a surface, and over and in contact with said surface, and in conductive relation with said base, a coating of electrophoretically-responsive and electrophoretically-orientable organic material including discrete mobile molecules, said molecules having an anionic moiety and an organophilic portion, and being further characterized, when subjected to an electromotive force in a conductive medium with the base connected as the anode, in moving and orienting in the areas of current flow to form an organophilic surface with the anionic moiety directed toward the base.

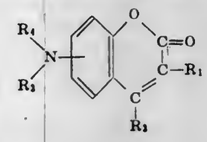
3,359,102

OPTICAL BRIGHTENING OF PHOTOGRAPHIC MATERIALS

Hendrik Adolf Pattijn, Wilrijk-Antwerp, Edwin Frans Hendricx, Boechout, Jozef Frans Willems, Wilrijk-Antwerp, and August Jean Van Paesschen, Hove, Belgium, assignors to Gevaert Photo-Producten N.V., Mortsel-Antwerp, Belgium, a Belgian company

No Drawing. Filed Apr. 6, 1964, Ser. No. 357,752
Claims priority, application Netherlands, Apr. 5, 1963, 291,196
20 Claims. (Cl. 96—1.8)

1. The method of enhancing the brightness of photographic material including at least one layer of a coating having a polymer latex uniformly incorporated therein, said method being characterized by the step of incorporating in said material a basic coumarin derivative in effective contact with said first-mentioned layer, said basic coumarin derivative being of the general formula:



wherein:

R_1 represents hydrogen or an alkyl radical

R_2 represents hydrogen, an alkyl radical, and an aryl radical, each of R_3 and R_4 represents hydrogen and an alkyl radical.

3,359,103

CONVERSION OF PHOTOGRAPHIC PHOTOCHROMIC IMAGE TO PERMANENT FIXED CHROMOGENIC IMAGE

William J. Becker and Peter L. Foris, Kettering, Ohio, assignors to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland

No Drawing. Filed Feb. 28, 1966, Ser. No. 530,388
16 Claims. (Cl. 96—27)

10. The process of making a permanent image on a thin film layer of polymeric material traversable by ultraviolet light and having dispersed in it, in reactive proximity, molecules both of photochromic material taken from the group consisting of benzo-indolinospiropyrans and 3-aroyl-2-methylchromones and of basic substantially colorless chromogenic material which yields a colored product on undergoing an acid-base reaction, including the steps of

(a) creating a photochromic image in the layer by applying ultraviolet light to selected areas of the film to represent data;

(b) while the ultraviolet-light-induced image is extant, treating the film layer to a gas selected from the group consisting of SO_2, I_2, and boron trichloride to convert the photochromic material in the image area to a chemical complex product; and

(c) supplying environmental heat to the layer to cause an acid-base reaction between the complex product material and the chromogenic material molecules in the image area to produce the image in terms of a colored product generated from the chromogenic material.

3,359,104

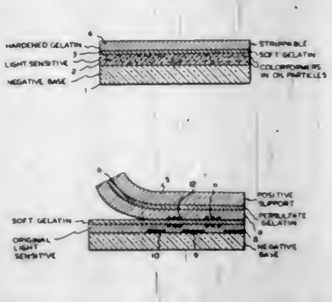
COLOR DIFFUSION TRANSFER PROCESS AND NEGATIVE MATERIAL THEREOF

Felix Viro, Apalachin, N.Y., assignor to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

Filed Dec. 30, 1963, Ser. No. 334,663
8 Claims. (Cl. 96—29)

1. A process for producing a dye image on an unsensitized receiving sheet which comprises exposing to light a photographic negative comprising a silver halide

emulsion overcoated with a hardened, strippable, hydrophilic colloid coating, said emulsion having dispersed therein oily packets containing a color former, said oily packets being produced by dissolving the color former in a substantially water insoluble, low molecular weight, organic crystalloidal material having a boiling point above about 175° C., said crystalloidal material having a high solvent action for the color former and for the dye formed therefrom and being permeable to photographic processing solutions, the nature and proportions of the color former and crystalloidal material being so chosen that particles thereof are liquid under conditions of coating and processing the emulsion, said color former being capable of reacting with the oxidation products of a primary aromatic amino color developer to produce a non-diffusible dyestuff image selected from the class consisting of a quinoneimine and azomethine dye image, said color former being free from water solubilizing groups but sufficiently soluble in the aforesaid crystalloidal material as to be incorporated in an oily packet and containing such organic groups that at a pH of at least as high as 12.5, the color former becomes diffusible in an aqueous me-



dium, the exposure being sufficient to ensure maximum density in the emulsion upon color development of those areas in the emulsion corresponding to the high-light areas of the subject to be reproduced, color developing the emulsion in a primary aromatic amino developer having a pH as high as 12.5 to produce such maximum density with complete conversion and immobilization of the color former in the areas of maximum density to a non-diffusible dye image, providing a receiving sheet comprising a base coated with a hydrophilic colloid containing a diffusible oxidizing agent, pressing the hardened, strippable coating on the silver halide emulsion into contact with the hydrophilic colloid of said receiving sheet to cause image-wise diffusion of the color former from the emulsion into said hardened, strippable coating and the oxidizing agent from the hydrophilic colloid on said receiving sheet into said hardened, strippable coating, oxidizing the color developer in the hardened, strippable coating by said oxidizing agent, reacting the oxidized developer with diffused color former in said hardened, strippable coating to produce a dye image therein and peeling the receiving sheet from the negative with the hardened, strippable coating adhering to said receiving sheet.

3,359,105
SPEED-INCREASING AGENTS FOR AN N-VINYL AMINE AND ORGANIC HALOGEN DYE FORMER SYSTEM

Eugene Wainer, Shaker Heights, Ohio, assignor to Horizons Incorporated, a corporation of New Jersey

No Drawing. Filed Mar. 10, 1965, Ser. No. 438,760
11 Claims. (Cl. 96—48)

1. A photosensitive composition comprising:
(a) an N-vinyl amine;
(b) a halogen containing organic compound represented by the general formula R—C—X_3 wherein each X represents an atom of chlorine, bromine or iodine and R represents a member selected from the group consisting of H, Cl, Br, I, alkyl, aralkyl, aroyl and haloalkyl; and,
(c) a sulfur containing organic compound selected from the group consisting of
(1) Mercapto compounds represented by the formula R′—S—H wherein R′ is a heterocyclic nucleus commonly used in cyanine dye chemistry;
(2) Disulfides represented by the formula R′—S—S—R′ wherein R′ has the same meaning as in 1 above; and
(3) Sulfur compounds wherein the sulfur is attached to a carbon atom in a heterocyclic ring wherein the same carbon atom is attached to two non-carbon atoms.

3,359,106
PHOTOGRAPHIC MATERIAL

Jozef Frans Willems and Albert Lucien Poot, Wilrijk-Antwerp, and Paul Désiré Van Pee, Edegem, Belgium, assignors to Gevaert Photo-Producten N.V., Mortsel-Antwerp, Belgium, a company of Belgium

No Drawing. Filed Mar. 30, 1964, Ser. No. 355,912
Claims priority, application Belgium, Mar. 29, 1963, 42,481
4 Claims. (Cl. 96—52)

1. Photographic material comprising a support and at least one light-sensitive silver halide emulsion printing layer incorporating a 6 - thioxo - 5,6 - dihydrobenzimidazo [1,2-c]quinazoline.

3,359,107
PHOTOGRAPHIC ELEMENT

Charles A. Goffe and William J. Venor, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed May 22, 1964, Ser. No. 369,454
13 Claims. (Cl. 96—83)

1. A photographic element comprising a photographic film support or a paper support as a primary support, and a self-supporting polyolefin stripping layer extruded onto and removably adhered to said primary support.

3,359,108
PHOTOGRAPHIC EMULSION HAVING A LOW MODULUS OF ELASTICITY AND PROCESS FOR ITS MANUFACTURE

Jean-Pierre C. G. Dubosc, Paris, and Roger P. J. G. Thiebaut, Vincennes, France, assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Apr. 2, 1964, Ser. No. 356,936
9 Claims. (Cl. 96—85)

1. A photographic emulsion having a low modulus of elasticity comprising an aqueous dispersion of silver halide in a binder composed of approximately 70–97% (dry weight) of styrene-butadiene latex and at least 3% (dry weight) of hydrophilic material consisting principally of gelatin which emulsion contains 5–100%, based on the total binder, of colloidal silica the particle size of which is less than 0.03 microns.

3,359,109
LEUCO DYE - N,N,O - TRIACYLHYDROXYLAMINE LIGHT-SENSITIVE DYE FORMER COMPOSITIONS

Robert Junior Harder and Charles Yembrick, Jr., Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Apr. 29, 1964, Ser. No. 363,594
7 Claims. (Cl. 96—90)

1. A light-sensitive composition comprising an intimate admixture of (1) the leuco form of a dye having one or two removable hydrogen atoms, the removal of which

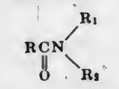
forms a differently colored compound, and (2) an N,N,O-triacylhydroxylamine wherein the N,N-acyl groups may form with the nitrogen atom an imide ring, with the proviso that the N,N,O-triacylhydroxylamine and said leuco dye produce color when about 10 mg. of each of these compounds are mixed together in 10 ml. of a 50:50 mixture of ethanol and N,N-dimethylformamide in a quartz vessel and irradiated with light of a wavelength from about 2000 A. to about 4200 A.

3,359,110
USE OF ORGANIC AMIDES AS ANTI-COAGULANTS IN EMULSIONS PREPARED BY THE GELATIN DERIVATIVE COAGULATION WASH PROCEDURE

Gordon F. Frame, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Apr. 13, 1964, Ser. No. 359,418
17 Claims. (Cl. 96—94)

1. A silver halide photographic emulsion having a pH below 7 containing an acid coagulable gelatin derivative selected from the group consisting of the aromatic sulfonyl chloride derivatives of gelatin, the carboxylic acid chloride derivatives of gelatin, the carboxylic acid anhydride derivatives of gelatin, the aromatic isocyanate derivatives of gelatin and the 1,4 diketone derivatives of gelatin and an organic amide which suppresses coagulation of the gelatin derivative, said organic amide being selected from the group consisting of N-2-hydroxyethyl formamide, hexamethyl phosphoric triamide, N-(lower alkyl)pyrrolidone and amides having the formula



wherein R, R_1 and R_2 each represents a lower alkyl group.

3,359,111
HARDENING COMPOSITIONS WITH PYRAZOLONE COUPLERS

John H. Van Campen, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Aug. 27, 1965, Ser. No. 483,332
10 Claims. (Cl. 96—100)

1. A gelatin-silver halide photographic emulsion useful in color photography which contains a pyrazolone coupler capable of forming an azomethine dye with a phenylenediamine developer and a hardener having the formula

$$XCH_2CH_2CO(ACO)_mCH_2CH_2X$$

in which X is selected from the group consisting of acetoxy and chloroacetoxy, *m* is either 0 or 1 and A is a divalent linkage selected from the group consisting of $-(CH_2)_{1-10}$, $-CH{=}CH-$, $-CH_2CH_2OCH_2CH_2-$, $-CH_2CH_2SCH_2CH_2-$, phenylene and cyclohexylene radicals.

3,359,112
SENSITIZATION OF PHOTOGRAPHIC MEDIA

Gershon M. Goldberg, Arlington, Mass., and Edward Hartouni, Claremont, Calif., assignors to Technical Operations, Incorporated, Burlington, Mass., a corporation of Delaware

Continuation of application Ser. No. 243,949, Dec. 11, 1962. This application Sept. 3, 1965, Ser. No. 489,789
11 Claims. (Cl. 96—102)

10. A method of surface optical sensitization of a microcrystalline binder-free silver halide photographic medium comprising the steps of vapor depositing onto a surface of said medium a quantity of sensitizing dyestuff, and thereafter applying water to the deposit on said surface.

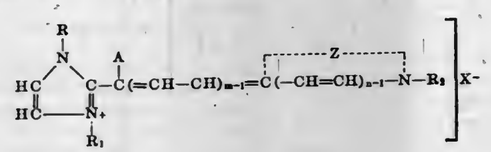


3,359,113
SILVER HALIDE EMULSIONS SENSITIZED WITH METHINE DYES CONTAINING AN IMIDAZOLE NUCLEUS

Henri Depoorter, Marcel Jan Libeer, and Jean Marie Nys, Mortsel-Antwerp, Belgium, assignors to Gevaert Photo-Producten N.V., Mortsel-Antwerp, Belgium, a Belgian company

Filed Mar. 30, 1964, Ser. No. 355,882
Claims priority, application Great Britain, Mar. 4, 1964, 9,100/64
7 Claims. (Cl. 96—106)

1. A photographic silver halide emulsion containing a methine dye having the formula:



wherein:

A represents a cyano group,
R, R_1 and R_2 each represent a lower alkyl group having up to 6 carbon atoms and a phenyl group,
n represents an integer of from 1 to 2,
m represents an integer of from 2 to 3,
z represents the atoms necessary to complete a heterocyclic nitrogen nucleus containing 5 to 6 atoms in the heterocyclic ring, and
X represents an acid radical.

3,359,114
BUOYANT FISHING LURE

Frank Witteman and Richard T. Witteman, both of 4614 Grand Ave., La Canada, Calif. 91011

Filed June 1, 1964, Ser. No. 371,247
10 Claims. (Cl. 99—3)

1. A fishing lure composition for mounting on and engulfing a fish hook comprising, a fishing bait material having a substantially non-buoyant density and a multiplicity of buoyant density microspheres of a substance which is unaffected by said bait material and dispersed in said material in a quantity for causing a buoyant density.

3,359,115

METHOD FOR PREPARING AN ANIMAL FOOD COMPRISING SUBSTANTIALLY UNOXIDIZED FISH MEAL AND CONDENSED FISH SOLUBLES

George T. Lanz, Kirkwood, Mo., assignor to Ralston Purina Company, St. Louis, Mo., a corporation of Missouri

Filed Apr. 1, 1964, Ser. No. 356,578
10 Claims. (Cl. 99—7)

1. The method of preparing an animal feed comprising mixing condensed fish solubles in an amount to permit extrusion into pellets with substantially unoxidized fish meal to form a mixture, and extruding said mixture.

3,359,116

PROCESS OF MAKING SOUR CREAM TYPE PRODUCTS AND CREAM CHEESE

Lawrence L. Little, Creve Coeur, Mo., assignor to The Battelle Development Corporation, Columbus, Ohio, a corporation of Delaware

No Drawing. Filed Nov. 30, 1966, Ser. No. 597,862
20 Claims. (Cl. 99—54)

1. The process of making sour cream comprising:
(a) adding from .20 to 3.00%, by weight, of monodiglycerides having a monoglyceride to diglyceride ratio of at least 5:3 and .05% to 1.00%, by weight, of a hydrophilic colloid to an animal milk containing .50 to 25.00% lipoids;
(b) pasteurizing and homogenizing; and thereafter
(c) acidifying said milk to a pH of from about 4.0 to 4.9 with an edible acidifying addition that constitutes no more than about 5%, by weight, of said milk.

3,359,117

REMOVAL OF STRONTIUM 90 FROM MILK WITH CALCIUM PYROPHOSPHATE, STRONTIUM PYROPHOSPHATE, OR MIXTURE THEREOF

Bartholomeus Van't Riet, Richmond, Va., assignor to the United States of America as represented by the United States Atomic Energy Commission

No Drawing. Filed Dec. 23, 1966, Ser. No. 604,493
8 Claims. (Cl. 99—60)

1. A process for the removal of radioactive strontium from milk which comprises contacting said milk with an inorganic salt selected from the group consisting of strontium pyrophosphate and calcium pyrophosphate and mixtures thereof, said inorganic salts being absorbed upon silica-alumina porous pellets, thereby removing said radioactive strontium from the milk.

3,359,118

TASTE IMPROVEMENT FOR BEVERAGE WHITENERS

Anne Josephine Neilson, Cambridge, and Richard Lawrence Hughes, West Roxbury, Mass., assignors, by mesne assignments, to Abbott Laboratories, Chicago, Ill., a corporation of Illinois

No Drawing. Filed Dec. 16, 1964, Ser. No. 418,896
2 Claims. (Cl. 99—63)

1. The process of adding, on a dry basis, between 0.02% and 0.1% by weight of cyclamic acid to a non-dairy beverage whitener and uniformly blending said cyclamic acid into said beverage whitener.

3,359,119

METHOD OF PREPARING AN AGGLOMERATED FOOD PRODUCT

Charles H. Milton, Winston-Salem, N.C., assignor to R. J. Reynolds Tobacco Company, Winston-Salem, N.C., a, corporation of New Jersey

No Drawing. Filed Mar. 27, 1964, Ser. No. 355,476
3 Claims. (Cl. 99—78)

1. A method of co-agglomerating an admixture made up of a particle-form edible acid and a particle-form edible carbonate, said carbonate being capable of reacting with said acid in the presence of water to yield carbon dioxide, which comprises mixing and fluidizing said mixture of particle-form acid and particle-form carbonate by flowing warm air upwardly therethrough and introducing into the flow of warm air moving upwardly through said mixture an atomized aqueous solution of an edible coating material, said solution serving to coat the individual particles of said acid and said carbonate and to effect co-agglomeration of the resulting coated acid and carbonate particles.

3,359,120

METHOD OF TREATING A MEAT EMULSION TO PRODUCE A DESIRED COLOR THEREIN

Jerome A. Meusel and Ralph A. Brunn, Baltimore, Md., assignors to The Baltimore Spice Company, Baltimore, Md., a corporation of Maryland

No Drawing. Filed Jan. 22, 1965, Ser. No. 427,465
3 Claims. (Cl. 99—109)

1. A method of treating a meat emulsion to produce a desired color therein which comprises incorporating in said emulsion a suitable amount of solid particles of fumaric acid, said particles being substantially completely encased in a non-toxic coating material which melts at a temperature between 100° F. and 180° F. and which is below the temperature at which the fumaric acid is to be made available to the meat emulsion, the fumaric acid constituting between 1% and 25% of the total weight of said coated particles, and thereafter smoking the meat emulsion at a temperature sufficient to melt the coating on said particles, to thereby release the acid into said meat emulsion and to produce the desired color in the resulting product.

3,359,121

METHOD OF PREPARING PACKAGED SLICED BACON

John C. Bard and Everett V. Podebradsky, Madison, Wis., assignors to Oscar Mayer & Co., Inc., Chicago, Ill., a corporation of Illinois

Filed July 22, 1964, Ser. No. 384,304
7 Claims. (Cl. 99—174)



1. The method of preparing packaged sliced bacon from skinned bacon bellies which comprises, smoking the bellies, heating the surfaces only of the smoked bellies to set the smoke, chilling the bellies prior to forming, forming the bellies, slicing the bellies and collecting the slices in shingled condition, applying dry cure composition onto at least one shingled surface without any appreciable amount of said dry cure composition being applied except to one of the two shingled surfaces and said dry cure composition being the only curing treatment employed, and packaging the shingled slices in containers which are substantially free of oxygen, said chilling and forming steps being carried out before or after said smoking and surface heating steps.

3,359,122

METHOD OF PRESERVATION, PACKAGING AND MOLDING OF FRESH FOODS FOR HUMAN USE

Ralph S. Zebarth and Richard A. Braeking, Kansas City, Mo., assignors to Gordon Johnson Company, Kansas City, Mo., a corporation of Missouri

No Drawing. Continuation of application Ser. No. 266,061, Mar. 18, 1963. This application Dec. 13, 1966, Ser. No. 601,434
5 Claims. (Cl. 99—194)

1. A method of preservation and packaging of poultry comprising the steps of:
chilling freshly dressed poultry to a temperature for preventing rapid growth of most harmful, pathogenic, disease-producing bactteria; thereupon
lowering the temperature of the poultry to within a range of approximately 28° F. to 32° F. to freeze the free water on the surface of the poultry without freezing the tissues thereof; and
packing a plurality of individual units of said poultry in a single shipping container.

3,359,123

PROCESS OF DEHYDRATING POTATOES

George A. Katucki, Nanuet, and Augustine D. D'Ercole, White Plains, N.Y., and William J. Howley, Ramsey, N.J., and Dominic A. Alia, Yonkers, N.Y., assignors to General Foods Corporation, White Plains, N.Y., a corporation of Delaware

No Drawing. Continuation of application Ser. No. 200,920, June 8, 1962. This application June 3, 1966, Ser. No. 555,934
16 Claims. (Cl. 99—207)

1. A process for dehydrating potatoes which comprises:
(a) partially cooking raw, whole potatoes with their skins substantially unremoved in an atmosphere having a relative humidity less than 100% and an ambient temperature such that the internal temperature of the potato does not exceed about 180° F. for a period of time such that the starch molecules in the potatoes swell but are substantially unruptured,
(b) freezing the partially cooked potatoes under conditions such that the internal potato temperature is held at about 30° F. until the entire cellular structure of the potatoes is frozen,
(c) drying said potatoes to a moisture content of less than about 10% by weight.

2. The process of claim 1 wherein the potatoes are thawed prior to drying.

ERRATUM

For Class 106—14 see:
Patent No. 3,359,181

3,359,124

ZIRCON REFRACTORY

George R. Henry, Bethel Park, Pa., assignor to Harbison-Walker Refractories Company, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed Feb. 16, 1967, Ser. No. 616,457
4 Claims. (Cl. 106—57)

1. A method of making ceramically bonded, pressed zircon shapes comprising the steps of:
(1) preparing a size-graded batch of up to 30%, by weight, fused silica, 1 to 5% clay, the remainder zircon, and 0.5 to 5%, by weight of the batch, of an alkali phosphate binder added,
(2) tempering with sufficient water so that the batches obtain pressable character,
(3) forming the batches into shapes by pressing,
(4) drying the shapes, and
(5) burning the dried shapes.

3,359,125

RADIATION INDICATING GLASS

Frederic L. Bishop, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio

Filed Apr. 17, 1963, Ser. No. 273,647
12 Claims. (Cl. 106—54)

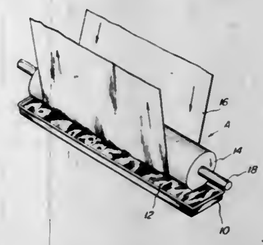
1. A glass composition selected from the group consisting of soda lime glasses and borosilicate glasses, said glass composition including, as sole colorizing agents, a combination of oxides selected from the group consisting of manganese oxide, cobalt oxide and cerium oxide, said combination always including manganese oxide and cobalt oxide in the weight range of from 0.04 to 0.10% and 0.002 to 0.005% respectively, based on the total glass forming oxide constituents, said cerium oxide measuring from 0 to 0.2% by weight based on the total glass forming oxide constituents, said glass composition thereby yielding a glass exhibiting a slight blue coloration, which coloration changes to a color ranging from colorless to a light neutral gray upon exposure of the glass to sterilizing radiation.

3,359,126

ALKYLOLAMINE ANTI-STATIC SURFACE TREATMENT OF PLASTIC FILMS

Charles O. Barbre, % Celanese Corp. of America, Belvidere, N.J. 07823

Filed Jan. 12, 1966, Ser. No. 520,228
1 Claim. (Cl. 106—186)



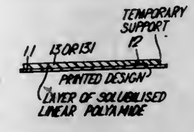
A composition for preventing the accumulation of static charges upon a cellulose acetate film, which comprises cellulose acetate in an amount of between 1.0 and 0.5%; N,N-bis(2-hydroxy ethyl alkyl C_{12-18}) amine in an amount of between 1.0 and 0.5%; acetone in an amount of between 60.0 and 80.0%; 36.8 to 18.8% methanol; and 1.2 to 0.2% water, all percentages being by weight.

3,359,127

POLYAMIDE HEAT TRANSFER FOR LAUNDERABLE FABRICS

Hans Meyer, Lawrence E. Shadbolt, and Harold J. Stern, London, England, assignors to Polymark Limited, London, England, a corporation of Great Britain

Filed May 9, 1966, Ser. No. 575,478
Claims priority, application Great Britain, Oct. 14, 1960, 33,276/60
9 Claims. (Cl. 117—3.4)



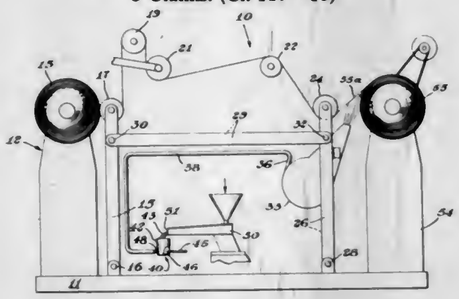
1. A heat-sealable transfer for producing a permanent information-bearing mark on textiles comprising a temporary support and an information-bearing thermoplastic layer thereon, said thermoplastic layer being a solubilized thermoplastic polyamide taken from the group consisting of polyhexamethylene adipamide, polyhexamethylene sebacamide and inter-polymers thereof, said polyamide

being 10–70% substituted by groups taken from the group consisting of alkylol and alkoxy alkyl substitution groups and combinations thereof and being soluble in a homogenous mixture of an alcohol and water, and a curing agent taken from the group consisting of citric acid, aconitic acid, phthalic acid, salicylic acid, tartaric acid, tannic acid, thiosalicylic acid, the ammonium and amine salts thereof, and a mixture of n-butyl dihydrogen phosphate and di-n-butyl hydrogen phosphate and being present in an amount sufficient to maintain the pH of said thermoplastic layer upon being heated between 3.5 and 5, said layer being capable of being insolubilized and bonded to an article to be marked by heat and pressure.

3,359,128
DUSTING OF SURFACES

Loren K. Humphrey, Alma, and Robert A. Dunning and Curtis A. Layman, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed June 10, 1963, Ser. No. 286,672
3 Claims. (Cl. 117—16)



1. A method of dusting the surface of a web comprising directing a gaseous dispersion of the dust in the form of a generally planiform blast on to the surface of a web as it is being wound onto a roll the planiform blast being directed toward the point of contact of the web surface with the roll and maintaining the supply of said dust at about a constant rate for the entire winding operation.

3,359,129
METHOD OF PHOTOPOLYMERIZING ACRYLIC MONOMER COATINGS

Tzu Jen Mao, Royal Oak, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

No Drawing. Filed May 15, 1964, Ser. No. 367,858
6 Claims. (Cl. 117—34)

1. A coating process comprising the steps of providing a coating composition consisting essentially of a methacrylate monomer having high reactivity and low volatility taken from the group consisting of glycidyl methacrylate and 2-methoxyethyl methacrylate and including a photo-initiator, applying a layer of said composition to a substrate under atmospheric pressure, and subjecting said layer to ultraviolet radiation at substantially room temperatures for a time sufficient to cure said layer.

3,359,130
DOUBLE SHELLED FOAMABLE PLASTIC PARTICLES

Conrad Goldman, Rochester, N.Y., assignor to Papex Corporation, Rochester, N.Y., a corporation of Delaware

Filed Nov. 12, 1963, Ser. No. 323,045
4 Claims. (Cl. 117—72)

1. Foamable plastic powder, substantially each of the particles of which comprise a core consisting essentially of gelled blowing agent material, a first relatively non-polar shell enveloping said core and consisting essentially of first thermoplastic resin material, and a second shell enveloping said first shell and consisting essentially of second thermoplastic material more responsive to radio frequency heating than said first thermoplastic resin material.



3,359,131
QUATERNIZED HALOMETHYL ETHERS

Robert J. Koshar, Lincoln Township, Washington County, and Harvey A. Brown, East Oakdale Township, Washington County, Minn., assignors to Minnesota Mining and Manufacturing Compay, St. Paul, Minn., a corporation of Delaware

No Drawing. Filed May 6, 1960, Ser. No. 27,279
10 Claims. (Cl. 117—119.6)

1. A compound of the formula

$$R_fROCH_2Q^+X^-$$

wherein R_f is perfluoroalkyl having 4 to 12 carbon atoms, Q is a tertiary nitrogenous organic residue selected from the group consisting of trialkylamino having 3 to about 36 carbon atoms, tricyclohexylamino, aralkyl amino having about 8 carbon atoms, aryl amino having about 8 carbon atoms, pyridino, picolino, lutidino and quinolino, X is a halogen of the group consisting of chlorine and bromine and R is a divalent radical selected from the group consisting of:

$$—CH_2—CHCl—(CH_2)_n—$$

and

$$—(CH_2)_m—$$

wherein n is an integer from 1 to 10 and m is an integer from 3 to 12.

8. The process for rendering fibrous materials water- and oil-repellent, which comprises treating the fibrous material with a compound of the formula:

$$R_fROCH_2Q^+X^-$$

wherein R_f is perfluoroalkyl having 4 to 12 carbon atoms, Q is a tertiary nitrogenous organic residue selected from the group consisting of trialkylamino having 3 to about 36 carbon atoms, tricyclohexylamino, aralkyl amino having about 8 carbon atoms, aryl amino having about 8 carbon atoms, pyridino, picolino, lutidino and quinolino, X is a halogen of the group consisting of chlorine and bromine and R is a divalent radical selected from the group consisting of:

$$—CH_2—CHCl—(CH_2)_n—$$

and

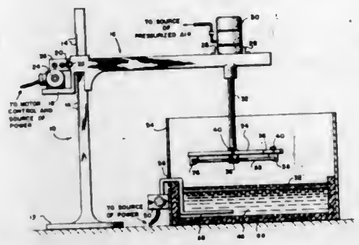
$$—(CH_2)_m—$$

wherein n is an integer from 1 to 10 and m is an integer from 3 to 12; in aqueous medium buffered to about pH 5.5 to 6.5, drying the treated fibrous material and heating the dried, treated material to a temperature in the range of about 100° to 140° C. for a period of about 5 to 30 minutes.

3,359,132
METHOD OF COATING CIRCUIT PATHS ON PRINTED CIRCUIT BOARDS WITH SOLDER

Albin E. Wittmann, Huntsville, Ala., assignor to the United States of America as represented by the National Aeronautics and Space Administration

Filed July 10, 1964, Ser. No. 381,940
10 Claims. (Cl. 117—212)



1. The method of coating the circuit paths of a printed circuit board with solder comprising:
(a) positioning said circuit board in a holder;
(b) lowering said holder and said circuit board into a bath of molten solder;
(c) allowing said holder and said circuit board to dwell in said bath for a short period of time whereby an intermetallic bond between said circuit paths and said coating is produced; and
(d) spinning said holder and circuit board immediately upon withdrawal to remove excess solder from said circuit board to thereby produce a coating on said circuit board having a uniformly smooth finish and the desired thickness.

3,359,133
CERAMIC DIELECTRICS

James P. Smyly, Soddy, Tenn., assignor, by mesne assignments, to American Lava Corporation, Chattanooga, Tenn., a corporation of Tennessee

Filed Apr. 6, 1964, Ser. No. 357,478
9 Claims. (Cl. 117—227)

1. A ceramic dielectric body characterized by having a dielectric constant above 9,500 up to approximately 16,000 at room temperature, by having a maximum aging rate per hour decade less than about 6%, and by being capable of operation at 50 volts D.C. per mil at 85° C. for 1,000 hours without failure, said body being composed essentially of ingredients in mol percent as follows: barium titanate, 71 to 77; strontium titanate, 8 to 13; barium stannate, 6 to 10; barium zirconate, 5 to 9; a total quantity of barium stannate and barium zirconate between 11 and 16; with a ratio of barium stannate to barium zirconate no greater than 1.4; and a small but significant quantity, at least 0.01 mol percent but less than 0.7 mol percent, of one or more oxides selected from the group consisting of cerium oxide and lanthanum oxide.

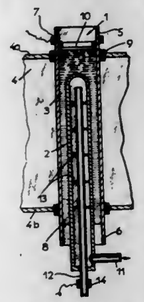
9. The body of claim 1 having at least one electrode of conductive material affixed thereto.

3,359,134
FUEL CELL INCLUDING PACKED CATALYTIC SUBSTANCE

André Salvadori, Paris, Philippe Lovy, Roissy-en-Brie, and Michel Beigelman, Villiers-Adam, France, assignors to Service National dit: Gaz de France, Paris, France, national service of France

Filed Dec. 4, 1962, Ser. No. 243,200
Claims priority, application France, Dec. 5, 1961, 881,055
3 Claims. (Cl. 136—86)

1. A gaseous fuel cell, operating at high temperature with an electrolyte in the liquid state as a molten salt, a fuel and an oxygenated combustive agent, comprising two refractory hollow porous electrodes forming respectively an oxidizer electrode and a fuel electrode, disposed substantially vertically and in concentric parallel relationship, said oxidizer electrode surrounding said fuel electrode, a vessel containing said combustive agent and in which said oxidizer electrode is mounted, said electrolyte being located in the annular space between the electrodes, said oxidizer electrode having substantially the form of a tubular cylinder open at both ends and extending in a fluid-tight manner through the walls of said vessel with its both ends as well as the ends of the column of electrolyte therein projecting externally from said vessel, a sealing plug being provided at the lower end of said column of electrolyte, the fuel electrode being closed at both ends and immersed in said electrolyte with its lower end



projecting outwards beyond said plug and said fuel electrode being coated with a layer of noble metal in the form of a foil on a very porous ceramic support, a central inner fuel-feed duct extending nearly to the top of said electrode, said duct being open at least at its top end and extending at its bottom end in a fluid-tight manner through the bottom of said electrode, said fuel-feed duct having an opening at its bottom end which is connected to a fuel supply, a steam cracking catalytic substance packed along at least a portion of said inner fuel-feed duct length, and a discharge pipe connected to the annular space between said fuel-feed duct and the inner wall of said fuel electrode adjacent the fuel supply inlet whereby heated gases which flow to the discharge pipe transfer heat to the fuel entering the fuel-feed duct.

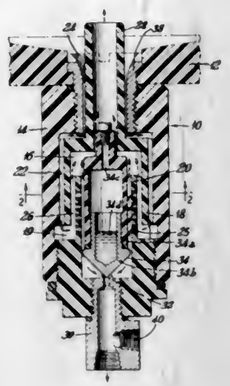
3,359,135
ELECTROCHEMICAL CELL AND LIQUID MIXTURE SEPARATOR COMBINATION

Lawrence J. Uline, Lakewood, Ohio, and Helio A. Trull, St. Petersburg, Fla., assignors to Union Carbide Corporation, a corporation of New York

Filed Dec. 23, 1963, Ser. No. 332,696
13 Claims. (Cl. 136—86)

1. An electrochemical cell comprising an anode, a cathode, an electrolyte, and a liquid mixture separator affixed to said cell for separating said electrolyte from products of the reaction between said electrolyte and said cell electrodes, said electrolyte and said product being immiscible and of different specific gravities and constituting a liquid mixture, said separator comprising a housing having a chamber therein with the bottom central portion of said chamber being the lowest part of said chamber; a liquid inlet and conduit means near the lateral circumference of said chamber for entry of said mixture near the top of said chamber and the conduction of said mixture to a place near the bottom of said chamber, and horizontal flow conduit means connecting said inlet and conduit means near the bottom of said chamber with the central portion of said chamber, thereby permitting said mixture to enter and flow down through said inlet and conduit means and flow substantially horizontally and laminarly through said horizontal flow means to the central portion

of said chamber wherein the heavier of said electrolyte and said products settles to the central bottom portion of said chamber; a first liquid outlet means at the top of said chamber for permitting the exit of the lighter of said electrolyte and said products; a second liquid outlet means at the bottom of said chamber near its center for permit-



ting the exit of the heavier of said electrolyte and said products, said second liquid outlet means having an orifice seat therein; and a float disposed within said chamber in cooperative relationship with said orifice seat for maintaining a predetermined amount of the heavier of said electrolyte and said product at the bottom of said chamber.

3,359,136
RECHARGEABLE ENERGY CONVERSION SYSTEM

Ulrich Merten, Solana Beach, and John T. Porter II, Del Mar, Calif., assignors to General Dynamics Corporation, New York, N.Y., a corporation of Delaware

Filed Jan. 14, 1966, Ser. No. 525,815
14 Claims. (Cl. 136—86)

1. In a rechargeable energy conversion system, at least one electrochemical rechargeable cell having a zinc electrode and an inert porous electrode which is spaced from said zinc electrode to define an electrolyte passageway therebetween for a liquid electrolyte, means for supplying an oxygen-containing gas to said porous electrode, means for circulating liquid electrolyte through said electrolyte passageway and for recirculating the electrolyte exiting from said electro-chemical cell back to said cell, and means for separating the reaction products which are formed during cell discharge from said electrolyte and for storing said separated reaction products exterior of said electrochemical cell, whereby said reaction products are available where they may be carried back into said electrochemical cell during recharging thereof and be plated upon said zinc electrode as metallic zinc.

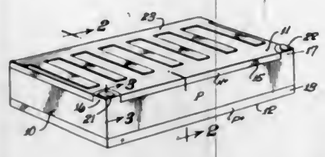
3,359,137
SOLAR CELL CONFIGURATION

Stephen Kaye, Pasadena, and Louis Garasi, Los Angeles, Calif., assignors to Electro-Optical Systems, Inc., Pasadena, Calif., a corporation of California

Filed Mar. 19, 1964, Ser. No. 353,186
3 Claims. (Cl. 136—89)

1. A solar cell comprising:

a unitary semiconductor crystal body of a predetermined conductivity type material defining a front surface and a back surface and including a first thin surface region extending across the entirety of said back surface and a second thin surface region extending across all but a small predetermined perimetric portion of said front surface, with the remainder of said crystal body defining a third region of said predetermined conductivity type material contiguous with and separating said first and second regions and having a pillar like portion terminating in said small predetermined perimetric portion of said front surface, said first region being a highly doped region of said predetermined conductivity type and having a sheet resistance not in excess of about 5 ohms per square, said second region being a highly doped region of the opposite conductivity type and being sufficiently thin to be appreciably transparent to solar radiation;



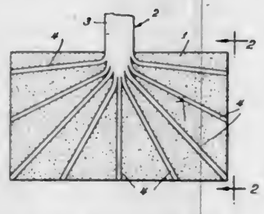
first metallic means bonded in low resistance ohmic contact to said front surface within said second surface region to provide an electrical front contact for conductive connection to an external circuit; and,

second metallic means bonded in low resistance ohmic contact to said front surface within said small predetermined perimetric portion and spaced apart from said second surface region to define an electrical back contact for conductive connection to an external circuit.

3,359,138
SILVER ELECTRODES FOR ELECTRIC BATTERIES

Howard J. Strauss, Rockford, Ill., assignor to Clevite Corporation, a corporation of Ohio

Filed Jan. 7, 1965, Ser. No. 424,025
13 Claims. (Cl. 136—120)



1. A method for the preparation of a porous silver electrode substantially free from chloride ions which comprises forming an electrode member from solidified fused silver chloride substantially free from metallic silver, providing said electrode member with an electrically conductive current collector, chemically reducing the surface of said electrode member to form a thin metallic silver coating thereon, and cathodically electrolyzing the silver chloride of said electrode member in a suitable electrolyte bath until substantially all of the silver chloride has been reduced to metallic silver.

3,359,139
CIRCUIT FOR COMPATIBLE TANDEM CONNECTION OF THERMOELECTRIC COUPLES

Nils E. Lindenblad, Princeton, N.J., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed June 22, 1964, Ser. No. 377,145
1 Claim. (Cl. 136—205)

A thermoelectric device providing continuity of electrical and thermal flow over a wide temperature range which comprises,

(a) a first thermocouple formed of thermoelectric elements which are constructed of metals for operating effectively at the higher stage of the temperature range,

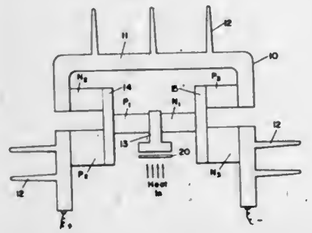
(b) each thermoelectric element having two ends and the elements being disposed in spaced relation providing a pair of adjacent ends and a pair of remote ends,

(c) a heat input conductor disposed centrally of and interconnecting said adjacent ends,

(d) a first thermal and electrical conductor connected generally perpendicular to one of said remote ends and a second thermal and electrical conductor connected generally perpendicular to the other of said remote ends,

(e) a second and a third thermocouple each being formed of thermoelectric elements which are constructed of metals for operating effectively at a lower stage of the temperature range,

(f) each thermoelectric element of the second thermocouple having two ends and the elements being disposed in spaced relation providing a pair of adjacent ends and a pair of remote ends,



(g) said adjacent ends of said second thermocouple being connected generally perpendicular to said first thermal and electric conductor,

(h) each thermoelectric element of the third thermocouple having two ends and the elements being disposed in spaced relation providing a pair of adjacent ends and a pair of remote ends,

(i) said adjacent ends of said third thermocouple being connected generally perpendicular to said second thermal and electric conductor and

(j) a third thermal and electrical conductor bridging one element of each of said second and third thermocouples and providing a common heat sink and,

(k) the dissimilar metals of said second and third thermocouples being formed to have different ratios between their lengths and cross sections and the dissimilar metals of the first thermocouple being formed to have a greater ratio between its length and cross section than the ratios of the dissimilar metals of said second and third thermocouples.

3,359,140
SUPPRESSION OF FUMES GENERATED IN FUME GENERATING METAL REMOVAL PROCESSES

Thomas E. Butler, Chatham, N.J., assignor to Union Carbide Corporation, a corporation of New York

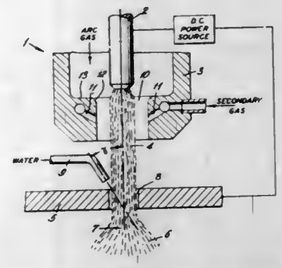
Filed July 19, 1965, Ser. No. 473,019
11 Claims. (Cl. 148—9)

1. A metal removal process comprising the steps of:

introducing a gas into an electric-arc to combine with the electric-arc to form a plasma;

constricting the plasma to form an effluent characterized by its stability, high inertia, high energy per unit area and relatively high temperature;

subjecting a workpiece to the effluent to remove metal therefrom, such metal being in relatively small particles; and



introducing a coolant into a fume suppression zone to cool the metal which has been removed from the workpiece, the coolant effecting the cooling of the particles without appreciably oxidizing the particles and added in sufficient amounts to substantially eliminate the fumes which would otherwise be generated.

3,359,141
ELECTRICAL CONDUCTORS OF ALUMINUM AND METHODS FOR PRODUCTION OF SAME

Jean Louis Mercier, Issoire, Puy-de-Dome, France, assignor to Pechiney, Compagnie de Produits Chimiques et Electrometallurgiques, Paris, France

Filed Feb. 18, 1964, Ser. No. 345,646
15 Claims. (Cl. 148—11.5)

NO. OF CASTING	WIRE COOLED IN AIR									HEAT TREATMENT UPON LEAVING EXTRUSION DIE		
	BILLETS WITHOUT TREATMENT			BILLETS HOMOGENIZED AND SLOW COOLED			BILLETS HOMOGENIZED AND COOLED IN AIR			BILLETS HOMOGENIZED AND SLOW COOLED		
	d=11	d=5		d=11	d=5		d=11	d=5		d=11	d=5	
	R	R	ρ	R	R	ρ	R	R	ρ	R	R	ρ
F_1	9.55	18.10	2.818	7.90	17.90	2.709	8.70	17.65	2.775	8.25	17.5	2.772
F_2	9.45	18.40	2.811	8.40	18.15	2.772	8.63	18.15	2.776	8.45	18.56	2.772
F_3	9.00	18.60	2.809	8.85	18.10	2.768	8.70	18.15	2.772	9.25	18.15	2.772
S_1	9.50	18.10	2.810	7.80	17.15	2.768	8.40	17.85	2.780	8.90	17.80	2.765
S_2	8.80	18.35	2.807	8.10	18.50	2.769	8.10	18.65	2.772	8.10	18.60	2.770
S_3	8.55	18.40	2.805	7.50	18.65	2.775	8.25	18.90	2.777	8.15	18.85	2.776
C_1	9.25	18.60	2.814	8.00	18.10	2.784	8.56	18.95	2.791	8.35	19.05	2.781
C_2	9.45	18.85	2.848	7.90	18.45	2.785	8.19	18.60	2.795	7.86	18.70	2.780

1. In the production of electrically conductive aluminum wire, the steps of casting billets of aluminum containing copper as an alloying element in an amount within the range of 0.01% to 0.05% by weight, homogenizing the billets by heating to a temperature above 400° C. for at least 8 hours, slowly cooling the homogenized billets, and then reducing the billets to wire of the desired gauge.

3,359,142
BONDING ALUMINUM TO TITANIUM AND HEAT TREATING THE COMPOSITE

Bennie Ray Ward, Jr., Chesterfield County, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware

No Drawing. Filed Oct. 18, 1965, Ser. No. 497,554
6 Claims. (Cl. 148—11.5)

1. The method of producing a metal composite, comprising the steps of:

bonding a layer of heat-treatable aluminous metal to a layer of titanium alloy which is susceptible to strengthening by a thermal treatment in the temperature range for solution heat treatment of the aluminous metal; and

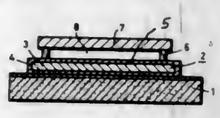
heating the bonded layers so as to effect concurrently a solution heat treatment of said aluminous metal and the strengthening of said titanium alloy.

3,359,143

METHOD OF PRODUCING MONOCRYSTALLINE SEMICONDUCTOR MEMBERS WITH LAYERS OF RESPECTIVELY DIFFERENT CONDUCTANCE

Walter Heywang and Erhard Sirtl, Munich, Germany, assignors to Siemens Aktiengesellschaft, a corporation of Germany

Filed Jan. 7, 1965, Ser. No. 424,149
Claims priority, application Germany, Jan. 10, 1964, S 89,017
20 Claims. (Cl. 148—174)



1. The method of producing monocrystalline semiconductor members with layers of respectively different conductance, which comprises placing a substance of monocrystalline semiconductor material in face-to-face relation to a source body of semiconductor material, said source body having at least two layers of respectively different conductance forming with each other a junction parallel to the source side facing the substrate, the source layer at said side having the same type of conductance as said substrate; heating the source body and simultaneously subjecting it on said side to a gaseous atmosphere chemically combinable with the source material to deposit semiconductor material by transport reaction via the evolving gaseous compound from the source body onto the substrate, until at least two layers of respectively different conductance are transferred from the source body to the substrate.

3,359,144

GELLED HYDRAZINE

Bobby Leroy Atkins, Lake Jackson, and Billy Gene Harper, Brazoria, Tex., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed July 23, 1964, Ser. No. 384,802
4 Claims. (Cl. 149—36)

1. Hydrazine gelled with about 0.1–10 weight percent, hydrazine basis, of particles of a crosslinked resinous gellant polymer selected from the group consisting of (1) polymers of at least one salt of the group consisting of acrylic and methacrylic acid alkali metal and ammonium salts and (2) copolymers of 15 to 99 mole percent of at least one salt of the group consisting of acrylic and methacrylic acid alkali metal and ammonium salts with a balance of at least one member of the group consisting of acrylamide and methacrylamide, and wherein said resinous polymer is crosslinked with a small proportion of a crosslinking agent in amount to give a polymer having a gel capacity of at least 20.

3,359,145

ELECTRICALLY CONDUCTING ADHESIVE

Ival O. Salyer and James L. Schwendeman, Dayton, and Bobby R. Hickman, Bellbrook, Ohio, assignors to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Dec. 28, 1964, Ser. No. 421,656
12 Claims. (Cl. 156—1)

1. The process of bonding together electricity conducting units which comprises interposing between the units at the desired junction so as to contact a surface of each unit, a layer of a composition consisting essentially of (1) a hardenable organic adhesive in the mobile state and (2) from 5% to 60% by weight of the composition of a ferromagnetic, electricity-conducting, finely particulated filler; and maintaining one interface of the layer normal to the lines of force of an applied magnetic field while the adhesive is hardening, to form bridges of conducting particles between the opposing interfaces.

3,359,146

METHOD OF PRODUCING GYPSUM ARTICLES HAVING IMPROVED STRENGTH TO DENSITY RATIO

Marvin K. Lane, Chicago, and John S. Sheahan, Hoffman Estates, Ill., assignors to United States Gypsum Company, Chicago, Ill., a corporation of Illinois

No Drawing. Filed Mar. 27, 1964, Ser. No. 355,492
3 Claims. (Cl. 156—43)

3. In a method of producing gypsum board having increased dry compressive strength at any particular dry density and having a dry core density of from about 35 to 50 pounds per cubic foot, wherein a foamed calcined gypsum slurry is deposited between paper cover sheets, permitted to set, and dried, the improvement which comprises producing said slurry by providing a source of finely divided calcined gypsum capable of disintegration in water, forming an aqueous slurry of such calcined gypsum, mixing said slurry for a time and at an intensity sufficient to disintegrate the same into particles whose Blaint surface area is greater than that of the provided stucco and is at least about 12,000 square centimeters per gram, incorporating at least about 0.1% by weight of an accelerator and foam with agitation into said slurry in an amount sufficient to produce a temperature rise set of not more than about 15 minutes and casting the slurry between paper cover sheets, while the combined moisture content of the calcined gypsum is less than about 9% by weight.

3,359,147

NON-WOVEN PATTERNED PILE MAKING METHOD AND APPARATUS

Paul E. Miller, 113 Liberty Ave., Norristown, Pa. 19401

Filed Dec. 30, 1963, Ser. No. 334,176
13 Claims. (Cl. 156—72)



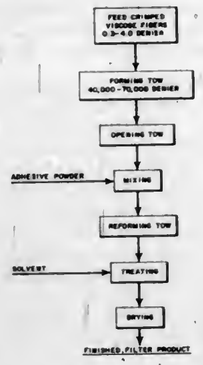
1. Apparatus for continuously forming a non-woven pile fabric comprising a moistening chamber, means for parallelizing running lengths of pile material in predetermined relationship to each other to form a predetermined pattern, means in said chamber for applying a material freezable under condtions of reduced temperature to the parallelized pile material, means for drawing parallelized pile material through said moistening chamber while the parallelized pile material is in relatively open condition, means for condensing the longitudinally parallelized moving pile material, a mold through which the pile material is drawn in condensed parallel form, a solidifying chamber through which the pile material is progre sively advanced under conditions of reduced temperature, cutting means for severing slabs of frozen pile material, a conveyor belt onto which a plurality of said slabs are positioned in pre-arranged relationship, means for applying a backing material to the upturned faces of said slabs while on the conveyor belt, means for raising the temperature of the slabs above the melting point of the freezable material, and means for drying the pile material and curing the backing material.

3,359,148

TOBACCO SMOKE FILTERS AND METHOD OF MAKING THE SAME

Shojiro Fukui, Hon-machi, Toyonaka, Japan, assignor to Kurashiki Rayon Company Limited, Kurashiki, Japan, a corporation of Japan

Filed Aug. 30, 1963, Ser. No. 305,853
Claims priority, application Japan, Sept. 19, 1962, 37/40,349
4 Claims. (Cl. 156—180)



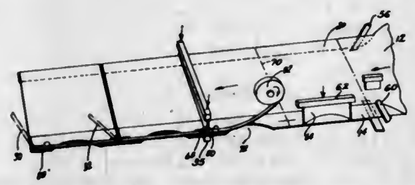
1. A method for the manufacture of tobacco smoke filters which comprises in sequence the steps, (1) providing a tow of parallel crimped rayon fibers, said fibers having a monofilament denier of 0.3 to 4.0 and 15 to 40 crimps per inch, the total denier of said tow being 40,000 to 70,000, (2) opening said tow, (3) applying an adhesive in powder form to the fibers in said opened tow, (4) reforming the thus-treated tow, (5) thereafter applying to the tow a solvent for the said adhesive, and (6) evaporating said solvent from the tow whereby crimped fibers adhere within said tow.

3,359,149

METHOD OF MAKING A PLASTIC CLOTHES PROTECTOR

Raymond J. Hummel, Grand Rapids, Mich., assignor to H & H Plastics Mfg. Co., Grand Rapids, Mich., a corporation of Illinois

Original application Jan. 17, 1963, Ser. No. 252,222, now Patent No. 3,146,465, dated Sept. 1, 1964. Divided and this application Feb. 7, 1964, Ser. No. 350,138
3 Claims. (Cl. 156—204)



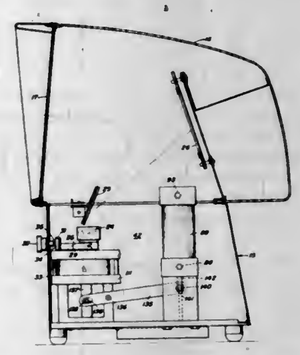
3. A method of rapidly forming a large number of disposable plastic bibs, comprising the steps of, unrolling and conveying a continuous sheet of plastic, continuously folding an edge of said sheet over a portion of one side of said sheet to form a folded edge, continuously folding the opposite continuous sheet edge over a portion of the opposite side of said sheet to form a second folded edge, longitudinally slitting one of said folds and adjacent sheet portion at spaced intervals near to, parallel to, but spaced from the adjacent folded edge; cutting said one fold and sheet portion to a depth partially across said one fold at spaced intervals intermediate the spaced slits to form spaced intervals intermediate the spaced slits to form spaced openings; unrolling a continuous narrow strip of plastic fusible to said plastic sheet, along said cut fold, between the slits and adjacent folded edge, and transversely melt severing said sheet, folds, and strips into equal sections along severance lines spaced between the cuts on the spaced slits while simultaneously fusing the newly cut sheet edges, fold edges, and strip ends together to form a complete bib having a catch pocket, having a slipover collar construction with said cuts, and capable of having a pair of ties by dividing said strip in the center, said ties being effectively lengthened by said slits.

3,359,150

MACHINE FOR MOUNTING AN INSERT IN THE APERTURE IN A RECORD CARD

Stanley T. Stoothoff, Glen Rock, and William W. Stoothoff, Ramsey, N.J., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Mar. 14, 1963, Ser. No. 265,094
30 Claims. (Cl. 156—379)



1. In a machine for cutting a predetermined length of film from a film strip and mounting said length of film in a predetermined location on a receiving member, the combination comprising:

guide means for guiding said film strip along a predetermined path;

a first station on said path for viewing at least a portion of said length of film;

a second station on said path spaced from said first station and including means for supporting said receiving member;

drive means;

reciprocating means actuated by said drive means for engaging said film strip to advance the latter along said path successively into said first and second stations and for releasing said film strip upon movement of said length of film into said second station; and

cyclically operable means in said second station actuated by said drive means in timed relation to movement of said length of film into said second station for cutting a length of film from said film strip and moving said length of film into engagement with said receiving member.

3,359,151

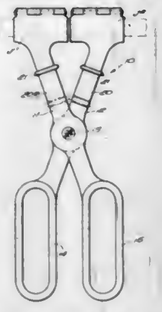
IMPLEMENT FOR SPLICING ROPE

Edward H. Hall, Fitchburg, Mass., assignor to Morey Paper Mill Supply Co., Fitchburg, Mass., a corporation of Massachusetts

Filed Mar. 9, 1965, Ser. No. 438,282
3 Claims. (Cl. 156—497)

1. A manually actuatable implement for use in splicing a pair of rope ends, each rope end comprising at least three individual strands wherein each strand consists predominantly of fibrous material which melts when ex-

posed to flame but solidifies when thereafter cooled, said implement conprising two rigid, elongate levers of the first order united by pivot means at points intermediate their ends, each lever having an elongate, open-loop handle extending from one extremity toward the pivot means and having at its opposite extremity a holder for a rope end, each holder comprising two semicylindrical jaws united by a hinge and which, when disposed in opposed relation, define a cylindrical chamber for the reception of a rope end, means for forcibly drawing the jaws of each



holder toward each other so as to compress and solidify a rope end interposed between said jaws, the holders being so mounted on the respective levers that by moving the handles apart the exposed end faces of rope ends, gripped in the respective holders, may be so spaced as to admit an open flame between said exposed faces thereby to melt the fibrous material, and when the handles are drawn toward each other the axes of the cylindrical chambers of the two holders will be aligned and the molten faces of the rope ends urged together thereby to coalesce the constituent fibers.

3,359,152

MACHINABLE ANISOTROPIC MAGNET

Walter S. Blume, Jr., Cincinnati, Ohio, assignor to Leyman Corporation, Cincinnati, Ohio, a corporation of Ohio

Original application July 15, 1958, Ser. No. 748,705, now Patent No. 2,999,275, dated Sept. 12, 1961. Divided and this application May 7, 1959, Ser. No. 817,018

2 Claims. (Cl. 161—162)

1. A permanent magnet material comprising a laminate of sheet forms each sheet comprising roughly plate-like, substantially domain size anisotropic particles of at least one permanent magnet substance selected from the class consisting of the ferrites of barium, strontium and lead, said particles individually having single predominantly preferred magnetic axes which are consistently normal to their respective general planes, said particles being adhered by a physically coherent, non-magnetic binder selected from the class consisting of rubbers, elastomers, and resins, said particles being so oriented with respect to each other and to said material that the planes of said plate-like particles are substantially parallel to each other and the preferred magnetic axes of said particles are substantially parallel to each other and are substantially perpendicular to the surface of said material, said laminate having a preferred direction of magnetization which is substantially normal to the planes of the sheet material comprising the laminate.

3,359,153

LIGHT STABILIZED LAMINATED ARTICLES

Claude Thomas Bean, Jr., Niagara Falls, N.Y., assignor to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Filed Mar. 2, 1964, Ser. No. 348,801

7 Claims. (Cl. 161—189)

1. A plastic article comprising (a) a copolymerized core material comprised of an unsaturated polyester resin and a vinylidine monomer, (b) an outer surface of polyvinyl fluoride, and (c) a copolymerized intermediate layer comprised of a major proportion of an unsaturated polyester resin and a vinylidine monomer and a minor proportion of an ultraviolet light stabilizer, said intermediate layer being between and permanently bound to said core and said outer surface.

3,359,154

POLYOLEFIN ADHESION

Melville A. J. Clark, North Brunswick, N.J., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Aug. 31, 1962, Ser. No. 220,862

16 Claims. (Cl. 161—235)

16. In a laminate construction comprising a substrate layer and a polyolefin film layer, the improvement which comprises having at the interface of said layers a modified polyolefin wax having a molecular weight from 1000 to 5000 which has been modified by being reacted with a carboxylic reagent selected from the group consisting of unsubstituted, unsaturated monocarboxylic acids having from 3 to 6 carbon atoms, unsubstituted, unsaturated dicarboxylic acids having from 4 to 10 carbon atoms, thioglycolic acid and anhydrides of the foregoing acids and from 0.1 to 25 percent by weight of an organic peroxide based on the wax.

3,359,155

PROCESS FOR PREPARING A VISCOSE SPINNING SOLUTION, FIBERS FORMED THEREFROM AND PAPER CONTAINING SAID FIBERS

Yoichi Kajitani, Saijo, Japan, assignor to Kurashiki Rayon Company Limited, Kurashiki, Japan, a corporation of Japan

Filed Oct. 16, 1964, Ser. No. 404,271

Claims priority, application Japan, Oct. 28, 1963, 38/57,821; Dec. 16, 1963, 38/67,373

12 Claims. (Cl. 162—146)

1. A process for the preparation of a viscose spinning solution, comprising dissolving in a dilute alkali solution under at least atmospheric pressure the products of a simultaneous reaction among carbon disulfide, acrylonitrile and alkali cellulose, the amount of acrylonitrile ranging from between about 3 percent and 40 percent by weight of cellulose and the amount of carbon disulfide being at least about 10 percent by weight of cellulose, deaerating and ripening the resultant solution which contains both dispersed and dissolved air therein such that said dispersed air is at least partially selectively evolved and the said dissolved air is retained, the portion of the said dispersed air not evolved itself being dissolved and also being retained, and thence foaming the said dissolved air and uniformly dispersing the said air thus foamed in the solution.

3,359,156

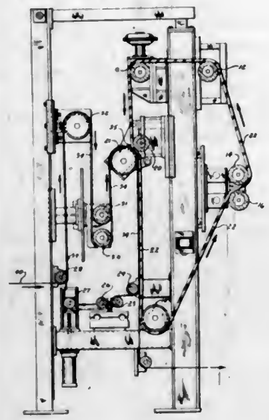
ANGLE BAR COMPACTOR FOR PRODUCING ISOTROPIC EXTENSIBILITY IN A WEB

Fred H. Freuler, Stamford, Conn., and James M. Futch, Jr., Yonges Island, S.C., assignors, by mesne assignments, to Clupak, Inc., New York, N.Y., a corporation of Delaware

Continuation of application Ser. No. 385,635, July 28, 1964. This application Feb. 24, 1967, Ser. No. 633,643

7 Claims. (Cl. 162—361)

1. An angled bar compactor for increasing the extensibility of a web in a preselected obliquely angular direction, a deformable surfaced blanket, means for driving the deformable surfaced blanket in a closed path, a first pair of rods for said angled bar compactor extending obliquely across the direction of travel of the deformable surfaced blanket and at opposite sides thereof and in such relation to the deformable surfaced blanket and to one another that the blanket is caused to have a wrap around one rod in one direction of curvature and then around the other rod in the other direction of curvature, said rods being non-rotary and forming a nip therebetween, a recoilless blanket, means for driving said recoilless blanket in a closed path and said recoilless blanket passing through said nip, a second rod for said angled bar



compactor and extending obliquely across the direction of travel of the recoilless blanket and said second rod being disposed at a greater angle relative the recoilless blanket than the angle that the first pair of rods makes with said deformable surfaced blanket, and means for passing a web into said nip formed between said deformable surfaced blanket and said recoilless blanket.

3,359,157

ANTIMICROBIAL SOLUTION CONTAINING SODIUM OR POTASSIUM SALT OF 3,4',5-TRIBROMOSALICYLANILIDE, ALCOHOL AND WATER

William A. Kelly, Teaneck, N.J., assignor to Lever Brothers Company, New York, N.Y., a corporation of Maine

Filed Apr. 14, 1964, Ser. No. 359,705

20 Claims. (Cl. 167—30)

1. A composition of matter useful as an antimicrobial agent in laundering which is a solution of an alkali metal salt of 3,4',5-tribromosalicylanilide solute dissolved in a synergistic aqueous binary solvent system, said solution being selected from the group consisting of (1) a solution of the sodium salt of 3,4',5-tribromosalicylanilide solute dissolved in a synergistic binary aqueous solvent mixture selected from the group consisting of (a_1) from about 73% to about 2% by weight of water and from about 27% to about 98% by weight of normal-propyl alcohol respectively, (b_1) from about 78% to about 5% by weight of water and from about 22% to about 95% by weight of iso-propyl alcohol respectively, (c_1) from about 47% to about 2% by weight of water and from about 53% to about 98% by weight of ethyl alcohol respectively, and (d_1) from about 78% to about 2% by weight of water and from about 22% to about 98% by weight of tri-ethanolamine respectively, and (2) a solution of the potassium salt of 3,4',5-tribromosalicylanilide solute dissolved in a synergistic binary aqueous solvent mixture selected from the group consisting of (a_2) from about 68% to about 2% by weight of water and from about 32% to about 98% by weight of normal-propyl alcohol respectively, (b_2) from about 88% to about 2% by weight of water and from about 12% to about 98% by weight of iso-propyl alcohol respectively, and (c_2) from about 38% to about 2% by weight of water and from about 62% to about 98% by weight of ethyl alcohol respectively.

3,359,158

IMIDAZOLE PYRAZOLE AND OXAZOLE INSECTICIDES FOR FIBER EATING INSECTS

Roy J. Pence, Los Angeles, Calif., assignor to The Regents of the University of California, Berkeley, Calif.

No Drawing. Filed Mar. 20, 1962, Ser. No. 181,169

10 Claims. (Cl. 167—37)

1. A method for protecting fibers and articles made therefrom from destruction by fiber-eating insects which comprises: depositing on said fibers and articles a composition comprising an effective amount of an organic compound from a class consisting of imidazole, pyrazol and oxazol.

3,359,159

ETHYLENE OXIDE STERILIZING AGENT

Robert A. Fulton, Silver Spring, and Edward O. Haenni, Bethesda, Md., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Filed Aug. 22, 1958, Ser. No. 756,739

6 Claims. (Cl. 167—39)

1. A noninflammable sterilizing agent comprising a mixture of about from 11 to 12% by weight of ethylene oxide and the balance being a mixture of dichlorodifluoromethane and a member of the group consisting of dichlorofluoromethane, tetrachlorodifluoroethane, trichlorotrifluoroethane, dichlorotetrofluoroethane, dichloromethane, 1,1,1-trichloroethane, methyl bromide, and mixtures thereof.

3,359,160

BUTANE TETRACARBOXYLIC ACID POTENTIATION OF 5-OXYTETRACYCLINE BLOOD SERUM LEVELS

Richard S. Gordon, St. Louis, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Mar. 4, 1965, Ser. No. 437,266

3 Claims. (Cl. 167—53)

1. A method of potentiating the concentration of 5-oxytetracycline in the blood serum of a host animal which comprises substantially concurrently feeding the host animal an orally-acceptable composition containing 5-oxytetracycline, and an orally-acceptable composition containing between about one and about 250 parts, based on the weight of the 5-oxytetracycline, of butane tertacarboxylic acid.

3,359,161

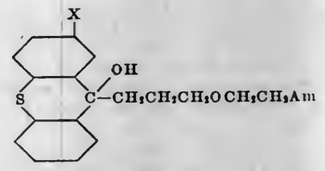
THIAXANTHENOLS, PROCESS OF PRODUCING AND ANTI-TUSSIVE COMPOSITIONS THEREOF

Povl Viggo Petersen, Virum, and Torben Huld, Kgs. Lyngby, Denmark, assignors to Kefalas A/S, Copenhagen-Valby, Denmark

No Drawing. Filed Aug. 29, 1963, Ser. No. 305,510

16 Claims. (Cl. 167—55)

14. A pharmaceutical composition in unit dosage form adapted for use as an antitussive comprising a compound selected from the class consisting of (1) thiaxanthenols of the formula:



I

in which X is selected from the group consisting of hydrogen, halogen and lower-alkyloxy, and Am is selected from

the group consisting of di-lower-alkylamino, piperidino, pyrrolidino, morpholino, thiamorpholino, and N-lower alkylpiperazino, and (2) non-toxic acid addition salts thereof, in an amount of from 1 to 100 mg. calculated as the free amine, and a pharmaceutical carrier.

3,359,162
DI-ARGININE-GLUCOSE-1-PHOSPHATE AND METHOD OF USING SAME

Giuseppe Ghielmetti, Piazza Caneva 5, Milan, Italy
No Drawing. Filed Mar. 4, 1964, Ser. No. 349,474
3 Claims. (Cl. 167—65)

1. The compound di-arginine-glucose-1-phosphate having therapeutical properties and being prepared by reacting 1 mol of glucose-1-phosphoric acid with 2 mols of arginine.

2. A method of treating a patient, suffering from hepatic disfunctions associated with hyperazotemia, comprising the step of administering to such patient an effective amount of di-arginine-glucose - 1 - phosphate obtained by reacting 1 mol of glucose-1-phosphoric acid with 2 mols of arginine.

3,359,163
ANTIBIOTIC LINCOMYCIN C AND A PROCESS FOR PREPARING THE SAME

Alexander D. Argoudelis, Kalamazoo, and Donald J. Mason, Portage, Mich., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware
Filed Mar. 25, 1964, Ser. No. 354,652
12 Claims. (Cl. 167—65)

1. Lincomycin C, a nitrogenous base, which as the free base is characterized by (a) a molecular formula $C_{19}H_{36}N_2O_6S$; (b) being monobasic and having a pKa of about 7.73; (c) having no absorption in the UV region; (d) being more stable in the salt form than the base form; (e) being soluble in methanol, ethanol, isopropanol, butanol, ethyl acetate, butyl acetate, amyl acetate, acetone, methyl ethyl ketone, isopropyl butyl ketone, methylene chloride, chloroform, and ethylene dichloride; and, in the form of its crystalline hydrochloride Form I by (f) a needle crystalline form; (g) the empirical formula $C_{19}H_{36}N_2O_6S.HCl.H_2O$, and the elemental analysis

Found: C, 48.02; H, 8.35; N, 6.05; S, 7.03; Cl, 7.73; O, 22.82 (by diff.);

(h) an optical rotation $[\alpha]_D^{25}=+140.5°$ (c., 0.427, water); and, (i) a characteristic infrared absorption spectrum in mineral oil mull at the following frequencies expressed in reciprocal centimeters, and as shown in FIGURE II of the drawing: 3300 (S), 3060 (S), 2920 (S) (oil), 2850 (S) (oil), 2720 (M), 2340 (W), 1680 (S), 1568 (M), 1456 (S) (oil), 1375 (S), 1363 (S) (oil), 1333 (M), 1318 (M), 1300 M), 1262 (S), 1230 (M), 1210 (M), 1140 (M), 1094 (S), 1073 (S), 1048 (S), 1000 (M), 990 (M), 965 (M), 932 (W), 900 (W), 890 (W), 865 (M), 795 (M), 708 (M), 675 (M), 660 (M), and, in the form of its crystalline hydrochloride crystal Form II by (j) the empirical formula

$$C_{19}H_{36}N_2O_6S.HCl.H_2O$$

and the elemental analysis

Found: C, 48.07; H, 8.30; N, 6.48; S, 6.94; Cl, 7.54; O, 22.67 (by diff.);

(k) an optical rotation $[\alpha]_D^{25}=+143°$ (c., 0.620, water); (l) a cube crystalline form; and, (m) a characteristic infrared absorption spectrum in mineral oil mull at the following frequencies expressed in reciprocal centimeters and as shown in FIGURE III of the drawing: 3550 (M), 3440 (S), 3340 (S), 3210 (S), 3070 (S), 3020 (S), 2920 (S) (oil), 2850 (S) (oil), 2720 (M), 1673 (M), 1650 (S), 1610 (W), 1560 (S), 1555 (S), 1535 (M), 1450 (S), 1420 (M), 1400 (M), 1370 (S), 1360 (M), 1345 (M), 1320 (M), 1290 (M), 1260 (S), 1225 (M), 1200 (M), 1145 (M), 1140 (M), 1095 (S), 1070 (S), 1040 (S), 1000 (M), 990 (M), 975 (M), 960 (M), 935 (W), 900 (W), 865 (M), 800 (M), 730 (W), 715 (M), 705 (M), 660 (M); and in its essentially pure crystalline hydrochloride Forms I and II by (n) a characteristic papergram pattern as shown in FIGURE I of the drawing, and (o) a molecular weight of 490±20 as determined by potentiometric titration.

7. A process which comprises cultivating *Streptomyces lincolnensis* var. *lincolnensis* in an aqueous nutrient medium containing ethionine in an effective amount ranging from more than incidental impurities up to 4 mg./ml. of aqueous nutrient medium, under aerobic conditions until substantial antibacterial activity is imparted to said medum by production of lincomycin C and isolating the lincomycin C so produced.

3,359,164
ANTIBIOTIC LINCOMYCIN B AND PROCESS FOR PREPARING THE SAME

Alexander D. Argoudelis, Kalamazoo, John A. Fox, Texas Township, Kalamazoo County, and Malcolm E. Bergy, Kalamazoo, Mich., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware
Filed Mar. 25, 1964, Ser. No. 354,688
7 Claims. (Cl. 167—65)

1. A composition of matter substantially free from lincomycin, lincomycin B, a compound which

(a) is effective in inhibiting the growth of various gram-positive bacteria;

(b) is soluble in lower alcohols, acetone, ethyl acetate, chlorinated hydrocarbons, and dioxane; less soluble in water, ether and benzene; and relatively insoluble in saturated hydrocarbon solvents;

and which in its essentially pure free base form

(c) has the following elemental analysis: C, 50.86; H, 8.48; N, 7.40; S, 8.13; O, 25.13 (by diff.);

(d) has a molecular weight of 402±10 by potentiometric titration;

(e) shows no ultraviolet absorption maxima between 220 and 400 mu;

(f) has a characteristic infrared absorption spectrum as shown in FIGURE I of the accompanying drawings; and

(g) has a characteristic papergram pattern as shown in FIGURE II of the drawing.

4. A process which comprises cultivating *Streptomyces lincolnensis* var. *lincolnensis* in an aqueous nutrient medium under aerobic conditions until substantial antibacterial activity is imparted to said medium by production of lincomycin and lincomycin B, separating lincomycin B from lincomycin, and isolating the lincomycin B.

3,359,165
ANTIBIOTIC LOMONDOMYCIN AND METHOD OF PRODUCTION

Malcolm E. Bergy and Le Roy E. Johnson, both of Kalamazoo, Mich., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware
Filed Nov. 2, 1966, Ser. No. 591,632
9 Claims. (Cl. 167—65)

1. A composition of matter assaying at least 3.5 bio-units of lomondomycin per ml., a compound which

(a) is effective in inhibiting the growth of various Gram-negative and Gram-positive bacteria, and fungi; and in its essentially pure crystalline form;

(b) is soluble in dimethylformamide, relatively soluble in water at a pH of about 10–12, and very soluble in acetone and methyl ethyl ketone at a pH of about 2.0;

(c) has the following elemental analyses: C, 56.89; H, 3.35; N, 8.90; O, 30.28;

(d) has a molecular weight of 314 as determined by mass spectrometer;

(e) has a characteristic infrared absorption spectrum as shown in FIGURE 1 of the accompanying drawing; and

(f) has a characteristic papergram pattern as shown in FIGURE 2 of the accompanying drawing.

3,359,166
METHOD OF EFFECTING ANALGESIA

David A. McClure, Canoga Park, Calif., assignor to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware
No Drawing. Filed May 5, 1967, Ser. No. 636,278
3 Claims. (Cl. 167—65)

1. A method of effecting analgesia in mammals which comprises the administration to a mammal suffering from pain of a non-toxic amount of the magnesium salt of 4-thiazolidinecarboxylic acid sufficient to induce a state of analgesia in said mammal.

3,359,167
VITAMIN A COMPOSITIONS

Albert E. Timreck, Rego Park, N.Y., assignor to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed July 22, 1965, Ser. No. 474,184
9 Claims. (Cl. 167—81)

1. A non-aqueous stable, readily water-dispersible vitamin A fatty acid ester composition, comprising in combination with a vitamin A higher fatty acid ester and as dispersing agent therefor, a mixture of (1) a polyoxyethylene derivative of a monoester of sorbitan with a higher fatty acid having from 16 to 18 carbon atoms and (2) a lower polyethylene glycol having an average molecular weight that is in the range of from about 200 up to about 600, said vitamin A ester being present in said composition at a level ranging from about 3% to about 15% by weight of the total and the ratio by weight of (1) to (2) being from about 4:3 up to about 9:1 when said vitamin A concentration is below 10% and from about 4:3 to about 5:1 when said vitamin A concentration is at least about 10%.

3,359,168
DYEING HAIR WITH 2,3,6-TRIAMINOPYRIDINE AND SALTS THEREOF

Stanley Brechner, West Orange, and Leonard A. Como, Franklin Boro, N.J., assignors to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware
No Drawing. Filed Aug. 3, 1966, Ser. No. 569,851
8 Claims. (Cl. 167—88)

1. Process for imparting a greenish-blue coloration to hair which comprises contacting hair with an aqueous solution of about 0.01% to 2% by weight of 2,3,6-triaminopyridine or the salts of 2,3,6-triaminopyridine in the presence of an oxidizing agent.

3,359,169
ALUMINUM COMPOUNDS

Joseph N. Slater, Jr., New York, Herman E. Jass, Hartsdale, and Isidore Ugelow, West Babylon, N.Y., assignors to Revlon, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Apr. 27, 1962, Ser. No. 190,825
10 Claims. (Cl. 167—90)

1. The method of making an alcohol-soluble, glycol-soluble liquid or crystalline astringent product which comprises contacting an aluminum compound of the formula $Al_2Cl_{6-x}(OH)_x$ where x is an integer from zero to five, with a hydroxylic reagent selected from the group consisting of aliphatic alcohols having at least two hydroxy groups and aliphatic glycol monoethers, in the presence of sufficient water to dissolve said aluminum compound and then removing water from the system by evaporation to form said astringent product.

7. An astringent aerosol composition comprising an effective amount of an astringent product prepared according to claim 1 dissolved in a liquefied aerosol propellant in the presence of a cosolvent.

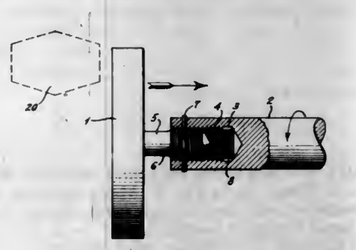
3,359,170
NOVEL DENTIFRICE AND METHOD OF PREPARATION

Fred McCollough, Jr., Jacksonville, and Julian E. Blanch, Tinley Park, Ill., assignors to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Oct. 26, 1964, Ser. No. 406,549
9 Claims. (Cl. 167—93)

6. A dentifrice paste composition comprising a water soluble fluoride, a calcium pyrophosphate polishing agent produced by a process which comprises heating a feed mixture consisting of between 20% and 50% by weight of preformed calcium pyrophosphate of which 5% to 70% by weight is in the beta phase modification with the remainder dicalcium phosphate until said feed mixture is converted to calcium pyrophosphate of which 5% to 70% by weight is in the beta phase modification, and a paste base.

3,359,171
PULSED NUCLEAR REACTORS

Wilhelm Hanke, Bobbiate, Varese, Italy, assignor to European Atomic Energy Community (Euratom), Brussels, Belgium
Filed Feb. 10, 1966, Ser. No. 526,450
Claims priority, application Germany, Feb. 15, 1965, E 28,695
5 Claims. (Cl. 176—33)



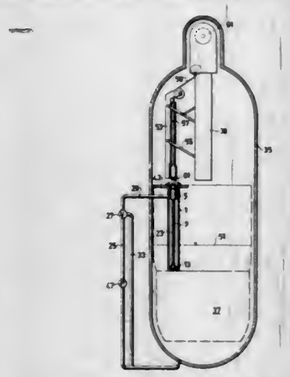
1. In a pulsed nuclear reactor of the kind in which the reactivity is pulsed by a rotating disk which is rotated before a neutron exit window of the reactor and which carries localized means for increasing the reactivity of the reactor as it passes in front of the window, the improvement comprising a disk and a driving shaft coupled to said disk by a screw connection having the screwthreads coaxial with the axis of disk rotation and a frangible driving member coupled to said disk and to said driving shaft for locking the same together and which fractures under the momentum of the disk relative the shaft to permit the disk to continue rotation by running along the screwthreads.

3,359,172
DEVICE FOR OPERATING NEUTRON-ABSORBING RODS IN NUCLEAR REACTORS

Curt Sigvard Olsson, Bandhagen, Sweden, assignor to Aktiebolaget Atomenergi, Stockholm, Sweden
Filed Oct. 8, 1965, Ser. No. 494,046
Claims priority, application Sweden, Oct. 15, 1964, 12,440/64
5 Claims. (Cl. 176—36)

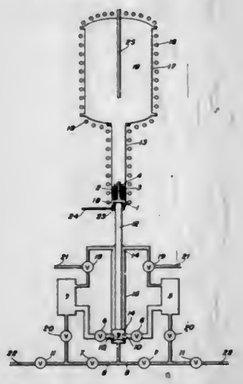
1. In a nuclear reactor comprising a core containing fissile nuclear fuel, a substantially vertical cylinder above the reactor core, a substantially vertical neutron-absorb-

ing slide member which is axially movable in the cylinder and which comprises a neutron-absorbing rod having a plunger at its upper end, and means for supplying a pressurized fluid to a space defined by the cylinder and the cooperating slide member including said plunger for holding the slide member in its upper position in which the absorbing rod is situated above the reactor core, the improvement wherein recessed portions are provided in one of said cooperating parts consisting of the cylinder and the slide member, said recessed portions extending along



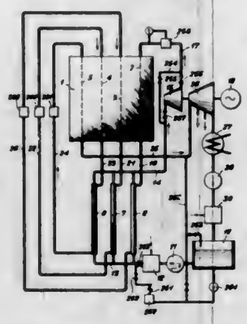
the entire operative length of said part, said recessed portions forming channels through which fluid leaves said space when the slide member leaves its upper position after the supply of pressurized fluid has been cut off, to the effect that the slide member falls into the reactor core by its own weight and relatively freely, and wherein lifting means are provided to be detachably fastened to the upper end of said slide member and to lift said slide member so that the slide member is removed from the core and the slide member is elevated to its upper position in said cylinder.

3,359,173
LIQUID EXCURSION PULSED REACTOR
L. D. Percival King, Santa Fe, N. Mex., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Apr. 5, 1967, Ser. No. 628,789
5 Claims. (Cl. 176—47)



1. A liquid pulsed neutron source comprising a cavity, liquid nuclear fuel, means to place the liquid fuel while supercritical in an unconfined geometry within the said cavity, said means to place the liquid fuel being capable of propelling the liquid fuel with such velocity that the liquid fuel substantially maintains its geometry until said fuel reaches the center portion of said cavity.

3,359,174
METHOD AND APPARATUS FOR EXTRACTING AND USING THE HEAT OF A NUCLEAR REACTOR
Willy Heibling, Winterthur, Switzerland, assignor to Sulzer Brothers Limited, Winterthur, Switzerland, a Swiss company
Filed Apr. 5, 1965, Ser. No. 446,794
Claims priority, application Switzerland, Apr. 3, 1964 4,282/64
4 Claims. (Cl. 176—59)

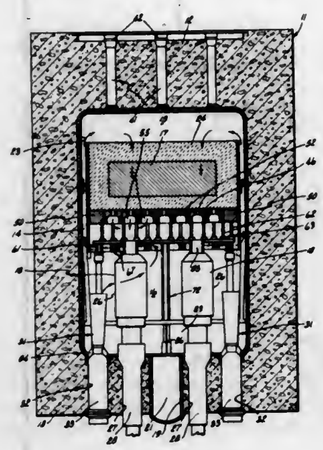


1. A nuclear power plant comprising a reactor, a pump, an evaporator and a superheater each having a primary side and a secondary side, two turbines, and conduit means extending from the pump through the secondary side of the evaporator, the secondary side of the superheater, the first turbine, through the reactor, through the primary side of the superheater, through the reactor a second time, through the primary side of the evaporator, through the reactor a third time, and through the second of said turbines.

3,359,175
NUCLEAR REACTOR
Ian P. Arthur and Francis R. Bell, San Diego, Calif., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed Sept. 16, 1966, Ser. No. 580,570
1 Claim. (Cl. 176—59)

A nuclear reactor comprising an elongated prestressed concrete reactor vessel including upper and lower end walls, said reactor vessel defining an elongated vertically oriented chamber with upper and lower regions, a plurality of steam generator modules removably supported in said lower region, a reactive core in said upper region supported by a core supporting means comprising a generally hollow core supporting floor extending transversely of said chamber between said upper and lower regions, coolant circulating means including a plurality of gas compressors located in said lower region, including a means for directing coolant through said compressors immediately after such coolant passes through said steam generator modules, coolant directing means comprising a lower floor extending transversely of said chamber in said lower region, said lower floor being spaced from said lower end wall to partially define at least one plenum and having openings for permitting coolant from said steam generator modules to pass therethrough, said compressors having intake openings communicating with said plenum, said core supporting floor having a plurality of ducts therein communicating between each of said steam generator modules and said upper region for passing coolant from said upper region to said steam generator modules, said core supporting means further comprising a plurality of columns extending between said core supporting floor and said lower floor and supporting said core supporting floor, wherein said compressors are positioned to discharge into the space between said lower floor and said core supporting floor for cooling said core supporting floor and said columns,

said lower floor being hollow, said columns having coolant passages therein communicating between the interior of said hollow core supporting floor and the interior of said hollow lower floor, said coolant directing means further



comprising means for directing coolant from the interior of said hollow core supporting floor and from the interior of said hollow lower floor to the top of said core and from the top of said core down through said core.

3,359,176
CERAMIC FUEL ELEMENT FOR A GAS-COOLED NUCLEAR REACTOR INCLUDING A METALLIC FUEL CONTAINER PROVIDED WITH AN OXIDATION RESISTANT COATING
John Edward Antill, Harwell, near Didcot, England, assignor to United Kingdom Atomic Energy Authority, London, England
No Drawing. Filed Jan. 10, 1966, Ser. No. 521,482
Claims priority, application Great Britain, Jan. 22, 1965, 3,042/65
5 Claims. (Cl. 176—82)

1. A fuel element for a gas-cooled nuclear reactor wherein the coolant comprises carbon dioxide, said fuel element comprising a ceramic nuclear fuel material in a non-fissile metal container, said metal being selected from the group of alloys consisting of iron-based alloys and nickel-based, iron-containing alloys, and including a thin outer coating of an oxidation resistant material on said container.

3,359,177
FERMENTATION METHOD FOR THE PRODUCTION OF 5'-PURINE NUCLEOTIDES
Takashi Nara, Tokyo, Masanaru Misawa, Kawasaki-shi, and Toshio Komuro, Tokyo, Japan, assignors to Kyowa Hakko Kogyo Co., Ltd., Tokyo, Japan, a corporation of Japan
No Drawing. Filed Mar. 5, 1965, Ser. No. 437,586
Claims priority, application Japan, Mar. 9, 1964, 39/12,768, 39/12,769, 39/12,770
4 Claims. (Cl. 195—28)

1. A method for producing 5'-nucleotide which comprises culturing *Micrococcus sodonensis* in an aqueous nutrient medium containing carbon source, nitrogeu source and, as a precursor of said nucleotide, a purine base corresponding to the said 5'-nucleotide, until the latter has accumulated.

3. In a method for producing 5'-nucleotide by culturing a microorganism selected from the group consisting of *Micrococcus sodonensis* and *Brevibacterium ammoniagenes* in an aqueous nutrient medium containing nutrients, growth factors, and a precursor for said nucleotide, the improvement which comprises incorporating into said nutrient medium an effective amount of a microorganism growth-suppressing antibiotic selected from the group consisting of penicillin, mitomycin, streptomycin, oxamycin, bacitracin, tetracyclin, hydroxytetracyclin, chlortetracyclin, carziophilin, kanamycin, and neomycin.

4. In a method for producing 5'-nucleotide by culturing a microorganism selected from the group consisting of *Micrococcus sodonensis* and *Brevibacterium ammoniagenes* in an aqueous nutrient medium containing nutrients, growth factors, and precursors for said nucleotide, the improvement which comprises incorporating into said nutrient medium an effective amount of microorganism growth-suppressing surface active agent selected from the group consisting of cationic and nonionic surface active agents.

3,359,178
METHOD OF PRODUCING L-GLUTAMIC ACID
Katsunobu Tanaka and Kazuo Kimura, Machida-shi, and Ken Yamaguchi, Tokyo, Japan, assignors to Kyowa Hakko Kogyo Co., Ltd., Tokyo, Japan, a corporation of Japan
No Drawing. Filed Mar. 19, 1965, Ser. No. 441,339
Claims priority, application Japan, Mar. 23, 1964, 39/15,574
8 Claims. (Cl. 195—28)

1. In a method for producing L-glutamic acid from hydrocarbon by fermentation of an aqueous nutrient medium containing paraffinic hydrocarbon as carbon source and a microorganism capable of converting hydrocarbon into L-glutamic acid, the improvement according to which the nutrient medium contains an amount of thiamine sufficient to enhance the yield of L-glutamic acid, such amount being less than 20γ of thiamine/liter.

3,359,179
SYNTHESIS OF STEROIDS
Patrick A. Diassi, Westfield, and Pacifico A. Principe, South River, N.J., assignors, by mesne assignments, to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Original application Mar. 23, 1965, Ser. No. 442,203, now Patent No. 3,316,281, dated Apr. 25, 1967. Divided and this application Sept. 27, 1966, Ser. No. 612,061
2 Claims. (Cl. 195—51)

1. A process for the preparation of 4α,8,14-trimethyl-18-nor-5α,8α,9β,14β-androst-1-en-3,11,17 - trione; which comprises subjecting 4α,8,14 - trimethyl - 18 - nor - 5α,8α,9β,14β-androstane-3,11,17-trione to the action of a microorganism of the species *Fusarium javanicum.*

2. A process for the preparation of 4α,8,14-trimethyl-17-hydroxy-18-nor-5α,8α,9β,14β-androstane - 3,11 - dione which comprises subjecting 4α,8,14 - trimethyl - 18 - nor-5α,8α,9β,14β-androstane-3,11,17-trione to the action of a microorganism of the species *Fusarium javanicum.*

3,359,180
DIAGNOSTIC PREPARATION FOR THE DETECTION OF ACETYLMETHYLCARBINOL
George L. Evans, Hopatcong, Charles I. Heller, Fort Lee, and Benjamin S. Schwartz, Livingston, N.J., assignors to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware
Filed Apr. 4, 1967, Ser. No. 628,385
11 Claims. (Cl. 195—103.5)

1. A diagnostic preparation for the rapid and positive detection of acetylmethylcarbinol which comprises a strip of bibulous material impregnated with:

(a) a medium zone capable of supporting the growth of Enterobacteriaceae;

(b) a reagent zone comprising:
(i) a member selected from the group consisting of:
l-arginine,
the mono-, di, or tri acid addition salts of l-arginine,
agmatine,
and creatine; and



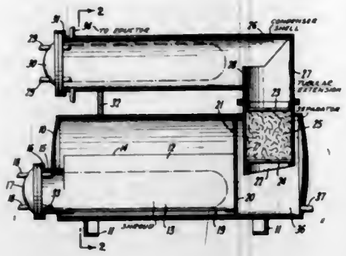
(ii) an alkali metal salt of α-naphthol-sulfonic acid, and
(c) a hydrophobic barrier zone separating said medium.

3,359,181
PROCESS FOR PREPARING A PROTECTIVE COATING
James L. Peterson, Idaho Falls, Idaho, assignor to The Joyce Corporation, Pocatello, Idaho
No Drawing. Filed May 7, 1965, Ser. No. 454,220
1 Claim. (Cl. 106—14)

A method of producing an impervious coating containing elaterite as a major ingredient comprising:
(a) heating elaterite ore at 40 p.s.i. for three and one half hours to a final temperature of 312° F. to vaporize the lower boiling distillates,
(b) lowering the temperature to 200° F. and adding a solvent of orthoxylene in an amount equal to the weight of the elaterite,
(c) agitating the elaterite and xylene for an hour to homogenize them,
(d) straining the homogenized mixture to remove impurities,
(e) cooling the mixture,
(f) adding japan drier to the mixer in an amount equal to the weight of the xylene.

3,359,182
DISTILLATION APPARATUS WITH THE CONDENSER SUPPORTED BY THE STILL
William Rodger Williamson, Waterford, Conn., assignor to American Machine & Foundry Company, a corporation of New Jersey
Original application July 3, 1967, Ser. No. 292,667, now Patent No. 3,302,373, dated Feb. 7, 1967. Divided and this application June 22, 1966, Ser. No. 592,239
13 Claims. (Cl. 202—189)

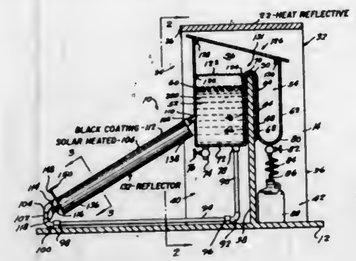
1. A distillation apparatus comprising, in combination, a horizontally disposed evaporator shell, a transverse baffle dividing said shell into a first and a second chamber, said baffle being perforated in its upper portion, a horizontally disposed shroud within said shell extending substantially the length of said first chamber close to the bottom of said shell, said shroud having two side walls and a bottom portion extending between said side walls, said bottom portion containing at least one longitudinal slot, the total area of slot in said bottom portion being less than 25 percent of the area between said side walls of said shroud, a horizontally disposed bundle of heating coils within said shroud, a steam outlet pipe in said



second chamber extending from below the lowermost perforations of said baffle, a condenser shell extending horizontally from the upper portion of said outlet pipe, a horizontal bundle of cooling coils within said condenser shell, and a water separator within said outlet pipe.

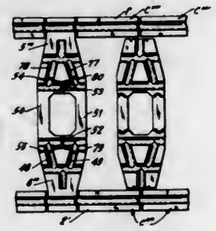
3,359,183
SOLAR STILL WITH HEAT REFLECTIVE ROOF
Roman Kenk, Alexandria, Va. (3025 Ontario Road NW., Apt. 504, Washington, D.C. 20009)
Filed July 30, 1965, Ser. No. 475,959
5 Claims. (Cl. 202—190)

1. A solar still for distilling a liquid, said still comprising a pair of upright receptacles, each of said receptacles comprising a pair of opposed spaced outer and inner walls, a pair of opposed spaced sidewalls, and a bottom wall, said receptacles having adjacent open upper and closed bottom ends, said receptacles being disposed with said inner walls spaced from but confronting one another and with said front walls being remotely-disposed relative to one another, means connecting together the upper ends of each of said inner walls, said upper ends of said inner walls being spaced below the upper ends of said front walls and said front wall of one of said receptacles being spaced below said front wall of the other of said receptacles, a closure member and condenser means extending across the upper ends of said front walls of both of said receptacles, said closure member being downwardly-inclined from said front wall of said other of said receptacles toward said front wall of said one of said receptacles, said closure member cooperating with said upper ends of the inner walls to form an open throat establishing communication between the upper ends of said receptacles, means supporting said receptacles in their said upright positions, a liquid distilland circulation system including a conduit having an end in open communication with said other receptacle through said bottom wall thereof and at its other end in open communication with said other receptacle through its said front wall and adapted to be below the level of the liquid distilland disposed in said other receptacle, and said conduit including a portion thereof having its longitudinal axis disposed at an acute angle relative to a horizontal plane and being exposed to solar heat emission whereby sa d heat emission causes said liquid in said conduit portion to rise for discharge in said other receptacle to heat said liquid therein and to effect liquid circulation through said other receptacle and said conduit, said liquid heated in said conduit portion heating said liquid in said other receptacle to cause vaporization thereof and subsequent condensation on said closure member, the condensate collecting and sliding downwardly on the underside of said closure member for discharge and collection in said one receptacle, said conduit portion being provided with a coating having high heat-absorbing characteristics, reflector means mounted on said conduit portion adjacent the opposed ends thereof, said reflector means having a focal line lying on the longitudinal axis of said conduit portion, means for pivoting said reflector means about the longitudinal axis of said conduit portion to a selected adjusted position, and means for holding said reflector means in its said adjusted position, a wire mesh screen extending across said open end of said other of said receptacles, said screen being disposed in vertically-spaced relation relative to said liquid level and to said closure member, drain means connected with said bottom wall of said other of said recep-

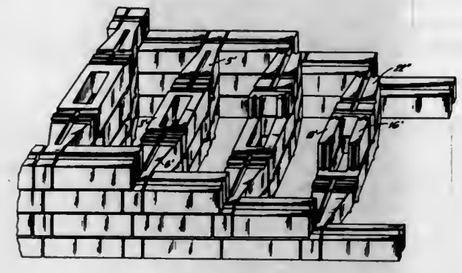


tacles, a helicoidal conduit for passing condensate having one of its ends fixedly-secured to said bottom wall of said one receptacle and being in open communication therewith, valve means interposed in said helicoidal conduit, indicator means fixedly-secured to said reflector means and cooperating with said conduit portion to indicate proper adjustment of the position of said conduit portion relative to the path of travel of the sun, and a housing mounted on said support means, said housing including a pair of sidewalls disposed proximate to but spaced from said sidewalls common to said receptacles, and said housing having a pair of opposed open sides to permit free air circulation therethrough.

3,359,184
HEATING WALL CONSTRUCTION
Friedrich Thiersch and Manfred Morgenstern, Recklinghausen, Germany, assignors to Firma Carl Still, Recklinghausen, Germany
Filed Nov. 8, 1962, Ser. No. 236,385
Claims priority, application Germany, Nov. 25, 1961, St 18,608
3 Claims. (Cl. 202—223)

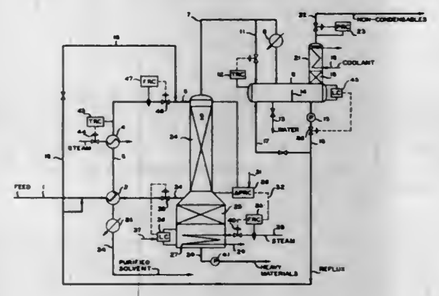


1. A wall construction for the heating flues of a horizontal chamber coke oven, comprising spaced upright stretcher block walls, and a header wall assembly connected between said stretcher block walls, said header wall assembly comprising first courses each including a first central block section having substantially parallel upper and lower surfaces and formed with a vertically extending opening which opens completely through said upper and lower surfaces, and a pair of head blocks each engaging a respective end face of said first central block section, said head blocks having outer ends engaging through the adjacent stretcher wall to the coal-contacted surface thereof; and second courses alternating vertically with said first courses each including a second central block section having substantially parallel upper and lower surfaces and formed with a vertically extending opening which opens completely through said upper and lower surface, and a pair of end blocks each engaged with a respective end of said second central block section and having outer end faces engaging said stretcher walls; said second central block section being shorter, in longitudinal



dimension, than said first central block section so that said end blocks partially overlap said first central block section; each first central block section of each first course consisting of not more than two blocks forming closed ends about said opening; each second central block section of each second course consisting of two laterally spaced edge blocks; the width of said header wall assembly, at the center thereof, defined by said central block sections, being substantially greater than the width of said header wall assembly adjacent the stretcher block walls, defined by said head blocks and end blocks, said header wall assembly decreasing in width, in a uniformly tapered manner, toward said stretcher block walls and without abrupt changes in lateral dimensions.

3,359,185
PROCESS AND APPARATUS FOR A DISTILLATION SYSTEM PROVIDING LIQUID LEVEL AND DIFFERENTIAL PRESSURE CONTROLS
Romeo Matta, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Dec. 23, 1965, Ser. No. 516,015
5 Claims. (Cl. 203—1)



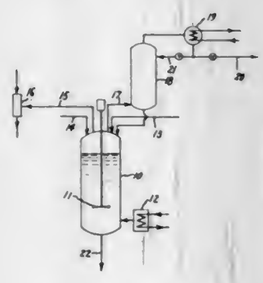
1. A method for the purification of a normally liquid material containing a low boiling component and a high boiling component comprising feeding said liquid contain-

ing said low and high boiling components to the upper portion of a distillation column, removing vaporous overhead containing said boiling component, removing from a central portion of said column a vaporous side draw stream containing substantially pure said normally liquid material, collecting said high boiling component as a liquid product in the bottom of said column, removing said liquid from the bottom of said distillation column at a constant rate, sensing differential pressure between the upper and central portion of said column, supplying heat to the lower portion of said column in accordance with said sensed pressure differential to maintain a predetermined differential pressure, sensing the level of liquid in the bottom of said column, and adjusting the rate of withdrawal of said vaporous normally liquid material in accordance with the liquid level to maintain a predetermined level of liquid in the bottom of said column.

3,359,186
DISTILLATION OF DIMETHYLCHLOROSILANE IN PRESENCE OF ADDED HCl

Richard A. Petelinkar, Latham, N.Y., assignor to General Electric Company, a corporation of New York

Filed July 31, 1964, Ser. No. 386,761
4 Claims. (Cl. 203—34)



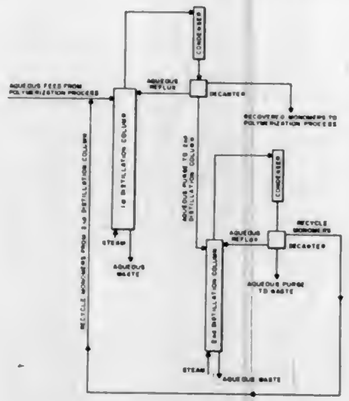
1. A method which comprises (1) contacting chlorosilane having a hydrocarbon contaminant with anhydrous hydrogen chloride, to provide for the production of a mixture having at least 0.01 part of hydrogen chloride, per part of said chlorosilane (2) distilling the resulting mixture of (1) to provide for the recovery of chlorosilane having a boiling point between 34°–36° C. at atmospheric pressure free of said hydrocarbon contaminant, where said chlorosilane is the product of reaction of powdered silicon and methylchloride and comprises at least 10% by weight of dimethylchlorosilane, and said hydrocarbon contaminant is the result of free radical degradation during the reaction of powdered silicon and methyl chloride.

3,359,187
ACETALDEHYDE AND ACETONE QUANTITY CONTROL IN MONOMER PURIFICATION BY PLURAL DISTILLATION AND DECANTATION

Thomas M. Veazey and Wayne R. Eberhardt, Decatur, Ala., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

Filed Aug. 3, 1964, Ser. No. 387,222
1 Claim. (Cl. 203—41)

The method of controlling the amount of acetaldehyde and acetone in the recovered monomers of a monomer recovery system of a terminated aqueous copolymerization reaction of vinyl monomers of a redox catalyst system in which the activator comprises a water soluble, oxidizable, sulfoxy compound in which the valence of a sulfur atom does not exceed 4; comprising filtering the aqueous slurry resulting from the copolymerization reaction to remove the copolymer therefrom; distilling the filtrate thereof in a distillation zone, thereby recovering an overhead vapor stream; condensing the vapor stream to form a distillate and passing said distillate to a phase separation zone where the distillate is allowed to separate into a monomer phase and an aqueous phase; recycling the monomer phase to the copolymerization reaction, dividing the aqueous phase into two parts, returning one part to the distillation zone as reflux, feeding the second part into a second distillation zone, distilling said second part in said second distillation zone, recovering an

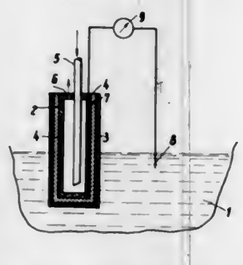


overhead vapor stream, condensing the vapor stream, passing the resultant distillate to a second and separate phase separation zone; allowing the distillate to separate into a monomer phase and an aqueous phase; recycling said monomer phase to the feed of the first distillation zone; dividing the aqueous phase into two parts, returning a major part to the second distillation zone as reflux and purging a minor part of said aqueous phase to waste, said minor part containing a major portion of the acetaldehyde and acetone originally present in the filtrate from the copolymerization reaction.

3,359,188
METHODS AND APPARATUS FOR DETERMINING THE OXYGEN ACTIVITY OF MOLTEN METALS, METAL OXIDES AND SLAGS

Wilhelm Anton Fischer, Ratingen, Germany, assignor to Max-Planck-Institut fur Eisenforschung, Dusseldorf, Germany, a German body corporate

Filed Jan. 2, 1964, Ser. No. 335,144
Claims priority, application Germany, Jan. 5, 1963, M 55,334
8 Claims. (Cl. 204—1)



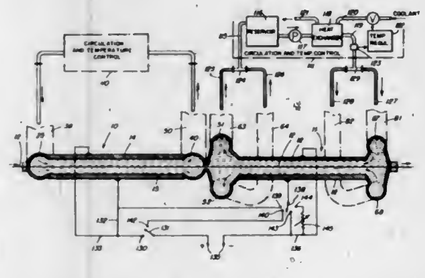
3. A method of determining the oxygen activity of liquid metals, metal oxides and slags, which comprises dipping a comparison electrode and a measuring electrode,

separated from each other by a voltage measuring device interconnecting the two electrodes, into the melt to be tested; the measuring electrode being embedded within a gas pervious zirconium-oxide layer forming the inner wall of a receptacle made of a gas impermeable mixed oxide capable of conducting oxygen ions; filling said receptacle with a comparison substance and measuring the voltage between the comparison substance and the melt.

3,359,189
CONTINUOUS ANODIZING PROCESS AND APPARATUS

William Ernest Cooke, Kingston, Ontario, David Egerton Bury, Toronto, Ontario, and Paul Smits, Kingston, Ontario, Canada, assignors to Aluminium Laboratories Limited, Montreal, Quebec, Canada, a corporation of Canada

Filed Feb. 4, 1964, Ser. No. 342,450
10 Claims. (Cl. 204—28)



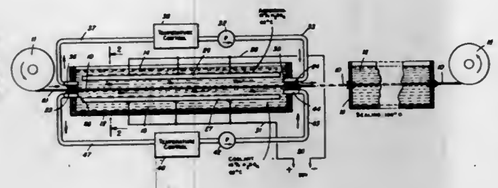
1. A method of continuously treating the opposite surfaces of an elongated aluminum article to produce an anodic coating thereon, comprising advancing said article lengthwise first through a region of submerged contact of said surfaces with cleaning electrolyte and continuously thereafter through a region of submerged contact of said surfaces with anodizing electrolyte which produces a porous coating on aluminum, said article being maintained in submerged position and in substantially continuous contact with electrolyte, beneath the upper parts of said regions during advance between them, while passing electric current through the cleaning electrolyte to the article as cathode in the first region and while passing electric current from the article, as anode, into the anodizing electrolyte in the second region, said current in the second region being passed at a density, of at least 100 amperes per square foot of said surfaces exposed in said second region, for producing, in coaction with said anodizing electrolyte, a porous anodic coating on the surfaces, and maintaining substantially constant temperature conditions in the electrolyte bodies adjacent the article surfaces in the said regions as the article advances, by turbulently advancing the electrolyte in each region over the surfaces in a direction lengthwise of the path of the article, and recirculating the electrolyte from each region through heat exchange paths for temperature control thereof.

3,359,190
ONE-SIDE ANODIZING OF ALUMINUM SHEET

William Ernest Cooke, Kingston, Ontario, Canada, and Niels Otto Helwigh, San Francisco, Calif., assignors to Aluminium Laboratories Limited, Montreal, Quebec, Canada, a corporation of Canada

Filed Feb. 4, 1964, Ser. No. 342,451
18 Claims. (Cl. 204—28)

1. A method of continuously anodizing aluminum sheet to provide a porous anodic coating, on one side only, of said sheet, comprising advancing the sheet through a treating zone while flowing first and second bodies of liquid in turbulent flow respectively over the opposite surfaces of said sheet, said first body of liquid being an anodizing electrolyte, and while passing electric current, at said treating zone, between the aluminum sheet and said first body of liquid at a density of at least 100 amperes per square foot of the surface of the sheet exposed to the first body, for anodizing said surface exposed to said first body to produce said anodic coat-



ing, and while causing the sheet and the anodic coating thereon to reach a sufficiently elevated temperature during said anodizing operation by maintaining the temperatures of the bodies flowing over both said surfaces at sufficiently high values, of which the sum is greater than 100° C., for providing a one-side anodized sheet that is conditioned to be capable of receiving subsequent high temperature sealing treatment without impairment of the coating.

3,359,191
METHOD FOR THE MANUFACTURE OF SOLID TYPE ELECTROLYTIC CONDENSERS OF TITANIUM

Shinichi Minami, Osaka, Wataru Mizushima Neyagawa-shi, and Akiyoshi Nomura, Kadoma-shi, Japan, assignors to Matsushita Electric Industrial Co., Ltd., Osaka, Japan, a corporation of Japan

No Drawing. Filed Feb. 20, 1964, Ser. No. 346,089
Claims priority, application Japan, Feb. 23, 1963, 38/9,118
9 Claims. (Cl. 204—38)

1. A process of forming a solid electrolytic condenser of titanium comprising the following steps: anodizing the surface of a titanium pellet; forming a layer of manganese dioxide on the anodic oxidation surface by pyrolysis of manganese nitrate covering the entire anodized surface of the titanium with a semi-conductive oxide layer; and forming another layer of manganese dioxide at the weak points of the anodied surface by electrolytical deposition.

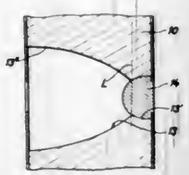
3,359,192
PROCESS OF MANUFACTURING A SIEVE PLATE HAVING APERTURES OF NONUNIFORM CROSS-SECTION

Hans-Joachim Heinrich, Oldenburg, and Walter Dietzel, Braunschweig, Germany, assignors to Balco Filtertechnik GmbH, Braunschweig, Germany, a corporation of Germany

Filed Mar. 12, 1965, Ser. No. 439,385
10 Claims. (Cl. 204—143)

1. A process for making a sieve plate with a multiplicity of orifices, comprising the steps of covering one surface of a metallic foil with a first masking layer having a multiplicity of perforations, covering the opposite side of said foil with a second masking layer having a multiplicity of perforations aligned with those of said first layer, eroding said one surface through the perforations of said first layer to a limited depth less than the thickness of said foil, packing the resulting erosions with a protective agent, terminating the erosion of said one

surface through said first layer prior to throughgoing passage, eroding said opposite side through the perforations of said second layer to the level of the erosions of said one side whereby throughgoing passages converging



from said opposite side to said one side are formed in said plate, and removing said masking layers and said agent.

5. A process as defined in claim 1 wherein the erosion of said opposite side is performed electrolytically.

3,359,193

HEAT RECOVERABLE CROSS-LINKED POLYMERS OF VINYL CHLORIDE AND A POLYUNSATURATED MONOMER

Solomon Harris Pinner, Hinxton Hall, Essex, England, assignor to Raychem Corporation, Redwood City, Calif., a corporation of California

No Drawing. Continuation of application Ser. No. 680,918, Aug. 29, 1957. This application Aug. 14, 1962, Ser. No. 216,746

Claims priority, application Great Britain, Aug. 30, 1956, 26,489/56

15 Claims. (Cl. 204—159.17)

1. A process for making an article capable of recovering an original shape upon the application of heat comprising heating a shaped article comprising a high energy irradiation cross-linked mixture of a vinyl chloride polymer with an essentially nonvolatile polymerizable polyunsaturated monomer to its softening range; deforming said heated article and cooling said deformed article whereby said article is caused to retain its deformed shape until reheated to cause it to recover substantialy its original shape.

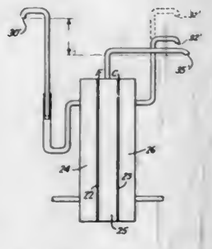
3,359,194

METHOD OF AND APPARATUS FOR PRODUCING A DEIONIZED LIQUID PRODUCT BY ELECTRODIALYSIS

Paul Kollsman, 100 E. 50th St., New York, N.Y. 10022

Filed Nov. 23, 1966, Ser. No. 596,532

18 Claims. (Cl. 204—180)



1. The process of extracting solvent from an ionic solution in which the solvent is present in excess of the solvent of solvation by the action of an electric current passing through the solution in a membrane cell, comprising, between spaced electrodes, a first and a second membrane, the process comprising the steps of applying a direct electrical potential to said electrodes to drive ions of one polarity of the solution by the resulting electric current from a first chamber through the first membrane into a second chamber; driving said ions by said electric current from said second chamber through the second membrane into a further chamber containing an electrolyte liquid, the second membrane being selectively permeable to ions of said one polarity and passage resistant to ions of the opposite polarity, the first membrane being of larger effective pore size than the second membrane to pass ions of said one polarity in a more highly solvated state from said first chamber into said second chamber than the state of the ions of said one polarity which pass from said second chamber into said further chamber; maintaining a higher hydrostatic pressure in said first chamber than in said second chamber; maintaining the potential sufficiently high to prevent passage of substantially all the ions of the opposite polarity from the first chamber into the second chamber; and withdrawing solvent component liquid from said second chamber.

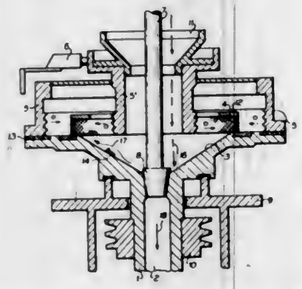
3,359,195

AUTOMATIC CHROMIUM PLATING APPARATUS

Kazuya Hojyo, 1215 1-chome, Mukaiga-oka, Ueno-shiba, Sakai, Japan

Filed Oct. 29, 1963, Ser. No. 319,907

8 Claims. (Cl. 204—212)



1. An automatic chromium plating apparatus comprising

a rotator means having a recessed conical portion widening toward a surface thereof and axially mounted for rotation,

said conical portion having an opening at its bottom apex,

a substantially annular disc cathode net axially disposed on the outer edge of the surface of said rotator means annularly and partly covering said recessed conical portion,

a cylindrical inner anode member axially disposed within said annular disc cathode net and perpendicular thereto, and

an operating rod axially disposed and axially movable within said cylindrical anode member.

3,359,196

ELECTRODIALYSIS DEVICE HAVING TAPERED GASKET THICKNESS

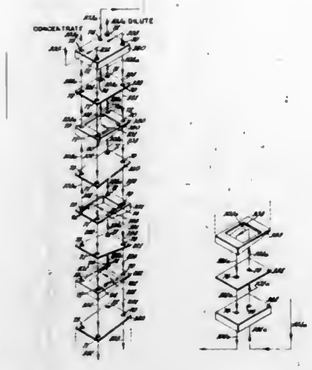
William Kwo-Wei Chen, Stamford, Conn., assignor to American Machine & Foundry Company, a corporation of New Jersey

Application Dec. 6, 1962, Ser. No. 243,217, now Patent No. 3,223,606, which is a continuation of applications Ser. No. 815,188, May 22, 1959, and Ser. No. 195,352, Mar. 30, 1962, now Patent No. 3,228,867, dated Jan. 11, 1966; said Ser. No. 195,352, being in turn, a division of Ser. No. 815,188. Divided and this application July 19, 1965, Ser. No. 485,662

2 Claims. (Cl. 204—301)

1. In an electrodialysis device, a pair of electrodes and a plurality of ion-permeable membranes and intermembrane gaskets arranged between the electrodes and

providing alternate diluting and concentrating compartments, each of said compartments being provided with a fluid inlet and outlet, means for connecting the fluid inlets and outlets of said diluting and concentrating compartments, at least some of the gaskets between membrane



pairs having a thickness which is progressively decreased in the direction of the dilute stream flow and forming diluting compartments having a cross-sectional flow area which is progressively decreased in a substantially direct path from the inlet to the outlet of said diluting compartments.

3,359,197

FUNCTIONAL FLUIDS

Philip X. Masciantonio, Penn Township, Westmoreland County, and Myron H. Wilt, Monroeville, Pa., assignors to United States Steel Corporation, a corporation of Delaware

No Drawing. Filed Sept. 24, 1965, Ser. No. 490,057

2 Claims. (Cl. 208—14)

1. A functional fluid comprising an alkylated, hydrogenated, activated-alumina treated and fractionated high temperature coke oven tar fraction having a boiling range within the limits 315°–455° C. prior to alkylation, said fluid being a liquid in the temperature range between about −30° F. and at least about 550° F. and exhibiting thermal stability at a temperature of at least about 700° F., said alkylation being effected with a para-toluene sulfonic acid catalyst and an olefin chosen from the group consisting of propylene and butylenes and said hydrogeneration being effected with a nickel metal catalyst.

3,359,198

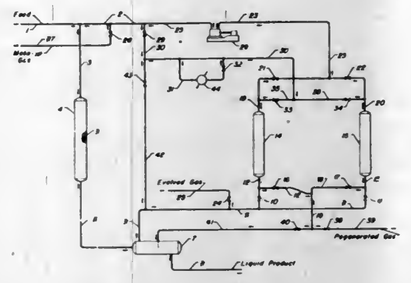
GAS PURIFICATION METHOD

Robert A. Lengemann, Arlington Heights, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

Filed July 9, 1965, Ser. No. 470,829

7 Claims. (Cl. 208—111)

1. In a process for the conversion of a hydrocarbon charge stock in the presence of hydrogen in a conversion zone in which at least a portion of the gaseous hydrogen effluent from the conversion zone which is separated from liquid hydrocarbon product in a gravity type separation vessel is recycled back to the inlet of the conversion zone, the improvement which comprises contacting at least a portion of the recycled gas with a first active solid adsorbent bed to produce a gas stream of enriched hydrogen purity and contacting a first portion of the enriched hydrogen purity gas at regeneration conditions with a second spent adsorbent bed to regenerate the spent solid adsorbent therein and returning the remaining portion of the enriched hydrogen purity gas to the inlet of the conversion zone and therein effecting said



conversion in the presence of said enriched hydrogen purity gas, and returning the gas evolved from said spent bed undergoing regeneration to said separation vessel.

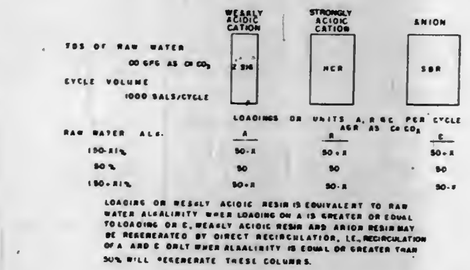
3,359,199

PROCESS FOR DEMINERALIZATION OF POLAR LIQUIDS, ESPECIALLY WATER

Kenneth A. Schmidt, Chicago Ridge, Ill., assignor to Nalco Chemical Company, Chicago, Ill., a corporation of Delaware

Filed Dec. 28, 1964, Ser. No. 421,418

7 Claims. (Cl. 210—24)



1. A process for demineralizing water which comprises: bringing water containing inorganic salts into contact first with a weak acid cation exchange resin in the carboxylic acid form, and secondly into contact with a cation exchange resin in the hydrogen form, and then in contact with a strongly basic anion exchange resin in the polyvalent salt form, and thereby exchanging the hydrogen of the carboxylic group of the weak acid exchanger for the cations associated with carbonates and bicarbonates, and the hydrogen of the strong acid exchange resin for the cations of mineral salts forming the acids of the anions of said salts, and sorbing the said acids on the anion exchange resin.

3,359,200

PARTIAL WET AIR OXIDATION OF SEWAGE SLUDGE

Wayne B. Gitchel and Clarence A. Hoffman, Rothschild, and Eugene W. Schoeffel, Kronenwetter, Wis., assignors to Sterling Drug, Inc., New York, N.Y., a corporation of Delaware

Filed Feb. 24, 1966, Ser. No. 529,874

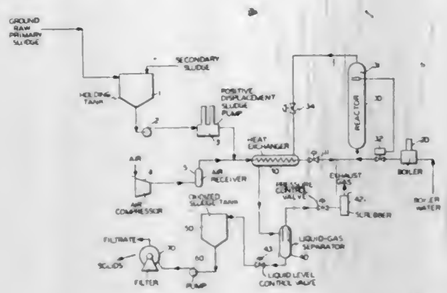
3 Claims. (Cl. 210—63)

1. In a continuous process for the wet air partial oxidation of sewage sludge at a substantially constant temperature in which a continuous stream of said sludge of

substantially constant volume is pre-heated by indirect countercurrent heat exchange with a continuous stream of the oxidized sludge and then partially oxidized at a temperature above 150° C. with a substantially constant volume of air in an amount sufficient to maintain gaseous oxygen in the oxidized mixture, the improvement which comprises

(a) pre-heating a mixture of the sludge and air by the indirect heat exchange to a temperature not exceeding 150° C.;

(b) heating the pre-heated sludge and air mixture to a temperature above 150° C. by injecting steam directly into the mixture;



(c) maintaining the sludge at the selected temperature for a period of time which reduces from 5 to 45 percent the Chemical Oxygen Demand of the sludge by non-autogenetic wet air oxidation; and

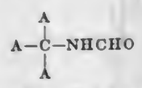
(d) maintaining the reaction temperature substantially constant by varying the amount of steam injected into the sludge in response to variations in the reaction temperature.

3,359,201
LECITHIN PRODUCT AND METHOD
Joseph Eichberg, 3726 Peachtree Road NE., Atlanta, Ga. 30319
No Drawing. Filed Aug. 13, 1962, Ser. No. 216,328
14 Claims. (Cl. 252—1)

1. A lecithin preparation having improved dispersibility, consisting essentially of about 1% moisture and up to about 40% of fatty oil, said preparation being the vacuum dried reaction product of aqueous oil-containing lecithin emulsion containing up to about 50% by weight of water with from about 0.5% to about 5% by weight of acetic anhydride.

3,359,202
LUBRICATING COMPOSITIONS
Robert L. Stambaugh, Philadelphia, Pa., assignor to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware
No Drawing. Filed Oct. 29, 1965, Ser. No. 505,740
6 Claims. (Cl. 252—33.4)

1. A lubricating composition comprising a major portion of an oil base and a minor portion sufficient to inhibit corrosion of an oil-soluble petroleum sulfonate in the form of its alkaline earth salt in the amount of about 0.2 to 7.5% by weight of said oil and an alkylformamide, in the amount of about 0.05 to 3% by weight of said oil, having the formula



wherein A represents alkyl, the three alkyl groups having a total carbon content of 3 to 23 carbon atoms.

3,359,203
ASHLESS DITHIOPHOSPHORIC ACID DERIVATIVES
Rosemary O'Halloran, Union, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Filed Sept. 1, 1965, Ser. No. 484,419
8 Claims. (Cl. 252—46.6)

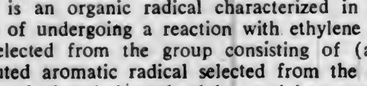
1. A lubricating oil composition comprising a major proportion of a hydrocarbon lubricating oil of internal combustion engine crankcase oil viscosity grade to which has been added from 0.01 to 10 wt. percent of an adduct that has been prepared from a dihydrocarbon dithiophosphoric acid having hydrocarbon radicals of from 1 to 20 carbon atoms and from an ester of a C_1 to C_{12} aliphatic alcohol and an unsaturated dicarboxylic acid selected from the group consisting of maleic acid and fumaric acid.

3,359,204
LUBRICATING OIL DISPERSANT
Gordon G. Knapp, Southfield, Mich., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia
No Drawing. Filed Dec. 19, 1966, Ser. No. 602,568
6 Claims. (Cl. 252—51.5)

1. An ashless lubricant dispersant comprising the reaction product of:

(A) one mole part of a succinic acid generating reactant selected from the group consisting of alkenyl succinic acid and alkenyl succinic anhydride wherein the alkenyl portion has a molecular weight of from 700 to 1600 with

(B) from about 0.6 to 3 mole parts of a tertiary amine having the formula:



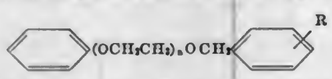
wherein n is an integer from 1–2, m is an integer from 1–2, the sum of n plus m is 2–3, R_1 and R_2 are divalent hydrocarbon radicals containing 2–5 carbon atoms, and R_3 is an alkyl radical containing from 1 to about 18 carbon atoms;

said reaction being carried out at a temperature of from about 100 to 200° C.

4. A lubricating oil containing a dispersant amount of the composition of claim 1.

3,359,205
DETERGENT COMPOSITION CONTAINING SUBSTITUTED BENZYL ETHER NON-IONIC DETERGENTS
Richard J. Day, St. Louis, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed July 8, 1965, Ser. No. 470,351
9 Claims. (Cl. 252—89)

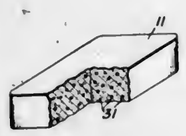
1. A low foam high detergency composition consisting essentially of a mixture of (1) from about 0.5% to about 20% by weight of a compound having the formula



where R is an organic radical characterized in being incapable of undergoing a reaction with ethylene oxide and is selected from the group consisting of (a) an unsubstituted aromatic radical selected from the group consisting of phenyl, benzyl, alpha- and beta-naphthyl, pyridyl, quinonyl, and anthryl radicals, (b) substituted aromatic radicals selected from the group consisting of halo-, nitro-, and alkyl-substituted phenyl, benzyl, alpha- and beta-naphthyl, pyridyl, quinonyl, and anthryl radicals, in which the alkyl substituent contains from about

1 to about 20 carbons in the alkyl group, and (c) unsubstituted aliphatic radicals containing from about 8 to about 20 carbon atoms and n is a number of about 21 to about 30, and (2) a water-soluble salt selected from the group consisting of inorganic alkaline, water-soluble alkali-metal detergent builder salts selected from the group consisting of alkali metal phosphates, silicates, borates, carbonates, bicarbonates, and mixtures thereof together with a water-soluble, inert, inorganic neutral alkali metal salt selected from the group consisting of alkali metal sulfates, chlorides and mixtures thereof.

3,359,206
FLOATING SOAP
Steve N. Cratsa, Pittsburgh, Pa., assignor to Koppers Company, Inc., a corporation of Delaware
Filed May 21, 1964, Ser. No. 369,084
1 Claim. (Cl. 252—92)



A floating soap consisting essentially of a block of water soluble soap having intimately incorporated and uniformly dispersed therein discrete particles of foam polystyrene having closed cells.

3,359,207
CHLORINE-STABLE DETERGENT COMPOSITIONS AND PROCESS FOR THE PREPARATION THEREOF
Thomas M. Kaneko, Trenton, and Irving R. Schmolka, Grosse Ile, Mich., assignors to Wyandotte Chemicals Corporation, Wyandotte, Mich., a corporation of Michigan
No Drawing. Filed June 18, 1965, Ser. No. 465,197
14 Claims. (Cl. 252—99)

1. A process for the preparation of a chlorine-stable detergent composition consisting essentially of, based on 100 parts of said composition, from 35 to 80 parts of an alkaline condensed phosphate, from 5 to 15 parts of a hydrated metasilicate, from 5 to 25 parts of an active chlorine-containing compound, from 1 to 10 parts of a nonionic surfactant, and from 1 to 15 parts of water, the sum total of said surfactant and water being at least 10 parts which comprises:

(a) adding an aqueous solution of a nonionic surfactant to an alkaline condensed phosphate selected from the group consisting of tetrasodium pyrophosphate and mixtures of tetrasodium pyrophosphate and other inorganic salts other than sodium meta-silicate, said mixtures containing at least 50 percent by weight tetrasodium pyrophosphate, whereby hydration of the condensed phosphate and simultaneous absorption of the surfactant occurs;

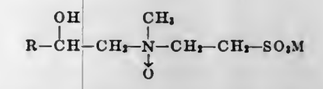
(b) adding a hydrated sodium metasilicate to the hydrated condensed phosphate with mixing;

(c) reducing the size of the mixture resulting from (b) to a desired particle size, and

(d) adding an active chlorine-containing compound selected from the group consisting of chlorinated trisodium phosphate, chlorinated cyanuric acids and alkali metal salts thereof, and 1,3-dichloro-5,5-dimethylhydantoin to the mixture from (c) whereby a dry, free-flowing, granular product is obtained.

3,359,208
DETERGENT COMPOSITION
Arno Cahn, Pearl River, and Thaddeus J. Kaniecki, Brooklyn, N.Y., assignors to Lever Brothers Company, New York, N.Y., a corporation of Maine
No Drawing. Original application Feb. 11, 1965, Ser. No. 431,982, now Patent No. 3,267,135, dated Aug. 16, 1966. Divided and this application June 23, 1966, Ser. No. 559,706
8 Claims. (Cl. 252—137)

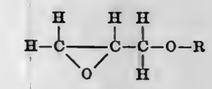
1. A detergent composition consisting essentially of a compound of the formula



wherein R is an alkyl group having from 8 to 18 carbon atoms and M is selected from the group consisting of hydrogen and the alkali metals in an amount sufficient to impart detergency to said composition and an inorganic builder salt in an amount effective to improve the detergency of said compound.

3,359,209
COMPOSITION AND METHOD OF INHIBITING CORROSION OF CUPREOUS METALS BY AMINE-STABILIZED UNSATURATED CHLORINATED HYDROCARBONS
Wilbur H. Petering and William A. Callahan, Detroit, Mich., assignors to Detrex Chemical Industries, Inc., Detroit, Mich., a corporation of Michigan
No Drawing. Filed Feb. 27, 1962, Ser. No. 176,096
The portion of the term of the patent subsequent to Apr. 24, 1979, has been disclaimed
5 Claims. (Cl. 252—153)

1. In a process wherein cupreous metal is exposed to a hot anhydrous chlorinated hydrocarbon solvent selected from the class consisting of trichlorethylene and perchlorethylene, said solvent containing a basic organic amine stabilizer selected from the class consisting of pyridine, disecondary butylamine, diisopropylamine, n-butylamine, amylamine, methyl pyridine, N-methyl morpholine, triethylamine in an amount of from about .01% to about 1.0% by weight of said solvent, said stabilized solvent normally causing corrosion of the cupreous metal, the improvement which comprises the step of incorporating into said stabilized chlorinated hydrocarbon solvent about .01% to about 5% by weight of an inhibitor for said corrosion comprising a glycidyl ether having the general formula



where R is a hydrocarbon radical chosen from the group consisting of methyl, ethyl, isopropyl and allyl.

3,359,210
GREEN-YELLOW EMITTING EUROPIUM ALUMINO SILICATE PHOSPHOR
Philip M. Jaffe, Nutley, N.J., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 12, 1964, Ser. No. 403,136
4 Claims. (Cl. 252—301.4)

1. A phosphor composition having the general formulation $EuAl_2Si_2O_8$.

3,359,211
BLUE-WHITE EUROPIUM ACTIVATED ALUMINOSILICATE PHOSPHOR

Philip M. Jaffe, Nutley, N.J., assignor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed Oct. 12, 1964, Ser. No. 403,389
7 Claims. (Cl. 252—301.4)

1. A phosphor composition having the formulation $x Al_2O_3.(1-x)SiO_2:yEu$, wherein x is from 0.05 to 0.8 and y is from 0.0015 to 0.15.

3,359,212
AQUEOUS MIXTURE AND SILICONE OIL IN WATER EMULSION CONTAINING SILOXANE WETTING AGENTS

Donald L. Bailey, Sistersville, W. Va., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Original application June 19, 1964, Ser. No. 376,549, now Patent No. 3,299,112, dated Jan. 17, 1967. Divided and this application Aug. 5, 1966, Ser. No. 570,401
6 Claims. (Cl. 252—312)

1. A mixture consisting essentially of water and from 0.001 to 2 parts by weight per 100 parts by weight of the water of a siloxane composed of only (a) one group having the formula:

$$\frac{3-a}{2}\ \overset{R_a}{\underset{|}{O}}SiC_mH_{2m}(OC_2H_4)_n(OC_3H_6)_pOR' \qquad (A)$$

and (b) from 1 to 4 groups represented by the formula:

$$\sim\!\!-\ R_bSiO_{\frac{4-b}{2}} \qquad (B)$$

wherein:

(1) a has a value from 0 to 2 inclusive;
(2) b has a value from 2 to 3 inclusive;
(3) R is a methyl or an ethyl group;
(4) R′ is an alkyl group containing from 1 to 4 carbon atoms inclusive;
(5) m has a value from 2 to 4 inclusive;
(6) n has an average value from about 4 to 17 inclusive;
(7) p has an average value from 0 to 5 inclusive;
(8) the ratio of n to p is at least 2 to 1;
(9) $n+p$ has a value from 4 to 17 inclusive; and
(10) the alkoxypoly(ethyleneoxy) group is attached to the silicon atom of formula (A) through at least two carbon atoms of the C_mH_{2m} group.

5. A silicone oil in water emulsion comprising (a) water, (b) from 0.1 to 5 parts by weight per 100 parts by weight of water of a silicone oil having the formula:

$$R''_3SiO(R''_2SiO)_xSiR''_3$$

wherein R″ is a monovalent hydrocarbon group and x has a value from 10 to 1000 and (c) from 1.0 to 2 parts by weight per part by weight of the oil of a siloxane as defined in claim 1.

3,359,213
PRODUCTION OF AQUEOUS SUSPENSION OF COLLOIDAL, CRYSTALLINE, HYDROUS OXIDES OF ZIRCONIUM AND HAFNIUM

Abraham Clearfield, Niagara Falls, N.Y., assignor to National Lead Company, New York, N.Y., a corporation of New Jersey

No Drawing. Filed Jan. 31, 1963, Ser. No. 255,198
6 Claims. (Cl. 252—313)

1. A process for producing an aqueous suspension of a colloidal, crystalline hydrous metal oxide selected from the group consisting of hydrous zirconia, hydrous hafnia, and mixtures thereof from amorphous hydrous metal oxides of said group, which comprises forming an aqueous slurry from a precipitated mass of said amorphous hydrous metal oxide by mixing therewith a solution containing hydrogen ions and ions selected from the group consisting of chloride ions and nitrate ions in such amounts as to establish the pH of the mixture in the range from about 0.6 to about 3.0 and refluxing said slurry for a period of at least 24 hours whereby to form an aqueous colloidal suspension of said hydrous metal oxide at least in part in crystalline form.

3,359,214
SURFACE PROPERTIES OF SOLIDS

Victor D. Aftandilian, Watertown, Mass., assignor to Cabot Corporation, Boston, Mass., a corporation of Delaware

No Drawing. Filed Feb. 20, 1964, Ser. No. 346,109
The portion of the term of the patent subsequent to Sept. 19, 1983, has been disclaimed
18 Claims. (Cl. 252—431)

1. A new composition comprising a finely-divided solid having oxygen atoms chemically bound in the surface thereof and carrying in chemical combination at least about 1×10^{-5} equivalents per gram of surface structures conforming to the formula

$$T(OH)_cR_b$$

wherein T is a metal of Group IV*b*; each OH is a hydroxyl group; c is a number from 1 to 3; R is chosen from the group consisting of alkyl, aryl, alkoxy and aryloxy radicals; b is a number from 0 to 1; and wherein said structures are chemically linked from T to at least one oxygen atom in the surface of said solid.

3,359,215
HYDROCARBON REFORMING CATALYSTS

Ronald E. Reitmeier, Middletown, Ky., assignor to Catalysts and Chemicals, Inc., a corporation of Delaware

No Drawing. Filed Apr. 6, 1964, Ser. No. 357,800
5 Claims. (Cl. 252—459)

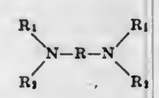
1. A hydrocarbon reforming catalyst comprising definitely shaped particles of a nickel-hydraulic cement catalyst in the form of Raschig rings 3/8 inch in height and 3/8 inch in diameter with a 1/4 inch hole through the center, the amount of nickel as metal being 15 to 30 weight percent.

3,359,216
RESINOUS PRODUCTS BASED ON EPOXY RESINS AND HALOGENATED AMINES AND METHOD FOR PREPARATION OF SAME

Laszlo Szobel, Grenoble, and Ludovic Parvi, Pont de Claix, France, assignors to Societe d'Electro-Chimie, d'Electro-Metallurgie et des Acieries Electriques d'Elgine, Paris, France, a corporation of France

No Drawing. Filed July 10, 1963, Ser. No. 294,172
Claims priority, application France, July 11, 1962, PV 903,672
9 Claims. (Cl. 260—2)

1. A resinous thermosetting composition comprising a mixture of at least one epoxy resin consisting of a glycidic polyether produced by the reaction between polyhydroxylated alcoholic and phenolic compounds and an epichlorohydrin and a curing agent consisting of a polyamine derived from a halogenated diphenyl having the general formula:



in which R represents different isomers of octochlorodiphenyl radical taken separately and in mixture, N represents an amine function which in one of primary, secondary, or tertiary, and each of R_1 and R_2 being independently selected from the group consisting of an atom of hydrogen and a saturated aliphatic radical, each of said radicals having at least one primary amine function, and where said curing agent in said mixture is in an amount between 0.8 and 3.0 amino equivalent per epoxy equivalent.

3,359,217
RIGID URETHANE FOAM COMPOSITIONS PREPARED UTILIZING AN ACID CATALYZED SORBITOL-PROPYLENE OXIDE CONDENSATION PRODUCT

John D. Brandner, Wilmington, Del., assignor to Atlas Chemical Industries, Inc., Wilmington, Del., a corporation of Delaware

No Drawing. Filed July 21, 1961, Ser. No. 125,683
3 Claims. (Cl. 260—2.5)

1. A rigid urethane foam prepared by reacting a urethane forming organic material containing free isocyanato groups, in the presence of a blowing agent with an acid catalyzed condensation product of propylene oxide and sorbitol, the propylene oxide content of said condensation product being in the proportion of from 0.5 to 3 moles of propylene oxide per mol of sorbitol hydroxyl groups.

3,359,218
FIRE RETARDANT URETHANES AND ORGANIC ANTIMONY POLYOL COMPOUNDS THEREOF

Robert A. Wiles, Syracuse, N.Y., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Dec. 23, 1963, Ser. No. 332,880
2 Claims. (Cl. 260—2.5)

1. A cellular urethane produced by reacting an organic polyisocyanate with a polyether polyol in the presence of a blowing agent and a hydroxyl containing polyether of the formula:

$$X_n—Sb—(OR)_m$$

wherein
n is an integer of from 0 to 2 and
m is an integer of from 1 to 3,
the sum of $m+n$ being 3,
X is chlorine or bromine and
OR is the residue of a polyether polyol having a hydroxyl number of from about 200 to 750, and wherein the hydrogen atoms of from one to three hydroxyl groups of said polyether polyol have been removed, said polyether polyol having the formula:

$$R\text{—}[O\text{—}(CH_2\text{—}CHO)_x\text{—}H]_y$$
$$\quad\ (OH)_z \qquad\quad R'$$

wherein R is the residue of an organic polyol having from 3 to 10 hydroxyl groups and wherein the hydrogen atoms of from one or more of the hydroxyl groups of said organic polyol have been removed,
R′ is hydrogen, methyl, halomethylene or phenyl,
x is an integer from 1 to 35,
y is an integer from 1 to 10,
z is an integer from 0 to 9, and
the sum of y plus z being an integer of from 3 to 10.

3,359,219
EXPANDABLE STYRENE POLYMERS

Alvin R. Ingram, Murrysville, Alvin J. Zupanc, Irwin, and Harold L. Nicholson, Murrysville, Pa., assignors to Koppers Company, Inc., a corporation of Delaware

Filed Sept. 17, 1965, Ser. No. 488,139
10 Claims. (Cl. 260—2.5)

1. A heat stable copolymer composit on which will expand on heating to a low density shrink resistant cellular foam comprising a vinyl aryl monomer copolymerized with from 0.7 to 0.025 percent by weight of vinyl aryl monomer of tung oil, said composition containing from about 3–20 percent by weight of copolymer of a blowing agent.

3,359,220
SELF-EXTINGUISHING EXPANDABLE STYRENE POLYMERS

Harold A. Wright, Murrysville, Pa., assignor to Koppers Company, Inc., a corporation of Delaware

No Drawing. Filed Sept. 17, 1965, Ser. No. 488,248
9 Claims. (Cl. 260—2.5)

1. A self-extinguishing expandable styrene polymer composition comprising:
a styrene polymer containing a blowing agent and about 0.5–5.0 parts by weight of a fatty oil selected from the group consisting of cottonseed oil, rapeseed oil, safflower oil, linseed oil, hempseed oil, corn oil, poppyseed oil, soybean oil, perilla oil, and sunflower oil, said oil being substantially brominated and being characterized by containing at least two nonterminal, non-conjugated ethylene bonds which are separated by a single methylene group prior to bromination.

3,359,221
SULFUR-CURABLE MONOOLEFIN COPOLYMERS CONTAINING POLYUNSATURATED RUBBER

Melvin Albert Schoenbeck, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Nov. 15, 1962. Ser. No. 238,003
10 Claims. (Cl. 260—5)

1. A sulfur-curable, filler-loaded elastomeric composition comprising (I) a copolymer of ethylene, propylene and at least one non-conjugated diene or from about 5 to 22 carbon atoms, units of said diene constituting up to about 10 weight percent of said copolymer, (II) from about 20 to 300 parts, per 100 parts of copolymer, of a filler compound selected from the group consisting of carbon black and kaolin clay, (III) up to about 10 parts, per 100 parts of copolymer, of a polyunsaturated rubber promoter composition selected from the group consisting of styrene-butadeine rubber, natural rubber, cis-1,4-polybutadiene, and cis-polyisoprene, said promoter compositions having at least about 10 gram-moles of sulfur-reactable carbon-to-carbon double bonds per kilogram of said promoter with the mole ratio of total sulfur reactable carbon-to-carbon double bonds in said promoter to the carbon-to-carbon double bonds in said copolymer (I) being at least 0.05:1; and (IV) a sulfur-curing system in amounts containing sufficient sulfur to react with said copolymer and said promoter compound.

3,359,222
THIOATED KERATIN SUBSTRATE-ETHYLENICALLY UNSATURATED MONOMER GRAFT COPOLYMER

Robert W. Faessinger, Media, and John S. Conte, Ridley Park, Pa., assignors to Scott Paper Company, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Original application July 6, 1966, Ser. No. 563,055. Divided and this application Dec. 7, 1966, Ser. No. 599,729
33 Claims. (Cl. 260—8)

1. The process of producing a graft copolymer of ethylenically unsaturated monomers and derivatives of keratin-containing material which comprises the steps of preparing the thioated keratinaceous polymer by the steps of wetting a water-insoluble keratin-containing material with an alkaline solution; bringing the alkaline-wet material in intimate contact with carbon disulfide or carbonyl sulfide

to produce the thioate derivative of the keratin-containing material; washing the resulting thioated substrate to remove the water-soluble by-products of the thioate formation or thioate substrate decomposition; and reacting the washed thioated substrate, via peroxidic free radical initiation, with at least one ethylenically unsaturated monomer.

3,359,223

ADHESIVE COMPOSITION CONSISTING OF ACETONE-RESIN AND STARCH AMINE-FORMALDEHYDE CO-CONDENSATION

Yoshimitsu Nakamura, Hirakata, and Katsuhisa Shimizu, Osaka, Japan, assignors to Arakaw Rinsan Kagaku Kogyo Kabushiki Kaisha, Osaka, Japan

No Drawing. Filed Apr. 13, 1967, Ser. No. 630,517
Claims priority, application Japan, Aug. 16, 1962, 37/33,941
7 Claims. (Cl. 260—17.3)

1. An adhesive composition for corrugated paperboard which forms a paste by dispersion in water, said composition comprising a water-soluble co-cendensation resin and starch, partly dextrinized in the presence of an alkali, the resin being produced by reacting 1 mol of acetone, 0.1–0.6 mol of at least one amine selected from the group consisting of urea, ethylene urea, and melamine; and 2 to 6 mols of formaldehyde for each mol of the sum of acetone and amine in the presence of an alkaline catalyst at a temperature of less than 70° C.

3,359,224

THIOATED CELLULOSIC/AMYLACEOUS SUBSTRATE - ETHYLENICALLY UNSATURATED MONOMER GRAFT COPOLYMER

Robert W. Faessinger, Media, and John S. Conte, Ridley Park, Pa., assignors to Scott Paper Company, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Original application July 6, 1966, Ser. No. 563,055. Divided and this application Dec. 7, 1966, Ser. No. 599,715
44 Claims. (Cl. 260—17.4)

1. The process of producing a graft copolymer of ethylenically unsaturated compounds and derivatives of cellulose-containing or amylaceous-containing material which comprises reacting a water-insoluble cellulose or amylaceous dithiocarbonate or monothiocarbonate derivative, via peroxidic free radical initiation, with at least one ethylenically unsaturated monomer.

3,359,225

CEMENT ADDITIVES CONTAINING POLYVINYLPYRROLIDONE AND A CONDENSATE OF SODIUM NAPHTHALENE SULFONATE WITH FORMALDEHYDE

Charles F. Weisend, P.O. Box 17087, Dallas, Tex. 75217

No Drawing. Filed Aug. 26, 1963, Ser. No. 304,669
10 Claims. (Cl. 260—29.6)

1. A cement additive for Portland type cements comprising ½–10% by weight polyvinylpyrrolidone having an average molecular weight of the order of magnitude of 40,000, the balance of the additive being essentially the sodium salt of naphthalene sulfonate condensed with formaldehyde and having an average molecular weight of at least 1500.

5. A Portland type cement mixture comprising water, sufficient Portland type cement to form a pumpable slurry, and 0.1–3% by weight of an additive comprising ½–10% by weight polyvinylpyrrolidone having an average molecular weight of the order of magnitude of 40,000, the balance of the additive being essentially the sodium salt of naphthalene sulfonate condensed with formaldehyde and having an average molecular weight of at least 1500.

3,359,226

METHOD FOR PRODUCTION OF A MOLDABLE PHOTOCHROMIC COMPOSITION

Sydney Arthur Giddings, New Canaan, and Lawrence Joseph Patella, Huntington, Conn., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Sept. 24, 1964, Ser. No. 399,087
9 Claims. (Cl. 260—30.4)

1. A method for the production of a moldable photochromic composition of matter which comprises intimately blending a polymer, a solvent therefor and a metal compound having the formula

$$MX_mO_n(OR)_p$$

wherein M is a metal selected from the group consisting of titanium, zirconium, tungsten, hafnium, tantalum, chromium, vanadium and niobium, X is a halide, R is selected from the group consisting of an alkyl radical having from 1–12 carbon atoms, inclusive, an aryl radical having from 6–10 carbon atoms, inclusive, and an

$$-C(=O)-R^1$$

radical, R^1 is selected from the group consisting of an alkyl radical having from 1–12 carbon atoms, inclusive, and an aryl radical having 6–10 carbon atoms, inclusive, m and p are whole, positive integers of from 0–6, inclusive and n is a whole, positive integer from 0–2, inclusive, the total of $2n+m+p$ being equal to the valence of the metal M, at least one of m and p being an integer of at least 1, at least one of said polymer and said solvent containing oxygen, to form a homogeneous blend, precipitating said homogeneous blend into a non-solvent for said plymer and said transition metal compound and recovering the resultant precipitated moldable photochromic composition of matter.

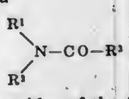
3,359,227

PRODUCTION OF SHAPED POLYAMIDE STRUCTURES OF IMPROVED PROPERTIES USING AMIDES, SULFOXIDES OR SULFONES

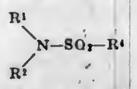
Herbert Amann, Grossauheim, and Erich Bäder, Hanau am Main, Germany, assignors to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler, Frankfurt am Main, Germany

No Drawing. Filed May 6, 1964, Ser. No. 365,522
Claims priority, application Germany, May 11, 1963, D 41,543
5 Claims. (Cl. 260—30.8)

1. In a process for the direct production of shaped polyamide structures by the polymerization of at least one lactam of at least 7 ring members in fused state but at a temperature below the melting point of the polyamide produced between 80 and 200° C. in the presence of an alkaline catalyst and an activator in a mold, the steps of incorporating at least one material selected from the group consisting of tertiary carboxylic acid amides of the formula



tertiary sulfonic acid amides of the formula



dilower alkyl sulfoxides and dilower alkyl sulfones wherein R^1 and R^2 are selected from the group consisting of lower alkyl and phenyl, R^3 is selected from the group consisting of hydrogen, lower alkyl and phenyl lower alkyl, and R^4 is selected from the group consisting of phenyl and lower alkyl phenyl, in the composition to be polymerized and polymerizing such composition containing said material, the amount of said incorporated material being 1 to 20% by weight with respect to the monomeric lactam contained in the composition and being effective to increase the impact resistance of the polymerized product substantially to at least 8 cm. kg./cm.^{2}.

3,359,228

PREPARED PAINTS AND COLOR KITS FOR ARTISTS

Edgar B. Nichols, 325 W. Main St., Moorestown, N.J. 08057

Filed Jan. 18, 1963, Ser. No. 252,456
3 Claims. (Cl. 260—33.4)

1. In the method of making paints for artists, the improvement consisting essentially of mixing together polycarbonamide in a methanol solvent along with a coloring pigment until both the pigment and the polycarbonamide are dissolved within the methanol, evaporating the solvent, leaving a dried film sheet, cutting the film sheet into strips to facilitate their being dissolved, and redissolving a portion of the strips into a methanol solvent.

3,359,229

VULCANIZABLE RUBBER COMPOSITIONS

Paul Chalex, Elmhurst, William R. Dunlop, Maywood, and Selwyn R. Mather, Elmhurst, Ill., assignors to The Richardson Company, Melrose Park, Ill.

No Drawing. Filed Feb. 26, 1964, Ser. No. 347,380
9 Claims. (Cl. 260—33.6)

1. A vulcanizable composition comprising from 8–30 percent of a sulfur-vulcanizable, unsaturated-hydrocarbon elastomer, from 75–50 percent of a finely divided bituminous coal wherein substantially all of the coal particles will pass through a 100 mesh screen and at least 50 percent of the coal particles will pass through a 325 mesh screen, between about 80 to 160 parts of a calcium hydroxide or oxide per 100 parts of elastomer between about 40–70 percent of a processing oil based on the weight of the elastomer, between about 0.5 to 40 parts of an accelerator per 100 parts of the elastomer, and between approximately 15–30 percent sulfur based on the weight of the elastomer, the processing oil being further characterized by a specific gravity range of about 0.900–1.00, a viscosity (SUS at 210° F.) range of about 53–145, and an aniline point (° F.) range of about 90–220; and being composed primarily of nitrogen bases, first and second acidaffins, and saturate components; and being substantially free of asphaltenes.

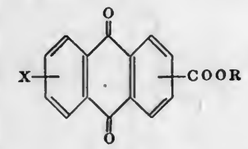
3,359,230

PROCESS FOR THE MASS COLORATION OF POLYESTERS

Francis Bowman, Albert Charles Cooper, Francis Irving and Alistair Livingston, Manchester, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Apr. 25, 1966, Ser. No. 544,708
Claims priority, application Great Britain, May 19, 1965, 21,223/65; Feb. 11, 1966, 6,131/66
4 Claims. (Cl. 260—40)

1. Process for the mass-coloration of synthetic linear polyesters which comprises using as colouring matter a dyestuff of the formula:



wherein X is selected from the class consisting of hydrogen and —COOR;

R is selected from the class consisting of hydrogen, lower alkyl, hydroxy lower alkyl, lower alkoxy lower alkyl and hydroxy lower alkoxy lower alkyl;

the anthraquinone nucleus is substituted by at least one substituent selected from the class consisting of amino, hydroxy, lower alkylamino, lower alkylmercapto, monocyclic arylamino and monocyclic aryl mercapto; and any further substituents on the anthraquinone nucleus are selected from the class consisting of chlorine, bromine, cyano and nitro wherein the dyestuff is mixed with the polyester and the resulting mixture is melted and spun into fibres.

3,359,231

SYNTHETIC TRANS-1,4 POLYMERS OF CONJUGATED DIOLEFINS WITH IMPROVED HARDENING RATE PROPERTIES

Eric George Kent, Sarnia, Ontario, Canada, assignor to Polymer Corporation Limited, Sarnia, Ontario, Canada, a body corporate and politic

No Drawing. Filed Oct. 18, 1965, Ser. No. 497,448
Claims priority, application Canada, Feb. 6, 1965, 922,679
6 Claims. (Cl. 260—41.5)

1. A process of producing a shaped article of a composition containing a synthetic crystalline trans-1,4 polymer of a conjugated diolefin which comprises heating the composition above the melting point of said polymer, whereby the composition softens, shaping to a predetermined shape, and hardening by cooling, whereby the rate of hardening is increased by dispersing 1–10 parts per 100 parts by weight of the trans-1,4 polymer of a siliceous material having an average particle size from 0.01 to 0.05 micron.

3,359,232

POLYOXYMETHYLENE STABILIZED WITH TRIMETHYLENE THIOUREA

Irving Rosen, Painesville, Ohio, assignor to Diamond Alkali Company, Cleveland, Ohio, a corporation of Delaware

No Drawing. Filed Nov. 16, 1964, Ser. No. 411,578
8 Claims. (Cl. 260—45.8)

1. A stabilized polymer composition comprising a normally solid, easily processed oxymethylene polymer having recurring oxymethylene groups and a stabilizing amount of trimethylene thiourea.

3,359,233

POLY - γ - OLEFIN COMPOSITIONS CONTAINING N,N,N',N' - TETRALKYLPHOSPHORODIAMIDOTHIOIC ACID AND ESTERS THEREOF

Stanley B. Mirviss, Westfield, and Adam F. Kopacki, Westwood, N.J., assignors to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed June 18, 1964, Ser. No. 376,274
7 Claims. (Cl. 260—45.9)

1. A solid polymer composition comprising a solid polymer selected from the class consisting of a poly-α-olefin, an alkyd polyester, a vinyl polymer and a terpolymer formed from acrylonitrile, butadiene and styrene and as a stabilizer therefor a stabilizing quantity of a N,N,N',N'-tetralkylphosphorodiamidothioic acid in which each of the N-alkyls contain from 1 to 8 carbon atoms and the alkyl and phenyl esters thereof, said alkyl having from 2 to 24 carbon atoms.

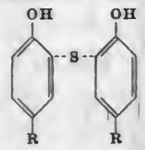
3,359,234

STABILIZED POLYOLEFINS CONTAINING A NICKEL ALKANOATE AND A THIO-BISPHENOL

Jerry Peter Millonis, Franklin Township, Somerset County, and James Anthony Melchore, Middlesex, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed June 26, 1963, Ser. No. 290,609
8 Claims. (Cl. 260—45.75)

1. A composition comprising (a) the nickel salt of an alkane carboxylic acid having 6 to 18 carbon atoms and (b) a thiobisphenol of the formula:



wherein each of the R symbols is an alkyl radical of 4–12 carbon atoms; the components being in the proportion of 0.75–4 parts by weight of (a) for each part of (b).

3. A method of stabilizing a polyolefin material selected from the group consisting of polymers of ethylene and polymers of propylene, which comprises incorporating therein the composition of claim 1 in a concentration of 0.1 to 3.0% by weight; and subjecting the mixture thus formed to a temperature in the range of 150° C. to 280° C.

3,359,235

NYLON COMPOSITION RESISTANT TO HEAT DETERIORATION

Edmond P. Brignac and Robert T. Wright, Pensacola, Fla., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

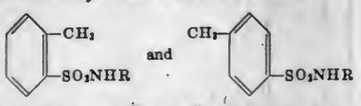
No Drawing. Filed Feb. 2, 1967, Ser. No. 613,440
4 Claims. (Cl. 260—45.75)

1. A polycarbonamide composition resistant to heat deterioration having recurring amide groups as an integral part of the polymer chain and a formic acid relative viscosity of at least 50 and having incorporated therein:

(a) a stabilizing amount of a dissolved copper compound,

(b) a stabilizing amount of a halogen compound selected from the group consisting of sodium, potassium, magnesium and ammonium chlorides, bromides and iodides; and

(c) an N-substituted toluene sulfonamide, either the ortho- or para-isomers thereof or a mixture thereof represented by the structural formulae:



wherein R is an alkyl radical of 1 to 4 C-atoms and the sulfonamide being present in an amount of about 0.025 to 3.0 percent by weight of polycarbonamide.

3,359,236

STRAIN FREE, LIGHT STABLE HALO-ACRYLATE POLYMERS AND METHOD OF PRODUCTION

Harry D. Anspon, Kansas City, Mo., assignor to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 17, 1964, Ser. No. 352,667
12 Claims. (Cl. 260—45.95)

1. The process of preparing transparent polymeric methyl α-chloroacrylate sheets which are substantially strain-free and light stable, which comprises adding to the monomeric acrylate 0.01 to 0.25% by weight of a hydroxy benzophenone compound selected from the group consisting of benzoyl resorcinol, 2,2′-dihydroxy-4,4′-dimethoxy benzophenone, 2,2′-dihydroxy-4,4′ - diethoxyphenzophenone, 2,2′,4,4′-tetra-hydroxy benzophenone, 2,2′,4-trihydroxy-4′-methoxy benzophenone, 2,2′,4 - trihydroxy - 4′-ethoxy benzophenone, 2 hydroxy-4-methoxy and 2 hydroxy-4-ethoxy benzophenone as a ultra-violet absorber, placing the monomer with additive in a mold, and then polymerizing the monomer by exposure to light which includes ultra-violet radiation and longer wave radiation for a period of time sufficient to produce a strong plastic sheet.

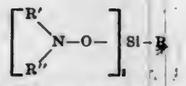
3,359,237

ORGANOSILICON COMPOUNDS AND THEIR USE

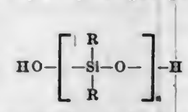
Jean Boissieras, Louis Frederic Ceyzeriat, and Marcel Joseph Celestin Lefort, Paris, France, assignors to Rhone-Poulenc S.A., Paris, France, a French body corporate

No Drawing. Original application Feb. 27, 1964, Ser. No. 347,664, now Patent No. 3,318,898, dated May 9, 1967. Divided and this application Feb. 16, 1966, Ser. No. 544,325
6 Claims. (Cl. 260—46.5)

1. A composition stable in the absence of moisture and vulcanisable at ambient temperature in the presence of moisture, comprising an organoaminoxysilane of the formula:



in which R, R′ and R″ are each selected from the group consisting of hydrocarbon radicals and halogen-substituted hydrocarbon radicals, R′ and R″ being optionally joined to form, with the adjacent nitrogen, a heterocyclic ring, and an α,ω-hydroxy-diorganopolysiloxane of the formula:



in which R is as hereinbefore defined and n is 5 to 10,000.

6. A vulcanized composition formed by exposing the composition of claim 1 to moisture.

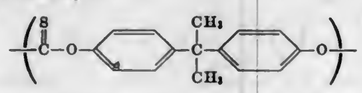
3,359,238

THIOCARBONATE-CARBONATE COPOLYMERS

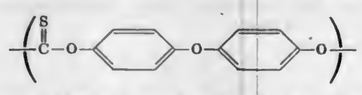
Eugene P. Goldberg, Highland Park, and Frank Scardiglia, Arlington Heights, Ill., assignors to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois

No Drawing. Filed Apr. 3, 1962, Ser. No. 184,656
2 Claims. (Cl. 260—47)

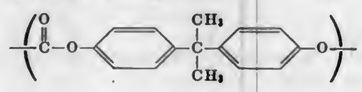
2. A linear copolymer composition having an intrinsic viscosity of at least 0.3 dl./g. when measured in 1,1,2,2-tetrachloroethane at 25° C. and a heat distortion temperature in excess of 145° C. comprising in its linear chain from about 5 to about 95 mole percent recurring thiocarbonate ester structural units selected from the groups consisting of



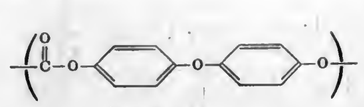
and



and correspondingly from about 95 to about 5 mole percent recurring carbonate ester structural units selected from the groups consisting of



and



3,359,239

POLYMERIZATION OF BIS-(α-HALOALKYL)AROMATIC COMPOUNDS IN THE PRESENCE OF A COUPLING AGENT; REACTION CONDUCTED IN ORGANIC SOLVENT/HYDROXYLIC SOLVENT MEDIUM

Karl Koch, Norwood, and John M. Hoyt and Charles E. Frank, Cincinnati, Ohio, assignors to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Apr. 2, 1964, Ser. No. 356,943
21 Claims. (Cl. 260—47)

12. In a polymerization process which comprises reacting at least one bis-(α-haloalkyl) arene, capable of polymerization, having the formula

$$X—CR_1R_2ArCR_3R_4—X'$$

wherein:

X and X′ are selected from the group consisting of chlorine, bromine, iodine, fluorine and mixtures thereof.

R_1, R_2, R_3 and R_4 are selected from the group consisting of hydrogen, fluorine, lower alkyl group having from 1 to 3 carbon atoms, aryl group having 6 to 10 carbon atoms and mixtures thereof;

Ar is a divalent arene radical; with an olefinic compound having the formula

$$R_5CH=CR_6R_7$$

wherein:

R_5 is selected from the group consisting of hydrogen, a cyano radical, and aryl groups having from 6 to 10 carbon atoms;

R_6 is selected from the group consisting of hydrogen, a lower alkyl group having from 1 to 6 carbon atoms, and a COOR radical wherein R is a lower alkyl group having from 1 to 12 carbon atoms;

R_7 is selected from the group consisting of hydrogen, a CN radical, a COOH radical, a lower alkyl group having from 1 to 6 carbon atoms, CH_2COOR and COOR radicals wherein R is a lower alkyl group having from 1 to 12 carbon atoms, a $CONH_2$ radical, a CONHR′ or $CONHR'_2$ radical wherein R′ is a lower alkyl group having from 1 to 6 carbon atoms, and an aryl group having 6 to 10 carbon atoms, in the presence of a lower valent chromium salt dissolved in a hydroxylic solvent at a temperature within the range of about 0° to 100° C. under an inert atmosphere; the improvement which comprises conducting said polymerization in a two phase solvent reaction medium wherein said bis-(alpha-haloalkyl) arene and said olefinic compound are dissolved in an organic solvent which is substantially immiscible is said hydroxylic solvent.

3,359,240

COPOLYMERS CONTAINING PHENYLVINYLENE CARBONATE

Dale J. Hubbard, Bay City, and Leo R. Morris, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Jan. 14, 1963, Ser. No. 251,059
8 Claims. (Cl. 260—63)

1. A normally solid copolymer produced by copolymerizing a mixture comprising essentially phenylvinylene carbonate and at least one monoethylenically unsaturated compound selected from the group consisting of acrylonitrile, styrene, o-chlorostyrene, α-methylstyrene, methyl methacrylate, methyl vinyl ketone and vinyl acetate, said polymerization being carried out in the presence of a free radical catalyst at a pressure corresponding substantially to the vapor pressure of the reaction mixture.

3,359,241

SALTS OF HEXAFLUOROANTIMONIC ACID AS POLYMERIZATION CATALYSTS IN THE PREPARATION OF POLYESTERS

Frank Dobinson, Chapel Hill, N.C., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Jan. 7, 1965, Ser. No. 424,128
7 Claims. (Cl. 260—75)

1. In a process for producing synthetic, highly polymeric polyesters wherein a compound selected from the group consisting of dicarboxylic acids and ester-forming derivatives thereof and a molar excess of a polymethylene glycol having the formula, $HO(CH_2)_nOH$, wherein n is an integer from 2 to 10 are reacted under polyesterification conditions and the reaction is continued until a highly polymeric product is formed, the improvement which comprises carrying out the polymerization step in the presence of a catalytic amount of a salt of hexafluoroantimonic acid as a catalyst.

3,359,242

PROCESS FOR PRODUCING HIGH MOLECULAR WEIGHT (CYCLO) ALIPHATIC POLYESTERS OF CARBONIC ACID WITH (CYCLO) GLYCOLS

Wolfgang Seeliger, Marl, Kreis Recklinghausen, Germany, assignor to Chemische Werke Huls Aktiengesellschaft, Marl, Kreis Recklinghausen, Germany

No Drawing. Filed July 27, 1964, Ser. No. 385,495
Claims priority, application Germany, Aug. 19, 1963, C 30,724
1 Claim. (Cl. 260—77.5)

High molecular weight polyesters of carbonic acid produced by a process consisting essentially of:

(a) reacting at temperatures between 70° and 300° C., hydrogenated dilinoleyl glycol being a diol of the empirical formula $C_{36}H_{68}O_2$, with ethyl chloroformate, the molar ratio of reactants being 1:1 to 1:1.8 respectively to produce an initial reaction product containing 1.0 to 2.0 alkyl carbonate ester groups per hydroxyl group, and

(b) effecting polycondensation at 100–300° C.

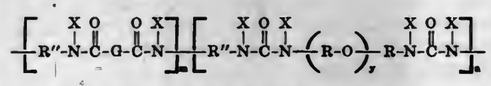
3,359,243

LINEAR POLYUREA ELASTOMERS

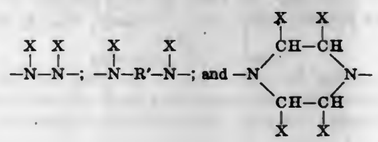
Gaspard X. Criner, Cary, N.C., assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed Dec. 15, 1964, Ser. No. 418,551
9 Claims. (Cl. 260—77.5)

1. A synthetic, fiber-forming, linear, polyurea elastomer consisting essentially of a plurality of intra-linear structural units having the formula

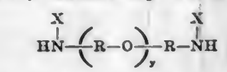


wherein R″ is an aromatic radical selected from the group consisting of phenylene, alkyl phenylene, biphenylene and alkylene biphenyl, R is an alkylene radical containing 2 to 10 carbon atoms, X is a member of the group consisting of hydrogen and lower alkyl radicals, m, n, and y are integers greater than zero and G is a divalent radical selected from the group consisting of

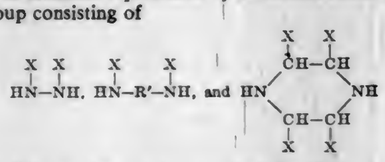


wherein R′ is a divalent organic radical containing 2 to 20 carbon atoms.

5. A process for producing a synthetic fiber-forming linear polyurea elastomer which comprises reacting a poly(oxyalkylene) diamine represented by the formula



wherein R is an alkylene radical containing 2 to 10 carbon atoms, X is a member of the group consisting of hydrogen and lower alkyl radicals, and *y* is an integer greater than zero, with an aromatic diisocyanate selected from the group consisting of phenylene diisocyanates, alkyl phenylene diisocyanates, biphenylene diisocyanates, and alkylene biphenyl diisocyanates to form a isocyanate terminated prepolymer, reacting the thus formed prepolymer with a diamine extender selected from the group consisting of diamines represented by a formula selected from the group consisting of



wherein X is as defined above and R′ is a divalent organic radical containing 2 to 20 carbon atoms, and recovering the elastomeric polyurea thus formed.

3,359,244
POLYURETHANES

Stephen Adamek, Islington, and Bertie B. J. Wood, Oakville, Ontario, Canada, assignors to Dunlop Rubber Company Limited, London, England, a company of Great Britain

No Drawing. Filed June 18, 1965, Ser. No. 465,176
Claims priority, application Great Britain, July 10, 1964, 28,470/64
5 Claims. (Cl. 260—77.5)

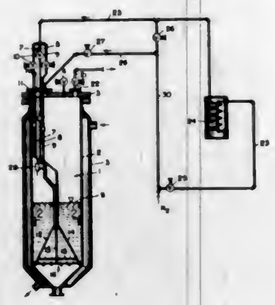
1. A polyurethane which comprises the reaction product of a polymer of at least one vicinal episulphide produced by polymerizing at least one episulphide produced under anhydrous conditions and in the presence of a catalyst selected from the group consisting of (a) an anionic compound of a metal of Group IA of the Mendeleef Periodic Table in the presence of a compound containing a labile hydrogen atom and (b) a compound of a metal of the B sub Group of Group II of the Mendeleef Periodic Table, and a cocatalyst of the group consisting of ammonia, an inorganic ammonium compound, an organic amine, a hydrazine and a derivative of hydrazine, said polymer having a molecular weight between 350 and 6000 and having at least two terminal groups each having an active hydrogen atom, at least one of said terminal groups being a thio group, under anhydrous conditions with an organic compound containing at least two terminal —NCX groups wherein X represents an atom of oxygen or sulphur under anhydrous conditions.

3,359,245
PROCESS FOR INCREASING SOLUTION VISCOSITY OF POLYAMIDE MELT

Ernst Meyer, Erlenbach am Main, Germany, assignor to Vereinigte Glanzstoff-Fabriken AG., Wuppertal-Elberfeld, Germany

Filed May 27, 1964, Ser. No. 370,431
Claims priority, application Germany, June 6, 1963, V 24,141
7 Claims. (Cl. 260—78)

1. A process for increasing the solution viscosity of a linear polyamide melt containing a small amount of water, said polyamide being the polyamide polycondensate of an alkylene diamine and a saturated, aliphatic dicarboxylic acid, which process comprises feeding substantially dry nitrogen preheated to about 20 to 350° C., into a body of said melt in a plurality of nitrogen streams introduced near the bottom of said body at spaced intervals near the outer edges of said body at a minimum distance from the



center of said body to said streams which is at least 70% of the distance from the center of said body to said outer edges thereof for a period of time sufficient to raise the solution viscosity of said polyamide melt to a value substantially above η_{rel} 2.40, measured on a 1% solution of said polyamide in 90% formic acid at 25° C.

3,359,246
PROCESS FOR MAKING POLY(MALEIC ANHYDRIDE)

Jim S. Berry, Springfield, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

No Drawing. Filed Jan. 28, 1965, Ser. No. 428,838
5 Claims. (Cl. 260—78.4)

1. The process of homopolymerizing maleic anhydride which comprises the use of acetyl peroxide as an initiator.

3,359,247
VULCANIZING RUBBER WITH 3,3′-DITHIOBIS (3-AZA-BICYCLO[3.2.2]NONANE)

John J. D'Amico, Dunbar, W. Va., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Original application June 1, 1965, Ser. No. 460,509. Divided and this application Apr. 1, 1966, Ser. No. 539,274
3 Claims. (Cl. 260—79.5)

1. The method of vulcanizing sulfur-vulcanizable diene rubber which comprises incorporating therein a vulcanizing amount of 3,3′-dithiozis(3-azabicyclo[3.2.2]nonane) and heating the mixture.

3,359,248
ZINC OR MERCURY SALT CATALYTIC PROCESS

Stephen W. Osborn, Yardley, Theodore F. Wells III, Morrisville, and Ernest L. Kutch, Levittown, Pa., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware

No Drawing. Continuation of application Ser. No. 269,774, Apr. 1, 1963. This application Dec. 2, 1966, Ser. No. 598,877
26 Claims. (Cl. 260—79.7)

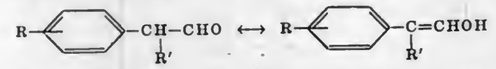
1. A process comprising polymerizing at least one vicinal episulfide monomer under substantially non-alkaline conditions in the presence of, as a catalyst, at least one inorganic compound selected from the group consisting of the sulfides, chromites, oxides, peroxides, and hydroxides of zinc and mercury.

3,359,249
HOMO- AND COPOLYMERIZATION OF VINYL MONOMERS USING TAUTOMERIC ALDEHYDE DERIVATIVES AS CATALYSTS

Henrich Hopff, Zurich, Switzerland, and Eduard Kleiner, Ardsley, N.Y., assignors to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler, Frankfurt am Main, Germany

No Drawing. Filed Nov. 10, 1964, Ser. No. 410,280
Claims priority, application Germany, Nov. 14, 1963, D 42,932
5 Claims. (Cl. 260—89.5)

1. In a process for the polymerization of at least one vinyl monomer having a terminal $CH_2{=}C<$ group, the step of carrying out such polymerization in contact with a catalytically effective amount of at least one tautomeric compound of the formulae:



in which R is selected from the group consisting of hydrogen, alkyl of 1–3 carbon atoms and halogen, R′ is selected from the group consisting of hydrogen, alkyl of 1–3 carbon atoms, phenyl, nitrile and $COOR^2$ wherein R^2 is alkyl of 1–3 carbon atoms.

3,359,250
PROCESS FOR TREATING DIPENTENE POLYMERS

Henry G. Sellers, Jr., Pensacola, Fla., assignor to Tenneco Chemicals Corporation, a corporation of Delaware

No Drawing. Filed Jan. 8, 1964, Ser. No. 336,384
8 Claims. (Cl. 260—93.3)

1. The process for the decolorization of discolored dipentene polymers which comprises contacting said polymers with an amount of hydrogen that is sufficient to decolorize the polymers and insufficient to affect the other physical properties of the polymers in the presence of a hydrogenation catalyst selected from the group consisting of Raney nickel and noble metal catalysts.

3,359,251
PROCESS IMPROVEMENT FOR CONTROLLING MOLECULAR WEIGHT OF AN ALPHA-OLEFIN REACTION

Kenneth W. Doak, Wyckoff, N.J., assignor to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware

No Drawing. Filed Feb. 20, 1964, Ser. No. 346,126
2 Claims. (Cl. 260—94.9)

1. In a process for polymerizing ethylene wherein hydrogen is employed to effect molecular weight control which comprises polymerizing in a reaction zone said ethylene with a catalytic amount of a catalyst formed by mixing titanium trichloride with an aluminum alkyl, said reaction zone being operated at a temperature of from room temperature to about 200° F. and a pressure of from about 150 to 5000 p.s.i. in the presence of an inert hydrocarbon diluent having a boiling point of from —45° to 0° C. and being in the liquid phase at the operating conditions in said reaction zone, the improvement which comprises continuously and separately introducing hydrogen substantially free of other materials below the liquid level in said reaction zone at a temperature of from about 10° to 25° F. higher than the operating temperature for polymerization reactions carried out at from room temperature to about 125° F. and from about 10° F. below to 25° F. above the operating temperature for reactions carried out at from 125° F. to about 200° F. whereby the melt index of the resulting polyethylene becomes a function of the hydrogen concentration in the liquid diluent and recovering from said reaction zone said polyethylene having a density of at least 0.96.

3,359,252
CARBENE ADDITION REACTION AND COMPOUND

Friedrich Nerdel, Siegmundhof 4, Haus P. XII Stock, Berlin, Germany; Joachim Buddrus, Am Sandberg 10, Holzheim, Dusseldorf, Germany; Dieter Klamann, Wettloop 22a, Hamburg-Neugraben, Germany; Peter Weyerstahl, Schaaphusen 3, Hamburg-Hausbruch, Germany; and Klaus Ulm, Muhlenstieg 5, Fleestedt, Hamburg-Harburg, Germany

No Drawing. Filed Jan. 6, 1964, Ser. No. 336,073
Claims priority, application Germany, Jan. 7, 1963, N 22,572, N 22,573, N 22,574
15 Claims. (Cl. 260—144)

1. A process for the preparation of carbene derivatives which comprises reacting a carbene acceptor having at least one unsaturated bond with a halogen containing carbene forming compound of the formula:



where X is a halogen, and R and R′ are selected from the group consisting of: hydrogen, halogen, alkyl, aryl, aralkyl and alkaryl with structures which exclude β-elimination, in the presence of (A) a compound of the formula:



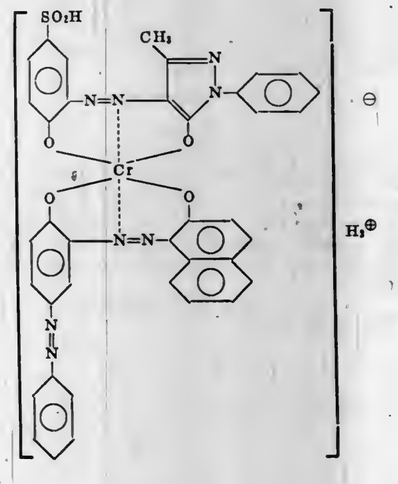
where Z is selected from the group consisting of: oxygen, sulfur, and selenium, Y is a C_2 to C_8 lower alkylene group, and R and R′ are selected from the group consisting of: hydrogen, alkyl, alkene, and aryl; and (B) an ionic catalyst for promoting carbene formation consisting of an anion containing Lewis base.

3,359,253
CHROMIUM-CONTAINING AZO DYESTUFF

Walter Biedermann and Eginhard Steiner, Basel, Switzerland, assignors to J. R. Geigy A.G., Basel, Switzerland

No Drawing. Filed Dec. 16, 1964, Ser. No. 418,868
1 Claim. (Cl. 260—145)

The chromium complex dyestuff which in its free acid form is of the formula

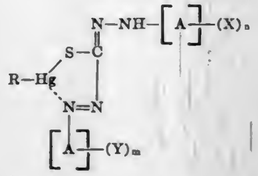


3,359,254
ORGANO-MERCURIC COMPLEXES OF DIARYL THIOCARBAZONES

John Kazan, Jr., Somerville, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed May 22, 1964, Ser. No. 369,613
5 Claims. (Cl. 260—149)

1. A compound of the formula:



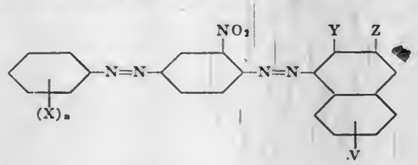
wherein R is a member selected from the group consisting of lower hydroxyalkyl, hydroxyphenyl and hydroxynaphthyl radicals; "A" is a member selected from the group consisting of phenyl and naphthyl; *n* and *m* are whole numbers between 0 and 3 inclusive; and X and Y are members selected from the group consisting of lower alkyl, hydroxy, lower alkoxy, phenoxy, phenyl, phenylazo, nitro, amino, sulfo and halo radicals.

3,359,255
WATER-INSOLUBLE DISAZO-DYESTUFFS

Hans Wilhelm Liechti, Oberwil, Basel-Land, Switzerland, assignor to Ciba Limited, Basel, Switzerland, a Swiss company

No Drawing. Filed Sept. 1, 1964, Ser. No. 393,782
Claims priority, application Switzerland, Sept. 11, 1963, 11,222/63; July 22, 1964, 9,638/64
6 Claims. (Cl. 260—188)

1. A water-insoluble disazo dyestuff of the formula



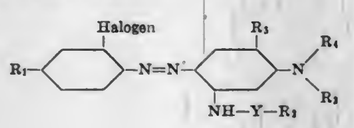
in which X is a member selected from the group consisting of hydrogen, chlorine, bromine, lower alkyl and lower alkoxy, Y a member selected from the group consisting of hydroxy and amino groups, Z is hydrogen and carboxophenylamido groups, V is a member selected from the group consisting of hydrogen and lower alkoxy, and *n* is a whole number of at most 2.

3,359,256
MONOAZO DYES

Curt Mueller, Basel, and Rudolf Altermatt, Tecknau, Basel-Land, Switzerland, assignors to Sandoz Ltd. (also known as Sandoz A.G.), Basel, Switzerland

No Drawing. Filed Mar. 8, 1965, Ser. No. 438,057
Claims priority, application Japan, Mar. 13, 1964, 3,263/64; Apr. 9, 1964, 4,653/64; Apr. 13, 1964, 4,693/64
9 Claims. (Cl. 260—205)

1. Dye of the formula



wherein:

R_1 is a member selected from the group consisting of nitro and methylsulphonyl;

R_2 is a member selected from the group consisting of phenyl, unsubstituted alkyl having 1 to 4 carbon atoms, chloroalkyl radicals, methoxy alkyl radicals, ethoxy alkyl radicals and phenoxy alkyl radicals, the alkyl of each substituted alkyl radical having 1 to 2 carbon atoms;

R_3 and R_4 are alkyl having 1 to 2 carbon atoms;

R_5 is a member selected from the group consisting of hydrogen and alkoxy radicals having 1 to 2 carbon atoms;

Halogen is a member selected from the group consisting of chlorine and bromine; and

Y is a member selected from the group consisting of —CO—, —COO— and —SO_2—.

3,359,257
ASCORBO ADENYLATE COMPOUNDS

Carol Farhi, New York, N.Y., and Norman E. Harris, Waltham, Mass., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Sept. 21, 1964, Ser. No. 398,030
6 Claims. (Cl. 260—211.5)

1. Ascorbo adenylates wherein the cationic moiety thereof is selected from the group consisting of the alkaline earth metals, iron, procaine, and nicotinamide.

3,359,258
PREPARATION OF DIETHYL AMINO ETHYL CELLULOSE

Bryan Atkinson Toms, Leamington Spa, England, assignor to Courtaulds Limited, London, England, a British company

No Drawing. Filed Feb. 3, 1965, Ser. No. 430,214
Claims priority, application Great Britain, Feb. 6, 1964, 5,031/64
4 Claims. (Cl. 260—231)

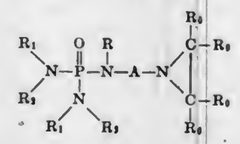
1. A process for the manufacture of diethyl amino ethyl cellulose comprising reacting alkali cellulose and amino ethyl hydrogen sulphate to form amino ethyl cellulose and reacting the amino ethyl cellulose with diethyl sulphate at a temperature above about 60° C., at an absolute pressure above about 3 lbs./sq. inch and in the presence of a substance capable of removing acid from the reaction.

3,359,259
CERTAIN 1-AZIRIDINYLALKYL PHOSPHORAMIDE COMPOUNDS

George E. Ham, Lake Jackson, Tex., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Nov. 13, 1963, Ser. No. 323,243
4 Claims. (Cl. 260—239)

1. A compound of the formula:



wherein:

(a) R_1 is a lower alkyl group of from 1 to 4 carbon atoms,

(b) each R_0, R, and R_2 is independently selected from the group consisting of the hydrogen atom and a lower alkyl group, and

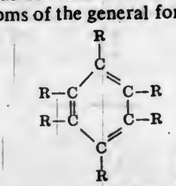
(c) A is an alkylene group of no more than 4 carbon atoms.

3,359,260
PURIFICATION OF EPSILON-CAPROLACTAMS

Richard L. Roberts, Milton, and Donald L. MacPeek, South Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York

Filed Dec. 30, 1964, Ser. No. 422,140
11 Claims. (Cl. 260—239.3)

1. A method of recovering a purified epsilon-caprolactam from the crude aqueous solution thereof formed in a process for production of an epsilon-caprolactam by ammonolysis of a 6-hydroxycaproic acid derivative in an aqueous medium at superatmospheric pressure and elevated temperature, which method comprises contacting said crude aqueous solution with an aromatic solvent of 6 to 12 carbon atoms of the general formula:



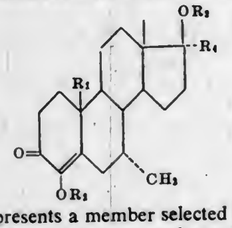
wherein each R is independently selected from the group consisting of hydrogen and lower alkyl radicals of 1 to 4 carbon atoms, and separating the epsilon-caprolactam from said aromatic solvent.

3,359,261
NEW 7α-METHYL-ANDROSTENES

Georg Anner and Peter Wieland, Basel, Switzerland, assignors to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed May 11, 1964, Ser. No. 366,631
Claims priority, application Switzerland, May 17, 1963, 6,277/63; Mar. 9, 1964, 2,991/64
7 Claims. (Cl. 260—239.55)

1. 7α-methyl-androstenes of the formula



in which R_1 represents a member selected from the group consisting of a hydrogen atom and a methyl group, R_2 and R_3 each represents a member selected from the group consisting of a hydrogen atom, lower alkyl, cyclo-lower alkyl and phenyl-lower alkyl, the tetrahydropyranyl radical and an acyl radical with 1 to 18 carbon atoms and R_4 stands for hydrogen.

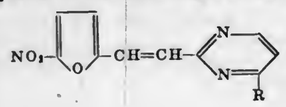
6. Δ⁴-3-oxo-4-tetrahydropyranyl-(2') - oxy-7α-methyl-17β-acetoxy-19-nor-androstene.

3,359,262
2-[2-(5-NITROFURYL)-VINYL]-PYRIMIDINES

Hideji Takamatsu, Amagasaki-shi, Hyogo-ken, Shinsaku Minami, Nara-ken, Akio Fujita, Inokumadori, Kami-kyo-ku, Kyoto, Katsuro Fujimoto, Neyagawa-shi, Osaka-fu, Masanao Shimizu, Suma-ku, Kobe-shi, Hyogo-ken, and Shinichi Nakamura, Suita-shi, Osaka-fu, Japan, assignors to Dainippon Pharmaceutical Co., Ltd., Osaka, Japan, a corporation of Japan

No Drawing. Filed May 20, 1963, Ser. No. 281,798
Claims priority, application Japan, Mar. 16, 1963, 38/14,518
7 Claims. (Cl. 260—240)

1. A compound of the following formula



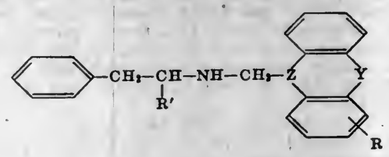
in which R is a member selected from the group consisting of hydrogen, hydroxyl, alkoxyls having 1 to 3 carbon atoms, amino, monoalkylaminos having 1 to 3 carbon atoms, dialkylaminos having 2 to 4 carbon atoms, acetylamino and propionylamino.

3,359,263
N-SUBSTITUTED-1-PHENYL-2-AMINOPROPANES

Cornelis van der Stelt, Haarlem, Netherlands, assignor to N.V. Koninklijke Pharmaceutische Fabrieken v/h Brocades Stheeman en Pharmacia, Amsterdam, Netherlands, a corporation of Dutch law

No Drawing. Filed Aug. 16, 1963, Ser. No. 302,707
Claims priority, application Great Britain, Oct. 19, 1962, 39,753/62
3 Claims. (Cl. 260—240)

1. A compound of the formula



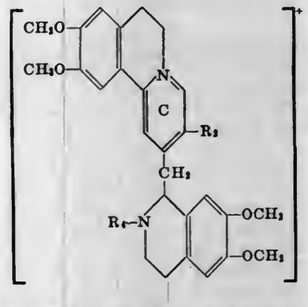
wherein R' is lower alkyl; R is selected from the group consisting of hydrogen, halogen, and lower alkyl; Y is selected from the group consisting of oxygen and sulfur; and Z is selected from the group consisting of —CH_2—CH and —CH=C.

3,359,264
BENZO[a]QUINOLIZINE DERIVATIVES AND PROCESSES FOR THE MANUFACTURE THEREOF

Max Gerecke, Basel, Switzerland, assignor to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed June 5, 1964, Ser. No. 373,043
Claims priority, application Switzerland, June 7, 1963, 7,040/63
13 Claims. (Cl. 260—240)

1. A method for the preparation of compounds having a cation of the formula

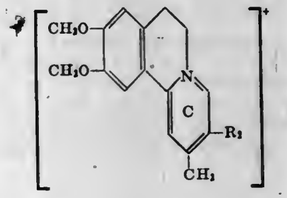


wherein

R_4 is selected from the group consisting of benzyl, lower alkyl and allyl;

R_2 is lower alkyl;

which comprises reacting a compound having a cation of the formula



wherein R_2 has the same meaning as above; with a compound having a cation of the formula

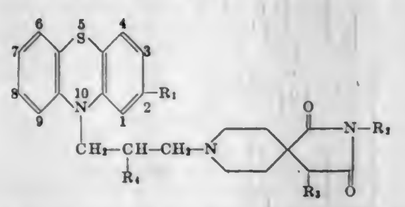


wherein R_4 has the same meaning as above.

11. A compound having the 2-[(6',7'-dimethoxy-1',2',3',4' - tetrahydro - 1' - isoquinolyl) - methylidene] - 3-ethyl - 9,10 - dimethoxy - 6,7 - dihydro - benzo[a]quinolizinium cation.

3,359,265
PHENOTHIAZINE DERIVATIVES
Ernst Jucker, Ettingen, Anton Ebnöther, Reinach, Basel-Land, Adolf Lindenmann, Erwin Rissi, and Erhard Schenker, Basel, and Rudolf Süess, Bettingen, Switzerland, assignors to Sandoz Ltd., Basel, Switzerland
No Drawing. Filed June 22, 1966, Ser. No. 559,395
Claims priority, application Switzerland, July 17, 1964, 9,384/64; Apr. 5, 1965, 4,698/65; July 13, 1965, 9,814/65
19 Claims. (Cl. 260—243)

1. A compound selected from the group consisting of a phenothiazine derivative of formula:



in which R_1 signifies hydrogen, halogen, lower alkoxy, lower alkylthio, lower alkanoyl, trifluoromethyl, cyano, N,N-dimethylsulphamoyl, N,N-dimethylcarbamoyl, methylsulphinyl or methylsulphonyl,
R_2 signifies lower alkyl or aralkyl (C_7–C_{10}),
R_3 signifies hydrogen or lower alkyl, and
R_4 signifies hydrogen or methyl,
and a physiologically acceptable acid addition salt thereof.

3,359,266
PROCESS FOR PREPARING PHOSPHORUS-CONTAINING MANNICH BASES
Ludwig Maier, Zurich, Switzerland, assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed June 10, 1966, Ser. No. 556,583
15 Claims. (Cl. 260—246)

1. A process for preparing phosphorus-containing Mannich bases of the formula $(HO)_a P(O)_b (RNR'R'')_c$ wherein R is a group CHR''' wherein R''' is a hydrogen atom or a hydrogen group, R' when taken singly is a hydrogen atom, a hydrocarbon group or a hydroxy-substituted hydrocarbon group, R'' when taken singly is a hydrocarbon group or a hydroxy-substituted hydrocarbon group, and R' and R'' when taken together with the nitrogen atom to which they are attached form heterocyclic groups having in the ring substituents selected from the group consisting of methylene groups, methyl-substituted methylene groups, nitrogen atoms and oxygen atoms, a=0, 1 or 2 but is 0 if b=0, b=0 or 1, c=1, 2 or 3 and $a+b+c$=3 or 4 depending on the valence of the phosphorus atom, comprising reacting white phosphorus with an aldehyde and a primary or secondary amine or with an alkylolamine in a solvent for the reaction, and the aldehyde and amine or alkylolamine are limited to give the Mannich bases described hereinabove.

5. A process of claim **1** wherein the aldehyde is formaldehyde.

11. A process of claim **5** wherein the amine is morpholine.

3,359,267
PROCESS FOR PREPARATION OF CYANURIC CHLORIDE AND PENTACHLOROPYRIDINE
Robert Neville Haszeldine, "Windyridge," Lyme Road, Disley, England; Ronald Eric Banks, 187 Kingsway, Burnage, Manchester, England; and John Michael Birchall, 22 Lorna Road, Cheadle Hulme, England
No Drawing. Filed Dec. 14, 1965, Ser. No. 513,846
Claims priority, application Great Britain, Mar. 17, 1965, 11,336/65
8 Claims. (Cl. 260—248)

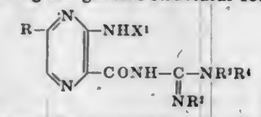
1. A method for preparing cyanuric chloride and pentachloropyridine which comprises reacting carbon tetrachloride and ammonia at a temperature within the range of 320° C. to about 1000° C.

3,359,268
SUBSTITUTED PHTHALAZINES AND INTERMEDIATES OBTAINED IN THE SYNTHESIS THEREOF
Alan Frederick Turner, Wheathampstead, and David Gordon Parsons, Hertford, England, assignors to Vantorex Limited, Loughborough, England, a British company
No Drawing. Filed June 28, 1966, Ser. No. 561,046
8 Claims. (Cl. 260—250)

6. 6-(phenyl-lower alkyl)-3-keto-3H[1,2,4]oxadiazolo-[3,4-a]phthalazine.

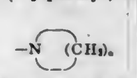
3,359,269
3-AMINO-5-SUBSTITUTED-PYRAZINOYL-GUANIDINES
Edward J. Cragoe, Jr., Lansdale, Pa., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey
No Drawing. Filed Mar. 16, 1966, Ser. No. 534,640
The portion of the term of the patent subsequent to Apr. 11, 1984, has been disclaimed
13 Claims. (Cl. 260—250)

1. A product selected from the group consisting of a compound having the general structural formula



and pharmaceutically acceptable salts thereof, wherein:

R is selected from the group consisting of hydroxyl; lower alkyl; lower alicyclic; lower alkoxy; phenyl; phenyl-lower alkyl; —NR'R'' wherein R' is selected from the group consisting of hydrogen, and lower alkyl, and R'' is selected from the group consisting of hydrogen, lower alkyl, halo-lower alkyl, (lower alicyclic-alkyl), phenyl-lower alkyl, (4-piperidyl)-lower alkyl, and phenyl; and



wherein n is one of the numerals 4 through 7;

R^2 is selected from the group consisting of hydrogen and lower alkyl;

R^3 is selected from the group consisting of hydrogen, lower alkyl, hydroxy-lower alkyl, phenyl-lower alkyl, alkoxy-phenyl-lower alkyl, and phenyl;

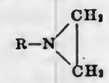
R^4 is selected from the group consisting of hydrogen and lower alkyl;

when R^3 and R^4 are each lower alkyl, they can be joined together to form with the nitrogen atom to which they are attached one of the cyclic structures 1-pyrrolidinyl, piperidino, 1-piperazinyl, 4-lower alkyl-1-piperazinyl and morpholino;

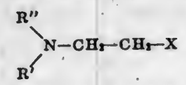
when R^2 and R^3 are each lower alkyl, they can be joined together to form with the nitrogen atoms to which they are attached an imidazolinyl radical; and
X^1 is a number of the group selected from hydrogen and lower alkanoyl.

3,359,270
PREPARATION OF SUBSTITUTED PIPERAZINIUM SALTS
Clarence R. Dick, Lake Jackson, Tex., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Nov. 16, 1965, Ser. No. 508,137
6 Claims. (Cl. 260—268)

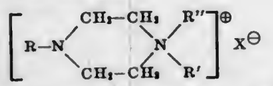
1. A process for preparing a 1,1,4-trisubstituted piperazinium halide which comprises: reacting (1) an N-substituted aziridine of the formula



wherein R is a hydrocarbon radical conferring on said N-substituted aziridine a K_B value greater than about 10^{-8}, with (2) a haloethyl amine of the formula



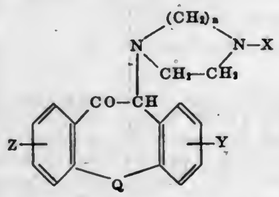
wherein R' and R'' are hydrocarbon radicals containing from 1 to about 20 carbon atoms, and X is chlorine, bromine or iodine, to give a 1,1,4-trisubstituted piperazinium salt of the formula



wherein R, R', R'' and X are as above defined.

3,359,271
PIPERAZINO-DIBENZ[b,f]-OXEPINONES AND THIEPINONES AND INTERMEDIATES
Walter Schindler, Riehen, and Erich Schmid, Basel, Switzerland, assignors to Geigy Chemical Corporation, Ardsley, N.Y., a corporation of New York
No Drawing. Filed Aug. 9, 1966, Ser. No. 571,174
Claims priority, application Switzerland, Apr. 29, 1965, 5,941/65; Dec. 1, 1965, 16,575/65; Feb. 11, 1966, 1,973/66
21 Claims. (Cl. 260—268)

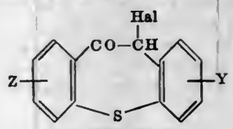
1. A compound selected from among thiepin and oxepin derivatives of the formula



(I)

wherein
Q represents oxygen or sulphur,
X represents hydrogen, lower alkyl, hydroxy-lower alkyl or lower alkanoyloxy-lower alkyl,
each of Y and Z represents a member selected from among hydrogen, halogen up to the atomic number 35, lower alkyl, lower alkoxy, and lower alkylthio, and
n represents 2 or 3,
and their pharmaceutically acceptable addition salts with acids.

14. A compound of the formula

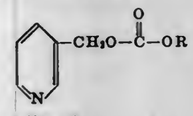


(II)

wherein
Hal represents halogen,
each of Y and Z represents hydrogen, halogen up to the atomic number 35, lower alkyl lower alkoxy or lower alkylthio.

3,359,272
LOWER ALKENYL PYRIDINE CARBONATES
Godfrey Wilbert, Carmel, and Seymour Hyden, Spring Valley, N.Y., assignors to Nepera Chemical Co., Inc.
No Drawing. Filed Apr. 25, 1966, Ser. No. 544,845
4 Claims. (Cl. 260—295.5)

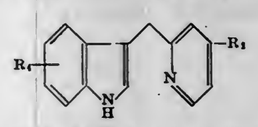
1. A compound of the formula:



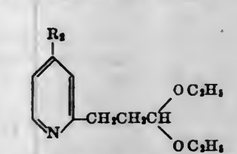
wherein R is lower alkenyl.

3,359,273
PROCESS FOR THE PRODUCTION OF 2-(INDOL-3-YLMETHYL)-4-METHYLPYRIDINE
John Shavel, Jr., Mendham, and Glenn C. Morrison, Dover, N.J., assignors to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware
No Drawing. Original application Dec. 9, 1963, Ser. No. 329,219, now Patent No. 3,264,310, dated Aug. 2, 1966. Divided and this application Dec. 10, 1965, Ser. No. 513,102
1 Claim. (Cl. 260—296)

Process for the production of a compound of the formula:



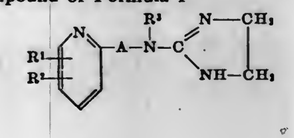
wherein R_2 is lower alkyl of 1 to 6 carbons, and R_4 is hydrogen which comprises reacting a compound of the formula:



with a phenyl hydrazine in an acidic medium.

3,359,274
2-(2-PICOLYLAMINO)-2-IMIDAZOLINE DERIVATIVES
John Evlyn Warner Billinghurst, London, England, assignor to Burroughs Wellcome & Co. (U.S.A.) Inc., Tuckahoe, N.Y., a corporation of New York
No Drawing. Filed June 25, 1964, Ser. No. 378,050
Claims priority, application Great Britain, June 25, 1963, 25,229/63
3 Claims. (Cl. 260—296)

1. A compound of Formula I



(I)

and acid addition salts thereof, wherein R^1 and R^2 are the same or different and each is a hydrogen atom or an alkyl group of 1 to 4 carbon atoms, A is a methylene or ethylene group or is absent altogether and merely represents the bond between the pyridyl group and the nitrogen atom, and R^3 is a hydrogen atom or a lower alkyl group.

3,359,275

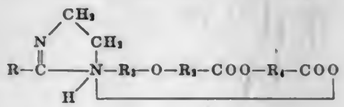
SUBSTITUTED IMIDAZOLINES AND METHODS FOR PRODUCING THEM

Hans S. Mannheimer, 23 Haines Cove Drive, Toms River, N.J. 08753

No Drawing. Filed June 10, 1964, Ser. No. 374,145

6 Claims. (Cl. 260—309.6)

1. A compound selected from the group of compounds within the following generic formula:



wherein

R is a hydrocarbon radical of 4–18 carbon atoms;

each R_2 and R_4 are the same or different alkylene radical of 1–6 carbon atoms; and

R_3 is an alkylene radical of 2–6 carbon atoms.

3,359,276

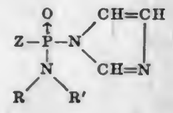
PHOSPHINIC AMIDES

Morris L. Nielsen, Dayton, Ohio, and Robert Z. Greenley, St. Louis, Mo., assignors, by mesne assignments, to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Sept. 1, 1966, Ser. No. 576,537

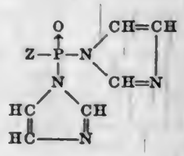
16 Claims. (Cl. 260—309)

1. A compound of the formula



wherein Z is selected from the class consisting of the imidazol-1-yl radical and an aromatic hydrocarbyl radical of 6 to 12 carbon atoms which is free of aliphatic unsaturation and is bonded through nuclear carbon to the remainder of the molecule and R is a hydrocarbyl radical of from 1 to 12 carbon atoms which is free of olefinic and acetylenic unsaturation, and R′ is selected from the class consisting of R and hydrogen.

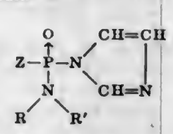
11. The method which comprises heating, at a temperature of 60° C. to 300° C., a phosphine oxide of the formula



wherein Z denotes the imidazol-1-yl radical or an aromatic hydrocarbyl radical of from 6 to 12 carbon atoms which is free of aliphatic unsaturation and is linked through nuclear carbon to the remainder of the molecule, with an amine of the formula



wherein R is a hydrocarbyl radical of from 1 to 12 carbon atoms which is free of olefinic and acetylenic unsaturation, and R′ is R or hydrogen, to obtain a phosphinic amide of the formula



wherein Z, R and R′ are as defined above.

3,359,277

CHLOROPHYLL DERIVATIVE

William Mitchell, London, and Stanley Arthur Wood, Woodford Green, Essex, England, assignors to Stafford Allen & Sons Limited, London, England, a company of Great Britain, Northern Ireland and the Isle of Man

No Drawing. Filed Nov. 9, 1964, Ser. No. 409,979

Claims priority, application Great Britain, Nov. 13, 1963, 44,847/63

12 Claims. (Cl. 260—314)

1. A method of producing a water-soluble ester that is stable in acid solution of a chlorophyllin and a sultone having from three to six carbon atoms, which comprises heating at a temperature of at least about 30° C. up to solvent reflux temperature in the presence of a solvent selected from the group consisting of water and inert volatile organic solvent selected from the group consisting of toluene, 1,4-dioxane and acetone, and comprising at least a small amount of water, a sultone having from about three to about six carbon atoms, and a water-soluble chlorophyllin in the form of the sodium or potassium salt thereof, derived from chlorophyll *a* and chlorophyll *b*, (a) water-soluble chlorophyll free from chelated metal and (b) water-soluble chlorophyll chelated with copper or magnesium, until the corresponding sulfonic acid ester is formed.

3,359,278

N-SUBSTITUTED-2,4,6-TRIIODOANILIC ACIDS AND SALTS THEREOF

Vernon H. Wallingford, Ferguson, Mo., assignor to Mallinckrodt Chemical Works, St. Louis, Mo., a corporation of Missouri

No Drawing. Filed May 24, 1963, Ser. No. 282,862

5 Claims. (Cl. 260—326.5)

1. 2,4,6-triiodosuccinanilic acid.

3,359,279

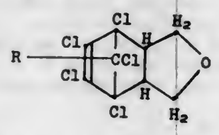
POLYHALOCYCLOPENTADIENE-UNSATURATED HETEROCYCLIC DIELS-ALDER ADDUCTS

Victor Mark, Norristown, Pa., assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed Dec. 11, 1963, Ser. No. 329,909

10 Claims. (Cl. 260—332.5)

2. A compound of the formula



wherein R is alkyl of up to eight carbon atoms.

3,359,280

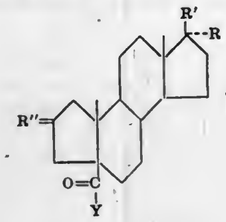
KETALS OF 5-ALKANOYL-A-NORANDROSTANE-2-ONES

Seymour D. Levine, Princeton, N.J., assignor, by mesne assignments, to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Original application Aug. 30, 1965, Ser. No. 483,790, now Patent No. 3,296,300, dated Jan. 3, 1967. Divided and this application Oct. 31, 1966, Ser. No. 608,240

6 Claims. (Cl. 260—340.9)

1. A compound of the formula



wherein Y is lower alkyl; R is selected from the group consisting of hydrogen and lower alkyl; R″ is selected from the group consisting of ethylenedioxy and propylenedioxy; R′ is selected from the group consisting of hydroxy and the acyloxy radical of a hydrocarbon carboxylic acid of less than twelve carbon atoms; and together R and R′ is keto.

3,359,281

SEPARATION AND ISOLATION OF 2,2(2,4′-DIHYDROXYDIPHENYL)PROPANE AND 2,2,4 - TRIMETHYL 4(4′ - HYDROXYPHENYL)CHROMAN FROM MIXTURES CONTAINING THE SAME

Hans L. Schlichting, Grand Island, and Ellis I. Lichtblau, Kenmore, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Filed Dec. 4, 1964, Ser. No. 416,132

15 Claims. (Cl. 260—345.2)

1. A process for separating 2,2,4-trimethyl 4(4-hydroxyphenyl)chroman from mixtures containing the said chroman and a compound which cannot be successfully separated from the chroman by distillation or by conventional extraction methods comprising adding a clathrating agent selected from the group consisting of short chain aliphatic alcohols, and short chain aliphatic ketones to a mixture containing 2,2,4-trimethyl 4(4′-hydroxyphenyl)chroman, forming a crystalline clathrate inclusion compound with said chroman and separating the crystalline compound from the medium.

3,359,282

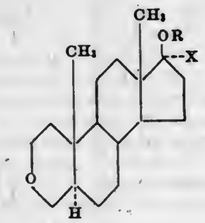
(OPTIONALLY 17-ALKYLATED)-3-OXA-5α-ANDROSTAN-17β-OLS, ESTERS CORRESPONDING AND INTERMEDIATES THERETO

Raphael Pappo, Skokie, and Mike G. Scaros, Arlington Heights, Ill., assignors to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed Sept. 24, 1965, Ser. No. 490,068

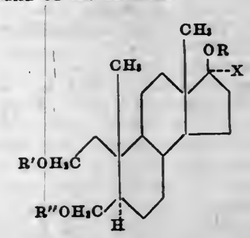
11 Claims. (Cl. 260—345.2)

1. A compound of the formula



wherein R is a member of the class consisting of hydrogen and a lower alkanoyl radical and X is selected from the group consisting of hydrogen and a lower alkyl radical.

7. A compound of the formula



wherein R, R′ and R″ are selected from the group consisting of hydrogen and a lower alkanoyl radical and X is a member of the class consisting of hydrogen and a lower alkyl radical.

3,359,283

RECOVERY OF DICARBOXYLIC ACID ANHYDRIDES FROM AQUEOUS ACID SOLUTION

Charles R. Campbell and Robert Johnson, Pensacola, Fla., assignors, by mesne assignments, to Monsanto Company, a corporation of Delaware

Filed Mar. 13, 1961, Ser. No. 95,273

14 Claims. (Cl. 260—345.9)

10. In the production of adipic acid manufactured by nitric acid oxidation of cyclohexanol and cyclohexanone, a continuous process for treating the aqueous liquor obtained in the crystallization and separation of the adipic acid so-produced which comprises the steps of evaporating the said aqueous liquor to remove substantially all the nitric acid and water therefrom thereby forming a substantially dry and nitric acid free mixture of dibasic acids comprising essentially succinic acid, glutaric acid, and adipic acid, continuously feeding said mixture in a molten state into the dehydration zone of a continuous fractionating system, heating said mixture at a temperature of at least 225° C. under a reduced pressure of at most 100 mm. of Hg for a time sufficient to dehydrate the succinic acid and the glutaric acid to their respective anhydrides, continuously distilling from the system the so-produced anhydrides simultaneously together with the water of dehydration, continuously cooling the overhead product of the distillation to condense selectively the distilled anhydrides at a temperature to maintain the anhydrides as a liquid and to maintain the water as a vapor, continuously returning a portion of the condensed anhydrides to the dehydration zone, collecting the remainder of the condensed anhydrides, and continuously withdrawing the bottoms product composed mostly of adipic acid from the system.

3,359,284

PROCESS FOR PREPARING TETRAPHENYLFURAN

Saul Patai, Yuval Halpern, and Michael Michman, Jerusalem, Israel, assignors to Yissum Research Development Company, a company of Israel

No Drawing. Filed Mar. 29, 1966, Ser. No. 538,192

Claims priority, application Israel, Mar. 18, 1966, 25,417

4 Claims. (Cl. 260—346.1)

1. A method of forming tetraphenylfuran according to the reactions

(1) $\text{benzoin} \xrightarrow{k_1} \text{benzil} + \text{desoxybenzoin}$

and

(2) $\text{desoxybenzoin} + \text{benzoin} \xrightarrow{k_2} \text{tetraphenylfuran}$

comprising heating benzoin to a temperature within the range of 150–200° C. in the presence of aluminum

chloride or hydrochloric acid as a catalyst to maintain k_2 at a value much greater than k_1.

3,359,285

PRODUCTION OF CYCLIC ADDITION PRODUCTS

Phillip S. Landis, Woodbury, N.J., assignor to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed July 3, 1963, Ser. No. 292,726
28 Claims. (Cl. 260—346.6)

25. A process for producing cyclic addition products which comprises reacting isoprene and maleic anhydride at a temperature from about 0° C. to about 400° C. in the presence of acid mordenite and recovering a product of 4-methyl-Δ^4-tetrahydrophthalic anhydride.

28. A process for producing cyclic additional products which comprises reacting a conjugated aliphatic diene containing from 4 to 20 carbon atoms and an α,β-ethylenically unsaturated carbonyl compound selected from the group consisting of acids, anhydrides, ketones and aldehydes containing from 3 to 15 carbon atoms at a temperature from about 0° C. to about 600° C. in the presence of a catalyst comprising a crystalline alumino-silicate having active cation sites within an ordered internal structure, said ordered internal structure having a defined pore size of at least 6 A., and recovering the reaction products from said catalyst.

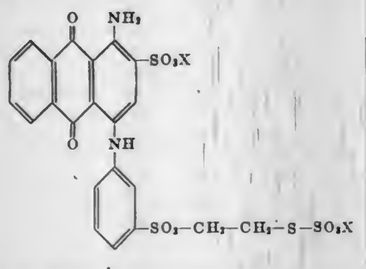
3,359,286

PREPARATION OF 1-AMINO-4-(3'-THIOSULFATO-ETHYLSULFONYL - ANILINO) - ANTHRAQUINONE-2-SULFONIC ACID

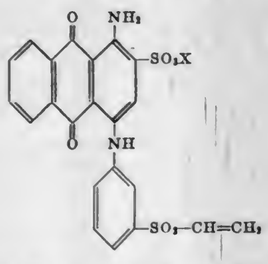
Fritz Meininger and Ernst Hoyer, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Nov. 2, 1964, Ser. No. 408,318
Claims priority, application Germany, Nov. 7, 1963, F 41,209
1 Claim. (Cl. 260—374)

Process for preparing an anthraquinone dyestuff of the formula



in which X represents a member selected from the group consisting of hydrogen, sodium and potassium, which comprises reacting the dyestuff of the formula



in which X has the meaning given above, in an aqueous medium at an acid pH-value from 3 to below 7 with a salt of thiosulfuric acid.

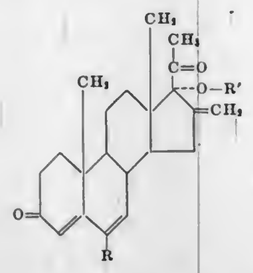
3,359,287

16-METHYLENE-17α-HYDROXY PROGESTERONES AND DERIVATIVES THEREOF

John C. Babcock and J. Allan Campbell, Kalamazoo Township, Kalamazoo County, Mich., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Nov. 16, 1959, Ser. No. 852,981
15 Claims. (Cl. 260—397.4)

2. Compounds represented by the formula:



wherein R is selected from the group consisting of hydrogen and lower-alkyl and R' is selected from the group consisting of hydrogen and the acyl radical of a hydrocarbon carboxylic acid containing from 1 to 12 carbon atoms, inclusive.

3,359,288

NOVEL 6-FLUORO-Δ^6-STEROIDS AND PROCESSES

Meyer Sletzinger, North Plainfield, N.J., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Mar. 13, 1961, Ser. No. 95,006
7 Claims. (Cl. 260—397.45)

1. 11β,17α,21 - trihydroxy - 6 - fluoro - 16α - methyl - 4,6-pregnadiene-3,20-dione.

3,359,289

PROCESS FOR THE PREPARATION OF 9α-FLUORO STEROIDS AND PRODUCTS OBTAINED THEREFROM

Arturo Blade, Rosny-sous-Bois, France, assignor to Roussel-UCLAF, Paris, France, a corporation of France

No Drawing. Filed Aug. 4, 1965, Ser. No. 508,402
Claims priority, application France, Aug. 12, 1964, 984,987
13 Claims. (Cl. 260—397.45)

1. A process for the preparation of a 9α-fluoro-11-oxygenated steroid of the pregnane and adrostane series selected from the group consisting of 9α-fluoro-11-oxo steroid and 9α-fluoro-11β-hydroxy-steroids which comprises the steps of reacting an acid anhydride of an alkanoic acid having from two to seven carbon atoms with a saturated 11-oxo steroid of the pregnane and androstane series, free from other ketones in its molecule, in the presence of an acidic catalyst selected from the group consisting of organic sulfonic acids and mineral acids, reacting the resultant 9,11-dehydro-11-ol ester with an alkanoic acid having from two to seven carbon atoms of a saturated steroid of the pregnane and androstane series with gaseous perchloryl fluoride in the presence of a tertiary cyclic amine and a di-lower-alkyl-amide of a lower alkanoic acid, and recovering said 9α-fluoro-11-oxygenated steroid of the pregnane and androstane series.

9. 9α-fluoro-5β-pregnane-3α,20β-diol-11-one.

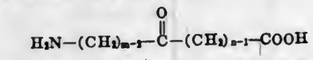
3,359,290

PRODUCTION OF OMEGA-AMINOKETO-CARBOXYLIC ACIDS

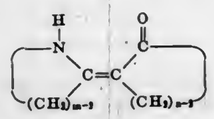
Siegfried Huenig, Hoechberg, near Wurzburg, and Eberhard Luecke, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed Jan. 3, 1964, Ser. No. 335,687
Claims priority, application Germany, Jan. 10, 1963, B 70,271
3 Claims. (Cl. 260—404)

1. A process for the production of omega-aminoketo-carboxylic acids having the general Formula I:



in which m is one of the whole numbers from 5 to 15 inclusive and n is one of the whole numbers from 5 to 12 inclusive, and salts of these acids, which comprises subjecting to hydrolysis a compound having the general formula:



in which m and n have the means given above.

3,359,291

PURIFICATION OF TETRAALKYL LEAD

David G. Braithwaite, Chicago, and Lawrence L. Bott, Oak Park, Ill., assignors to Nalco Chemical Company, Chicago, Ill., a corporation of Delaware

No Drawing. Filed Oct. 5, 1964, Ser. No. 401,636
9 Claims. (Cl. 260—437)

1. A process for separating a water insoluble ether from a water insoluble tetraalkyl lead compound which comprises extracting a mixture of said water insoluble ether and said tetraalkyl lead compound with a solution of water and an organic solvent which is soluble both in water and in said ether.

3,359,292

TRANSALKYLATION OF ALUMINUM ALKYLS

Wayne T. Davis, Baton Rouge, La., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia

Filed Feb. 28, 1964, Ser. No. 348,126
9 Claims. (Cl. 260—448)

1. The process for replacing alkyl groups of a trialkyl aluminum feed with different alkyl groups comprising

(a) preheating an olefin feed stream to a temperature from about 400 to 700° F., the olefins being in molal excess of the alkyl groups of a trialkyl aluminum feed and predominantly of different chain length than said alkyl groups, and the olefins being preheated sufficiently to provide an adiabatic reaction temperature as hereafter defined,

(b) mixing reacting said preheated olefins with the cold trialkyl aluminum feed under high intensity mixing conditions, for a time of about one-hundredth to one-half of the reaction time hereafter defined, and providing thereby a mixture temperature sufficient to cause rapid transalkylation of the alkyl groups by the olefins,

(c) further reacting the mixture from (b) under substantially adiabatic reaction conditions at a temperature from about 300 to 650° F. and a pressure of about 100 to 800 pounds per square inch for a total mixing and reaction time of about 0.1 to 5 seconds and,

(d) rapidly cooling the reacted mixture sufficiently to inhibit further reaction.

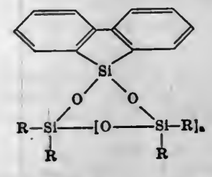
3,359,293

MONO-ORTHO,ORTHO'-BIPHENYLENE SUBSTITUTED ARYLCYCLOSILOXANES

Tse C. Wu, Waterford, N.Y., assignor to General Electric Company, a corporation of New York

No Drawing. Filed Feb. 17, 1965, Ser. No. 433,482
5 Claims. (Cl. 260—448.2)

1. A cyclopolysiloxane having the structure:



where R is a monovalent aryl radical and a is an integral number of from 1 to 2, inclusive.

3,359,294

REACTION PRODUCT OF TETRAFLUOROETHYLENE TELOMER AND POLYETHYL SILICATE

Elemer Domba, Chicago, Ill., assignor to Nalco Chemical Company, Chicago, Ill., a corporation of Delaware

No Drawing. Filed Jan. 14, 1964, Ser. No. 337,536
4 Claims. (Cl. 260—448.8)

1. A new composition of matter useful in defoaming and inhibiting foam formation which comprises the reaction product of a tetrafluoroethylene telomer having an average molecular weight of at least approximately 500 and a polyethyl silicate, said reaction taking place at a temperature of from 100–300° C., for a period of from about 2 to about 20 hours.

3,359,295

POLYISOCYANATE COMPOSITIONS AND PROCESSES FOR THE PRODUCTION THEREOF

Andrew Shultz, Amherst, and Melvin Kaplan, Tonawanda, N.Y., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Feb. 7, 1964, Ser. No. 343,218
5 Claims. (Cl. 260—453)

1. In a process for the production of polyisocyanate compositions by phosgenation of toluene diamines in the presence of a solvent, to produce a toluene diamine phosgenation product, the improvement of incorporating in the toluene diamine phosgenation product a polyol containing 3–8 inclusive hydroxyl groups in an amount of about 0.5% to about 4% by weight of the toluene diamine phosgenation product and thereafter distilling said mixture to remove volatile constituents until the resultant distilland has a viscosity of from 20 to 10,000 cps. at 25° C. and an amine equivalent within the range of 100–130.

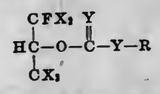
3,359,296

FLUOROALCOHOL CARBONATES

Peter E. Newallis, Morris Plains, Pasquale Lombardo, East Hanover Township, Morris County, and Julian A. Otto, Stockholm, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

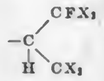
No Drawing. Filed Nov. 13, 1964, Ser. No. 411,131
9 Claims. (Cl. 260—455)

1. As compositions of matter the fluoroalcohol carbonates of the formula



wherein X is a member selected from the group consisting of fluorine and chlorine, Y is a member selected from

the group consisting of oxygen and sulfur, and R is a member selected from the group consisting of lower alkyl, aryl, and



wherein X is as defined above.

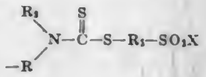
3,359,297

PROCESS FOR THE PREPARATION OF SULFONIC ACIDS HAVING DITHIOCARBAMIC ACID ESTER AND THIOUREA OR THIOSEMICARBAZIDE GROUPS

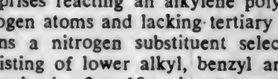
Wolfgang Gündel, Dusseldorf-Oberkassel, Germany, assignor to Debydag Deutsche Hydrierwerke G.m.b.H., Dusseldorf-Holthausen, Germany, a corporation of Germany

No Drawing. Filed Apr. 1, 1965, Ser. No. 444,784
Claims priority, application Germany, Apr. 18, 1964, D 44,199
4 Claims. (Cl. 260—455)

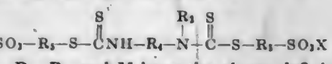
1. A process for the preparation of compounds containing at least one



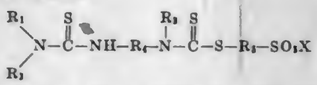
grouping wherein R is an alkylene radical of 2 to 18 carbon atoms having attached thereto at least one group selected from the group consisting of thiourea and thiosemicarbazide groupings, R_3 is selected from the group consisting of lower alkyl, benzyl and cyclohexyl, R_5 is an alkylene of 2 to 4 carbon atoms and X is in alkali metal which comprises reacting an alkylene polyamine having 2 to 4 nitrogen atoms and lacking tertiary amino groups and contains a nitrogen substituent selected from the group consisting of lower alkyl, benzyl and cyclohexyl, said alkylene having 2 to 18 carbon atoms, in an aqueous medium with one mole of carbon disulfide and one mole of an alkali metal for each mole of amino groups to form a poly-dithiocarbamate having a group of the formula



wherein R_4 is an alkylene of 2 to 18 carbon atoms and R_3 and X have the above definition, reacting the latter with a member selected from the group consisting of a salt of a halo alkane-ω-sulfonic acid having 2 to 4 carbon atoms, a 1,3-alkane sultone having up to 4 carbon atoms and a 1,4-alkane sultone having up to 4 carbon atoms to form alkane poly-dithiocarbamyl-S-alkylene sulfonic acid salts having a group of the formula



wherein R_3, R_4, R_5 and X have the above definitions, reacting the latter under alkaline conditions with one mole of a nitrogen compound selected from the group consisting of ammonia, a hydrazine having at least one labile hydrogen atom, a primary amine and a secondary amine for each mole of amino groups present in the original polyamine in the presence of about stoichiometric amounts of a water-soluble, aliphatic halogen compound whose halogen is labile to form a compound having a group of the formula



wherein R_3, R_4, R_5 and X have the above definition and R_1 and R_2 are the residue of the nitrogen compound and recovering the latter.

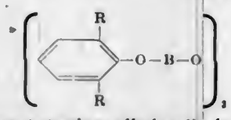
3,359,298

PHENOLIC BORATE ESTERS AND PRODUCTION THEREOF

Don L. Hunter, Long Beach, and Howard Steinberg, Fullerton, Calif., assignors to United States Borax & Chemical Corporation, Los Angeles, Calif., a corporation of Nevada

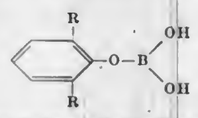
No Drawing. Filed June 17, 1958, Ser. No. 742,691
14 Claims. (Cl. 260—462)

1. A substantially water stable boron ester having the formula



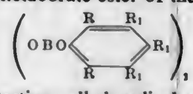
where R represents tertiary alkyl radicals.

2. A substantially water stable boron ester having the formula



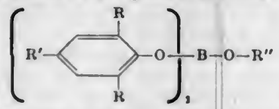
where R represents tertiary alkyl radicals.

3. A trimeric metaborate ester of the formula



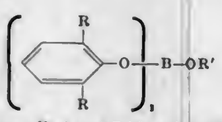
wherein R is a tertiary alkyl radical and R_1 is selected from the group consisting of hydrogen and alkyl radicals.

4. A borate ester of the general formula



where R represents a tertiary alkyl radical, R′ is selected from the group consisting of hydrogen and lower alkyl radicals and R″ represents a lower alkyl radical.

5. A substantially water stable boron ester of the formula



where R is tertiary alkyl and R′ is selected from the group consisting of alkyl, alkenyl and alkynyl.

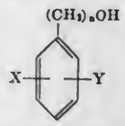
3,359,299

ARYL, ALKARYL AND ARALKYL ESTERS OF HALO-SUBSTITUTED POLYHYDRODIALKANONAPHTHALENEDICARBOXYLIC ACIDS AND A METHOD FOR THE PREPARATION THEREOF

Morris Dunkel, Paramus, N.J., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed June 17, 1964, Ser. No. 375,939
7 Claims. (Cl. 260—468)

1. An ester of a halo-substituted octahydro-1,4,5,8-dimethano-2,3-naphthalenedicarboxylic acid and a hydroxy-substituted compound of the formula:



wherein X and Y are independently selected from the group consisting of hydrogen, halogen and lower alkyl and *n* is a number of from 0 to 4.

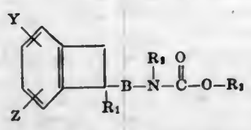
3,359,300

CARBAMATES OF 1-BENZOCYCLOBUTENYL AMINES

Joseph A. Skorcz, Milwaukee, Wis., assignor to Colgate-Palmolive, Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 7, 1964, Ser. No. 388,262
6 Claims. (Cl. 260—471)

1. A carbamate of the formula



wherein Y and Z represent ring substituents selected from the group consisting of hydrogen, hydroxyl, lower alkoxy, lower thioalkyl, methylenedioxy and halo-lower alkyl, B represents a member selected from the group consisting of a single chemical bond and lower alkylene, R_1 represents a member selected from the group consisting of hydrogen, lower alkyl, cycloalkyl, and aralkyl, R_2 represents a member selected from the group consisting of hydrogen, lower alkyl, cycloalkyl, aryl and aralkyl and R_3 represents a member selected from the group consisting of lower alkyl, cycloalkyl, aryl and aralkyl.

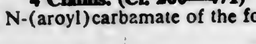
3,359,301

NOVEL ARYL N-(AROYL)CARBAMATES

Angelo John Speziale, Creve Coeur, and Lowell R. Smith, St. Louis, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Original application Sept. 4, 1962, Ser. No. 221,302. Divided and this application May 13, 1965, Ser. No. 455,587
4 Claims. (Cl. 260—471)

1. An aryl N-(aroyl)carbamate of the formula



wherein R is selected from the group consisting of phenyl, C_{1-5} alkyl substituted phenyl and chloro substituted phenyl, wherein X′ is selected from the group consisting of oxygen and sulfur, and wherein R″ is selected from the group consisting of chlorophenyl and nitrophenyl.

3,359,302

BIS(p-PHENYLPHENYL) DIPHENATE

Harold D. Medley, Weston, Conn., and Arthur W. Schnizer, Corpus Christi, Tex., assignor to Celanese Corporation, a corporation of Delaware

No Drawing. Filed Mar. 5, 1962, Ser. No. 177,191
1 Claim. (Cl. 260—475)

Bis(p-phenylphenyl) dipbenate.

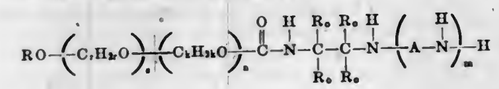
3,359,303

REACTION PRODUCTS OF POLY(ALKYLENOXY) ALKYL 1 - AZIRIDINECARBOXYLATES WITH POLYAMINES

William P. Coker and Robert E. Lane, Jr., Lake Jackson, Tex., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

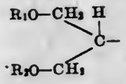
No Drawing. Filed Jan. 31, 1964, Ser. No. 341,773
8 Claims. (Cl. 260—482)

1. A compound of the formula



wherein:

(a) R is selected from the group consisting of an alkyl group of from 1 to 18 carbon atoms and a group of the formula



in which each of R_1 and R_2 is a lower alkyl group of from 1 to 4 carbon atoms,

(b) each of *r* and *k* is an integer of from 2 to 4,

(c) each of *n* and *s* is an integer of from 1 to 20, such that their sum is 2 to 20,

(d) each R_5 is selected from the group consisting of the hydrogen atom and a lower alkyl group,

(e) A is a divalent alkylene group of from 2 to 4 carbon atoms, and

(f) *m* is an integer of from 1 to 6.

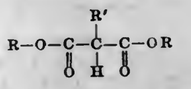
3,359,304

BORON-CONTAINING COMPOUNDS AND METHOD FOR MAKING THE SAME

Jack Bobinski, Rockaway, and Daniel Grafstein and Joseph Green, Dover, and Nathan Mayes, Rockaway, N.J., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware

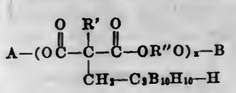
No Drawing. Filed Oct. 2, 1959, Ser. No. 844,818
12 Claims. (Cl. 260—485)

1. A process for making organoborane diesters, which process comprises condensing, in the presence of metallic sodium, a propargyl halide with a diester of the formula

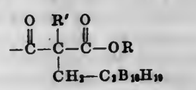


where R is a lower alkyl radical and R′ is a member of the class consisting of hydrogen and methyl, whereby a propargyl radical having an acetylenic bond is substituted into said diester according to a malonic ester synthesis, and then adding decaborane to the acetylenic bond of said substituted propargyl radical by reaction with a nitrogen coordinated decaborane derivative.

5. A polyester condensation polymer of the formula



wherein A is R— or HOR″—, B is —H or



$—C_2B_{10}H_{10}$ is carboranyl, R is an alkyl group having one to six carbon atoms, R′ is hydrogen, methyl, or

$—CH_2—C_2B_{10}H_{10}—H$

R″ is an aliphatic hydrocarbon radical having up to 10 carbon atoms, and *x* has a value such that the polymer has a molecular weight up to 20,000.

3,359,305

PREPARATION OF SULFO ESTERS OF α-METHYLENE CARBOXYLIC ACIDS

David P. Sheetz, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Dec. 16, 1963, Ser. No. 330,585
5 Claims. (Cl. 260—486)

1. A method for preparation of sulfo esters which comprises:

(a) heating a mixture consisting essentially of an

aliphatic hydroxy sulfonic acid, an α-methylene carboxylic acid and an effective amount of a polymerization inhibitor at a temperature sufficient to azeotropically distill water and α-methylene carboxylic acid from the mixture at a pressure from about 20 mm. of mercury to about 200 mm. of mercury whereby there is formed a sulfo aliphatic ester of the α-methylene carboxylic acid; said α-methylene carboxylic acid being used in a quantity from about 3 to about 10 times the quantity of said aliphatic hydroxy sulfonic acid, calculated on a mole basis;

(b) removing residual α-methylene carboxylic acid from the sulfo aliphatic ester by distillation at a pressure less than about 30 mm. of mercury.

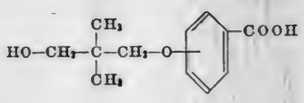
3,359,306

HYDROXYNEOPENTYL ETHERS AND PROCESS FOR PREPARING THE SAME

Alford G. Farnham, Mendham, and Phillip E. Sonnet, Highland Park, N.J., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Aug. 17, 1962, Ser. No. 217,538
9 Claims. (Cl. 260—521)

1. A hydroxyneopentyl ether having the formula:



3,359,307

PRODUCTION OF PURIFIED SALICYLIC ACID

Noland Poffenberger and Donald F. Pontz, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Mar. 10, 1965, Ser. No. 438,752
6 Claims. (Cl. 260—521)

1. In a process for obtaining crystalline salicylic acid by cooling to a crystallizing temperature a solvent solution of salicylic acid, thereby causing separation of solid salicylic acid from said solution, the improvement wherein the solvent is a mixture consisting essentially of phenol and water in proportions such that said solvent exists in two distinct liquid phases at said crystallizing temperature.

3,359,308

PREPARATION OF DICARBOXYLIC ACIDS BY NITRIC ACID OXIDATION

Otis Alwyn Sampson, Jr., Greenway Park, Tex., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed May 17, 1963, Ser. No. 281,083
7 Claims. (Cl. 260—531)

1. In a process for the preparation of alkane dicarboxylic acids by the liquid phase nitric acid oxidation of a reactant selected from the group consisting of cycloalkanols and cycloalkanones, the improvement of decreasing the nitric acid consumption while maintaining the yield of alkane dicarboxylic acid essentially constant by means of the steps comprising contacting said reactant, at a temperature of 90–140° C. for at least 0.3 minute with 40–75 weight percent aqueous nitric acid in the presence of a copper-vanadium catalyst, recycling at least a part of the reaction mixture containing 0.30–0.60 weight percent oxidized copper, 0.01–0.5 weight percent oxidized vanadium and nitric acid reduction products having an average oxygen to nitrogen ratio of greater than 0.5, while maintaining the product of the weight ratio of recycle to reactant multiplied by said oxidized vanadium concentration at 30–60, and thereafter recovering said alkane dicarboxylic acid.

3,359,309

CATALYTIC PROCESS FOR PREPARING UNSATURATED ALIPHATIC ALDEHYDES AND MONOCARBOXYLIC ACIDS FROM OLEFINS

Howard S. Young and Edgar L. McDaniel, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed June 15, 1964, Ser. No. 375,284
16 Claims. (Cl. 260—533)

1. A process for preparing acrolein and acrylic acid or methacrolein and methacrylic acid which comprises reacting in the vapor phase propylene or isobutylene, respectively, with oxygen at a temperature of from about 300° C. to about 600° C. in the presence of a catalyst comprising a calcined mixture of (1) about 1 to about 20% by weight of an oxide of arsenic, calculated as As_2O_5, (2) about 5 to about 60% by weight of a heteropoly acid of molybdenum containing manganese as the central atom and (3) about 30 to about 94% by weight carrier, wherein (1) and (2) are supported on said carrier and wherein said heteropoly acid is present in greater percent by weight than the oxide of arsenic.

3,359,310

PROCESS FOR PRODUCING POTASSIUM MALONATE

Bernhard Raecke, Dusseldorf, Germany, assignor to Henkel & Cie G.m.b.H., Dusseldorf, Germany, a corporation of Germany

No Drawing. Filed July 14, 1964, Ser. No. 382,638
Claims priority, application Germany, July 27, 1963, H 49,852
10 Claims. (Cl. 260—537)

1. A process for the production of the potassium salt of malonic acid which comprises reacting potassium acetate with carbon dioxide at temperatures of above 200° C. under pressures of 10 to 2000 atmospheres to form the potassium salt of malonic acid.

10. A process for the preparation of the potassium salt of malonic acid which comprises reacting potassium acetate with carbon dioxide at a temperature of 200 to 450° C. and at a pressure of 10 to 2000 atmospheres in the presence of a water-binding agent, 0 to 80 percent of an inert diluent and 0 to 15 percent of a catalyst selected from the group consisting of iron, bismuth and zinc, the oxides of the said metals and the inorganic and organic acid salts of said metals.

3,359,311

PROCESS FOR COLOR IMPROVEMENT OF β-VINYLADIPIC ACID

Robert H. Perry, Jr., Springfield, N.J., and Leroy C. Jennings, Baytown, Tex., assignors, by mesne assignments, to Esso Research and Engineering Company, Elizabeth, N.J., a corporation of Delaware

No Drawing. Filed Dec. 11, 1964, Ser. No. 417,820
8 Claims. (Cl. 260—537)

1. A method of improving the color of crude β-vinyladipic acid produced by the ozonization of 4-vinylcyclohexene which comprises

forming a solution of from 5 to 30 parts by weight of crude β-vinyladipic acid and from 0.05 to 1.0 part by weight of water in 100 parts by weight of a solvent chosen from the group consisting of benzene, toluene, xylene, polymethylbenzene, chlorinated benzenes, and chlorinated paraffin hydrocarbons,

at a temperature sufficient to dissolve said β-vinyladipic acid in said solvent,

cooling said solution to a lower temperature above the crystallization tempertaure of β-vinyladipic acid, at which a dark-colored oil layer forms,

separating said dark-colored oil layer from said solution,

and recovering β-vinyladipic acid from said solution as a substantially colorless product.

3,359,312

N-(S-BENZYLTHIOETHYL)PHOSPHORAMIDOTHIOIC DICHLORIDE

Bernard Buchner, Westfield, and George G. Curtis, Elizabeth, N.J., assignors, by mesne assignments, to Continental Oil Company, a corporation of Delaware

No drawing. Filed July 16, 1963, Ser. No. 295,531
1 Claim. (Cl. 260—543)

N-(S-benzylthioethyl) phosphoramidothioic dichloride.

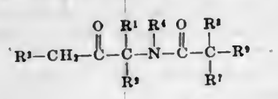
3,359,313

NOVEL AMIDES OF β-KETO AMINES

Nelson R. Easton and Robert D. Dillard, Indianapolis, Ind., assignors to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana

No Drawing. Filed June 3, 1965, Ser. No. 461,198
6 Claims. (Cl. 260—559)

1. A compound of the formula,



wherein

R^1 and R^2, when taken alone, are members of the group consisting of lower alkyl, phenyl, and phenyl bearing not more than two substituents selected from the group consisting of methyl, trifluoromethyl, and halo;

R^1 and R^2, when taken together with the carbon atom to which they are attached, complete a C_5–C_8 cycloalkyl ring;

R^3 is a member of the group consisting of hydrogen, lower alkyl, halo, phenyl, and naphthyl;

R^4 is a member of the group consisting of hydrogen, lower alkyl, C_3–C_8 cycloalkyl, lower-alkoxy-lower alkyl, and tetrahydrofurfuryl;

R^5 is a member of the group consisting of phenoxy, mono- and di-substituted phenoxy, phenylthio, mono- and di-substituted phenylthio, naphthyloxy, mono- and di-substituted naphthyloxy, naphthylthio, mono- and di-substituted naphthylthio, the substituents being members of the group consisting of methyl, trifluoromethyl, and halo;

R^6 and R^7 are members of the group consisting of hydrogen, methyl, and ethyl.

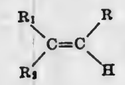
3,359,314

PROCESS FOR PREPARING ALPHA HYDROXY OXIMES

Corrado Brichta, Adriano Nenz, Giuseppe Ribaldone, Giampiero Borsotti, and Enzo Gallinella, Milan, Italy, assignors, by mesne assignments, to Montecatini Edison S.p.A.

No Drawing. Filed Aug. 6, 1963, Ser. No. 300,165
Claims priority, application Italy Aug. 10, 1962, 673,613; Oct. 31, 1962, 693,084
2 Claims. (Cl. 260—566)

1. The process of preparing alpha-hydroxy-oximes which comprises reacting nitrosyl sulfuric acid, sulfuric acid and a compound selected from the group of olefinic compounds having the following structure:



wherein R_1, R_2 and R represent a member selected from the class consisting of hydrogen, alkyl, monocyclic aryl, monocyclic aralkyl hydrocarbon groups and cycloaliphatic hydrocarbons having 4 to 12 carbon atoms selected from the group formed by R_1–R_2 and R_1–R joined through methylenic groups.

3,359,315

REDUCTION OF AROMATIC NITRO COMPOUNDS TO AROMATIC AMINES

John Richard Kosak, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Oct. 15, 1964, Ser. No. 404,186
11 Claims. (Cl. 260—575)

1. In the process of producing an aromatic amine by the catalytic hydrogenation of the corresponding nitro compound in the presence of a noble metal hydrogenation catalyst, the improvement consisting of adding to the hydrogenated product after the nitro compound has been substantially completely reduced a small impurity-scavenging amount of a member selected from the group consisting of hydrazine and a hydrocarbon substituted hydrazine having a free NH_2 group, and holding the temperature of said mass between 50° and 150° C. for about two hours to 15 minutes followed by isolating the resulting amine product.

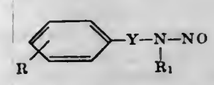
3,359,316

N-NITROSO-N-PHENYLALKYL-AMINES

John H. Biel, Milwaukee, Wis., assignor, by mesne assignments, to Colgate-Palmolive Company, a corporation of Delaware

No Drawing. Filed Feb. 24, 1958, Ser. No. 716,876
2 Claims. (Cl. 260—570.8)

1. A compound of the formula



wherein R represents hydrogen, lower alkyl, lower alkoxy, chloro, bromo, methylenedioxy or phenoxy, R_1 represents hydrogen or lower alkyl, and Y is a straight or branched alkylene of 2 to 5 carbons but Y is a branched alkylene when R is hydrogen.

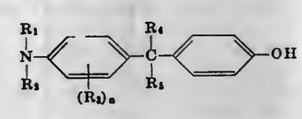
3,359,317

PROCESS FOR THE PRODUCTION OF ALKENYL-ANILINES

Heinrich Krimm, Krefeld-Bockum, and Hermann Schnell, Krefeld-Urdingen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed May 20, 1964, Ser. No. 368,978
Claims priority, application Germany, May 24, 1963, F 39,823
9 Claims. (Cl. 260—577)

1. A process for producing an alkenyl aniline or cycloalkenyl aniline compounds comprising heating a hydroxy phenylaminophenyl alkane of the formula



wherein

R_1 and R_2 are hydrogen or methyl;

R_3 is methyl or chloro;

n is an integer of 0–2;

R_4 is individually defined as methyl, ethyl or 4-aminophenyl, and

R_5 is individually defined as hydrogen or methyl, and

R_4 and R_5 in combination with the carbon atom being further defined as cycloalkyl having 6 carbon atoms;

in the presence of an active amount of a catalyst comprising alkali metal, alkaline earth metal and the corresponding oxide, hydroxide, alcoholate, phenolate, alkyl-

carboxylate and carbonate, zinc, cadmium, lead and their corresponding oxide, hydroxide, and caboxylates; and distilling off the resulting product as formed.

3,359,318
DIFLUORAMINES AND THEIR PREPARATION

Clay Marcus Sharts, Woodbury, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Nov. 17, 1961, Ser. No. 154,386
8 Claims. (Cl. 260—563)

1. Bisdifluoramines of the structural formula

$$F_2N(CH_2)_nNF_2$$

wherein n is an integer from 3 to 6.

6. A process for the preparation of difluoramines which comprises reacting an amine of the general structural formula

$$RNH_2$$

where R is an aliphatic radical, said radical having an H_2N substituent, with elemental fluorine in an aqueous medium having a pH from about 5.5 to about 9.5 at a temperature from about −10° C. to about 25° C. and in the presence of an acid acceptor free of groups reactive with elemental fluorine.

3,359,319
2-[BIS(PERFLUOROALKYL)AMINO]-1,3-BUTADIENES AND PROCESS OF PREPARATION

Frank S. Fawcett, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

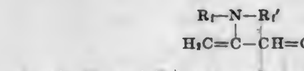
No Drawing. Filed May 7, 1965, Ser. No. 454,159
12 Claims. (Cl. 260—583)

1. The class of 2-amino-1,3-butadienes having the formula



where R_f and R_f' are perfluoro(lower alkyl of 1 to 6 carbon atoms) and X is selected from the group consisting of hydrogen and fluorine.

12. A process for the preparation of the class of 2-amino-1,3-butadienes having the formula



wherein R_f and R_f' are perfluoro(lower alkyl of 1 to 6 carbon atoms) which comprises the steps:

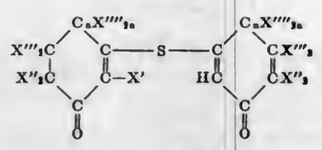
(a) reacting an N-chlorobis(perfluoro lower alkyl of 1 to 6 carbon atoms)amine and butadiene cyclic sulfone, in approximately stoichiometric proportions, under free radical reaction conditions, at a temperature of 0 to 200° C., to form a 3-N,N-bis(perfluoro lower alkyl of 1 to 6 carbon atoms)amino-4-chlorotetrahydrothiophene-1,1-dioxide;
(b) dehydrohalogenating said dioxide of (a) by reacting same in a lower alcohol solvent, at a temperature of 0° to 100° C., with an inorganic base, in approximately stoichiometric proportions, to form a 3-N,N-bis(perfluoro lower alkyl of 1 to 6 carbon atoms)aminodihydrothiophene-1,1-dioxide;
(c) heating the product of (b) to a temperature of 50° to 400° C. until sulfur dioxide evolution ceases;
(d) recovering said 2-amino-1,3-butadiene;
(e) reacting the sulfur dioxide from (c) with butadiene under superatmospheric pressure at a temperature of 20–100° C. to form butadiene cyclic sulfone, and
(f) recycling the butadiene cyclic sulfone from (e) to (a).

3,359,320
NOVEL HALOGENATED SULFIDES

Louis G. Anello, Basking Ridge, and Richard F. Sweeney, Dover, Randolph Township, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

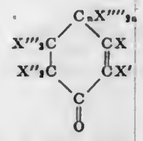
No Drawing. Filed Apr. 5, 1965, Ser. No. 445,706
19 Claims. (Cl. 260—586)

1. Compounds of the formula:



wherein X′–X″″ may be F or Cl and may be the same or different provided that there is present at least one fluorine atom and one chlorine atom in the molecule and n may be 0 or 1.

10. The process which comprises reacting a compound of the formula:



wherein X–X″″ may be F or Cl and may be the same or different provided that there is present at least one fluorine atom and one chlorine atom within X′–X″″, and n may be 0 or 1, with a compound of the formula:

$$R—SH$$

wherein R is an aryl radical selected from the group consisting of phenyl, phenylalkyl and alkylphenyl radicals at a temperature from about room temperature to about the reflux temperature of the reaction mixture.

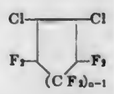
3,359,321
(PERFLUORODIOXOCYCLOALKYL) PHOSPHONIUM BETAINES

Samuel E. Ellzey, Jr., New Orleans, La., assignor to the United States of America as represented by the Secretary of Agriculture

No Drawing. Filed Sept. 29, 1964, Ser. No. 400,280
8 Claims. (Cl. 260—590)

1. A process for preparing (perfluorodioxocycloalkyl) triphenylphosphonium betaines which process comprises the following steps:

(a) reacting at least one molar proportion of a chlorinated cyclic fluorinated olefin of the type



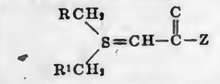
in which n is 1 or 2 with at least one molar proportion a triphenylphosphine, in the presence of a lower alkanoic acid and at least two moles of water per mole of olefin,
(b) continuing the reaction until the evolution of hydrogen halides is complete,
(c) precipitating the betaine by diluting the alkanoic acid solution with an excess of water,
(d) washing the precipitated betaine to remove the alkanoic acid, and
(e) recovering the precipitated betaine.

3,359,322
SULFONIUM YLIDS

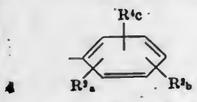
Kenneth Wayne Ratts, Creve Coeur, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed May 11, 1966, Ser. No. 549,166
11 Claims. (Cl. 260—592)

1. A compound of the formula



wherein R and R^1 are each selected from the group consisting of hydrogen, alkyl of not more than 12 carbon atoms and haloalkyl of not more than 12 carbon atoms containing from 1 to 3 halogen atoms, and Z is selected from the group consisting of naphthyl and



wherein R^2 is selected from the group consisting of halogen and alkyl of not more than 4 carbon atoms, R^3 is selected from the group consisting of NO_2 and alkoxy of not more than 4 carbon atoms, R^4 is phenyl, a is an integer from 0 to 5 inclusive, b is an integer from 0 to 2 inclusive, and c is an integer from 0 to 1 inclusive.

3,359,323
PROCESS FOR THE SYNTHESIS OF 4-HYDROXYRETINAL

Albert J. Reedy, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed June 28, 1965, Ser. No. 467,765
8 Claims. (Cl. 260—598)

1. A process for making 4-hydroxyretinal, which comprises: contacting retinal enol acetate with selenium dioxide in a liquid reaction medium selected from the group consisting of tetrahydrofuran, acetic acid, benzene and 1,4-dioxane, whereby a reaction product is formed; and contacting said reaction product with water.

3,359,324
METHOD OF PREPARING 2,3-DIMETHYL-4-PENTENAL

Donald H. Hirsh, South Charleston, W. Va., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Feb. 1, 1961, Ser. No. 86,297
2 Claims. (Cl. 260—601)

1. A method of preparing 2,3-dimethyl-4-pentenal which comprises heating 1-propenyl crotyl ether at a temperature of about 250° C. to about 400° C. for a period of about 1 second to about 100 seconds and recovering the 2,3-dimethyl-4-pentenal produced thereby.

3,359,325
PROCESS FOR THE MANUFACTURE OF ACROLEIN

Kurt Sennewald, Knapsack, near Cologne, Alexander Ohorodnik, Liblar, and Wilhelm Vogt, Knapsack, near Cologne, Germany, assignors to Knapsack Aktiengesellschaft, Knapsack, near Cologne, Germany, a corporation of Germany

Filed Oct. 8, 1965, Ser. No. 494,116
Claims priority, application Germany, Oct. 22, 1964, K 54,319
18 Claims. (Cl. 260—604)

1. In the process for the manufacture of acrolein by oxidizing propylene with oxygen in the presence of steam, at a temperature of 230 to 600° C. and a pressure of 0.1 to 10 atmospheres absolute in contact with a catalyst, the improvement which comprises carrying out the oxidation with the use of a catalyst consisting essentially of an oxide mixture of the elements vanadium, tin and phosphorus in an atomic ratio of 1:4.5–10:2–10 respectively and a carrier.

3,359,326
AQUEOUS FORMALDEHYDE SOLUTIONS STABILIZED WITH ACRYLATE POLYMERS

Frederic J. Locke, East Longmeadow, Mass., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Jan. 21, 1965, Ser. No. 427,180
4 Claims. (Cl. 260—606)

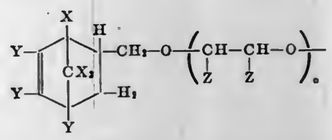
1. A stabilized solution of 38–80 weight percent of formaldehyde in water which solution has included therein 1–100 p.p.m. of a non-colloidal polymer having a weight average molecular weight of from about 800 to about 10,000 and being selected from the group consisting of alkyl acrylate homopolymers, alkyl methacrylate homopolymers, copolymers of two alkyl acrylates, copolymers of two alkyl methacrylates, alkyl acrylate-alkyl methacrylate copolymers, terpolymers of two alkyl acrylates and dialkyl fumarates, terpolymers of two alkyl methacrylates and dialkyl fumarates, alkyl acrylate-alkyl methacrylate-dialkyl fumarate terpolymers, terpolymers of two alkyl acrylates and dialkyl maleates, terpolymers of two alkyl methacrylates and dialkyl maleates, alkyl acrylate-alkyl methacrylate-dialkyl maleate terpolymers, and mixtures of the above wherein the alkyl radicals of the above contain 1–4 carbon atoms.

3,359,327
HALOGENATED ETHER ALCOHOLS

Carleton W. Roberts and John C. Little, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Nov. 14, 1966, Ser. No. 593,689
8 Claims. (Cl. 260—611)

1. A compound of the formula:



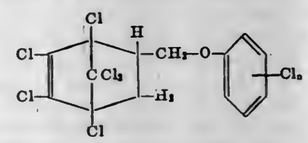
wherein X represents halogen of atomic weight less than 100, and Y represents halogen of atomic weight between 25 and 100, one Z represents hydrogen or lower alkyl and the other Z represents hydrogen, and n is an integer from 1 to 10, inclusive.

3,359,328
HALOPHENOXY NORBORNENES

Carleton W. Roberts, Midland, and Daniel H. Haigh, Beaverton, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Continuation of application Ser. No. 239,806, Nov. 23, 1962. This application Oct. 25, 1966, Ser. No. 589,461
4 Claims. (Cl. 260—612)

1. Compound of the formula:



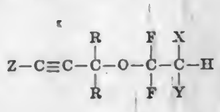
wherein n represents an integer from 3–5 inclusive.

3,359,329
HALOALKYL PROPYNYL ETHERS

Charles T. Pumpelly, Midland, Joseph J. Pedjac, Mount Pleasant, and Eric R. Larsen, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Mar. 18, 1963, Ser. No. 266,038
10 Claims. (Cl. 260—614)

1. Compounds of the formula



wherein:

(a) each R is independently selected from the group consisting of hydrogen and a monovalent saturated hydrocarbon group of from 1 to 6 carbon atoms,

(b) X and Y are each selected from the group consisting of the halogens (wherein both X and Y are fluorine atoms only when Z is a lower halogen), an alkyl group of from 1 to 6 carbon atoms and a perfluoroalkyl group of from 1 to 4 carbon atoms, and

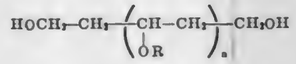
(c) Z represents a member of the group consisting of the hydrogen atom and a halogen atom.

3,359,330
3,5,X POLYALKOXY α,ω DIOLS

Samuel A. Glickman, Easton, Pa., assignor to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 20, 1961, Ser. No. 153,689
3 Claims. (Cl. 260—615)

1. Mixtures of the group consisting of alkoxy substituted α,ω primary diols of the formula



wherein R is an alkyl radical of from 1 to 8 carbon atoms, and n is an integer having an average value of from 2 to 50.

3,359,331
SECONDARY ALCOHOL ETHOXYLATION

Samuel B. Baker and William R. Thompson, Sarnia, Ontario, Canada, assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Nov. 10, 1965, Ser. No. 507,245
5 Claims. (Cl. 260—615)

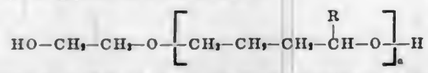
1. A batch method for the formation of secondary alkanol ethoxylates comprising contacting at reaction conditions a secondary alkanol having from 8 to 20 carbon atoms with ethylene oxide in the presence of a catalyst selected from the group consisting of $SnCl_4$ and $SbCl_5$, said reaction being initially conducted with at least about 0.25–0.5 wt. percent of said alkanol, ethylene oxide, and catalyst programed for said batch in a glass, ceramic or nonreactive resin coated reactor for a time sufficient to commence the ethoxylation reaction, said ethoxylation being conducted at a temperature in the range of from about 30 to 70° C., transferring at least a portion of said reacting mixture to a steel reactor and contacting said reacting mixture with the remaining amounts of alkanol, ethylene oxide, and catalyst programed for said batch for a time sufficient to obtain a substantial product yield.

3,359,332
PREPARATION OF POLYOXYTETRAMETHYLENE GLYCOL

Peter R. Johnston, Chapel Hill, N.C., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Apr. 13, 1966, Ser. No. 542,234
7 Claims. (Cl. 260—615)

1. An improved method for preparing polyoxytetramethylene glycols of the formula



wherein R is selected from the group consisting of H and lower alkyl and n is an integer sufficiently large to confer a molecular weight of at least 300, said method comprising reacting at a temperature between −80° C. and 50° C. as a first reactant, ethylene oxide, with a second reactant selected from the group consisting of tetrahydrofuran and tetrahydrofuran substituted with an alkyl group containing 1–4 carbon atoms in the presence of boron trifluoride-tetrahydrofuran etherate and in the presence of water which has been introduced into the reaction system separately from the boron trifluoride-tetrahydrofuran etherate, the molar ratio of said first reactant and said second reactant being between about 1:10 and 1:20, the molar ratio of said boron trifluoride-tetrahydrofuran etherate to said water being between 1:0.01 and 1:1.5 and the molar ratio of said ethylene oxide and said boron trifluoride-tetrahydrofuran etherate being substantially 1:1.

3,359,333
SEPARATION OF BF_3 CATALYST FROM ALKYL PHENOL

Helmuth G. Schneider, Westfield, and Thomas F. O'Connor, Atlantic Highlands, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Continuation of application Ser. No. 190,780, Apr. 27, 1962. This application Aug. 10, 1966, Ser. No. 571,643
4 Claims. (Cl. 260—624)

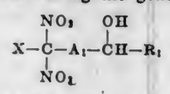
1. An improved process for separating BF_3 catalyst from the alkylation product obtained by alkylating a phenol with an olefin having from about 4 to 20 carbon atoms in the presence of BF_3 as a catalyst for the alkylation reaction, which comprises mixing said alkylation product with from 1 to 10 equivalents of a water-free base, per equivalent of BF_3 present in said alkylation product, at a temperature in the range of 100 to 200° F. whereby there is obtained a mixture of liquid alkylation product and solid reaction product of dry base and BF_3, and thereafter separating said solid reaction product from said liquid alkylation product by filtration, said water-free base being selected from the group consisting of $MgCO_3$, CaO, $Ca(OH)_2$, $CaCO_3$, $Ca(HCO_3)$, $Ba(OH)_2$, $NaHCO_3$ and Na_2CO_3.

3,359,334
POLYNITRO HALO COMPOUNDS USEFUL AS ANTIBIOTICS, FUNGICIDES AND EXPLOSIVES

Marvin H. Gold, Sacramento, and Henry J. Marcus, West Covina, Calif., assignors to Aerojet-General Corporation, Azusa, Calif., a corporation of Ohio

No Drawing. Filed Nov. 26, 1963, Ser. No. 326,286
2 Claims. (Cl. 260—633)

1. The compounds having the general formula



wherein A_1 is a lower alkylene radical, R_1 is selected from the group consisting of lower alkyl and lower ω hydroxy

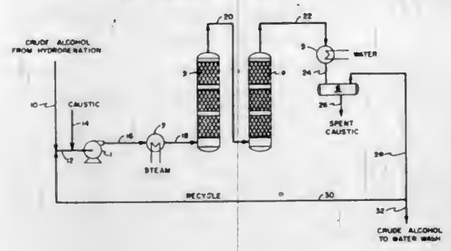
alkyl radical, and X is selected from the group consisting of chloro and bromo.

2. The compound 5-chloro-5,5-dinitro-1,2-pentanediol.

3,359,335
CAUSTIC SCRUBBING OF ALDOX ALCOHOLS

Charles Roming, Jr., Towaco, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

Filed May 13, 1964, Ser. No. 367,108
8 Claims. (Cl. 260—643)

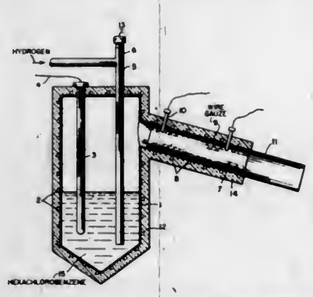


1. In a process for purifying crude alcohol products obtained from carbonylation reaction followed by hydrogenation, which products contain organic contaminants and undesirable color-forming impurities, wherein a stream of said crude alcohol products from said reactions is introduced to a caustic contact zone and is contacted in said zone with from 50 to 400 volume percent, based on said crude alcohol stream, of a 3 to 30 wt. percent aqueous solution of an alkali metal hydroxide at a temperature in excess of 150° F. and at a pressure sufficient to maintain the alcohol products in the liquid state to obtain a purified alcohol phase and an aqueous phase comprising alkali metal salts of organic impurities, the improvement which comprises withdrawing the purified alcohol phase from the aqueous phase and admixing from 25 to 75 volume percent of the withdrawn purified alcohol phase with the crude alcohol stream being introduced to the said caustic contact zone prior to contact with the aqueous solution of the alkali metal hydroxide in the caustic contact zone.

3,359,336
MANUFACTURE OF PENTACHLOROBENZENE

Leonhard Tiganik, Skoghall, Sweden, assignor to Uddeholms Aktiebolag, Uddeholm, Sweden, a company of Sweden

Filed Apr. 20, 1964, Ser. No. 361,073
Claims priority, application Sweden, Apr. 24, 1963, 4,511/63
2 Claims. (Cl. 260—650)



1. A method for the production of pentachlorobenzene which comprises passing an oxygen-free gaseous mixture consisting essentially of hexachlorobenzene and a hydrogen-containing material selected from the group consisting of hydrogen and ammonia over and in contact with a carrier at a temperature within the range from 350 to 500° C. whereby a graphitoid material deposits on said carrier and then continuing to passing said gaseous mixture over and in contact with said graphitoid material at said temperature.

3,359,337
DIENE OLIGOMERIZATION

Edward A. Rick, Charleston, W. Va., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed June 11, 1965, Ser. No. 463,384
18 Claims. (Cl. 260—666)

1. The process for producing predominantly the butadiene oligomers 3-methyl-1,5-heptadiene, 2,6-octadiene and 1,3,5-cyclooctatriene which consists essentially of contacting butadiene with a catalytic amount of the product obtained by admixing a nickel halide of the formula NiX_2 with a Grignard reagent of the formula RMgX, wherein X is a halogen having an atomic number of from 17 to 53, inclusive; and R is a hydrocarbyl radical of less than 20 carbons free from β,γ-aliphatic unsaturation, in as a solvent a normally-liquid ether consisting solely of carbon, hydrogen and oxygen, said oxygen being present solely in the form of an ether linkage, and wherein the molar ratio of said Grignard reagent to said nickel halide is at least 2:1.

3,359,338
PRODUCTION OF SATURATED DICYCLIC HYDROCARBONS

Lewis E. Drehman, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Sept. 28, 1960, Ser. No. 59,093
10 Claims. (Cl. 260—666)

3. A process for the production of saturated dicyclic hydrocarbons which comprises introducing into a reaction zone a hydrocarbon feed mixture consisting essentially of paraffin hydrocarbons boiling below 400° F. and at least one naphthene hydrocarbon selected from the group consisting of methylcyclopentane and cyclohexane, said paraffin hydrocarbons having at least seven carbon atoms contacting said hydrocarbon feed mixture with HCl and an aluminum chloride-hydrocarbon complex containing a concentration of 55–70 weight percent of aluminum chloride, maintaining in said reaction zone a catalyst concentration in the range of 25–50 volume percent in the reaction mixture, maintaining the temperature of said reaction zone in the range of 100–350° F., maintaining a pressure within said reaction zone so as to provide a liquid phase reaction, and withdrawing from said reaction zone an effluent hydrocarbon stream containing saturated dicyclic hydrocarbons.

3,359,339
PROCESS FOR THE PREPARATION OF CYCLOHEXENE AND ALKYL-SUBSTITUTED CYCLOHEXENES

Masataka Amagasa, Tadashi Yamaguchi, and Yoshiro Saito, Sendai-shi, Japan, assignors to Chiyoda Kakokensetsu Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan

No Drawing. Filed Mar. 17, 1965, Ser. No. 440,631
7 Claims. (Cl. 260—666)

1. A process which comprises contacting a compound selected from the group consisting of 1,4-dihydrobenzene and a lower alkyl substituted 1,4-dihydrobenzene with hydrogen and a catalyst consisting essentially of at least one Group VIII metal at a temperature of about 0° to 100° C. to selectively hydrogenate said compound to yield primarily the corresponding cyclic mono-olefinic compound in preference to producing the corresponding saturated compound.

3,359,340

PRODUCTION OF POLYPHENYLS

Clare R. Hand, Sanford, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Nov. 26, 1965, Ser. No. 510,031

3 Claims. (Cl. 260—670)

1. In a process for making a polyphenyl by subjecting benzene vapor to a pyrolytic temperature, the improvement wherein said benzene contains 0.1–5 percent by weight of benzoic acid.

3,359,341

EXTRACTION OF HYDROCARBONS

Hans Berthold Wiener and William Featherstone, Norton-on-Tees, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Apr. 6, 1964, Ser. No. 357,819

Claims priority, application Great Britain, May 1, 1963, 17,221/63

16 Claims. (Cl. 260—674)

1. In a process for the separation of aromatic hydrocarbon from a mixture comprising aromatic hydrocarbons, olefins, and paraffin wherein the mixture is contacted with an aqueous solution of a salt of a heavy metal whereby the aromatic hydrocarbon is absorbed by said solution to effect separation thereof from the paraffin, the improvement which comprises adding to said mixture, either prior to or during the absorption step, a predetermined amount of an olefine to increase the solubility of the said aromatic hydrocarbons in the said solution, whereby a greater amount of aromatic hydrocarbon may be separated from the paraffin.

3,359,342

PRETREATING AND ISOMERIZING α-PINENE

John Mentzer Derfer, Jacksonville, Fla., assignor to The Glidden Company, Cleveland, Ohio, a corporation of Ohio

No Drawing. Filed Jan. 16, 1967, Ser. No. 609,362

6 Claims. (Cl. 260—675.5)

1. A process of extending the useful life of a Group VIII metal as an isomerization catalyst in a process for the substantially non-destructive isomerization of α-pinene to β-pinene, which comprises:

pre-treating a sour α-pinene supply in a first zone at a temperature between about room temperature and about 300° C. in the presence of hydrogen with a metal from Group VIII of the Periodic Table having an atomic number of 28 to 78, inclusive,

said Group VIII metal having insufficient activity to catalyze an α- to β-pinene isomerization but sufficient activity effectively to sweeten the α-pinene supply,

and then contacting the pre-treated α-pinene supply while passing it through a second zone at a temperature between about room temperature and about 300° C. with a catalytically active Group VIII metal having an atomic number of 28 to 78, inclusive, said catalytically active metal being free of acidic support,

whereby the useful life of the catalytically active metal is appreciably extended and the isomerization process may continue with less frequent interruptions for exchange of isomerization catalyst by the defined pre-use of a metal of said Group VIII already unsuited for such catalytic isomerization.

3,359,343

DEHYDROGENATION OF HYDROCARBONS WITH OXYGEN, CHLORINE AND A GROUP I–A METAL COMPOUND

Laimonis Bajars, Princeton, N.J., assignor to Petro-Tex Chemical Corporation, Houston, Tex., a corporation of Delaware

No Drawing. Filed June 11, 1965, Ser. No. 463,362

9 Claims. (Cl. 260—680)

1. The method for the production of unsaturated aliphatic hydrocarbons of 4 to 6 carbon atoms which comprises heating in the vapor phase at a temperature of at least 450° C. the corresponding aliphatic hydrocarbon of 4 to 6 carbon atoms with oxygen in a molar ratio of about 0.4 to 2 mols of oxygen per mol of said aliphatic hydrocarbons, chlorine in a molar ratio of no greater than 0.2 mol of chlorine per mol of said aliphatic hydrocarbons being equivalent to no greater than 4 inches mercury at one atmosphere total pressure, with a catalyst comprising as its main active constituent a material selected from the group consisting of inorganic salts of metals of Periodic Table Group I–A and mixtures thereof in a catalytic amount, the ratio of the mols of said chlorine to the mols of said oxygen being at least three.

3,359,344

MIXED SPUN FIBERS CONTAINING POLYAMIDES OR POLYESTERS AND A SECOND COMPONENT SELECTED FROM THE GROUP OF POLYETHYLENE, POLYPROPYLENE OR POLYSTYRENE

Osamu Fukushima, Kurashiki, Japan, assignor to Kurashiki Rayon Company Limited, Kurashiki, Japan, a corporation of Japan

No Drawing. Filed July 6, 1964, Ser. No. 380,621

Claims priority, application Japan, July 22, 1963, 38/39,160, 38/39,161

3 Claims. (Cl. 260—857)

1. A process for manufacturing shaped articles by mixing (1) a spun fiber consisting essentially of a first polymer having a melting point lower than 170° C. and selected from the group consisting of polyethylene, polypropylene and polystyrene blended with a second polymer having a melting point higher than 170° C. and selected from the group consisting of polyamides and polyesters with (2) an additional amount of said first polymer, and shaping the mixture at a temperature lower than the melting point of said second polymer, said first polymer being present in a major amount in the shaped article.

3,359,345

BUTADIENE-STYRENE BLOCK COPOLYMERS REACTED WITH MONOMERIC MIXTURES

Kenneth W. Doak, Wyckoff, and Frederick E. Carrock, Paramus, N.J., assignors to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware

No Drawing. Filed Nov. 25, 1964, Ser. No. 414,022

2 Claims. (Cl. 260—880)

1. A transparent graft interpolymer of from 4 to 20% by weight of a solution polymerized linear styrene-butadiene block copolymer having from 5 to 20 percent bound

styrene, the remainder 96 to 80% comprising in parts by weight 10 to 25 parts alpha-alkylstyrene, 84 to 55 parts alkyl methacrylate, 3 to 10 parts acrylonitrile and 3 to 10 parts of methacrylic acid.

3,359,346

POLYMERIC POLYETHYLENE NUCLEATING AGENTS

Naoichi Takashima, Hajima-gun, Gifu-ken, and Toshihiko Kuroda, Shigeru Tanba, and Yuzuro Nakayama, Yokkaichi-shi, Mie-ken, Japan, assignors to Mitsubishi Petrochemical Company Limited, Chiyoda-ku, Tokyo, Japan, a corporation of Japan

No Drawing. Filed Jan. 15, 1964, Ser. No. 337,734

Claims priority, application Japan, Jan. 19, 1963, 38/1,524

6 Claims. (Cl. 260—897)

1. A composition consisting of solid branched chain polyethylene and less than 10% of a modified hydrocarbon selected from the group consisting of solid polyethylene, polypropylene and paraffin wax chemically bonded with from 0.1 to 2.1% phosphorus wherein said chemical bonding is effected by reacting said hydrocarbon with phosphorus trichloride and oxygen.

3,359,347

ADDITION REACTION PRODUCTS OF OXYALKYLENATED PHOSPHORUS COMPOUNDS AND N-CONTAINING POLYMERS

Henryk A. Cyba, Evanston, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Dec. 12, 1963, Ser. No. 330,006

11 Claims. (Cl. 260—925)

1. Addition reaction product of compound A selected from the group consisting of oxyalkylenated hydroxyhydrocarbon phosphate and oxyalkylenated hydroxyhydrocarbon thiophosphate and compound B being a polymeric reaction product containing basic nitrogen and consisting of the condensation product of

compound (1) being an alkylene polyamine containing at least 3 nitrogen atoms and from 4 to 50 carbon atoms, or an alkanolamine containing at least 2 nitrogen atoms and at least one hydroxyl group and from 4 to 50 carbon atoms, or an alkanolamine containing at least one nitrogen atom and at least 2 hydroxyl groups and from 4 to 50 carbon atoms with

compound (2) being an aliphatic or carbocyclic polycarboxylic acid consisting of carbon, hydrogen and oxygen, or corresponding anhydride, or ester thereof;

said compound B being formed by the reaction, at a temperature of from about 175° F. to about 500° F., of one mole proportion of compound (2) with from one to two mole proportions of compound (1).

3,359,348

POLYMERIC DIPROPYLENE GLYCOL HYDROGEN PHOSPHITES

Lester Friedman, Beachwood Village, Ohio, assignor to Weston Chemical Corporation, Newark, N.J., a corporation of New Jersey

No Drawing. Original application May 28, 1964, Ser. No. 371,122, now Patent No. 3,246,051, dated Apr. 12, 1966. Divided and this application June 28, 1965, Ser. No. 467,694

3 Claims. (Cl. 260—929)

1. Polymeric dipropylene glycol hydrogen phosphite having 3 to 4 dipropylene glycol units.

3,359,349

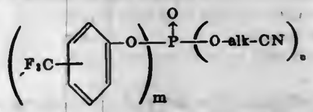
BIS(PERFLUOROMETHYLPHENYL) CYANOALKYL PHOSPHATES AND BIS(CYANOALKYL) PERFLUOROMETHYLPHENYL PHOSPHATES

Edward S. Blake, Ralph E. De Brunner, and James A. Webster, Dayton, Ohio, assignors to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware

Filed Oct. 9, 1964, Ser. No. 402,836

5 Claims. (Cl. 260—940)

1. The compound of the formula



wherein each of m and n is 1 or 2 and the sum of $m+n$ is 3 and alk denotes a bivalent alkylene radical of from 2 to 4 carbon atoms.

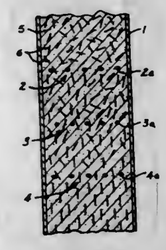
3,359,350

METHOD OF ALIGNING ELONGATED METALLIC HEAT CONDUCTORS WITHIN A VISCOUS, GAS-GENERATING MATRIX

John N. Godfrey, Alexandria, Va., assignor to Atlantic Research Corporation, Fairfax County, Va., a corporation of Virginia

Filed Oct. 20, 1965, Ser. No. 498,780

17 Claims. (Cl. 264—3)



1. A method of aligning elongated metallic heat conductors within a viscous, combustible, gas-generating matrix, said method comprising the sequential steps of:

(a) introducing a viscous, combustible, gas-generating matrix containing said heat conductors randomly dispersed therein into an elongated containment means,

(b) effecting relative motion between said matrix and a first alignment means disposed in said containment means transversely to the longitudinal axis thereof and defining a plurality of first channels therein, each of said first channels having a transverse dimension at least equal to the longest distance subtending any of said heat conductors adjacent to said first alignment means, thereby aligning at least some of said heat conductors into a direction more nearly parallel to the longitudinal axis of said containment means, and

(c) effecting relative motion between said matrix and a second alignment means disposed in said containment means transversely to the longitudinal axis thereof, said second alignment means being spaced from said first alignment means along the longitudinal axis of said containment means and defining a plurality of second channels in said containment means, each of said second channels having a transverse dimension at least equal to the longest distance subtending any of said heat conductors adjacent to said second alignment means, each of said second channels having a boundary not longitudinally colinear with the boundaries of said first channels, thereby effecting alignment of said heat conductors into a direction more nearly parallel to the longitudinal axis of said containment means.

6. A method for making an inhibitor encased solid propellant grain containing elongated metallic heat conductors aligned in the direction of flame propagation of said grain, said method comprising:

(a) forcing a viscous propellant matrix containing elongated metallic heat conductors randomly dispersed therein through means for aligning said heat conductors in said direction into an inhibitor casing,

(b) simultaneously effecting displacement between said means for aligning said heat conductors and said inhibitor casing at a rate substantially equal to the rate at which said matrix is passed into said inhibitor casing and

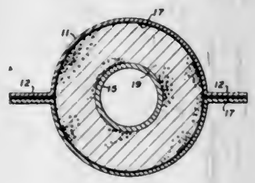
(c) hardening said matrix and effecting a bond between said matrix and said inhibitor casing.

3,359,351

METHOD OF APPLYING INSULATION COATING FOR PIPE

Richard B. Bender, P.O. Box 11302, Fort Worth, Tex. 76109

Filed Oct. 18, 1965, Ser. No. 528,659
3 Claims. (Cl. 264—45)



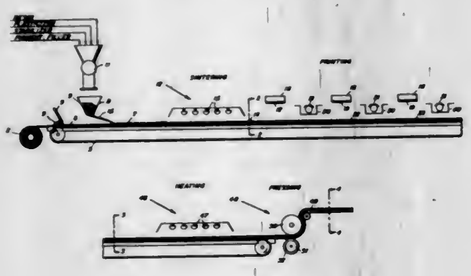
1. The method of applying a coating of unicellular foam around a length of pipe comprising the steps of placing said pipe in a mold, providing a lining surface in said mold of wax-like resin material of the class consisting of polypropylene, polyethylene and polytetrafluoroethylene and mixing and applying unicellular foam generating components in said mold around said pipe.

3,359,352

PROCESS FOR PRODUCING DECORATIVE SURFACE COVERING

William H. Powell, Livingston, and Lawrence J. Friedman, Fort Lee, N.J., assignors to Congoleum-Nairn Inc., Kearny, N.J., a corporation of New York

Filed Sept. 16, 1966, Ser. No. 580,018
19 Claims. (Cl. 264—47)



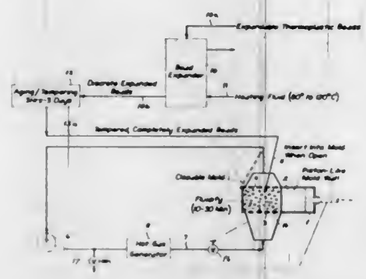
1. A process for producing a non-porous decorative surface covering having an inlaid decoration which comprises depositing fine granules of resinous composition in a layer at least 0.015 inch in thickness on the surface of a backing sheet, heating to cause sintering of said granules without complete coalescence thereof to form a layer of uniform porosity, applying a design on the surface of the sintered layer with sufficient printing composition to permeate into the porous structure to a substantial depth at the points of application and then molding the printed sintered layer into a non-porous sheet by the application of heat.

3,359,353

PROCESS FOR MAKING POROUS EXPANDED-THERMOPLASTIC ARTICLES

Piero Oddi, Milan, Italy, assignor, by mesne assignments, to Montecatini Edison S.p.A., a corporation of Italy

Filed Feb. 26, 1964, Ser. No. 347,384
Claims priority, application Italy, Mar. 2, 1963, 4,421/63
6 Claims. (Cl. 264—53)



1. In a process for producing unitary coherent porous bodies from particles of an expandable thermoplastic synthetic resin containing an expanding agent distributed in said particles and adapted to expand the latter upon heating of said particles, wherein the particles are heated in a hot gaseous fluid to expand said particles substantially completely without agglomeration of the expanded particles, the improvement which comprises the steps of:

(a) confining the individual nonagglomerated substantially completely expanded particles into an incompletely filled mold and subjecting them to a flow of a hot particle fluidizing gas of a temperature at least sufficient to bring said particles to their incipient softening point and to entrain said particles with said hot gas in substantially free motion in said mold; and

(b) compressing the moving particles in said mold while said particles are at a temperature of at least said incipient softening point by applying to said particles an externally derived compacting pressure by reducing the volume of said mold to agglomerate the particles and fuse them into a unitary porous body.

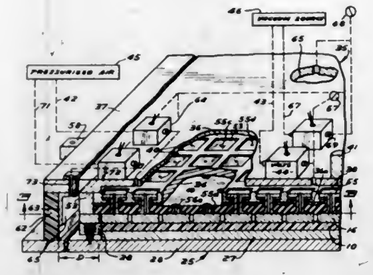
3,359,354

METHOD OF PRODUCING TILE PANELS

Russell W. Johnson, Hutchinson, Minn., assignor of fifty percent to Clarence R. Enright, St. Cloud, Minn.

Filed Sept. 29, 1964, Ser. No. 400,149
19 Claims. (Cl. 264—89)

1. In the method of forming a finished tile panel that includes a plurality of individual tile pieces each having a finished surface comprising arraying the tile pieces in preselected spaced relationship with the finished surfaces facing in the same direction; applying a deformable apertured resilient pad over the arrayed tile pieces with an aperture opening to each finished surface; applying a vacuum through said apertures to compress said pad to extend into the space between the tile pieces and releasably affix the tile pieces to said pad in the arrayed relationship; the affixing step including forming a fluid seal between the tile pieces finished surfaces and the pad; applying a curable resin mixture on a support member; then moving the thus compressed resilient pad relative the support member to position the tile pieces adjacent the support member and spaced therefrom; the step of moving the resilient pad relative the support member including forming an enclosed chamber opening to the support member and in which the resin mixture and tile pieces



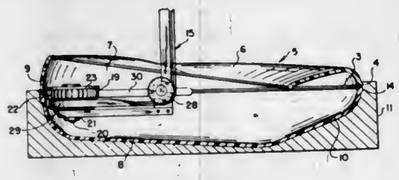
are located; applying a vacuum to said chamber while the first mentioned vacuum is being applied through said apertured pad to hold the tile pieces affixed thereto to withdraw the air from between the tile pieces, and the tile pieces and support member to draw the curable resin mixture to fill the voids between the tile pieces, and between the tile pieces and the support member to provide a backing layer; and curing the resin mixture.

3,359,355

APPARATUS AND METHOD FOR MAKING PLASTIC ARTICLE

Harvey A. Buker and Lorenzo Sam Price, West Lafayette, Ohio, assignors to The Jones Metal Products Company, West Lafayette, Ohio, a corporation of Ohio

Original application Jan. 20, 1964, Ser. No. 338,975, now Patent No. 3,252,166, dated May 17, 1966. Divided and this application Jan. 7, 1966, Ser. No. 519,233
6 Claims. (Cl. 264—161)



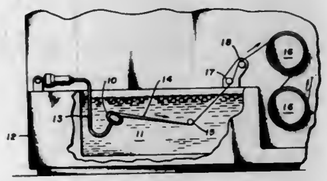
1. A method of making a seamless, autoclavable article from a plastic material, which comprises providing a pair of shaped article halves, joining the shaped halves together to form a composite, unitary article having an exuded rib of plastic material deposited adjacent the joined marginal edges thereof, and then progressively removing the deposited plastic material from the interior of said article by providing a support member contoured to accommodate one-half of said article and having an internal recessed portion therein of a size sufficient to receive the exuded rib of plastic material deposited on the exterior surface of said article, positioning said article in said support member so that the exterior exuded rib of plastic material is supportingly disposed in said recessed portion, bringing a cutting means into material removing engagement against the exuded rib of plastic material deposited on the interior of said article, turning the support member while maintaining said cutting means in a substantially fixed position, and then progressively removing the exuded rib of plastic material from the interior surface of said article by cutting while simultaneously controlling the depth of penetration of said cutting means, moving said article from said support member and removing the plastic material from the exterior surface of said article to provide a smooth, seamless structure for permanently holding the joined article halves in assembled position.

3,359,356

PROCESS FOR CRIMPING FILAMENTS AT THE SPINNERET FACE

John Mylo, Athens, Ala., assignor to Monsanto Company, a corporation of Delaware

Filed Mar. 2, 1964, Ser. No. 348,747
10 Claims. (Cl. 264—168)



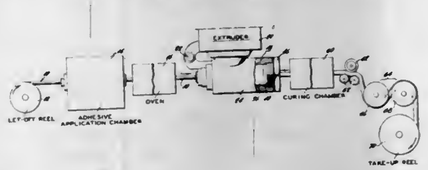
2. A process for producing crimped synthetic filaments from a thermoplastic composition which comprises extruding said composition through a spinneret to form continuous filaments, withdrawing the filaments from the face of the spinneret at an angle to cause preferential arrangement of the molecular structure of said filaments, and heat relaxing the withdrawn filaments to develop a crimped condition in said filaments.

3,359,357

PROCESS FOR COATING CONTINUOUS FLEXIBLE TUBING

William H. Bentley, Jr., Haverford, Joseph S. Kite III, Downingtown, Henry M. Morott, Trappe, Robert L. Nunnally, Norristown, and David H. Reinert, Wayne, Pa., assignors to Raychem Corporation, Redwood City, Calif., a corporation of California

Filed Oct. 21, 1963, Ser. No. 317,485
1 Claim. (Cl. 264—173)



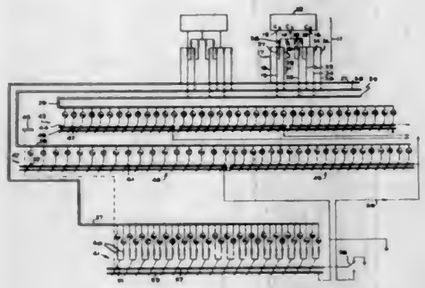
A process for coating continuous flexible tubing with a plastic material comprising passing the tubing through an extruder, tensioning said tubing by drawing said tubing from a restraining force in a direction longitudinal of said tubing during passage through said extruder, extruding a plastic material onto said tubing in said extruder, and controlling the effective pressure of extrusion and the longitudinal tensioning of said tubing such that the extrusion takes place without collapsing or deforming the tubing, the controlling of the effective pressure of the extrusion being effected by regulation of the rate of travel of said tubing and the flow rate of the plastic material through the extruder.

ELECTRICAL

3,359,358
CHORD ORGAN SWITCHING CIRCUIT FOR SELECTIVELY PLAYING EITHER CHORDS OR SINGLE NOTES BY DEPRESSING ONE KEY

John R. Brand, Northridge, and Stanley Cutler, Van Nuys, Calif., assignors, by mesne assignments, to Warwick Electronics Inc., Chicago, Ill., a corporation of Delaware

Filed May 22, 1963, Ser. No. 282,332
4 Claims. (Cl. 84—1.01)



1. In an electronic musical instrument having a plurality of tone means for generating signals corresponding to notes in a musical scale, and a keyboard for expressing tones from said tone means, the combination of;

a single pole switch means having a plurality of terminals and operable by a key of the keyboard;

impedance means connecting a first of said tone means to a first terminal of said switch means and connecting at least another non-octavely related tone means to said first terminal;

said switch means having a pole operable between a first station interconnecting said first terminal and a second terminal, and a second station interconnecting said first terminal with a third terminal, said second terminal connected to ground, and a circuit means for connecting the third terminal to the output of the electronic musical instrument, operation of any said key causing its corresponding switch means to swing said pole from said first station at ground to said second station connected to said output;

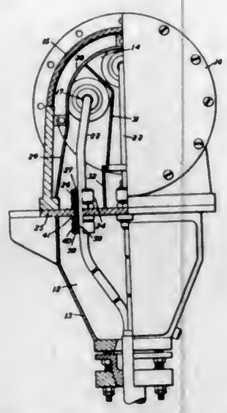
whereby there is applied to said output a plurality of tone signals.

3,359,359
TERMINAL BOX ARRANGEMENT WITH INTERNAL BARRIER SHIELDING

William Ernest Beck and George Robert Small, Edinburgh, Scotland, assignors to Bruce Peebles Industries Limited, Edinburgh, Scotland, a company of Great Britain

Continuation of application Ser. No. 242,969, Dec. 7, 1962. This application Jan. 31, 1967, Ser. No. 638,674
Claims priority, application Great Britain, Dec. 8 ,1961, 44,114/61
5 Claims. (Cl. 174—51)

1. A terminal box arrangement characterized by internal barrier shielding comprising a box having front, rear and side wall portions; electrical connections extending from the box to an associated electrical machine; terminals on such connections, said terminals being supported on a portion of the box; conductors within the box which optionally may be connected to or disconnected from such terminals, said conductors extending thence to an electrical supply source for the machine; and, within the box, grounded metal-plate shielding separating adjacent terminals and adjacent conductors, said metal-plate shielding defining a plurality of separate compartments



(*a*) into each of which one of the terminals projects, (*b*) within each of which one of the conductors extends to an exit, and (*c*) wherein, in the stretches between the terminals and the exits, the compartments are co-extensive with the conductors.

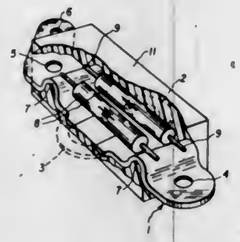
ERRATUM

For Class 174—52 see:
Patent No. 3,359,374

3,359,360
ELECTRONIC COMPONENT ASSEMBLY INCLUDING A MOUNTING BRACKET WITH REMOVABLE LOOPS

Robert Stanley Owings, Dallas, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Mar. 1, 1965, Ser. No. 435,884
2 Claims. (Cl. 174—52)

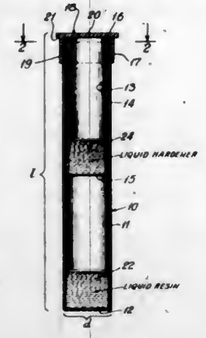


1. An electronic component assembly comprising a mounting bracket having two major parts spaced apart by two loop members, each of said major parts having holes therethrough and a projection on one face thereof, at least one electronic component mounted on said bracket and attached to said projections, and an encapsulating material enclosing said component and a portion of said bracket, said loop members extending beyond and being free of encapsulating material.

3,359,361
INSULATING DEVICE FOR WIRE AND CABLE ENDS

Louis Dean Oakman, Olean, N.Y., assignor to Hysol Corporation, Olean, N.Y., a corporation of New York

Filed Mar. 11, 1966, Ser. No. 533,625
3 Claims. (Cl. 174—76)

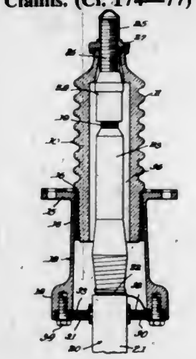


1. An insulating device for cable ends comprising an elongated plastic casing of generally cylindrical contour, twin-walled partition means substantially midway between the ends of said casing dividing the same into separate compartments said compartments containing liquid resin and liquid hardener components of a thermosetting resin system, means permanently closing one end of said casing, detachable closure means at the other end of said casing facilitating insertion of a cable end to rupture said thin-walled partition means for mixing of the resin components, the combined volume of said liquid resin and hardener components being equivalent to approximately ⅓ the volume of said casing, said resin and hardener being characterized as providing, when mixed, a resin composition which will gel in less than 2 minutes and reach a substantially complete cure in less than 5 minutes under atmospheric conditions, and said thin-walled partition means being characterized as rupturable by the application of about 1.5 to 3 pounds pressure with a 116″ probe.

3,359,362
CABLE AND ENCLOSURE WITH DOUBLE DIAPHRAGM ENTRANCE SEAL

George E. Lusk, Downers Grove, and Robert B. Gear, Hinsdale, Ill., assignors to G & W Electric Specialty Company, Blue Island, Ill., a corporation of Illinois

Filed Dec. 19, 1966, Ser. No. 602,951
3 Claims. (Cl. 174—77)

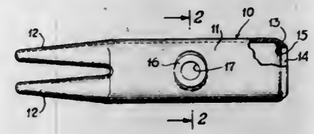


1. In a device of the character described, the combination including an enclosure and an electric cable disposed longitudinally within the enclosure, said cable having a jacket, said enclosure providing a chamber and an open entrance end through which the cable extends, sealing means for sealing the entrance end of the enclosure with respect to the cable including a pair of elastomeric diaphragms in back-to-back relation, said diaphragms being substantially equal in thickness, one of said diaphragms being located inside and the other diaphragm being located outside as regards the enclosure, an intermediate metal plate located between said diaphragms, said intermediate metal plate having a thickness approximately equal to the thickness of an elastomeric diaphragm, an outside metal plate having contact throughout its area with the outside diaphragm, each of said diaphragms and the metal plates having a central opening therein through which the cable extends, the edges of the opening in each diaphragm having a sealing fit with the jacket of the cable, and means for securing and sealing the arrangement of diaphragms and metal plates around the peripheries thereof to the entrance end of the said enclosure.

3,359,363
INSULATING AND REINFORCING MEANS FOR JUNCTURES BETWEEN INSULATED CONDUCTORS AND EXTERNAL APPLIANCE LEADS

Louis D. Oakman, Westlake, Ohio, assignor to Hysol Corporation, Olean, N.Y., a corporation of New York

Filed Jan. 20, 1967, Ser. No. 610,682
2 Claims. (Cl. 174—138)



1. Insulating and strengthening means for appliance-insulated conductor junctures comprising a casing of thin-walled flexible plastic material, said casing having an essentially tubular body portion, conductor receiving means of elongated conically tapered contour protruding axially from one end of said tubular body adapted by cutting at an appropriate position longitudinally thereof, to closely envelop the insulated conductor to be associated therewith, the other end of said tubular body having a gradually inturned shoulder terminating in an axial aperture for circumferentially engaging a portion of the appliance to be associated therewith, the periphery of said aperture being a smoothly rounded continuation of the inner surface of said casing which meets the outer surface at a sharp angle; thereby providing for adaptation in aperture size to variations in appliance dimensions, said casing as mounted on an appliance-insulated conductor assemblage, providing therewith a chamber for receiving liquid resin composition with a portion thereof extending along and circumferentially engaging a portion of said appliance, a radial aperture centrally of said tubular body for introducing liquid resin composition to said chamber, and means for sealing said radial aperture to confine said liquid resin composition during solidification thereof.

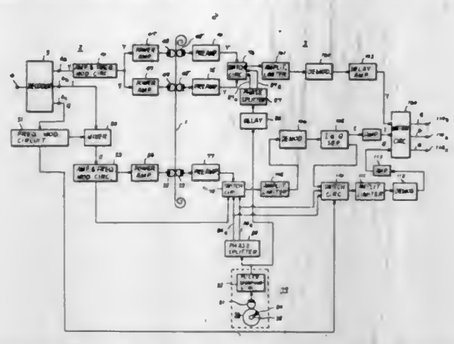
3,359,364
RECORDING AND/OR REPRODUCING SYSTEM

Nobutoshi Kihara, Shinagawa-ku, Tokyo, Japan, assignor to Sony Corporation, Tokyo, Japan, a corporation of Japan

Filed Mar. 27, 1964, Ser. No. 355,276
Claims priority, application Japan, Apr. 1, 1963, 38/16,761
2 Claims. (Cl. 178—5.4)

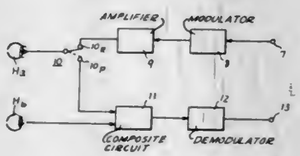
1. In an apparatus for recording and/or playing back color television signals on a magnetic tape, comprising means for separating a color television signal into three

components, Y, I and Q signals respectively, means for mixing said I and Q signals, means for frequency modulating said mixed I and Q signals, means for recording said frequency-modulated mixed I and Q signals on a magnetic tape through only a single rotary head, and means for reproducing an intermittent recorded I and



Q signal having successive "off" periods, the improvement comprising means for adding a constant frequency signal to the "off" periods of the reproduced I and Q signal, and means for controlling the last-mentioned means and comprising means for producing a switching pulse waveform synchronized with the rotation of said rotary head.

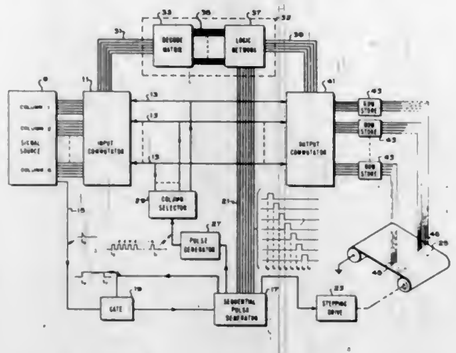
3,359,365
RECORDING AND REPRODUCING SYSTEM
Nobutoshi Kihara, Tokyo, Japan, assignor to Sony Corporation, Tokyo, Japan, a corporation of Japan
Filed July 27, 1965, Ser. No. 475,070
Claims priority, application Japan, Aug. 1, 1964, 39/44,082
12 Claims. (Cl. 178—5.4)



1. Apparatus for recording and reproducing visual image signals, said apparatus comprising a plurality of heads, means for rotating said heads, a recording medium, guide means for guiding said recording medium past said heads whereby visual image signals are recorded on said recording medium, circuit means for activating less than said plurality of heads during recording of said visual image signals whereby less than all of said visual image signals are recorded, and means for scanning all of said recorded signals on said recording medium with all of said plurality of heads during reproduction whereby a visual image signal is reproduced identical in duration to said visual image signals prior to recording.

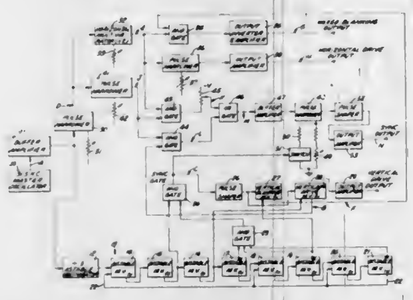
3,359,366
ELECTRONIC PRINTER
Kay B. Magleby, San Jose, Calif., assignor to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California
Filed Mar. 5, 1964, Ser. No. 349,670
5 Claims. (Cl. 178—30)

1. An electronic printer comprising:
first means having one signal port and a plurality of other signal ports which connect sequentially to said one signal port;
second means having one signal port and a plurality of other signal ports which connect sequentially to said one signal port in synchronism with the sequential connection of said one signal port of the first means to the plurality of signal ports thereof, each of the signal ports including a plurality of signal conductors;
means including each of the plurality of other signal ports of the first means connected to receive signals applied thereto related to characters to be printed;



a character generator connected between said one signal ports of the first and second means for producing signals on selected ones of the plurality of signal conductors in said one signal port of the second means in response to signals appearing at said one signal port of the first means;
a record chart; and
means connected to the plurality of other signal ports of the second means for producing line records on said chart related to signals on said conductors in response to the sequential connection of the plurality of signal ports to the one signal port of one of the first and second means.

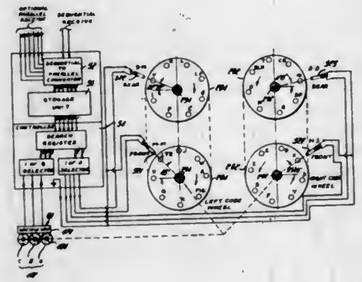
3,359,367
SYNCHRONIZING GENERATOR
Richard S. Hiatt, Jr., San Diego, Calif., assignor to Cohu Electronics, Inc., San Diego, Calif., a corporation of Delaware
Filed Mar. 26, 1964, Ser. No. 354,842
28 Claims. (Cl. 178—69.5)



1. A system for providing a composite television synchronizing signal including horizontal, vertical and equalizing pulses of different durations, comprising:
a source of pulses of a first frequency;
first gate means coupled to said pulse source for passing every other pulse;

means coupled to said first gate means for attenuating the pulses passed thereby;
second gate means coupled to said pulse source and periodically operable to pass all of said pulses;
means including a differentiating circuit for producing output pulses in response to input pulses;
means coupling said attenuating means and said second gate means to said differentiating circuit whereby pulses passed by said first gate means cause the production of output pulses of a first duration, and pulses passed by said second gate means cause the production of output pulses of a second duration; and
means for changing the time constant of said differentiating circuit whereby output pulses of a third duration are produced.

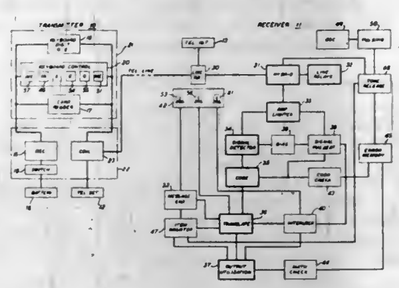
3,359,368
ELECTRONIC RECEIVER-CONTROLLER WITH STORAGE UNIT
Edward F. Kleinschmidt, Fort Lauderdale, Fla., and David F. Frick, Palatine, Ill., assignors to SCM Corporation, New York, N.Y., a corporation of New York
Original application July 24, 1959, Ser. No. 829,446, now Patent No. 3,150,235, dated Sept. 22, 1964. Divided and this application Nov. 22, 1963, Ser. No. 325,718
19 Claims. (Cl. 178—89)



1. In combination with a communication system including means for receiving coded word signal messages: first and second signal storage registers each having separate corresponding signal element channels; a first-in, first-out storage unit connected between output terminals on said first storage register and input terminals on said second storage register and adapted to receive incoming signals at random rates; means supplying input coded word signals to said first storage register; means connected to the output of said second storage register to process said coded word signals at a varying rate dependent upon the sequence of words received; and means responsive to the processing of one coded word signal for retrieving the next coded word signal from said storage unit.

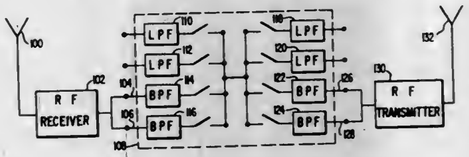
3,359,369
SYSTEMS FOR PROCESSING DATA OVER TELEPHONE NETWORKS
Michael V. Di Ioric, Oakland, and Philip J. Grunfelder and Laurin L. Sevebeck, Mountainside, N.J., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Original application Jan. 5, 1959, Ser. No. 784,983, now Patent No. 3,131,259, dated Apr. 28, 1964. Divided and this application Feb. 26, 1964, Ser. No. 347,533
16 Claims. (Cl. 179—2)

13. A system for processing data over a telephone network, which comprises
oscillator circuitry including a plurality of normally open resonant circuit paths of different resonant frequencies for producing multi-frequency signals in response to the closure of at least two of said resonant circuit paths,
means for closing selected ones of said resonant circuit paths so as to provide for each character of said data a coded multi-frequency signal,
means for transmitting such coded signals over said network normally in spaced time relationship,



receiving means responsive only to the first of two or more of such coded signals which may overlap each other in time, and
means for effecting a determination of the component frequencies of each coded multi-frequency signal sent over said network and passed by said receiving means, whereby a reading of each character of said data is accomplished.

3,359,370
IDEALLY LOSSLESS RESONANT TRANSFER OF ENERGY BETWEEN BANDPASS FILTERS OF EQUAL BANDWIDTH
Per O. Dahlman, Bethesda, Md., and Paul M. Thrasher, Falls Church, Va., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed June 5, 1964, Ser. No. 372,874
5 Claims. (Cl. 179—15)



1. A resonant transfer circuit for transferring energy entirely unidirectionally from a first bandpass filter to a second bandpass filter during time intervals τ spaced at time intervals T, where $T=1/f_s$ and f_s is the sampling frequency, comprising, in combination:
a source of energy having a bandwidth which is less than $\frac{1}{2}f_s$,
first bandpass filter means having a passband defined by two consecutive integral multiples of $\frac{1}{2}f_s$ and passing frequencies within said passband, said first bandpass filter means comprising a first energy storage means for transitorily storing the energy passed;
second bandpass filter means of equal bandwidth to said first bandpass filter means, and having a passband defined by two consecutive integral multiples of $\frac{1}{2}f_s$ and passing frequencies within said passband, said

second bandpass filter means comprising a second energy storage means for subsequently storing transitorily the energy stored by said first energy storage means;

normally open switch means for interconnecting said first bandpass filter means and said second bandpass filter means; and

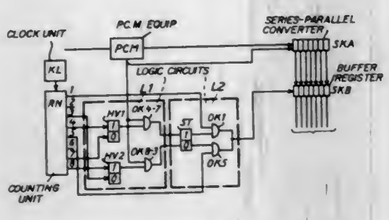
timing means for periodically closing said normally open switch means during time interval τ at sampling instants which are consecutive integral multiples of $1/f_s$, for transferring entirely unidirectionally the energy stored by said first energy storage means to said second energy storage means.

3,359,371

CONTROL ARRANGEMENT FOR A RECEIVER FOR PULSE-CODE MODULATED TIME-DIVISION MULTIPLEX SIGNALS

Nils Herbert Edstrom, Skarholmen, Sture Emil Ingvar Fjordland, Hagersten, Walter Emil Wilhelm Jacob, Stuvsta, and Jons Kurt Alvar Olsson, Tullinge, Sweden, assignors to Telefonaktiebolaget L M Ericsson, Stockholm, Sweden, a corporation of Sweden

Filed June 3, 1965, Ser. No. 461,063
Claims priority, application Sweden, June 9, 1964, 7,017/64
3 Claims. (Cl. 179—15)



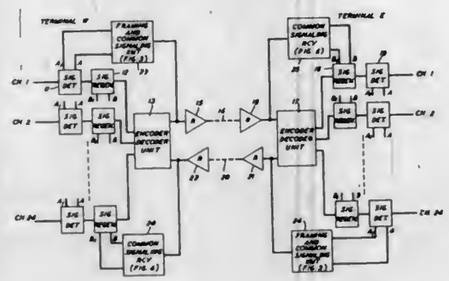
1. A control arrangement for a receiver for pulse-code modulated time-division multiplex signals comprising in combination: a series-parallel converter into which said signals are supplied in parallel form, a buffer memory, means for transferring said signals from said converter to said buffer memory in a time position determined by the signal received, means for reading out said signals from said buffer memory means, a receiver including a clock unit determining the time position of said reading out, the signals received having a phase shift which is caused by the transmission line and varying in relation to said clock unit but having the same frequency as the clock unit, means for preventing that said time position of transferring coincides with or comes close to the time position for reading out, a counting chain (RN) driven by the clock unit of the receiver exchange which chain at its respective outputs produces a pulse in each of the bit-positions of the pulse-code modulated signal, a first logic circuit (L1) two alternative outputs of which are activated in dependence on the fact that said transferring signal occurs simultaneously with one or the other of two time position ranges extending over a number of the pulses obtained from the output of the counting chain, and a second logic circuit (L2) which in dependence on the activation of said two alternative outputs allows the passing of two alternative reading out pulses selected among the output pulses of the counting chain in such a way that each reading out pulse is located within its own time position range of said two time position ranges, the condition of the passing of either of said two reading out pulses being that the transferring signal shall occur within the time position range belonging to the other reading out pulse.

3,359,372

PCM TELEPHONE SIGNALING WITH TIME-DIVIDED SIGNALING DIGIT SPACES

Agostino L. De Burro, Atkinson, N.H., assignor to Bell Telephone Laboratories, Incorporated, Berkeley Heights, N.J., a corporation of New York

Filed May 24, 1966, Ser. No. 552,518
7 Claims. (Cl. 179—15)



1. In a multichannel pulse code modulation communication system, a transmitter for converting message samples from a plurality of incoming message channels into frames of successive binary code groups, each of said code groups having a predetermined number of message digit spaces each and each of said frames containing one code group from each of said channels, means for adding a framing digit space to each frame exclusive of said message digit spaces, means for transmitting alternate binary "1" and binary "0" in successive framing digit spaces, and signaling means for transmitting up to four non-message signaling conditions per channel without interferring with either message transmission or framing which comprises means for adding a signaling digit space to each code group exclusive of said message digit spaces, means for forcing two digits in the signaling digit spaces for each of said channels in each four successive frames to prevent appearance of the alternate binary "1" and binary "0" framing pattern in said signaling digit spaces, and means for transmitting combinations of binary "1" and binary "0" in the remaining two signaling digit spaces for each of said channels in said four successive frames to transmit said non-message signaling conditions.

3,359,373

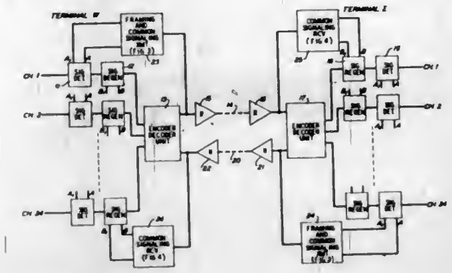
PCM TELEPHONE SIGNALING WITH TIME-DIVIDED SIGNALING DIGIT SPACES

Everett J. Anderson, Piscataway, N.J., and Agostino L. De Burro, Atkinson, N.H., assignors to Bell Telephone Laboratories, Incorporated, Berkeley Heights, N.J., a corporation of New York

Filed May 24, 1966, Ser. No. 552,566
4 Claims. (Cl. 179—15)

1. In a multichannel pulse code modulation communication system, a transmitter for converting message samples from a plurality of incoming message channels into frames of successive binary code groups, each of said code groups having a predetermined number of message digit spaces each and each of said frames containing one code group from each of said channels, means for adding a framing digit space to each frame exclusive of said message digit spaces, means for transmitting alternate binary "1" and binary "0" in successive framing digit spaces, and signaling means for transmitting up to four non-message signaling conditions per channel without interferring with either message transmission or framing which comprises means for adding a signaling digit space to each code group exclusive of said message digit spaces, means for forcing like digits in the signaling digit spaces for each

of said channels in two successive frames out of each four successive frames to prevent appearance of the alternate binary "1" and binary "0" framing pattern in said signaling digit spaces, and means for transmitting combina-



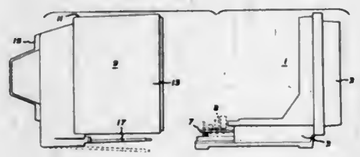
tions of binary "1" and binary "0" in the remaining two signaling digit spaces for each of said channels in said four successive frames to transmit said non-message signaling conditions.

3,359,374

CABINET FOR PORTABLE TELEVISION RECEIVER

Raymond S. Joseph, Syracuse, N.Y., assignor to General Electric Company, a corporation of New York

Filed July 1, 1965, Ser. No. 468,833
9 Claims. (Cl. 174—52)



1. A television receiver cabinet having an electronic component bearing circuit board positioned therein, said cabinet comprising;

(a) a first assembly having the circuit board assembled thereto and a bottom portion having a hole therein for providing access to one surface of the circuit board interior thereto,

(b) a second assembly adapted to mate with said first assembly and having a closure panel connected thereto,

(c) said closure panel overlying and interior to the hole in said bottom portion of said first assembly and substantially coextensive with said circuit board when said first and second assemblies are mated.

3,359,375

SWITCHING SYSTEM

William James Hannan, Moorestown, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Filed Dec. 26, 1963, Ser. No. 333,376
1 Claim. (Cl. 179—100.2)

A switching system for producing a continuous, frequency modulated signal of constant amplitude from overlapping, frequency modulated signal segments comprising in combination,

(a) a bridge circuit including first, second, third and fourth diodes, the cathode of said first diode being connected to the anode of said second diode, the cathode of said third diode being connected to the anode of said fourth diode, the anodes of said first and third diodes being connected together, and the cathodes of said second and fourth diodes being connected together,

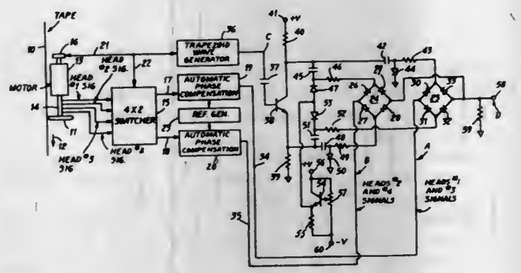
(b) a second bridge circuit including fifth, sixth, seventh and eighth diodes, the anode of said fifth diode being connected to the cathode of said sixth diode, the anode of said seventh diode being connected to the cathode of said eighth diode, the anodes of said sixth and eighth diodes being connected together, and the cathodes of the fifth and seventh diodes being connected together,

(c) a first signal input means connected to apply a first signal to the junction of said first and second diodes in said first bridge circuit,

(d) a second signal input means connected to apply a second signal to the junction of said fifth and sixth diodes in said second bridge circuit,

(e) an output means connected to the junction of said third and fourth diodes in said first bridge circuit and to the junction of said seventh and eighth diodes in said second bridge circuit,

(f) a transistor having a base, emitter and collector electrode,



(g) means for applying to said transistor's collector a reference potential of a given polarity,

(h) means for applying to said transistor's emitter a reference potential of a polarity opposite to said given polarity,

(i) a ninth and tenth diode both having an anode and cathode, said ninth diode's anode connected to said tenth diode's anode with the junction formed thereby connected to said transistor's emitter,

(j) means for coupling said ninth diode's cathode to said junction between said sixth and eighth diode's anodes,

(k) means for coupling said tenth diode's cathode to said connection between said first and third diode's anodes,

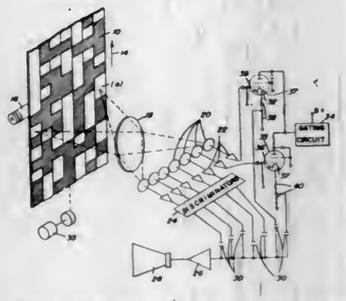
(l) a first control signal input means including a capacitor and an eleventh diode connected to apply a first control signal to the junction of said second and fourth diodes,

(m) a second control signal input means including another capacitor and a twelfth diode connected to apply a second control signal to the junction of said fifth and seventh diodes in said second bridge circuit,

(n) control means coupled to the base of said transistor to operate said transistor in a region to cause it to behave at said emitter electrode as a low impedance voltage source for determining the conduction of said diodes in said first and second bridge circuits to be less than that required to cause them to conduct, said control means further causing said transistor in combination with said capacitors and said eleventh and twelfth diodes to clamp said first and second control signal paths at a level to provide a

constant amplitude output from said output means in accordance with said first and second input signals whereby any impedance differences between said first and second bridge diodes are effectively cancelled.

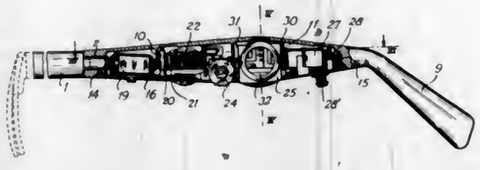
3,359,376
OPTICAL HIGH-FIDELITY PLAYER ARRANGEMENT
Keith F. Stultz, Rochester, N.Y., and Hans J. Zweig, Los Angeles, Calif., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Dec. 6, 1963, Ser. No. 328,642
4 Claims. (Cl. 179—100.3)



1. An optical high-fidelity player arrangement for reproducing signal information optically encoded in the form of a series of digit numbers, comprising:
means for illuminating the digit numbers;
detector means;
means for optically coupling said detector means to the digit numbers to detect the luminosity thereof in response to said illuminating means;
means for driving the series of digit numbers past said illuminating and coupling means at a rate of the order of 20,000 numbers per second for sampling the individual numbers at a corresponding rate,
said detector means comprising a plurality of photoelectric detectors, one corresponding to each digit of a number in said series,
discriminator means comprising a plurality of bistable electronic devices, one corresponding to each of said detectors, each such device adapted, when in a first stable state, to respond to the output from its associated detector upon sensing of a digit thereby to change from said first stable state to a second stable state wherein it produces an output signal proportional to the analog value of that particular digit,
gating means operable in timed relationship with said driving means for cyclically causing all of said electronic devices to be set to said first stable state at the beginning of each number-sampling period,
and signal reproducing means conjointly responsive to the outputs from all of said electronic devices for producing a combined output corresponding to the analog signal represented by said encoded series of numbers.

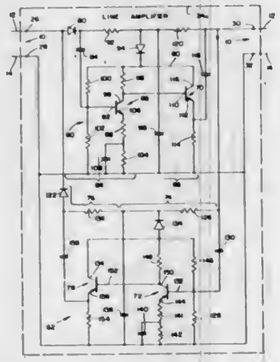
3,359,377
HEARING AID, PARTICULARLY SPECTACLE TYPE HEARING AID
Gerd Rosenstand, Vester Valdgade 7/9, Copenhagen, Denmark
Filed Sept. 18, 1963, Ser. No. 309,748
Claims priority, application Denmark, Sept. 20, 1962, 4,088/62
4 Claims. (Cl. 179—107)

3. Side-bar for a spectacle type hearing aid comprising a bar-shaped main part, said main part having a portion having a substantially U-shaped cross section, said portion having a top wall and two downwardly projecting side walls defining a hollow, a substantially U-shaped cover having a bottom wall and two upwardly projecting side walls, said upwardly projecting side walls being received between said downwardly projecting side walls of



said portion, said bottom wall of said cover providing a bottom for said hollow of said portion, and said main part having a rear end, said rear end having a substantially solid portion, said solid portion being adapted to be bent for adjustment to the shape of the user's head.

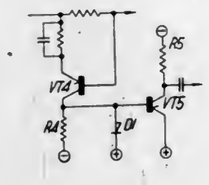
3,359,378
TWO-WAY AMPLIFIER
Nicholas D. Skeer, Amherst, N.H., assignor to Sanders Associates, Inc., Nashua, N.H., a corporation of Delaware
Filed Sept. 28, 1964, Ser. No. 399,791
11 Claims. (Cl. 179—170)



1. A two-way amplifier having first and second paired terminals and third and fourth paired terminals, said amplifier applying to said third and fourth terminals an amplified output signal corresponding to a signal input at said first and second terminals when a first control voltage is between said first and second terminals and applying to said first and second terminals an amplified output signal corresponding to a signal input at said third and fourth terminals when the control voltage between said first and second terminals has an opposite, second polarity said amplifier comprising in combination
(A) a first amplifier circuit having
(1) a pair of input terminals connected to said first and second terminals, and a pair of output terminals connected to said third and fourth terminals,
(2) a first unidirectional conduction element, a first resistor, and a second resistor connected in series succession between said first and third terminals and forming a unidirectional direct current path from said first terminal to said third terminal, and

(3) amplifying means forming an alternating current signal path from the common connection of said element and first resistor to said third terminal, and
(B) a second amplifier circuit having
(1) a pair of input terminals connected to said third and fourth terminals, and a pair of output terminals connected to said first and second terminals,
(2) a second unidirectional conduction element, a third resistor and a fourth resistor connected in series succession between said first and third terminals and forming a unidirectional direct current path from said third to said first terminals, and
(3) amplifying means forming an alternating current signal path form said third terminal to the common connection of said second element and third resistor.

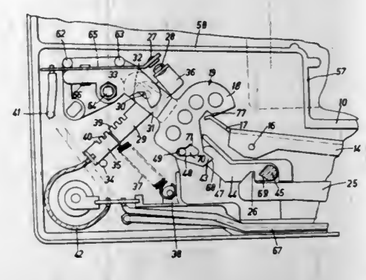
3,359,379
CURRENT MONITORING CIRCUITS
Geoffrey George Pullum and Richard Brough Andrews, London, England, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Aug. 26, 1963, Ser. No. 304,393
Claims priority, application Great Britain, Aug. 24, 1962, 32,643/62
13 Claims. (Cl. 179—175.2)



1. An electrical circuit for monitoring the current in a supervised circuit, which comprises a resistive impedance in said supervised circuit through which the current to be monitored flows, a transistor in the base-emitter circuit of which said resistive impedance is connected, so that current flowing in said impedance develops at the emitter of said transistor a voltage which causes the transistor to produce at its collector an output current whose characteristics are closely determined by the current in said impedance, and hence by the current in said supervised circuit, and threshold detector means connected to the collector of said transistor and operated responsive to the current applied thereto reaching a given value.

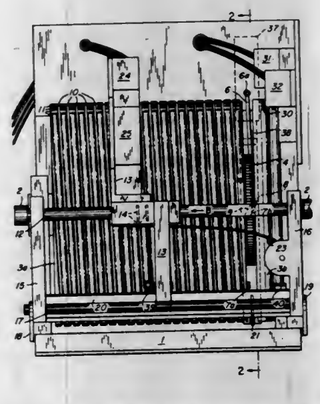
3,359,380
TIME SWITCH HAVING CONTACTS CONTROLLED BY MOVEMENT OF A TRAVELING BODY
Georg Cranskens, Wedel, Schleswig-Holstein, and Werner Salger, Hamburg-Langenhorn, Germany, assignors to Lumoprint Zindler KG, Hamburg, Germany
Filed Aug. 30, 1965, Ser. No. 483,588
Claims priority, application Germany, Aug. 31, 1964, L 48,676
10 Claims. (Cl. 200—33)

1. A time switch comprising contact means movable from a normal position to an off-normal position to perform a switching operation; operating means for said contact means; spring means engaging said operating means for tending to maintain said contact means in said normal position; a traveling body; guide means forming a descending track for said body; launching means for starting said body along said track; manually operable trigger means for said launching means displaceable into engagement with said operating means and displacing same against the force of said spring means substantially concurrently with the launching of said body, thereby moving said contact means to said off-normal position; latch means positioned for engagement with said operating means upon the displacement of the latter by said



trigger means; and a control member disposed to intercept said body at the end of said track, said control member having an extension juxtaposed with said operating means for disengaging same from said latch means in response to interception of said body by said control member whereby said spring means restores said operating means with consequent return of said contact means to said normal position.

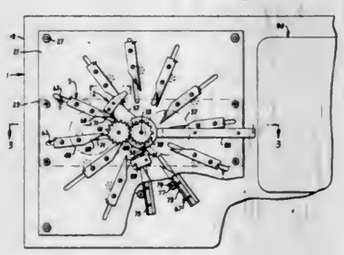
3,359,381
SEQUENCE TIMING DEVICE
John Clark, P.O. Box 137, Mount Forest, Ontario, Canada
Filed Feb. 1, 1966, Ser. No. 524,264
7 Claims. (Cl. 200—38)



1. A sequence timer device for controlling apparatus adapted to effect a predetermined sequence of operations which form a cycle that can be divided into primary and secondary parts, said device comprising: a revolving member whose degree of rotation can be related to said cycle and the timing of said operations therein; a frame; a primary drum rotatably mounted on said frame, and having on its surface in a helical path a plurality of primary control switch actuating means followed by a primary transfer switch actuating means; a carriage having a primary control switch and a primary transfer switch adapted to move along said drum parallel to the surface thereof, whereby as said drum rotates, said primary control and

transfer switches are sequentially actuated by their respective actuating means in the order in which they occur along said path; a secondary drum rotatably mounted on said frame and having on its surface a secondary transfer switch actuating means; a secondary transfer switch disposed adjacent said secondary drum for actuation by said secondary transfer switch actuating means; a drive means adapted alternately to engage said drums to said revolving member and maintain the drum not so engaged in a predetermined starting position; and control transfer means operatively associated with said drive means and said transfer switches whereby, during the primary part of the cycle the primary drum rotates with said revolving member and the primary control switch controls said apparatus, and during the secondary part of the cycle the secondary drum rotates with said revolving member, said control transfer means also including reset means for causing said carriage to return to its initial position during said secondary part of the cycle.

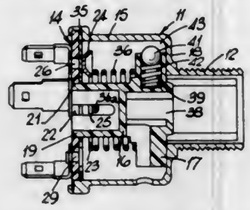
3,359,382
VARIABLE DURATION ELECTRIC TIMER WITH ADJUSTABLE CONTACTS
David W. Hendry, 215 Crocker Ave., Piedmont, Calif. 94611
Filed Sept. 28, 1965, Ser. No. 490,946
16 Claims. (Cl. 200—37)



1. An improved timer for controlling multi-valve irrigation systems having electrically controlled valves, comprising a support, a brush adapted to be connected to a source of electrical energy and supported for movement in a circular path, a plurality of elongate contacts adapted to be individually connected to the electrically controlled valves and mounted on said support in a circumferential array with each of said contacts extending across said circular path, each of said contacts being mounted for movement across said path and having a varying width relative thereto so as to expose varying widths of said contacts to electrical current-passing engagement by said brush upon such movement across said path, timed drive means for moving said brush at controlled speeds along said circular path, and adjusting means on each contact for effecting independent movement of each contact across said path to a selected desired position for selectively controlling the duration of time said brush is in engagement with each contact.

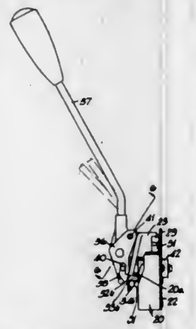
3,359,383
IGNITION SWITCHES
Edward Cryer, Burnley, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England
Filed Jan. 17, 1967, Ser. No. 609,956
Claims priority, application Great Britain, Feb. 17, 1966, 7,073/66
1 Claim. (Cl. 200—42)

An ignition switch for use in a road vehicle, comprising in combination a casing, a rotor rotatably mounted in said casing, a fixed contact plate secured to said casing, a second contact plate axially movable with respect to said rotor, a compression spring urging said second contact plate into engagement with said fixed contact plate, means coupling said second contact plate to said rotor for angular movement therewith from an off position into a first position in which the second contact plate co-operates with the first contact plate to complete the ignition circuit of the vehicle, and a second position in which the second contact plate co-operates with the fixed contact plate to complete both the ignition circuit and



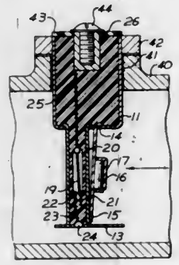
the starter circuit of the vehicle, said compression spring having one end thereof coupled to a part of the switch which moves angularly, and the other end of said compression spring being engageable with the casing when the second contact plate is moved from said first position to said second position, whereby movement of said second plate from said first position to said second position stresses said compression spring in torsion so that the spring urges the second contact plate towards said first position.

3,359,384
DIRECTIONAL TURN SIGNAL SWITCH WITH CAMS INCLINED TO THE PLANE OF ROTATION OF THE STRIKER
Leslie James Nevett, Whalley, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England
Filed Mar. 25, 1966, Ser. No. 537,422
Claims priority, application Great Britain, Mar. 26, 1965, 12,876/65
4 Claims. (Cl. 200—61.34)



1. A direction indicator switch which in use is cancelled by a striker rotatable with the steering wheel of a road vehicle, comprising in combination a support, an actuating member, means pivotally connecting said actuating member to said support for angular movement in opposite directions from an inoperative position to a pair of operative positions in which in use the switch completes circuits to direction indicator lamps on opposite sides of the vehicle respectively, resilient means actuating between the support and actuating member and urging the actuating member to its inoperative position, cooperating latch means on said actuating member and support said latch means serving when the actuating member is moved to an operative position to retain said actuating member in said operative position against the action of the resilient means, a pair of cams carried by said actuating member and which when the actuating member is moved to its operative positions are moved into the path of movement of said striker respectively, each of said cams being movable towards and away from said support and being inclined to the plane of rotation of said striker and defining a first surface which when a turn indicated by the switch is negotiated is engaged by the striker to move the appropriate cam towards the support, and a second surface which is engaged by the striker on return movement thereof after a turn has been negotiated to move the cam away from the support, and means responsive to movement of a cam away from the support for releasing the latch means so that the resilient means returns the switch to the inoperative position.

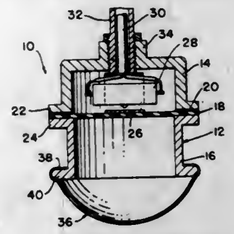
3,359,385
FLOW SENSING DEVICE
Erwin J. H. Bentz, Washington, Philip J. Costa, Chillicothe, and Clyde E. Fulton, Pekin, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed June 9, 1966, Ser. No. 556,469
2 Claims. (Cl. 200—81.9)



1. A sensing device for sensing fluid flow in a conduit and for actuating electrical fluid flow monitoring apparatus associated with the device, the device comprising in combination a housing having a first cylindrical portion extending from outside to inside the conduit and a second narrow elongated cylindrical portion disposed in the fluid stream within the conduit; magnetically operable reed switch means hermetically enclosed within the second portion of the housing at a location approximately midway the length of the second portion; a flexible flow sensing means consisting of a light, flexible, narrow spring leaf, of substantially equal length with the second portion, hingedly depending from the first portion of the housing at a short predetermined distance from the outer circumference of the second portion, the longitudinal axis of the spring leaf being substantially parallel to the longitudinal axis of the second portion of the housing at fluid standstill conditions; a permanent magnet disposed on the spring leaf approximately midway the length of the spring leaf but on the side of the spring leaf farther from the switch means such that a rate of fluid flow above a predetermined value urges the magnet toward the switch means to actuate the switch.

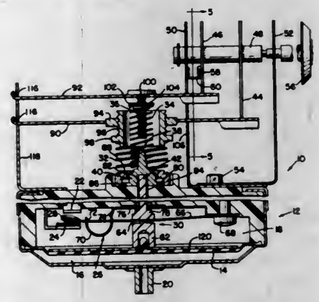
3,359,386
SLUDGE EXCLUSION DIAPHRAGM SWITCH
William F. Howard, Bloomfield Hills, Mich., assignor to Howard Electric Company, Detroit, Mich., a corporation of Michigan
Filed Oct. 11, 1965, Ser. No. 494,359
4 Claims. (Cl. 200—83)

1. A fluid pressure operated unit, comprising a housing structure having a flexible, fluid pressure responsive diaphragm secured thereto and internally sealing a housing space on one side of said diaphragm, a protective diaphragm having a liquid tight connection across said structure on a side of said housing space remote from said first named diaphragm, and a volume of air or other compressible gas filling the space between said diaphragms, said protective diaphragm being flexible under



external hydrostatic or similar pressure thereon to transmit a force arising from said pressure through said gas to said first named diaphragm, said protective diaphragm being of substantially greater flexibility than the first named diaphragm, to the extent of being floppy, hence self-cleaning.

3,359,387
PRESSURE SWITCH
William E. Rhodes, Columbus, Ohio, assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware
Filed Oct. 23, 1965, Ser. No. 502,827
10 Claims. (Cl. 200—83)



1. In combination:
a casing having a flexible diaphragm dividing said casing into a pressure chamber on one side of said diaphragm and a switch chamber on the other side of said diaphragm, and with a fluid pressure flow connection into said pressure chamber;
a stationary actuated contact in said switch chamber and carried by said casing;
a stationary reset contact in said switch chamber and carried by said casing;
snap blade means in said switch chamber with movable contact means alternately to engage said actuated and reset contacts;
connecting means connecting said diaphragm and snap blade means to cause said movable contact means alternately to contact said actuated contact when a desired high fluid pressure is produced in said pressure chamber and to engage said reset contact when a low reset pressure is produced in said pressure chamber;
a high pressure control spring carried by said casing and effective on said connecting means;
a reset low pressure control spring carried by said casing and effective on said connecting means;
a high pressure cam means carried by said casing and effective to adjust said high pressure control spring;

a reset low pressure cam means carried by said casing and effective to adjust said reset low pressure control spring;

and cam adjusting means carried by said casing and having manually operable means outside said casing to adjust said high pressure cam means and said reset low pressure cam means.

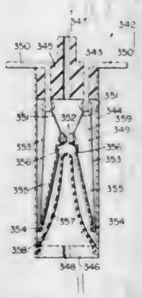
3,359,388

CONTROL DEVICES AND VALVE CONSTRUCTIONS THEREFOR OR THE LIKE

Roy W. Houser, Orange, Louis P. Morris, Garden Grove, and Sam E. Chenaur, Anaheim, Calif., assignors to Robertshaw Controls Company, a corporation of Delaware

Original application June 12, 1962, Ser. No. 202,003, now Patent No. 3,237,646, dated Mar. 1, 1966. Divided and this application Feb. 10, 1966, Ser. No. 547,099

4 Claims. (Cl. 200—83)



1. A switch construction comprising a casing, a pair of switch arm means; disposed in said casing and normally being urged toward each other by the natural resiliency of said switch arm means, a pair of switch contacts respectively carried by said switch switch arm means and normally disposed in contact with each other to complete a circuit through said switch construction, and an expansible member disposed in said casing and being disposed between said switch arm means, said expansible member being operatively interconnected to said switch arm means to spread said switch arm means and break said circuit when said member is expanded, said switch arm means each including an electrical terminal carried by said casing and having first, second and third arms carried thereby, said first and second arms of each arm means having adjacent ends secured to opposite sides of their respective terminal to be spaced from each other with said second arm carrying its respective contact at the other end thereof, said third arm of each arm means having one end carried by the other end of its respective first arm and having its other end disposed against said other end of its respective second arm, said exansible member being so disposed between said arm means that said expansible member engages said third arms when expanded to move the same away from each other and thus move said second arms away from each other to break said circuit.

3,359,389

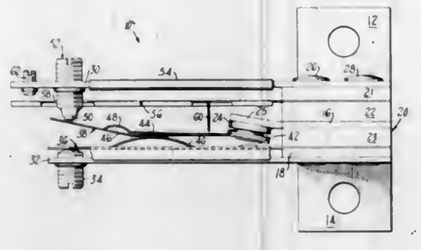
BIMETAL SNAP SWITCH WITH DISCONNECT LEVER TO PREVENT CONTACTS FROM PERMANENTLY WELDING

Carl A. Landin, West Hartford, Conn., assignor to The Hart Manufacturing Company, Hartford, Conn., a corporation of Connecticut

Filed Feb. 18, 1966, Ser. No. 528,648

5 Claims. (Cl. 200—138)

1. A bimetal actuated switch comprising a support having a fixed contact secured thereto, a switch arm mounted for movement relative to said support and carrying a second contact for movement toward said fixed contact, means mounting said switch arm on said support, a bimetallic member and a disconnect lever respectively cantilever supported on said support to extend therefrom in substantially parallel directions with said disconnect lever being positioned in spaced aligned relation between said bimetallic member and said switch arm, said bimetallic member and said disconnect lever having adjacent free end portions spaced apart from said support, said free end portion of said bimetallic member being movable to a first position for exerting an initial force on said



switch arm remote from said second contact to initiate movement thereof away from said fixed contact, said bimetallic member engaging said disconnect lever upon continued movement beyond said first position, said disconnect lever having positive disconnect means for engaging said switch arm adjacent said second contact responsive to said continued movement of said bimetallic member to apply an additional contact opening force on said switch arm adjacent said second contact which force is of amplified magnitude relative to said initial force exerted on said switch arm.

3,359,390

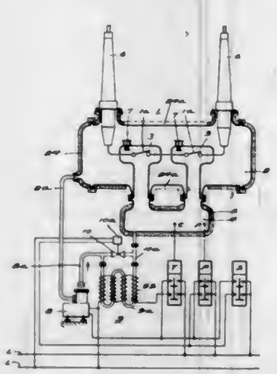
COMPRESSED GAS CIRCUIT BREAKER WITH CIRCULATING SYSTEM FOR COMPRESSED GAS

Egbertus Adrianus Frowein, Nussbaumen, Switzerland, assignor to Aktiengesellschaft Brown, Boveri & Cie, Baden, Switzerland, a joint-stock company

Filed June 2, 1965, Ser. No. 460,690

Claims priority, application Switzerland, June 10, 1964, 7,582/64

10 Claims. (Cl. 200—148)



1. In a circuit breaker of the compressed gas type operating on a closed gas circulation system, the combination comprising a switch chamber containing contact means for the circuit breaker actuatable between closed and open positions, a high-pressure tank in communication with and supplying gas at high pressure into said switch chamber, a low-pressure tank within which said switch chamber is located, valve means between said switch chamber and low-pressure tank actuatable to open position at a predetermined over-pressure to effect gas flow from said high-pressure tank to said low-pressure tank, said high-pressure tank being fully heat insulated and said low-pressure tank being only partly heat insulated, a gas flow circuit connecting an outlet from said low-pressure tank with an inlet to said high-pressure tank, said gas flow circuit including a gas compressor and a gas heater unit connected in series, first relay means responsive to the gas temperature within said high-pressure tank for controlling said heater unit, second relay means responsive to the gas pressure within said high-pressure tank for controlling said compressor, and third relay means responsive upon receipt of a disconnect signal for said contact means of said circuit breaker for controlling said compressor.

3,359,391

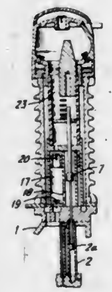
POWER CIRCUIT BREAKER WITH ARC QUENCHING MEANS

Hans Manz, Wallisellen, Switzerland, assignor to Maschinenfabrik Oerlikon, Zurich, Switzerland

Filed Mar. 30, 1965, Ser. No. 443,784

Claims priority, application Switzerland, Sept. 9, 1964, 11,793/64

6 Claims. (Cl. 200—150)



1. A power circuit breaker comprising, in combination, an arc control chamber containing a turbulator stack; a stationary contact within said chamber; a movable contact engageable with and disengageable from said stationary contact; a pump cylinder; a piston fixed to said movable contact and movable within said pump cylinder, said piston dividing said pump cylinder into a first compartment, beneath said piston, and a second compartment, above said piston; a reservoir communicating with said first compartment and communicable with said arc control chamber; a first non-return valve controlling communication of said reservoir with said arc control chamber; a supply chamber containing arc quenching liquid and communicable with said reservoir; a second non-return valve controlling communication of said supply chamber with said reservoir; and means defining a return path for quenching liquid extending between said arc control chamber and said supply chamber; the arrangement being such that, during closing of the circuit breaker contacts, quenching liquid is drawn from said supply chamber to said reservoir and said first compartment and, during separation of the circuit breaker contacts, quenching liquid is forced out of said reservoir into said arc control chamber and through said liquid return path back to said supply chamber.

3,359,392

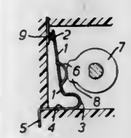
ROTARY SWITCH

Clarence Willans Heath, Bleasby, England, assignor to United-Carr Incorporated, Boston, Mass., a corporation of Delaware

Continuation of application Ser. No. 458,931, May 26, 1965. This application Apr. 27, 1967, Ser. No. 634,391

Claims priority, application Great Britain, May 28, 1964, 22,122/64

1 Claim. (Cl. 200—153)



A switch having a fixed contact and a movable contact, said movable contact formed of a single strip of conductive material and comprising a base portion, an arm connected to the base portion by a bight portion and extending away from the base portion, the arm having a tongue cut from the material thereof, the tongue being shorter in length than the arm and having an arced portion formed therein and spaced from the arm for the major portion of the length of the tongue and which is flexed past the plane of the engaged portion of the arm and said movable contact actuated by a rotor having a lobe engageable with the arced portion of the tongue.

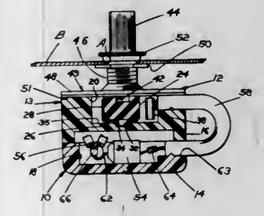
3,359,393

ROTARY DIMMER SWITCH OF THE CANOPY TYPE

Walter H. Anthony, Levittown, Pa., Frederick A. Zoda, Trenton, N.J., and Kenneth H. Walterick, Levittown, Pa., assignors to Circle F Manufacturing Company, Trenton, N.J., a corporation of New Jersey

Filed Oct. 12, 1965, Ser. No. 495,254

3 Claims. (Cl. 200—155)



1. In a canopy-type switch the combination, with a housing having a rotor well, a rotor mounted in said well for rotation and having a bridging element, a line contact and two load contacts uniformly angularly spaced about said well in the plane of the rotor and disposed for bridging of two of said contacts in each position to which the rotor is turned, the line contact having a connection to a current source, of dimmer means comprising:

(a) electrical connecting elements extending to one side of said plane from the respective load contacts to an adjacent plane paralleling the plane of the rotor;

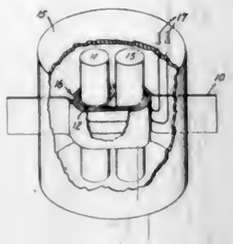
(b) a two-electrode rectifier lying in said adjacent plane and having one electrode connected to one of said connecting elements; and

(c) a connection to load extending exteriorly of the housing, said other connecting element and the other electrode of the rectifier having a common connection to said load connection.

3,359,394
PERSISTENT CURRENT SWITCH

Edward F. Mains, Scotia, N.Y., assignor to General Electric Company, a corporation of New York

Filed May 2, 1966, Ser. No. 546,625
2 Claims. (Cl. 200—166)

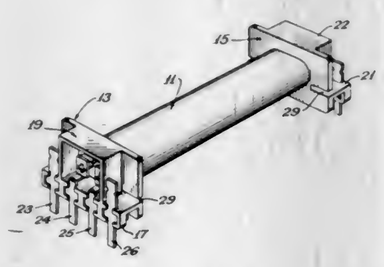


1. A persistent current switch constructed of a superconductive tape of greater width than thickness for use in conjunction with a superconducting solenoid, said switch comprising a pair of mandrels having radii larger than the minimum bending radius of the tape, a superconductive tape wound bifilarly about said mandrels, and electrical heating means for selectively heating said bifilar winding to change it from the superconductive to normally conductive condition when desired.

3,359,395
REED RELAY TERMINAL CONSTRUCTION

Morris W. Bruce, Princeton, Ind., assignor to Essex Wire Corporation, Fort Wayne, Ind., a corporation of Michigan

Filed July 25, 1966, Ser. No. 567,598
8 Claims. (Cl. 200—166)

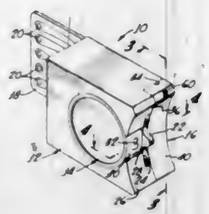


1. In combination, an elongated, reed switch cartridge including a switch terminal extending outwardly from each end thereof, the end of each of said switch terminals including a constricted region flanked by a pair of enlarged regions, the outermost one of said enlarged regions having a greater width than thickness, an insulated bobbin including a hollow barrel portion, said cartridge being positioned in said barrel portion, a circuit terminal fastened to said bobbin at each end of said barrel portion, each of said circuit terminals including an elongated slot receiving one of said switch terminals, said slot having long and short dimensions, said short dimension being greater than the thickness but shorter than the width of the outermost one of said enlarged regions of said switch terminal such that, when said constricted regions are positioned within said slots, said switch may be rotated to lock said switch terminals to said circuit terminal.

3,359,396
LIGHTED SWITCH HAVING A DEMOUNTABLE LAMP CARRIER WITH SWITCH ILLUMINATION MEANS SECURED TO THE LAMP CARRIER

Pleasie M. Day, 3012 Rio Clara Drive, Hacienda Heights, Calif. 91745

Filed July 28, 1966, Ser. No. 568,450
5 Claims. (Cl. 200—167)



1. A lighted switch, said lighted switch comprising:
a switch body, a rotary switch operator mounted on said switch body, and a lamp carrier mounted with respect to said switch body adjacent said rotary switch operator;
said switch body carrying said rotary switch operator and adapted to carry said lamp carrier adjacent thereto, electric interconnection means between said rotary switch operator and said switch body so that upon rotation of the rotary switch operator, electrical interconnections within said lighted switch change, said switch body being at least partially made of an opaque material;
said rotary switch operator being rotatably mounted upon said switch body, an operating wheel on said rotary switch operator extending out of said switch body, said operating wheel being adapted to be manually engaged so as to rotate said rotary switch operator with respect to said switch body, an indicia surface on said rotary switch operator, said indicia surface being visible from the front of said switch body, at least a part of said indicia surface being made of light conducting material, the improvement comprising:
said lamp carrier carrying a lamp and carrying plugs thereon, said lamp carrier being mounted with respect to said switch body and said rotary switch operator so that light from said lamp illuminates at least some said light conducting portion of said rotary switch operator visible from the front of said lighted switch, said lamp being connected to said plugs to receive energization through said plugs, said lamp carrier being demountable with respect to the front of said lighted switch.

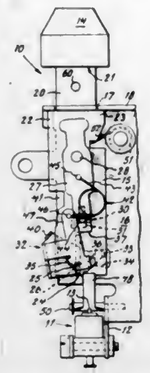
3,359,397
LOCKDOWN KEY MECHANISM

John I. Clark, Stamford, Conn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Sept. 12, 1966, Ser. No. 578,663
8 Claims. (Cl. 200—169)

1. A lockdown key mechanism comprising,
(a) a longitudinally movable keystem,
(b) means for supporting said keystem,
(c) said support means fixed with respect to said keystem and including means for establishing a normal position of said keystem,
(d) means for biasing said keystem in said normal position, and

(e) latch means pivotally mounted on said support means for restraining said keystem at a control position remote from said normal position,
(f) said biasing means including means for operatively coupling said keystem and said latch means,

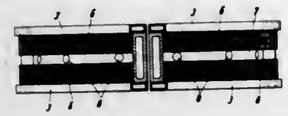


(g) said coupling means including trip means carried by said keystem for engagingly rotating said latch means to said restraining position when said keystem is moved to a predetermined longitudinal position from said normal position against said biasing means, whereby said keystem is retained in said control position.

3,359,398
INDUCTOR

Friedhelm Reinke, Remscheld, and Hermann Kuhlbars, Wuppertal-Elberfeld, Germany, assignors to Deutsche Edelstahlwerke Aktiengesellschaft, Krefeld, and Allgemeine Elektricitats-Gesellschaft, Berlin, Grunewald, Germany

Filed July 31, 1964, Ser. No. 386,707
Claims priority, application Germany, Aug. 5, 1963, D 42,179
4 Claims. (Cl. 219—10.43)



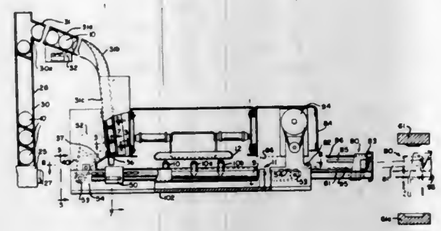
1. An inductor in the form of a closed loop for extending over a surface of a workpiece to be heated comprising:
a current conducting work section, said work section having a work surface disposed in spaced parallel relation to the surface of said workpiece, said work surface having apertures therein disposed across the path of current flowing therein for concentrating the current distribution at predetermined points to produce a heating pattern in the workpiece, said apertures extending through said work section in a direction perpendicular to the plane of said work surface.

3,359,399
HIGH FREQUENCY HEATING SYSTEM

Willard H. Hickok and Gordon C. Trabue, Louisville, Ky., assignors to Chemetron Corporation, Chicago, Ill., a corporation of Delaware

Filed July 25, 1963, Ser. No. 297,648
5 Claims. (Cl. 219—10.69)

5. Apparatus for high frequency heating of round dielectric objects comprising, a pair of rolls defining first heating electrode means, second heating electrode means, means including said pair of rolls for rotating a round dielectric object during a heating cycle in a high frequency field established between the first electrode means and the



second electrode means so the object is uniformly heated throughout, and means for rejecting the heated object at the end of the heating cycle if desirable.

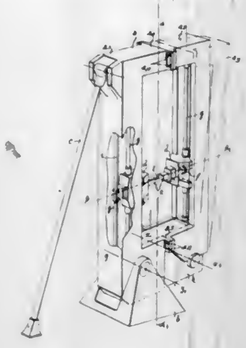
3,359,400
WELDING MACHINE

Jean Denis, Antony, and Gaston Albert Fontaine and Charles Molin, Chatenay-Malabry, France, assignors to Nord-Aviation Societe Nationale de Constructions Aeronautiques, Paris, France, a joint-stock company of France

Filed Mar. 18, 1965, Ser. No. 440,828
Claims priority, application France, Mar. 25, 1964, 968,726
8 Claims. (Cl. 219—78)

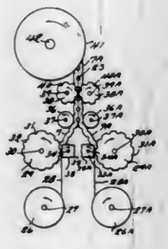
1. In a welding machine of the type having two opposite trolleys carrying the welding equipment and guiding means therefor and moving simultaneously in order to effect straight lines of welding, while applying variable and opposite pressures, the axes of the said straight lines of welding being located in line with each other:
(a) a rectangular, elongated frame constituted by two half-frames, each of which is in the shape of a U, in which the bar of each of the said half-frames forms one of the large sides of the said frame, and the two branches of the said half-frames forms the small sides of the said frame when they are coupled together by the means of a first rotating axis on one of said small sides and by an opening joint on the other of said sides;
(b) a pivotal shaft means supported by a base fixed to the ground, and about which on a second rotating axis a blocked half-frame can pivot;
(c) means for locking said half-frame in any position between a vertical position and a position close to the horizontal;
(d) a pivotal means for the opening of the said frame, around said first rotating axis, this means being supported by the two arms constituting one of the said small sides of the frame, and this pivoted means being parallel to the said pivotal shaft means about which the non-blocked half-frame can pivot with respect to said blocked half-frame.
(e) two lead-screw means respectively parallel to each of the said large sides of the said frame, by which the said trolleys which carry the welding equipment, are driven along guiding means.
(f) a variable speed driving device by which the two said lead-screw means are rotated;
(g) supporting means for holding the parts of the assembly to be welded in position with respect to the frame;
(h) mounting means by which all the elements of the assembly are maintained in position with respect to each other during the passage of the said assembly

from a position corresponding to an effective welding operation to the adjacent position corresponding to the following effective welding operation; comprising an upper ring and lower ring, mandrels between said upper and lower ring, and motor acting said rings on a bearing for moving the assembly between the position corresponding to an effective welding operation to the adjacent position corresponding to the following effective welding operation;



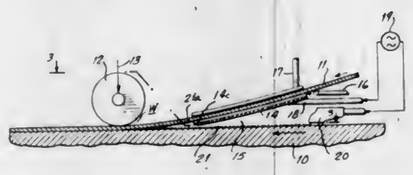
(i) an electrical and pneumatic equipment by which the said lead-screw means, the said supporting and mounting means for the assembly are operated in synchronism together with the operations of the two said trolleys, moving parallel to the large sides of the said frame under the action of their respective said lead-screw means and symmetrically with each other with respect to a fixed line of work defined by the intersection of the common axis of the said guiding means carried by the two said trolleys and the plane perpendicular to the said frame and passing through the centre of its small sides.

3,359,401
CONTINUOUS GAS BURNER STRIP AND APPARATUS FOR MAKING THE SAME
Phillip Miller Pappas, 2318 Bluebonnet Blvd., Houston, Tex. 77025
Original application Feb. 15, 1960, Ser. No. 8,761, now Patent No. 3,133,588, dated May 19, 1964. Divided and this application Sept. 5, 1963, Ser. No. 306,806
8 Claims. (Cl. 219—81)



1. A gas burner roll forming and welding machine utilizing thin gauge corrosion resisting steel strip metal in continuous long lengths coiled on two reels or spools with said coiled strip metal fed into separate rotating forming die sets each consisting of a rotating female and male die with each set forming one-half section of the gas burner by forming half-round tubular openings along the upper flanged vertical portion of the strip metal one-half the outwardly formed central passage for the combustible mixture along the center portions of the strip metal with inwardly formed V pleats extending partly into said center portions and forming mating half-round vertical portions along the lower flanged vertical sections with guide rollers directing said formed half sections of said gas burner together and opposed to each other into the roller resistance welder dies consisting of two revolving opposed die sets of current carrying copper alloy with said dies pressing and welding together the two half sections of said burner along the upper mating vertical flanges between the opposed half-round vertical forms and pressing and welding together the lower vertical flanged half round mating sections as well as the flanged straight vertical sections for a continuous weld seam joining the two half burner sections continuously together along the bottom vertically flanged area with the subsequent formed and joined gas burner section then coiled onto a revolving spool or reel.

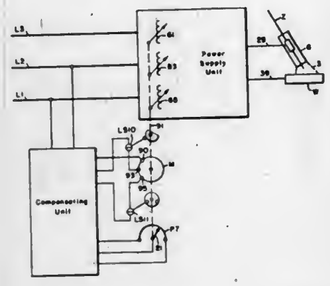
3,359,402
WELDING BY HIGH FREQUENCY RESISTANCE HEATING
Perry J. Rieppel, Worthington, Ohio, assignor, by mesne assignments, to American Machine & Foundry Company, New York, N.Y., a corporation of New Jersey
Filed Mar. 13, 1964, Ser. No. 351,686
12 Claims. (Cl. 219—117)



1. Method for welding an elongated first metal member of a character and with cross-sectional dimensions such as to have a relatively low heat-distributing capability, to another metal member having a relatively higher heat-distributing capability, said method comprising: so advancing said members that the seam lines or areas desired to be welded on each will follow paths which approach and become contiguous at a welding point or zone; disposing a cooled element having a conductive portion with said conductive portion extending along and adjacent said first member for a substantial distance in advance of the welding zone and extending along and in proximity to but spaced from said area on said other member and spaced from said welding zone; and heating said members along said seam areas by the use of radio frequency current connected to flow to and from the weld zone by supplying said current to a point on said other member in advance of said zone and to a first point on said conductive portion in advance of the end thereof nearest said zone and contacting said conductive portion with said first member at least at a second point nearer to said zone than said first point and said point on said other member but spaced from said zone to cause current to flow along the length of said conductive portion in advance of said second point and along the length of said first member at least from said second point to said weld zone; and maintaining the length of said conductive portion which is adjacent any current carrying portion of said first member in advance of said second point at least substantially as close to said area on said other member as the current carrying surface of said first member in advance of said second point and facing said last-mentioned area, said

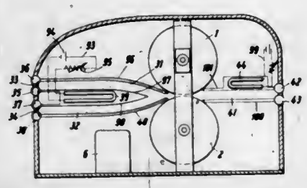
cooled element thereby preventing overheating of said first member and the current flowing thereon acting by reason of mutual inductance to concentrate the current flowing on said second member along the line of the desired seam.

3,359,403
ARC WELDING APPARATUS
Lewis F. Pettit, Jr., Kenmore, N.Y., and Harry J. Bichsel, Brussels, Belgium, assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Continuation of application Ser. No. 656,547, May 2, 1957. This application Dec. 22, 1965, Ser. No. 522,012
6 Claims. (Cl. 219—131)



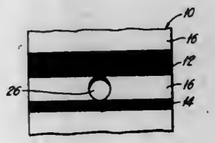
1. Apparatus for arc welding work with a consumable electrode supplied with energy derived from a source the potential of which may vary, comprising in combination, a power-supply unit having means for setting the output potential of said unit, said output potential, at any potential setting, being substantially constant over the range from no load to full load, means for connecting said unit to said electrode and to said work to cause arc welding current to flow between said electrode and said work, and means connected to said source and connected to said setting means and responsive to said source potential, for actuating said setting means to compensate for variations in said source potential thereby suppressing excessive arc outages and stubbing.

3,359,404
APPARATUS FOR PRODUCING A PICTURE
Walter Limberger, Hamburg-Poppenbuttel, Germany, assignor to Lumoprint Zindler K.G., Hamburg, Germany, a corporation of Germany
Filed Feb. 11, 1964, Ser. No. 344,127
10 Claims. (Cl. 219—216)



1. A reproduction apparatus for the diffusion-transfer of an image to a copy-receiving sheet from a thermally-activatable latent-image-carrying reproducing sheet having an emulsion layer containing a heat-activatable substance adapted to release a diffusion medium, comprising a housing; inlet means and outlet means in said housing respectively for receiving said reproducing sheet and discharging said reproducing and copy-receiving sheets; means intermediate said inlet means and said outlet means for providing a transport path for said reproducing sheet for the reproducing sheet and a transport path for said copy-receiving sheet; a pair of drums disposed on opposite sides of said transport path and rotatable in engagement with the reproducing and copy-receiving sheets passing therebetween; spring means resiliently bearing on at least one of said drums for pressing them into line engagement; means for setting the minimum gap between said drums; heating means along said path for said reproducing sheet between said drums and said inlet means and including a heated surface adapted to heat said emulsion layer upon confronting same for thermally activating said substance to at least partially release said medium prior to the passage of said sheets between said drums; and means for passing said copy-receiving sheet and said reproducing sheet concurrently between said drums.

3,359,405
DATA RECORD AND SENSING MEANS THEREFOR
Gunnar E. Sundblad, Bromma, Sweden, assignor to Svenska Dataregister AB, Solna, Sweden, a corporation of Sweden
Filed Nov. 3, 1964, Ser. No. 408,484
3 Claims. (Cl. 235—61.11)

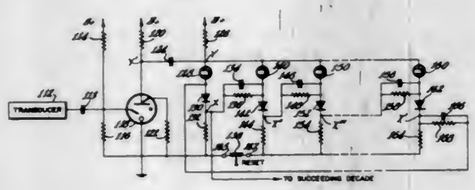


1. A coded data translating system comprising:
a record having a surface;
a series of areas on said surface of alternating light reflectivity types;
each of the areas of one type having a width at least as great as a first width;
the areas of the other type being divided into first and second groups in accordance with a coded representation of the stored data;
each of the areas of the first group having a width at least as great as the first width;
each of the areas of the second group having a width no greater than a second width substantially smaller than the first width;
a record reader responsive to light reflected from the record surface;
and means defining a light conveying aperture for conveying light from the record to said record reader;
said light conveying aperture being large enough to permit said record reader to instantaneously read a region on said surface larger than said second width.

3,359,406
ELECTRONIC COUNTER
Russell Perry, Smithtown, N.Y., assignor to General Time Corporation, Stamford, Conn.
Filed June 9, 1964, Ser. No. 373,726
8 Claims. (Cl. 235—92)

1. An electronic pulse counter, said counter comprising a series of individual gas conductive elements each of which has at least a first and second state of conduction, said element also visually indicating which of said states of conduction exist in each of said elements at any time; means for connecting all of said elements to a common source of electrical energy, said elements requiring

specified potentials applied thereto to be driven from one state of conduction to another; means connected between said source of electrical energy and said elements to determine the potentials applied to said elements and prevent more than one of said elements from being driven into one of said first and second states of conduction at any time; an electrical charge accumulating member connected between each of said elements and the next adjacent element, the conduction through one of said elements in its first state of conduction serving to accumulate a charge on said charge accumulating member, the potential across said members increasing with the accumulation of a charge thereon, and means for connecting said charge accumulating means to said adjacent element

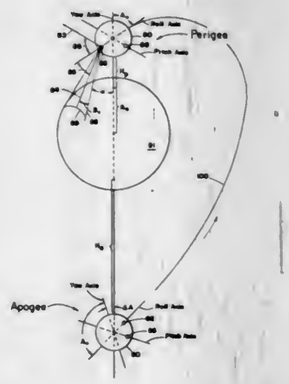


to apply thereto the potential across said charge accumulating means to aid the potential from said source when one of said elements is driven from its first state of conduction to its second state of conduction to determine which of said elements is to be next driven into its first state of conduction; and switch means connected in a common connection of said elements between said elements and said source of electrical energy for interrupting the flow of energy from said source to all but one of said elements to reset said counter, wherein said switch means includes an electron flow control means, and means for applying to said electron flow control means an electrical signal for determining current flow in said electron flow control means and interrupting the current in the common connection.

3,359,407
SATELLITE ORBIT CHANGING SYSTEM

Hilliard W. Paige, Berwyn, Pa., assignor to General Electric Company, a corporation of New York

Filed Oct. 28, 1959, Ser. No. 849,239
7 Claims. (Cl. 235—150.2)

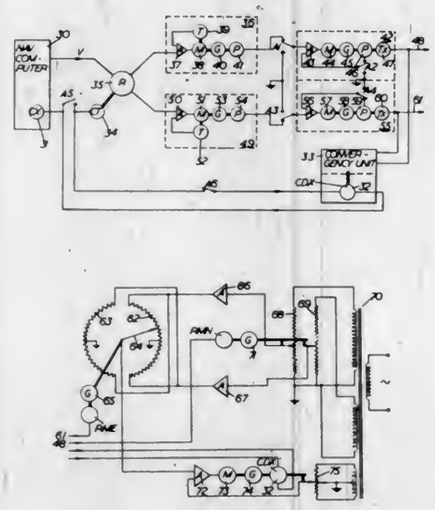


1. A satellite orbit changing system comprising means for sensing a signal representative of a function of satellite altitude, means for calculating from said signal the impulse required to circularize the orbit at apogee, means to detect the point on said orbit when the satellite is at apogee, and means for producing a signal representative of the magnitude of the impulse required to be applied to said satellite in order to circularize said orbit.

3,359,408
NAVIGATIONAL DISPLAY DEVICES FOR USE ON MOVING VEHICLES

Thomas Stanley Briggs, Edinburgh, Scotland, assignor to Ferranti, Limited, Hollinwood, England, a company of Great Britain and Northern Ireland

Filed Apr. 14, 1964, Ser. No. 359,618
Claims priority, application Great Britain, Apr. 18, 1963, 15,225/63
9 Claims. (Cl. 235—150.27)



1. A navigational display device for use on a moving vehicle including a viewing screen having a fiducial point for indicating the present position of the vehicle, means for projecting an image of part of a conical projection map onto said viewing screen, driving means for moving said image in two mutually perpendicular directions relative to the fiducial point, said image being so projected onto said screen that a given meridian of the map image is parallel to one of said two mutually perpendicular directions, means for determining the movements of said vehicle, means for determining the track angle of said vehicle, means for determining the convergence angle of the meridian of the present position of the vehicle relative to said given meridian, means for resolving said vehicle movements through the algebraic sum of said track angle and said convergence angle to determine the components of said movements parallel to and perpendicular to said given meridian, and means for actuating said driving means for moving said image in directions parallel to and perpendicular to said given meridian in accordance with said resolved components of said movements.

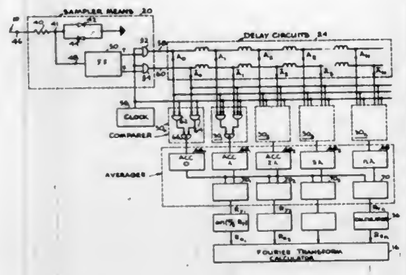
3,359,409
CORRELATION FUNCTION APPARATUS

Hugh L. Dryden, Deputy Administrator of the National Aeronautics and Space Administration, with respect to an invention of Richard M. Goldstein, Los Angeles, Calif.

Filed Apr. 9, 1963, Ser. No. 271,824
7 Claims. (Cl. 235—181)

1. Apparatus for generating the autocorrelation function of a specified signal comprising; first means for successively developing binary signals, at a specified sampling

rate, in accordance with the algebraic sign of said specified signal; a plurality of second means for respectively comparing binary signals representative of the sign of said

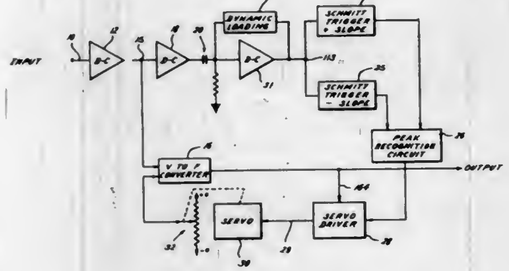


specified signal spaced in time by predetermined respective amounts for determining a distorted autocorrelation function of said specified signal; and means for correcting said distorted autocorrelation function.

3,359,410
AUTOMATIC BASE LINE DRIFT CORRECTOR CIRCUIT

Clinton D. Frisby and David W. Spence, Houston, Tex., assignors to Infotronics Corp., a corporation of Texas

Filed Apr. 23, 1964, Ser. No. 361,970
17 Claims. (Cl. 235—183)



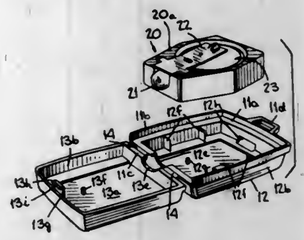
11. A base line drift corrector circuit for correcting the base line value of an analytical signal comprising:
(a) means for forming a correction signal;
(b) means for correcting the analytical signal with the the correction signal; and
(c) means operated by the analytical signal for withholding the changing of the output of said forming means during occurrence of analytical fluctuations in the analytical signal.

3,359,411
MINIATURE FLASHLIGHT WITH INTEGRAL HINGE CASING

Sidney Schwartz, New York, N.Y., assignor to Bantamlite, Inc., New York, N.Y., a corporation of New York

Filed Apr. 13, 1966, Ser. No. 542,405
6 Claims. (Cl. 240—6.4)

1. A miniaturized flashlight comprising a casing molded of elastomeric plastic material as an integral structure having a pair of casing-halves interconnected by a pair of spaced apart relatively thin webs providing hinges for disposing the casing-halves in an open side-by-side position and swingable to a closed edge-to-edge position of peripheral edges of the casing-halves, aligned recesses from said peripheral edges formed in each casing-half between said hinges providing an opening in the casing, integral means formed in said casing-halves opposite said hinges for releasably latching the casing-halves in said

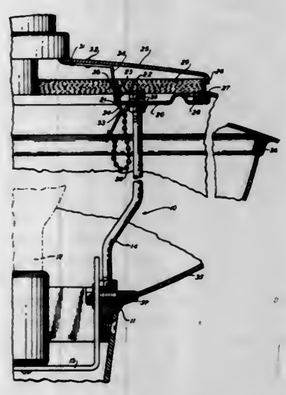


closed position, a battery-switch-bulb cartridge unit disposed in said casing with the bulb located in said opening and having a normally open switch projecting from a surface thereof towards a flat wall of one of said casing-halves, said flat wall being resiliently depressible to engage and close the switch to light the bulb.

3,359,412
ADJUSTABLE LIGHTING FIXTURE

John Kepenach, Middlesex, N.J., assignor to Pfaff and Kendall, Newark, N.J., a corporation of New Jersey

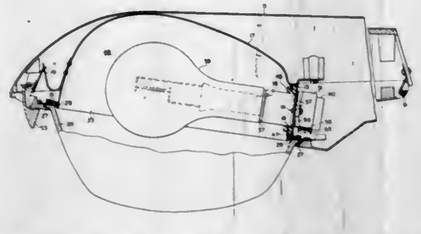
Filed Aug. 12, 1965, Ser. No. 479,266
7 Claims. (Cl. 240—11.2)



1. In a lighting device fixture having a base member having means affixed thereto to support a light unit and support means extending upwardly therefrom, a first plate member secured to said support means in fixedly spaced relation to the base member, a bowl interposed between the base and the first plate member, a flange extending from the first plate member and defining a marginal edge therof, a cover casing proportioned to overlie the plate member when assembled thereon, a second plate member fixed at one end to the cover casing and a free portion angularly extending from the second plate member, and a protuberance formed in the so extending portion of the second plate member, to readily detachably engage the flanged portion of the first plate member, to thereby selectively assemble and hold the cover casing in abutment with the first plate member, thereby closing the fixture, and to disengage the cover casing from the first

plate member and thereby enable the cover casing to be moved clear of the first plate member, to open the fixture for access to the interior thereof.

3,359,413
LAMP POSITIONING MECHANISM
Walter M. Waldbauer, North Olmsted, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 29, 1965, Ser. No. 467,839
14 Claims. (Cl. 240—25)



1. In combination with a luminaire comprising a housing, a concave reflector supported within said housing, said reflector having a periphery and an aperture provided in said reflector, a lampholder extending into said reflector through said aperture and adapted to support a light source within said reflector, flexible gasket means adjacent said reflector and said lampholder for establishing a seal therebetween, a refractor sealably engaging said reflector around the periphery thereof, and a lampholder adjusting means for adjusting the tilt of said lampholder and light source to any one of several predetermined positions within said reflector without disturbing the sealing action of said flexible gasket means, said lampholder adjusting means comprising:

a lampholder support affixed to said lampholder and releasably mounted to said housing, said lampholder support having a series of plane-determining means thereon which establish a predetermined series of slightly angularly displaced intersecting planes;

reference plane-determining means affixed to said housing and disposed in predetermined relation with respect to said series of plane-determining means;

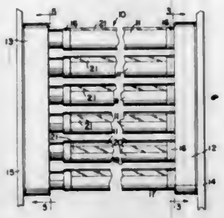
means for releasably securing said lampholder support to said reference plane-determining means along any one of said series of plane-determining means which is adjacent and substantially coplanar with respect to said reference plane-determining means;

said lampholder pivoting slightly about an axis when it is adjusted from one predetermined tilt to another predetermined tilt; and

each of said series of plane-determining means and said reference plane-determining means together with the securing means being positioned with respect to one another to cause the axis of pivot of said lampholder during tilting of same to be proximate the geometric center of said flexible gasket; whereby adjustment of said lampholder from one predetermined tilt to another predetermined tilt does not disturb the seal between said reflector and said lampholder.

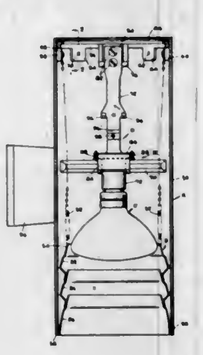
3,359,414
TERMINAL BLOCK FOR LAMP MOUNTING
Hans Ege, Chicago, Ill., assignor to Underwriters Safety Device Co., Chicago, Ill., a corporation of Illinois
Filed Sept. 8, 1965, Ser. No. 485,901
6 Claims. (Cl. 240—52)

1. A lamp mounting arrangement for mounting a plurality of lamps, each lamp having a narrow band-like portion which is directed to a pre-selected area, said lamps being mounted in juxtaposed parallel relation with the narrow band-like portion of each precisely oriented relative to the other lamps, said mounting arrangement comprising a first and second terminal block, said first terminal block having a front face portion with aligned pairs of openings arranged to receive conductor pins projecting from each of said lamps, ferrule means positioned in said openings in said first terminal block, each of said ferrule means having a frusto-conical socket portion in communication with the associated one of



said openings in said front face portion, said frusto-conical portion being of decreasing diameter as it extends away from said front portion of said first terminal block, conducting spring means urging said ferrule means towards said front portion to maintain the same in contact with conducting pins on each of said lamps, opposite ends of said spring means being bottomed on a connector, and means on said second terminal block to co-operate with the opposite end of each of said lamps while simultaneously urging each of said lamps towards said first terminal block assembly.

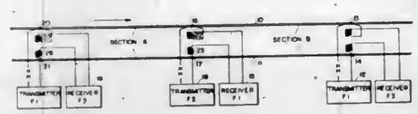
3,359,415
LIGHTING FIXTURE WITH NESTED REFLECTORS
Martin L. Lasker, Metuchen, N.J., assignor to Moldcast Manufacturing Company, Newark, N.J., a corporation of New Jersey
Filed Sept. 9, 1965, Ser. No. 486,136
8 Claims. (Cl. 240—103)



1. A reflector for a lighting fixture comprising an upper annular section and a lower annular section connected to one another in axially aligned, nested relationship, each of the sections having a wall portion tapered inwardly from the bottom end toward the upper edge thereof, the diameters of the tapered wall portions of the upper and lower sections at their respective bottom ends being substantially equal and the diameters of tapered wall portions of the upper and lower sections at their respective top edges being substantially equal, said upper section having a return segment extending from the bottom end of its tapered wall portion to the outer side of

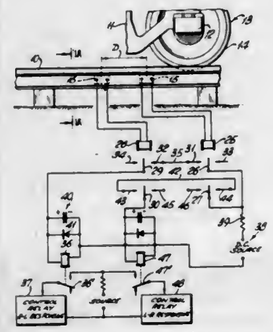
the lower section below the top edge thereof to provide an overlap, the inner sides of said sections having reflecting surfaces, and the outer side of the lower section at said overlap having a reflecting surface.

3,359,416
CONTINUOUS RAIL TRACK CIRCUITS
Clinton S. Wilcox, Rochester, N.Y., assignor to General Signal Corporation, Rochester, N.Y., a corporation of New York
Filed Mar. 29, 1965, Ser. No. 443,459
4 Claims. (Cl. 246—34)



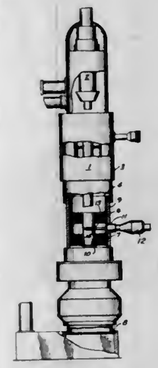
1. A double-rail wayside track circuit extending from a first point to a second point in a stretch of continuous rail railway track comprising, a source of alternating current connected across the track rails at said first point in said stretch of track, induction coils disposed adjacent the track rails respectively at said second point, each of the coils having its magnetic axis normal to the longitudinal axis of the associated track rails, and electroresponsive means connected across the track rails at said second point through windings of said induction coils respectively and through wires secured to the track rails, said electroresponsive means being operable to one condition in response to an interrail potential at said second point from said source and in response to the flow of current from said source in the track rails when the rails are shunted at a point outside of a section between said first point and said second point, and said electroresponsive means being operable to another condition to register the presence of a vehicle when the vehicle shunts the track rails between said first point and said second point in said stretch of railway track.

3,359,417
DIRECTIONAL RELAY
Cornelius A. Gallagher, Hicksville, N.Y., assignor to Servo Corporation of America, Hicksville, N.Y., a corporation of New York
Filed Nov. 18, 1966, Ser. No. 605,116
11 Claims. (Cl. 246—249)



1. Relay means responsive to a particular one direction of traffic movement along a railroad track, comprising two rail-mounted magnetic wheel-trip devices secured in spaced relation along the same track, each of said devices presenting a magnetized air gap for interception of a wheel flange and developing an electrical output signal characterized by a pulse of one polarity followed by a pulse of opposite polarity for each passing wheel, the spacing between said trips being such that a wheel flange on a given axle is leaving the gap for one wheel trip as a wheel flange on the same axle is entering the gap for the other wheel trip, whereby for each passing axle proceeding in a first direction there will be a coincidence of pulse outputs of said trips in a first unique polarized relationship, and further whereby for each passing axle proceeding in the opposite direction there will be a coincidence of pulse outputs of said trips in a second unique polarized relationship, and coincidence-detection means including a control relay responsive to detection of the coincidence in said first unique polarized relationship for producing a signal for remotely indicating that the passing traffic is in said first direction.

3,359,418
ELECTROMAGNETIC ACTUATING MEANS FOR A SHUTTER MECHANISM IN AN ELECTRON MICROSCOPE
Gunter F. Bahr, Chevy Chase, Md., Otmar H. Sackerlotzky, Kendall Park, N.J., and Elmar H. Zeitler, Washington, D.C., assignors to the United States of America as represented by the Secretary of the Army
Filed Dec. 11, 1964, Ser. No. 417,845
6 Claims. (Cl. 250—49.5)



1. In combination with an electron microscope having at least one coil for the focusing of a beam of electrons, an electrically operated shutter mechanism which obstructs the beam when current is flowing and does not obstruct the beam when current is not flowing in the shutter mechanism, said mechanism comprising:

(a) a shutter blade pivotally mounted within said electron microscope in close proximity to a point where the electron beam cross section is narrowest, said blade being capable of movement in a plane perpendicular to the axis of the electron beam from a position where said beam is obstructed by said blade to a position where said beam is not obstructed by said blade;

(b) biasing means coacting with said shutter blade to maintain said blade in a position where said beam is not obstructed;

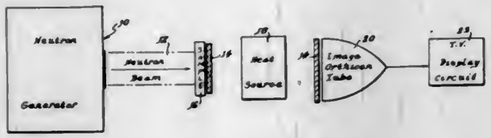
(c) actuating means abutting said shuter blade, said actuating means being biased to maintain said blade in a position where said blade does not obstruct said electron beam; and

(d) electromagnetic means for moving said actuating means and shutter blade, against their combined biases from the point where said shutter blade does not obstruct the said beam to a point where said shutter blade obstructs said beam.

3,359,419
RADIOGRAPHIC NONDESTRUCTIVE TESTING METHOD

Jacob Kastner, Park Forest, and Harold Berger, Naperville, Ill., assignors to the United States of America as represented by the United States Atomic Energy Commission

Filed Oct. 6, 1965, Ser. No. 493,598
8 Claims. (Cl. 250—83.1)

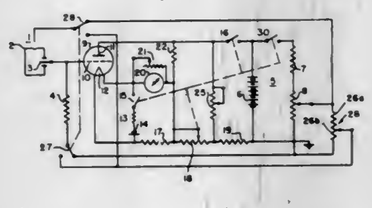


2. A method for obtaining a radiographic image of a sample, comprising generating a neutron beam, mounting a neutron-sensitive water-white thermoluminescent material adjacent said sample, exposing said thermoluminescent material to said neutron beam via said sample, exciting said thermoluminescent material to cause luminescence thereof, recording light released by said thermoluminescent material during the luminescence thereof wherefrom a radiographic image of said sample is obtained.

3,359,420
ELECTRICAL CALIBRATION MEANS FOR RADIAC EQUIPMENT

Fred W. Falk, U.S. Army Communication Agency, Europe, A.P.O. 403, New York, N.Y., and James M. McCue, 29 Borden St., Shrewsbury, N.J. 07701

Filed Nov. 24, 1964, Ser. No. 420,240
6 Claims. (Cl. 250—83.3)

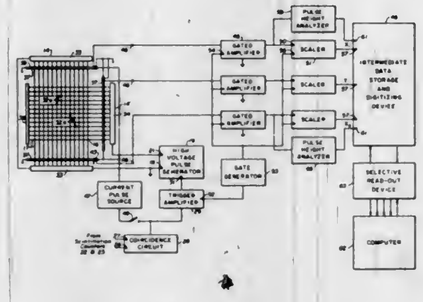


1. In combination with
(a) a radiometer having a voltage supply, a detector circuit connected to said voltage supply through a potentiometer responsive to radiation from radiation sources for producing a voltage which is a function of the intensity of said radiation source, an amplifier having an input and an output with the input connected to said detector circuit and connected to said voltage source responsive to said detector circuit voltage for providing an amplified voltage at its output, a meter connected to the output of said amplifier responsive to the amplified voltage producing a current through said meter to indicate the intensity of the radiation impinging on said detector circuit, and adjustable resistor shunting said meter for regulating the current in said meter;
(b) a means incorporated in said radiometer for testing the voltage of said voltage supply and for adjusting the voltage on said detector circuit to compensate for low voltage of said voltage supply; and
(c) a means also incorporated in said radiometer for testing the gain of said amplifier and the response of said meter and for permitting the adjustment of said adjustable resistor to control the current through said meter to compensate for low gain of said amplifier and low response of said meter, whereby said radiometer may be made to correctly indicate the radiation intensity when used to measure radiation intensity.

3,359,421
MAGNETOSTRICTIVE READOUT FOR WIRE SPARK CHAMBERS

Victor Perez-Mendez, Berkeley, and James M. Pfab, Monrovia, Calif., assignors to the United States of America as represented by the United States Atomic Energy Commission

Filed Oct. 20, 1965, Ser. No. 499,118
12 Claims. (Cl. 250—83.6)



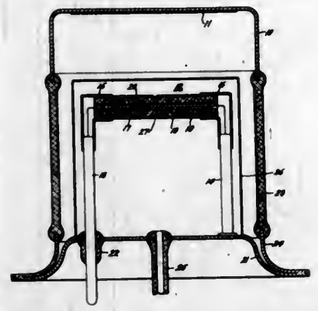
1. In combination with a spark chamber charged particle detector of the type having electrodes formed of wire grids wherein the current from a particle initiated spark between successive electrodes is discharged through a separate wire of each of said electrodes, a means for locating the position of said spark in said chamber comprising, a magnetostrictive delay line disposed along each of said electrodes and across the wires comprising the grid thereof in close proximity thereto for magnetic coupling to each wire of said grid upon the occurrence of a spark discharge current in said wire, sensing elements disposed near one end of each of said delay lines and responsive to magnetostrictive deformation pulses established in said delay line by the spark discharge currents in said wires, and means coupled to each of said sensing elements for timing the arrival of said deformation pulses at said sensing elements relative to the time of said chamber spark discharge whereby the position of said spark in the direction of said delay line may be computed.

3,359,422
ARC DISCHARGE ATOMIC PARTICLE SOURCE FOR THE PRODUCTION OF NEUTRONS

Herbert C. Pollock, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

Filed Oct. 28, 1954, Ser. No. 465,333
21 Claims. (Cl. 250—84.5)

1. An atomic particle source including a source of ions comprising a dielectric member, a plurality of electrodes closely spaced upon said dielectric member to provide at least one electric arc discharge gap producing an arc discharge instantaneously upon the application of

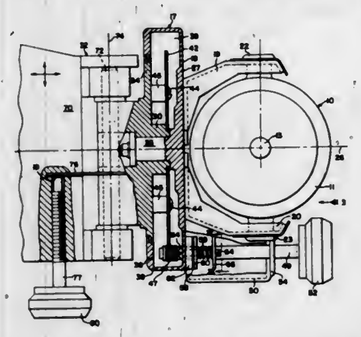


a potential difference thereacross, said electrodes including a hydrogen composition to form hydrogen ions when an electric arc discharge occurs across said gap.

3,359,423
PANOGRAPHIC X-RAY TUBEHEAD WITH A PROJECTING ANODE ROD MOUNTED FOR MANUAL MOVEMENT ABOUT TWO MUTUALLY PERPENDICULAR AXES

Harry E. Koerner, Catonsville, and Everett W. Vaughn, Ellicott City, Md., assignors to Westingbouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed Nov. 18, 1964, Ser. No. 412,056
3 Claims. (Cl. 250—91)



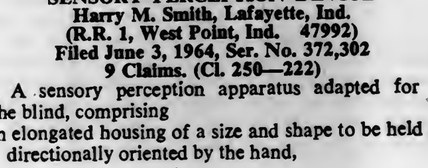
1. X-ray apparatus comprising an elongated cylindrical panographic X-ray tubehead having an anode rod projecting from one end thereof; a rotatable tubehead support member supporting said tubehead and turnable, by manual effort exerted on said tubehead, about a horizontal axis perpendicular to and intersecting the longitudinal axis of said tubehead, with 360° of angular freedom; and a vertically-shafted hinge means for said tubehead support member which permits manual movement thereof together with said tubehead horizontally about a vertical axis with 180° of angular freedom.

3,359,424
COMPENSATING SYSTEM FOR PHOTOCELLS OF EXPOSURE CONTROL APPARATUS FOR MAKING COLOR PRINTS

Alex W. Dreyfoos, Jr., Port Chester, N.Y., assignor to Photo Electronics Corporation, Port Chester, N.Y., a corporation of New York

Filed June 29, 1964, Ser. No. 378,773
5 Claims. (Cl. 250—208)

5. A compensating system operable to compensate for the undesirable characteristics of photoelectric cells in a color balancing bridge circuit for determining the ratio of light of the primary colors in the light beam emerging from a photographic printer and enlarger comprising:
(a) a source of electrical energy of high and low voltage magnitude,
(b) a plurality of photoelectric cells respectively responsive to the distribution of the primary colors of green, red and blue present in the light beam impinging thereon with the impedance of each said photoelectric cell being variable in accordance with the intensity of the particular primary color to which it is responsive,
(c) voltage regulating means comprising a transistor connected to said source of high-voltage magnitude through a load resistor and having an emitter-collector circuit including each of said photoelectric cells and an individual series connected load resistor therefor to produce a reference voltage across each photoelectric cell corresponding to approximately one-half that of said source of low-voltage magnitude,



(d) voltage sensing means connected to each photoelectric cell including a transistor having an emitter-collector circuit connected to said source of lower voltage magnitude and a load resistor for producing a predetermined voltage, such voltage in one instance being equal to that across one of said photoelectric cells as determined by the impedance thereof in response to the intensity of red radiations in the light beam impinging thereon, and the voltage across the remaining photoelectric cells as produced by their associated voltage sensing means having a predetermined ratio relative to the voltage produced by said one photoelectric cell depending upon the green and blue radiations in the light beam impinging on said remaining photoelectric cells;
(e) a base-collector circuit for the transistor of said voltage regulating means and operable to vary the voltage across the photoelectric cell responsive to red radiations inversely to changes in its impedance to maintain the voltage thereacross substantially constant, and
(f) indicator means connecting the voltage sensing means of said photoelectric cell responsive to red radiations with both the voltage sensing means of said photoelectric cells responsive to green and blue radiations and operable to indicate when a difference exists in the ratio of the predetermined voltage across the respective photoelectric cells due to a change in the distribution ratio between the primary colors of green, red and blue in the light beam impinging on said photoelectric cells.

3,359,425
SENSORY PERCEPTION DEVICE

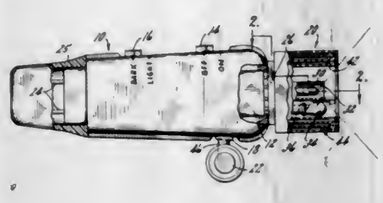
Harry M. Smith, Lafayette, Ind. (R.R. 1, West Point, Ind. 47992)

Filed June 3, 1964, Ser. No. 372,302
9 Claims. (Cl. 250—222)

1. A sensory perception apparatus adapted for use by the blind, comprising
an elongated housing of a size and shape to be held and directionally oriented by the hand,

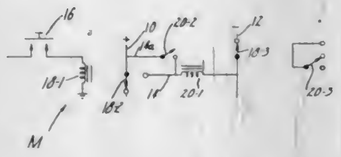
a forwardly-exposed photo-sensitive resistance cell to sense light appearing at the forward end of the housing, the cell and housing being so constructed and arranged that the cell is responsive to light appearing within a limited forward angle whereby the response and orientation indicate the direction of incident light,

an electrical oscillator circuit in said housing, an output signal device connected to said circuit for operation thereby to produce a perceptible vibratory signal, said circuit having a control loop connected to include said photo-sensitive cell and controlling the operation of the circuit and signal device in response to photo-responsive resistance of said cell,



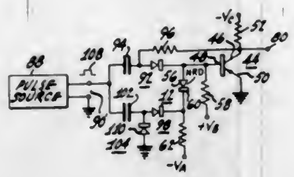
a sensitivity switch on said housing and electrical means for selectively controlling said circuit to operate in a cut-off sensitivity range in which the output signal will be cut off in the presence of a predetermined quantity of light on the cell, and alternatively to operate in a gradient range in which the output signal will vary in pitch over an audio range depending on the quantity of light on the cell.

3,359,426
RELAY CONTROL CIRCUIT
George S. Burr, Wellesley Hills, Mass., assignor to Instron Corporation, Canton, Mass., a corporation of Massachusetts
Filed Nov. 27, 1964, Ser. No. 414,185
7 Claims. (Cl. 307—38)



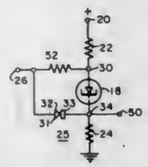
1. A relay control module comprising a pair of main leads, a main module switch, a momentarily actuable first relay, and a second relay, said first relay including a first switch normally connecting portions of a first of said main leads but actuated by energization of said first relay to complete a circuit through a rung lead and said second relay, and a second switch normally connecting portions of the second of said main leads and actuated by energization of said first relay to open, said first relay second switch being on the side of said rung lead most distant from the portion of said second main lead adapted for connection to ground and said first relay first switch being on the opposite side of said rung lead, and said second relay including a first switch normally open but actuated by said second relay to maintain a circuit through said rung lead and said second relay and a second switch normally open but actuated by energization of said second relay to supply current to a load.

3,359,427
BISTABLE CIRCUIT WITH NEGATIVE RESISTANCE DIODE
Wilbur A. Miller, Levittown, Pa., and Jack Y. Robertson, Collingswood, N.J., assignors to Radio Corporation of America, a corporation of Delaware
Filed Jan. 13, 1960, Ser. No. 2,248
41 Claims. (Cl. 307—88.5)



37. A bistable multivibrator comprising in combination; a tunnel diode having two electrodes and operable in a first and second state of operation; biasing means for placing said tunnel diode into one of said states of operation; input means for applying sequential input pulses of predetermined polarity and amplitude to alternate electrodes of said tunnel diode to alternately switch states of operation; and output means for sensing the switching of states of operation of said tunnel diode.

3,359,428
BISTABLE MULTIVIBRATOR
Vasil Uzunoglu, Hanover, Md., assiguor to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 20, 1962, Ser. No. 211,360
3 Claims. (Cl. 307—88.5)



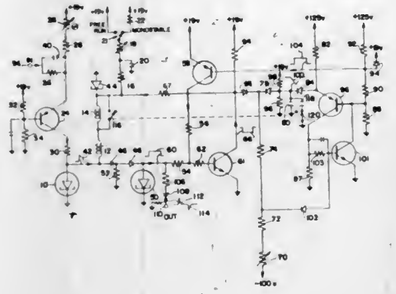
1. A bistable multivibrator operative with sequential input pulses and comprising in combination: a tunnel diode having two electrodes and operable in a first and second state of operation; biasing means for placing said tunnel diode into a first state of operation; input means including a resistor having one end connected to an electrode of said tunnel diode, a diode connected between the other electrode of said tunnel diode and the other end of said resistor, and means for applying said input pulses to the junction between said resistor and said diode, for alternately switching states of operation of said tunnel diode in response to said sequential input pulses; and output means for sensing the changes of states of operation of said tunnel diode.

3,359,429
TRIGGER GENERATOR CIRCUIT HAVING SYNCHRONIZED ASTABLE INPUT OSCILLATOR
Henry A. Zimmerman, Beaverton, Oreg., assignor to Tektronix, Inc., Beaverton, Oreg., a corporation of Oregon
Filed Mar. 23, 1964, Ser. No. 353,704
11 Claims. (Cl. 307—88.5)

1. A pulse generator circuit, comprising:

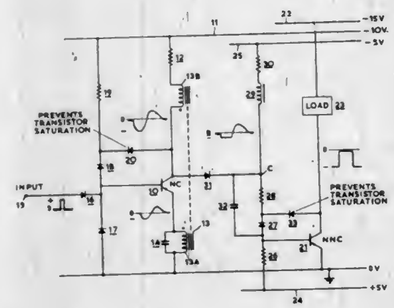
an astable input oscillator connected to an input terminal; first means for appling input signals to said input oscillator to cause it to produce output signals which are synchronized with said input signals;

an output switching circuit having at least one stable state with its input connected to the output of said input oscillator and its output connected to an output terminal so that the output signals of said input oscillator triggered said output switching circuit and cause it to transmit output pulses to said output terminal; and



second means for preventing said output switching circuit from being triggered for a predetermined time until after several of said synchronized output signals are produced by said input oscillator so that the output signal which triggers said output switching circuit is more closely synchronized with one of said input signals.

3,359,430
PULSE GENERATOR EMPLOYING RESONANT LC NETWORK IN BASE-EMITTER CIRCUIT OF TRANSISTOR
Wilfred James Jones, Edinburgh, Scotland, assignor to The English Electric Company Limited, London, England, a British company
Filed Apr. 15, 1964, Ser. No. 359,907
Claims priority, application Great Britain, Apr. 23, 1963, 15,960/63
3 Claims. (Cl. 307—88.5)



1. An electrical one-shot circuit having an active and a quiescent state, comprising;

a transistor having emitter, base, and collector electrodes;

a collector circuit connected to the collector electrode and including a first inductor and at least one resistor connected in series to a source of biasing potential; and

an emitter-base circuit connected between the emitter and base electrodes and including

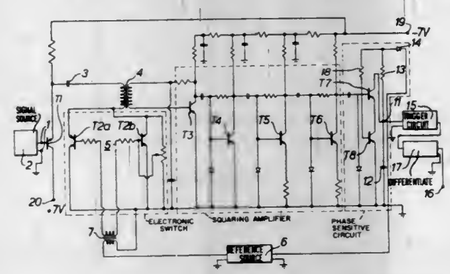
means for biasing the transistor into conduction in the quiescent state,

means for receiving input pulses effective to turn the transistor off and thereby cause the active state to commence, and

a resonant circuit comprising a capacitor and a second inductor connected in parallel:

the first and second inductors being inductively coupled together for causing a reversal of current in the second inductor in response to a change of current in the first inductor occurring in consequence of an input pulse.

3,359,431
APPARATUS RESPONSIVE TO THE OCCURRENCE OF A STATIONARY VALUE IN THE MAGNITUDE OF AN ELECTRICAL POTENTIAL
Alan J. Ramsay, Bothwell, Glasgow, Scotland, assignor to Minneapolis-Honeywell Regulator Company, Minneapolis, Minn., a corporation of Delaware
Filed May 19, 1964, Ser. No. 368,505
Claims priority, application Great Britain, May 29, 1963, 21,380/63
10 Claims. (Cl. 307—88.5)



1. Electrical apparatus responsive to the occurrence of a stationary value in the magnitude of an applied electric potential comprising

a capacitor,

a switch having alternate open and closed operating conditions,

a pair of input terminals for connection to a source applying an electric potential between said terminals,

circuit means connecting said capacitor and said switch in a series circuit between said terminals,

drive means connected to said switch for recurrently placing it in said open and closed conditions at a predetermined frequency,

potential responsive means connected to said series circuit and responsive to any difference between said applied potential and the potential across said capacitor for producing a first signal representative of any such potential difference,

sense responsive means connected to said potential responsive means for producing a second signal in response to said first signal solely when said first signal results from changes in said applied potential in a predetermined sense, and

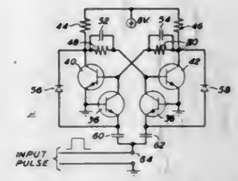
output means connected to said sense responsive means for producing an output signal upon each occasion that said second signal indicates a reduction in said potential difference substantially to zero and hence that said applied potential has ceased to vary after having been varying in said predetermined sense.

3,359,432

TRIGGER CIRCUIT EMPLOYING COMMON-BASE TRANSISTORS AS STEERING MEANS AS IN A FLIP-FLOP CIRCUIT FOR EXAMPLE

Gabriel L. Miller, Westfield, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Nov. 5, 1964, Ser. No. 409,157
12 Claims. (Cl. 307—88.5)



1. A system, comprising a bistable flip-flop having two alternately conducting transistors, said transistors having respective bases, energy storage means for each transistor, input terminal means connectable to a source of electric pulses, two control means each for selectively applying to one of said energy storage means the voltage at said terminal means, and two common base transistor amplifier means each having an emitter electrode connected to said energy storage means and a collector electrode connected to the base of one of said alternately conducting transistors said control means each including one of said alternately conducting transistors, said control means and said common base transistor means each forming separate loops with each of said energy storage means and having directions of easy current flow to alternately energize and de-energize said storage means through the different loops in response to pulses at said terminal means.

3,359,433

ELECTRONIC TELEGRAPH RELAY

Terje Thauland, Ronde, Norway, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

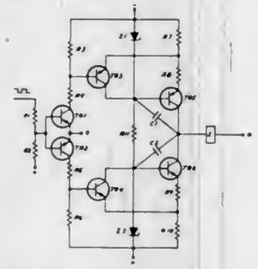
Filed Mar. 2, 1965, Ser. No. 436,537
Claims priority, application Norway, Mar. 4, 1964, 152,269
1 Claim. (Cl. 307—88.5)

An electronic telegraph relay including control circuits and a pair of constant current generators responsive to input pulses of positive and negative polarity for providing distinct output currents of positive and negative polarities at amplitudes which are substantially independent of changes in working voltage and independent of changes in load, comprising:

(1) a first control circuit including a first PNP transistor coupled to a first NPN transistor, each having a base, an emitter, and a collector,
an input terminal connected to the base of the first PNP transistor,
means biasing the first PNP transistor to a state of conduction in response to negative input pulses on the input terminal,
means biasing the first NPN transistor to a state of conduction in response to conduction in the collector of the first PNP transistor,

(2) a second control circuit including a second NPN transistor coupled to a second PNP transistor, each having a base, an emitter and a collector,
means connecting the base of the second NPN transistor to the input terminal,
means biasing the second NPN transistor to a state of conduction in response to positive input pulses on said terminal,
means biasing the second PNP transistor to a state of conduction in response to conduction in the collector of the second NPN transistor,

(3) a first constant current generator including a third NPN transistor having a base serving as the generator input terminal, an emitter, and a collector,
a zener diode connected between the emitter and the base of the third NPN transistor to assure constant current output,
means coupling the input terminal of said first constant current generator to said first NPN transistor and for biasing said generator into conduction to deliver a negative output current when said first NPN transistor is non-conducting and biasing the generator to a non-conductive state when said first NPN transistor is conducting,



(4) a second constant current generator including a third PNP transistor having a base serving as the generator input terminal, an emitter and a collector,
a zener diode connected between the emitter and the base of the third NPN transistor to assure constant current output,
means coupling the input terminal of said second constant current generator to said second PNP transistor and for biasing said generator into conduction to deliver a positive output current when said second PNP transistor is non-conducting and biasing the generator to a non-conducting state when said second PNP transistor is conducting, and
means connected to the collector of the third PNP transistor and to the collector of the third NPN transistor to deliver the respective positive and negative output currents at a common terminal.

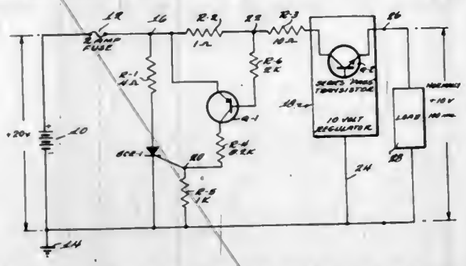
3,359,434

SILICON CONTROLLED RECTIFIER ARRANGEMENT FOR IMPROVED SHORT-CIRCUIT PROTECTION

Nicholas Paul Galluzzi, Beverly, Mass., assignor to Control Data Corporation, Minneapolis, Minn., a corporation of Minnesota

Filed Apr. 6, 1965, Ser. No. 446,009
2 Claims. (Cl. 307—88.5)

1. In a circuit employing a transistor having a load connected to its output, an improved arrangement for protecting said transistor against burnout caused by a short-circuit condition in said load comprising: a power source, means connecting said power source through said transistor to said load, said connecting means including a fuse and a sensing resistor joined in series, said fuse being interposed between said sensing resistor and the power source; a silicon controlled rectifier having an anode, a cathode and a gate, means connecting said anode to the junction of the fuse and the sensing resistor and additional means joining said cathode to said power supply whereby the rectifier is connected across the power source and fuse arrangement; control means joined to the gate of said rectifier, said control means including an additional transistor having an emitter, base and a collector, said emitter and base being connected across said sensing resistor and the collector being connected to said gate whereby during normal operation said additional transistor and the silicon controlled rectifier are non-conducting; said control means being responsive to an increased



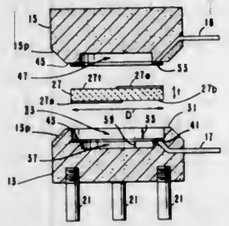
voltage drop across said sensing resistor during a short-circuit condition in said load to cause said additional transistor to conduct thereby causing the silicon controlled rectifier to conduct to divert current through said rectifier.

3,359,435

HOLDER FOR CRYSTAL RESONATORS

James E. Webb, Administrator of the National Aeronautics and Space Administration, with respect to an invention of Kenneth H. Le Vay, Panorama City, Calif.

Filed May 4, 1965, Ser. No. 453,232
3 Claims. (Cl. 310—9.1)



1. A resonator device comprising a disc-shaped crystal, a housing of a nonconductive material defining a disc-shaped central cavity and a pair of disc-shaped vibration cavities, each vibration cavity being disposed on a different side of said central cavity, the centers of the cavities being substantially aligned on a straight line, the cross-sectional area of each vibration cavity being smaller than the cross-sectional area of said crystal; conductive layers of material deposited on the opposite surfaces of said central cavity adjacent said vibration cavities, the spacing between said layers being less than the thickness of said disc-shaped crystal, and the cross-sectional area of said central cavity being at least equal to the cross-sectional area of said crystal for supporting said crystal under pressure between the conductive layers thereof; and conductive leads extending through said housing coupled to said layers of material to be conductively coupled with said crystal.

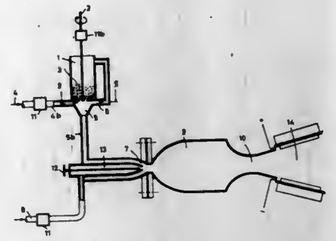
3,359,436

SEEDING DEVICE FOR A MAGNETOHYDRODYNAMIC GENERATOR

Hans Kohaut, Bamberg, and Hermann Wittel, Erlangen, Germany, assignors to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, a corporation of Germany

Filed Jan. 17, 1964, Ser. No. 338,344
Claims priority, application Germany, Feb. 2, 1963, S 83,565
6 Claims. (Cl. 310—11)

1. In a plasma-seeding apparatus, a vortex funnel; metering means communicating with said funnel for supplying a metered quantity of pulverulent ionizing seeding material into said funnel; and means for supplying a gas stream into said funnel so that the ionizing seeding material is whirled about by the gas stream and is



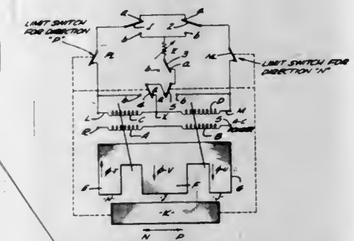
intimately mixed with the gas in said vortex funnel, said funnel communicating with a supply of fuel combustible in said gas stream to form a plasma having increased electrical conductivity due to the presence of said ionizing seeding material therein.

3,359,437

MAGNETIC RATCHET MOTOR

Philip E. Massie, 4220 Irving Place, Culver City, Calif. 90230

Filed May 23, 1963, Ser. No. 282,617
15 Claims. (Cl. 310—21)



8. An electromagnetic device comprising an electromagnet including a core configurated to provide a plurality of poles, a movable armature associated with said core, primary windings on said core, including first and second primary windings connected in boosting relationship for producing magnetic flux between said poles and said armature, secondary windings on said core, including first and second secondary windings, switch means normally connecting said secondary winding in opposing relationship, said switch means having positions for normally short circuiting one of said secondary windings and open circuiting the other of said secondary windings whereby to produce magnetic forces on said armature causing it to move, and means for actuating said switch means in response to movement of said armature whereby to return the circuits to their initial state.

3,359,438

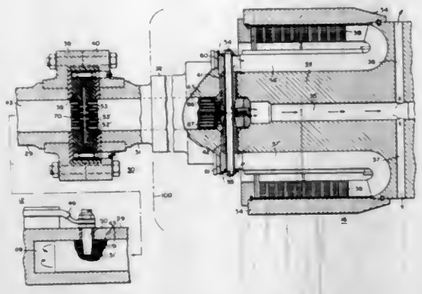
COOLING AND SHAFT COUPLING ARRANGEMENT

Lyle L. Hylen, Pittsburgh, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Oct. 1, 1965, Ser. No. 492,084
12 Claims. (Cl. 310—68)

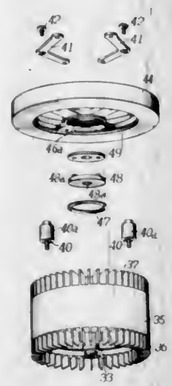
1. A coupling arrangement for at least two rotating machines, each having a shaft means extending therebetween

with means for coupling adjacent ends of the shafts together, at least one hollow electrical conductor disposed in each of said shafts and insulated therefrom, means for



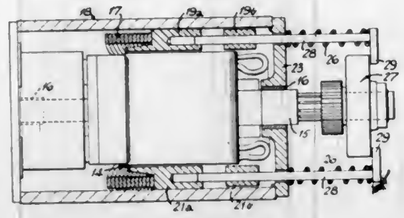
connecting adjacent ends of the conductors together, said connecting means adapted to pass a fluid flowing in the hollow conductors.

3,359,439
ELECTRIC MOTOR
Eisuke Fujimoto, Tokyo, Japan, assignor to Akai Electric Company, Limited, Tokyo, Japan
Filed Aug. 23, 1965, Ser. No. 481,599
6 Claims. (Cl. 310—74)



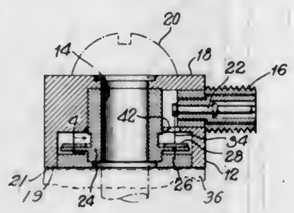
1. In an electric motor for tape recording and playback machine comprising in combination:
(1) a housing having substantially a cup shape,
(2) a cover having a boss at its central region and detachably attached to said housing for closing the upper open end of said housing,
(3) a stationary sleeve mounted on the bottom wall of said housing substantially at right angles to said wall,
(4) a stator assembly mounted on said sleeve,
(5) a rotor shaft rotatably supported within said sleeve, said shaft having an end projecting from the free end of said sleeve,
(6) an inverted cup-shaped rotor fixedly mounted on said projecting end of said shaft,
(7) a capstan shaft rotatably supported on the boss of said cover and extending substantially coaxially with said first shaft into the interior of said housing,
(8) a flywheel detachably suspended from said capstan shaft and for rotating in unison therewith, and
(9) a plurality of resilient coupling means joining said rotor and said flywheel.

3,359,440
ELECTRIC STARTER MOTORS
John Godfrey Wilson West, Sutton Coldfield, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England, a British company
Filed June 28, 1965, Ser. No. 467,334
Claims priority, application Great Britain, July 8, 1964, 28,098/64
4 Claims. (Cl. 310—75)



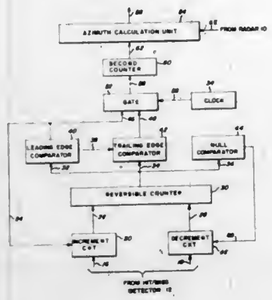
1. An electric starter motor including a housing, a pinion mounted on the motor shaft, a plurality of pole pieces, at least one pole piece having a first part fixed to said housing and a second part mounted on a rod, said rod and second part being resiliently biased away from said first part in a direction parallel to said motor shaft, means connecting said rod to said pinion, and means for setting up a magnetic field in said first part to attract said second part and rod to cause said pinion to be moved from an inoperative position to an operative position thereby engaging a toothed wheel on the engine to be started.

3,359,441
ACCELEROMETER
Anthony W. Orlacchio, Fords, N.J., assignor to Gulton Industries, Inc., Metuchen, N.J., a corporation of New Jersey
Filed Nov. 16, 1959, Ser. No. 853,144
12 Claims. (Cl. 310—8.4)



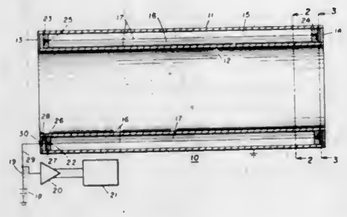
1. An accelerometer comprising an outer housing, said outer housing being provided with an opening therethrough, a hollow cylindrical inner housing having an outwardly extending flange adjacent one end thereof and mounted within said opening in said outer housing, said hollow cylindrical inner housing having a central opening aligned with said opening of said outer housing and adapted to receive a mounting screw projecting through the accelerometer and threading into a test body, a ring shaped electromechanically sensitive element having electrodes on both faces thereof affixed to said flange such that electrical contact is made between one of said electrodes and said flange, and an electrical connector affixed to said outer housing and means for making electrical connections from said electrodes to said electrical connector through said flange.

3,359,442
AZIMUTH ANGLE ESTIMATOR
Herbert L. Groginsky, Sudbury, Mass., assignor to Raytheon Company, Lexington, Mass., a corporation of Delaware
Filed Apr. 1, 1966, Ser. No. 539,502
2 Claims. (Cl. 343—16)



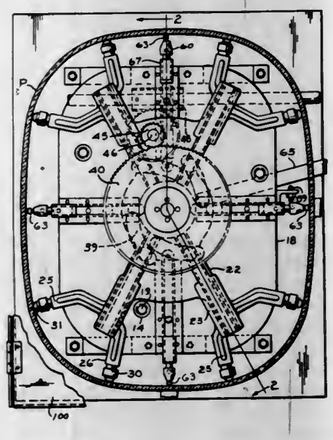
1. In combination with an azimuth angle calculator, an apparatus responsive to radar return signals representative of target hits and misses for estimating the target angle location within a radar beamwidth comprising:
a reversible counter operable between an upper and lower count;
means responsive to each target hit for incrementing the count by a predetermined amount and responsive to each target miss for decrementing the count by another predetermined amount; and
circuitry coupling the counter and incrementing means to the azimuth angle calculator for generating a first signal each time the count equals the upper count and a second signal each time the count equals the lower count.

3,359,443
SENSITIVE RADIATION DETECTOR HAVING ALTERNATE CATHODE AND ANODE MEMBERS IN CHAMBER CONTAINING IONIZING GAS
Wyatt W. Givens, Dallas, Tex., assignor to Mobil Oil Corporation, a corporation of New York
Filed Dec. 22, 1964, Ser. No. 420,383
19 Claims. (Cl. 313—61)



1. A neutron detector of the proportional type, comprising:
a pressure-tight annular chamber having walls formed by a pair of spaced cylindrical members disposed concentrically,
said members being formed of stainless steel,
an ionizing gas within said chamber and consisting substantially of helium-3 at superatmospheric pressures greater than about 2 atmospheres absolute,
a plurality of first wires extending through said chamber in spaced relation with each other and disposed intermediate said walls of said chamber,
said first wires and said walls of said chamber being connected together electrically to form a cathode,
a plurality of second wires extending through said chamber and disposed intermediate said walls of said chamber and said first wires,
said second wires being connected together electrically and insulated from said cathode to form an anode, and
circuit connections extending from said anode and from said cathode for application thereto of a direct current potential.

3,359,444
METAL INSERTS FOR USE IN THE WALL OF GLASS ENVELOPES FOR THE SUPPORT OF ELECTRODES
Wendell S. Blanding, Painted Post, Laurence H. Foster, Corning, and Paul F. Spremulli, Elmira, N.Y., assignors to Corning Glass Works, Corning, N.Y., a corporation of New York
Application May 29, 1959, Ser. No. 816,953, now Patent No. 3,021,643, dated Feb. 20, 1962, which is a division of application Ser. No. 591,179, June 13, 1956, now Patent No. 2,949,702, dated Aug. 23, 1960. Divided and this application Dec. 19, 1961, Ser. No. 160,479
8 Claims. (Cl. 313—64)

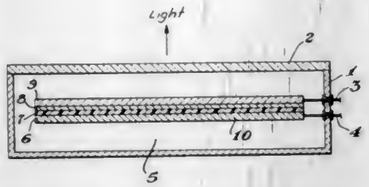


1. A face plate member for a cathode-ray tube envelope comprising a hollow disk-shaped enclosing part having a viewing portion and a surrounding flange portion, a series of at least three metallic stud-like elements mounted in spaced-apart relationship interiorly within the flange portion, each of said elements having a hollow cup-like mounting portion at least partially embedded within the glass of said flange portion and an inwardly-projecting seating portion extending from the flange surface adapted to retain an electronic element within said face plate.

3,359,445
ELECTROLUMINESCENT CELLS
Harold H. Roth, Bay City, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Oct. 7, 1964, Ser. No. 402,117
5 Claims. (Cl. 313—108)

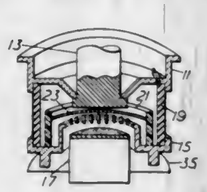
1. In an electroluminescent lamp comprising an electroluminescent organic phosphor cell enclosed in an envelope, said lamp containing an inert gas atmosphere, the

improvement which comprises construction of the envelope from materials that are relatively impermeable to oxygen, the permeability limits being no greater than 0.1



cc./100 sq. in./24 hours/mil at 1 atmosphere at room temperature, and limitation of the oxygen content in the inert gas atmosphere to less than about 1 part per million.

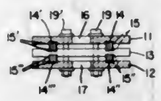
3,359,446
DIELECTRIC SHIELD FOR ULTRAHIGH FREQUENCY THERMIONIC TUBES
Hiromi Murakami and Yosihiro Morizumi, Tokyo, Japan, assignors to Nippon Electric Company, Limited, Tokyo, Japan, a corporation of Japan
Filed Feb. 4, 1965, Ser. No. 430,422
10 Claims. (Cl. 313—242)



1. In an ultrahigh-frequency disc-sealed thermionic tube the combination comprising: a cylindrical tubular member formed of an electrically insulating material; a pair of disc-shaped electrodes respectively disposed at and sealed to opposite ends of said member; tubular shielding means, also formed of an electrically insulating material, mounted within said tubular member and having one end thereof attached to one of said electrodes with the other end thereof being adjacent but spaced from the other of said electrodes; at least one band of electrically conducting material disposed on at least a portion of the inside surface of said tubular shielding means; and means for sealing said tube.

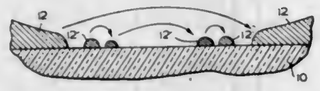
3,359,447
ELECTRODE ASSEMBLY
Hitoshi Tsuyama and Hiroshi Hirose, Kokubunji-machi, and Junichi Okamoto, Meguro-ku, Tokyo-to, Japan, assignors to Kabushiki Kaisha Hitachi Seisakusho, Chiyoda-ku, Tokyo-to, Japan, a joint-stock company of Japan
Filed May 20, 1964, Ser. No. 368,952
Claims priority, application Japan, May 28, 1963, 38/38,433
2 Claims. (Cl. 313—250)

1. An electrode assembly comprising a plurality of parallel-spaced planar electrodes, each having at the center thereof a thin elongated rectangular opening for passing charged particles, and at least a pair of mutually parallel, straight guide grooves extending perpendicularly to the longitudinal axis of said rectangular openings provided in the surface of said respective electrodes which confronts the surface of adjacent electrodes; and at least a pair of long insulating spacers of rectangular columnar shape disposed in parallel between the adjacent electrodes and extending in the direction perpendicular to the longitudinal axis of said thin elongated rectangular openings, said respective insulating spacers being slidably embedded in said guide grooves provided in the opposing surfaces of said adjacent electrodes, whereby said plurality of electrodes are constructed to be mutually parallel, the



longitudinal axis of said thin elongated rectangular openings are made parallel one after the other, and said respective electrodes are permitted relative transverse movement in the direction perpendicular to the longitudinal axis of said openings, relative transverse and rotational movements in other directions thereof being prevented.

3,359,448
LOW WORK FUNCTION THIN FILM GAP EMITTER
Nicolas M. Bashara, Lincoln, Nebr., and Donald G. Schueler, Albuquerque, N. Mex., assignors to Research Corporation, New York, N.Y., a non-profit corporation of New York
Filed Nov. 4, 1964, Ser. No. 408,813
2 Claims. (Cl. 313—326)



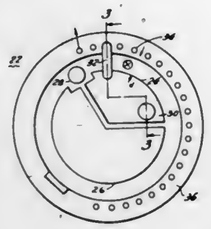
1. A low work function emission source comprising a very thin metallic film; a narrow dielectric gap formed in said film, traversing the same and separating the film into two electrically insulated spaced portions; the separation between said portions being of the order of 100,000 angstroms and a plurality of discrete, metallic island elements positioned adjacent the spaced film portions and between the boundaries of said gap.

3,359,449
MULTIPLE SECTION GRAPHITE ELECTRODE
Robert B. Trask, Model City, N.Y., assignor to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York
Filed Oct. 27, 1964, Ser. No. 406,832
5 Claims. (Cl. 313—357)



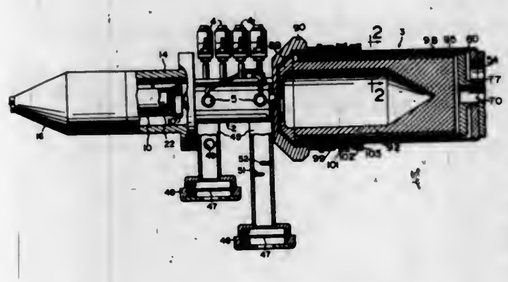
1. A threaded nipple for graphite electrode assemblies consisting of graphite modified with 0.5% to 8% by weight of boron dispersed throughout to impart to said nipple a coefficient of thermal expansion within the range of from 1.5×10^{-6}/° C. to 4.0×10^{-6}/° C.

3,359,450
FREQUENCY STABLE CROSSED FIELD DEVICE HAVING THERMAL SENSITIVE MEANS CONNECTED BETWEEN THE SLOW WAVE STRUCTURE AND SOLE ELECTRODE
James E. Orr, Redwood City, Calif., assignor to Litton Precision Products, Inc., San Carlos, Calif.
Filed Mar. 6, 1964, Ser. No. 349,954
11 Claims. (Cl. 315—3.5)



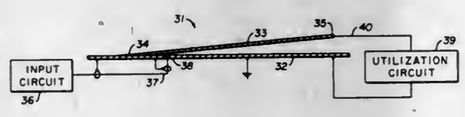
1. An electron discharge device comprising; a slow wave structure, a sole electrode, said slow wave structure and said sole electrode being spaced apart and defining an interaction region therebetween, means for providing an electron beam within said interaction region, and wherein said slow wave structure is initially heated at a greater rate then said sole electrode, said sole electrode including at least one movable portion, movable independently of other portions thereof, and means connected to a movable portion of said sole electrode responsive to thermally induced expansion of said slow wave structure for maintaining the spacing between said slow wave structure and at least a portion of said movable portion substantially constant independent of temperature differences therebetween.

3,359,451
BEAM COLLECTOR STRUCTURE FOR ELECTRON TUBES HAVING CONCENTRIC LONGITUDINALLY PARTITIONED COOLING ANNULI
Louis T. Zitelli, Palo Alto, and Irving Maltzer, San Carlos, Calif., assignors to Varian Associates, Palo Alto, Calif., a corporation of California
Original application Oct. 30, 1961, Ser. No. 148,520, now Patent No. 3,281,616, dated Oct. 25, 1966. Divided and this application July 5, 1966, Ser. No. 574,857
4 Claims. (Cl. 315—5.38)



1. An electron discharge device comprising means for forming a beam of electrons; means for collecting the beam of electrons; electromagnetic wave supporting structure arranged along a beam path defined between said beam forming and collecting means for electromagnetic interaction with the beam of electrons passable therethrough; means for extracting R.F. energy from the device; said means for collecting the beam of electrons comprising a tubular collector for receiving the beam incident therein, a plurality of longitudinally directed collector fins on the outer surface of said collector defined by a plurality of peripherally spaced-apart longitudinally directed collector channels, a tubular baffle surrounding said collector fins whereby said collector fins and said baffle define an interior, longitudinally partitioned annulus, said tubular baffle member having a plurality of longitudinally directed baffle fins, defined by a plurality of peripherally spaced-apart longitudinally directed baffle channels on the exterior surface of said tubular baffle, a tubular outer jacket surrounding said baffle whereby said baffle fins and said tubular outer jacket define an exterior longitudinally partitioned annulus, means for connecting said interior and exterior cooling annulus, and means communicating with said interior and exterior annulus for distributing an input and output flow of liquid coolant therethrough to remove heat dissipated in said collector by the beam of electrons.

3,359,452
RESONATOR FOR SUPPORTING NON-SINUSOIDAL PERIODIC WAVEFORMS
Quentin A. Kerns, Orinda, Calif., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Oct. 14, 1965, Ser. No. 496,197
10 Claims. (Cl. 315—5.52)

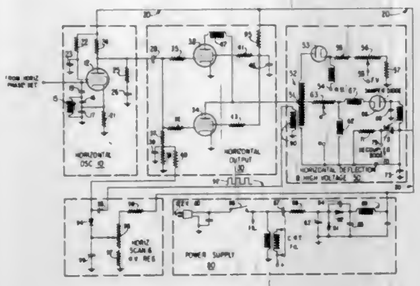


1. In an electrical resonator for supporting periodic non-sinusoidal waveforms, the combination comprising at least two conductive elements which are joined at a first region and spaced apart by a maximum gap at a second region, said elements being spaced apart by a gap which is progressively greater proceeding from said first region to said second region, the gap having a characteristic impedance varying inversely with the square of the distance from said second region, means exciting electromagnetic waves in said gap, and means for extracting energy from said gap.

3,359,453
HORIZONTAL SCAN WIDTH AND HIGH VOLTAGE REGULATION CIRCUIT FOR TELEVISION RECEIVERS
William H. Slavik, Chicago, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Nov. 27, 1963, Ser. No. 326,534
7 Claims. (Cl. 315—27)

1. In a television receiver having a cathode ray tube with a deflection winding to be energized for horizontal deflection of an electron beam in such tube, a horizontal sweep system including in combination, a horizontal output transformer coupled to the deflection winding, an electron amplifier device conductive through said transformer, said amplifier device having a control electrode, means connected to said control electrode for periodically driving said electron amplifier device into conduction to produce a sawtooth current in the deflection winding, a control rectifier circuit including means for deriving pulses from said horizontal output transformer and means direct current connected to said control electrode of said elec-

tron amplifier device, said rectifier circuit including a unidirectional conductive device, a source of reference potential to be energized by a power line voltage subject to variation, with the reference potential tracking variations in the power line voltage, means connecting said

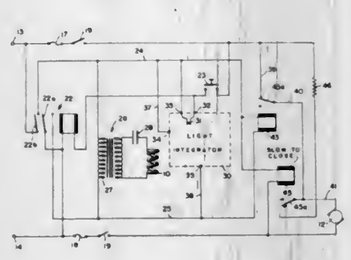


source of reference potential to said unidirectional conductive device for providing bias control of said electron amplifier device proportional to the difference between the amplitude of the pulses applied to said rectifier circuit and the reference potential varying with power line voltage variation.

3,359,454
LAMP CONTROL SYSTEM FOR AUTOMATICALLY CONTROLLING THE COOLING BLOWER

William N. Scheppe, Chicago, Ill., assignor to The Nuarc Company, Chicago, Ill., a corporation of Illinois

Filed Apr. 22, 1966, Ser. No. 544,539
9 Claims. (Cl. 315—117)



6. A control system for an air cooled electric lamp adapted to operate the electric lamp from a source of electric power and comprising:

a lamp power supply for operating an electric lamp;

a two-speed blower for directing cooling air against a lamp;

lamp contact means movable between an on and an off position adapted to electrically connect said lamp power supply across a source of electrical power to control energization of said power supply between an off and an on condition;

high speed circuit means including high speed contact means connected to operate said blower at a high speed;

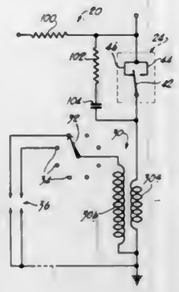
low speed circuit means including low speed contact means connected to operate said blower at a low speed; and

speed control means responsive to energization of said lamp power supply connected to render said high speed circuit means effective when said lamp power supply is deenergized and to render said low speed circuit means effective when said lamp power supply is energized.

3,359,455
AUTOMOTIVE DISTRIBUTOR AND IGNITION SYSTEM

Arthur J. Koda, Morton Grove, and John Kutyla and Richard H. Marks, Chicago, Ill., assignors to C. P. Clare & Company, Chicago, Ill., a corporation of Delaware

Filed July 9, 1964, Ser. No. 381,478
17 Claims. (Cl. 315—209)

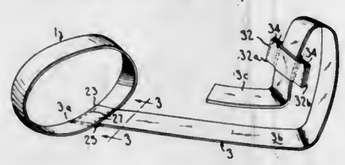


1. An automotive ignition system for use with a plurality of spark generating means comprising a rotatable distributor shaft, first permanent magnet means movable in synchronism with the distributor shaft, a glass enclosed magnetic switch having a movable magnetic armature and a pair of spaced contacts, said magnetic switch being positioned adjacent the path of movement of the first permanent magnet means so that the field of the first permanent magnet means moves the armature between the pairs of spaced contacts, second permanent magnet means applying a bias to the magnetic switch to condition the magnetic switch for bistable operation in which the armature is releasably retained in engagement with the contacts, inductive means coupled to the spark generating means for energizing the spark generating means, a potential source, and circuit means including the armature and the two contacts connecting the inductive means to the potential source for controlling the energization of the inductive means by the potential source, the inductive means being energized by the circuit means through the armature and the contact engaged by the armature and the energization of the inductive means being interrupted in the period in which the armature moves between the contacts.

3,359,456
STATIC ELECTRICITY DISCHARGE DEVICE FOR USE ON SHOES

Irvin S. De Woskin, St. Louis, Mo., assignor to Beltx Corporation, St. Louis, Mo., a corporation of Missouri

Filed Dec. 9, 1965, Ser. No. 512,767
12 Claims. (Cl. 317—1)

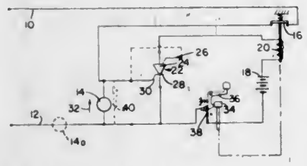


1. A static electricity discharge device for use in operating rooms over street shoes, the device comprising a narrow flexible loop of substantially uniform width adapted to fit around the vamp and outsole of a street shoe, and a long, narrow electrically conductive strap of substantially uniform width throughout its length, the strap being secured to the loop and adapted to extend from the loop along the shoe outsole, heel, counter and insole whereby static electricity can be conducted through the strap from a foot in the shoe to a floor beneath the shoe.

3,359,457
DEVICE FOR OVERLOAD PROTECTION OF ELECTRICAL EQUIPMENT

Stanley F. King, Bluffton, Ohio, assignor to Triplett Electrical Instrument Co., Bluffton, Ohio, a corporation of Ohio

Filed Oct. 14, 1963, Ser. No. 315,883
13 Claims. (Cl. 317—33)



1. In an electric circuit; an electrical component such as a meter liable to be damaged under abnormal conditions in the circuit and having electric power supplied thereto from a first source of the electric power, a relay having contact means in circuit with said component operable upon actuation of the relay to interrupt the supply of electric power to the component, a separate source of electric power in circuit with the coil of the relay for actuating the relay, a gated semiconductor in series with said relay coil and its source of power to control the actuation of the relay, said semiconductor having a pair of terminals and a gate pertaining to at least one terminal, and sensing element means connected in the circuit supplying said component for developing a triggering signal thereacross in response to a predetermined condition pertaining to the supply of electric power to said component, said gate being connected to one side of said sensing element means, and the terminal corresponding to said gate being connected to the other side of said sensing element means.

3,359,458
SOFT START CIRCUIT FOR PROCESS CONTROL

Bernard D. Leete, Newtown Square, Pa., assignor to General Electric Company, a corporation of New York

Filed Oct. 11, 1965, Ser. No. 494,440
10 Claims. (Cl. 317—33)

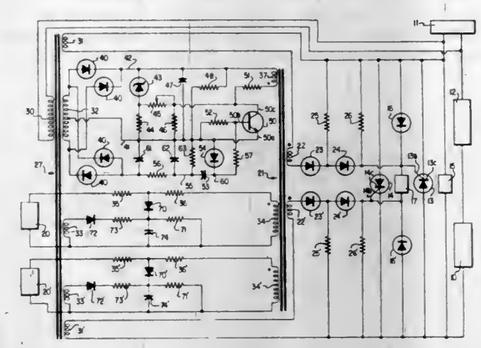
1. A control circuit for energizing a load in response to signals from at least one signal source, the load being energized by a power supply, comprising:

(a) static switching means adapted to connect the load to the power supply;

(b) coupling means to selectively couple signals to said static switching means, said coupling means having a first state whereby signals are coupled to said static switching means and a second state whereby signals are not coupled to said static switching means,

(c) condition shifting means connected to the power supply and to said coupling means to shift said coupling means from said first state to said second state when the power supply is de-energized, and

(d) signal disabling means for each signal source, said signal disabling means connecting the power supply and said coupling means to its associated signal source

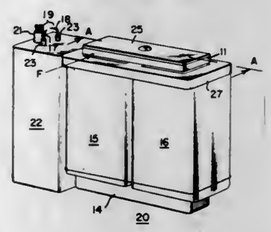


and effectively blocking signals from said coupling means when the power supply is disconnected.

3,359,459
IGNITION APPARATUS

Ernest J. Smith, Los Angeles, Calif. (18619 Collins St., Tarzana, Calif. 91356)

Filed Nov. 13, 1964, Ser. No. 410,964
12 Claims. (Cl. 317—81)



1. A spark-generating device including electrodes defining a spark gap and comprising a permanent magnet, means including an armature for providing a first substantially closed-loop flux path for said magnet, means for providing a second substantially closed-loop flux path, means for rapidly moving said magnet between said first and second flux paths to vary the flux in said first flux path, and coil means mounted on said armature and connected to the electrodes for generating a spark in the spark gap in response to flux changes in said first flux path of a preselected level.

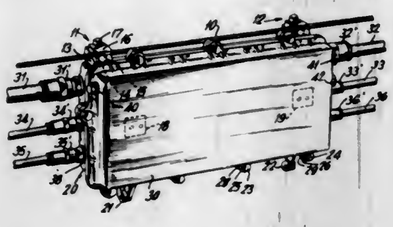
3,359,460
RF SIGNAL DISTRIBUTION STATION

Frank J. Ragone, Pennsauken, N.J., and Eric Winston, Melrose Park, Pa., assignors to Jerrold Electronics Corporation

Filed July 15, 1966, Ser. No. 565,530
10 Claims. (Cl. 317—99)

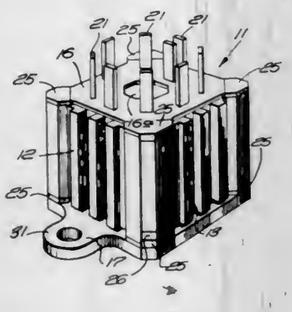
1. An RF signal distribution station containing electrical components connected to form a functionally complete electrical unit, comprising: a metal housing including a base and cover; circumferentially continuous coextending flanges on said base and cover; means cooperating with said flanges for securing said cover to

said base; a plurality of electrical connector fittings disposed at opposite ends of said base, for receiving coaxial cable connectors and being connected to said base to provide a water-tight seal and a continuous electrical connection therewith; an electrical component-carrying chassis within said base adjacent said fittings and including terminal means coupled electrically to said fittings



and with the received cable connectors; a first set of electrical connectors mounted on said chassis; means coupling said last mentioned connectors and said terminal means; and an electrical modular unit disposed in one of said cover and base and provided with a complimentary set of mating connectors pluggable into said chassis for transferring RF energy between predetermined chassis terminals.

3,359,461
MODULAR CIRCUIT PACKAGE
Chester L. Schuler, Wayland, and Norman Edward Chapman, West Peabody, Mass., assignors, by mesne assignments, to Powercube Corporation, Waltham, Mass., a corporation of Massachusetts
Filed Feb. 15, 1967, Ser. No. 616,244
14 Claims. (Cl. 317—100)



1. An integrated electronic modular power circuit package comprising:

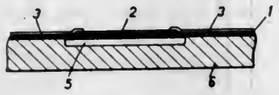
a plurality of individual electrically conductive, heat dissipative side wall elements;

thermally conductive, electrically insulating means for mechanically and thermally joining adjacent ones of said side wall elements to form a rigid unitized hollow housing of substantially polyginal cross-section having insulatively separated and electrically conducting side walls; and

electronic components constituting a modular circuit disposed within said housing, at least some of said components being attached in thermal contact with said side wall elements, the thermal contact portion of some of said components also making a direct electrical contact with selected ones of said side wall elements;

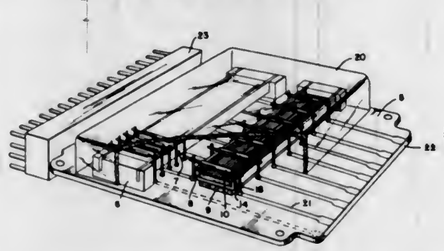
whereby said side wall elements provide physical support, electrical interconnection and thermal dissipation for said electronic components, together with structural rigidity for said modular package.

3,359,462
ELECTRICAL CIRCUIT DEVICE
Hans-Jürgen Schütze and Klaus Hennings, Ulm (Danube), Germany, assignors to Telefunken Patentverwertungsgesellschaft m.b.H., Ulm (Danube), Germany
Filed Aug. 2, 1965, Ser. No. 476,556
Claims priority, application Germany, Aug. 4, 1964, T 26,733
5 Claims. (Cl. 317—101)



1. A semiconductor device comprising a semiconductor body with at least one semiconductor element built into it, an insulating layer covering the semiconductor body, and at least one passive element provided on this layer, said semiconductor body having a recess disposed below said passive element and extending laterally at least as far as the lateral dimensions of said passive element for causing said passive element to be supported exclusively by said insulating layer, and wherein said insulating layer has apertures therein in strip form at the margins of said passive element.

3,359,463
MULTI-POLE REED SWITCH RELAY
John Paul Jones, Jr., Wynnewood, Pa., assignor to Navigation Computer Corporation, Norristown, Pa., a corporation of Pennsylvania
Filed Sept. 24, 1964, Ser. No. 399,025
8 Claims. (Cl. 317—123)

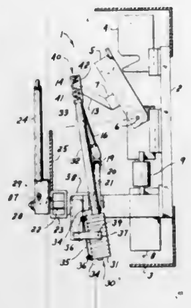


1. A multiple pole reed switch relay comprising a U-shaped channel core of ferromagnetic material, a coil wrapped along the channel of said core, and means holding a plurality of sealed magnetic reed switches across said channel having magnetic reeds adjacent both ends of the U of said channel, and a non-magnetic gap member placed between at least one of said magnetic reeds and the ferromagnetic material to create a non-magnetic space between said core and said reeds.

3,359,464
SWITCH ACTUATING MECHANISM
Louis S. Henderson, Lafayette Hill, Pa., assignor to The Pringle Electrical Manufacturing Company, Fort Washington, Pa., a corporation of Pennsylvania
Continuation of abandoned application Ser. No. 382,558, July 14, 1964. This application Feb. 6, 1967, Ser. No. 614,309
8 Claims. (Cl. 317—123)

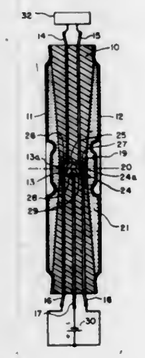
1. In combination with an electrical switch having at least one movable contact member, said member being pivotally mounted for movement between open and closed

positions, the improvement comprising: a linear induction motor having electromagnetic stator coils and a magnetic rod, said rod being linearly movable in response to sequential energizing of said coils, means pivotally mounting said motor for rocking movement about an axis paral-



lel to the axis of rotation of said contact member, coupling means pivotally connecting said rod to said member at a point on said member spaced from said pivot axis, and control means selectively operable to energize said coils in sequence to move said rod to rotate said contact member to switch opening position.

3,359,465
ELECTROCHEMICAL MICROPHONE
Charles W. Larkam, Austin, Tex., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Nov. 4, 1963, Ser. No. 321,380
1 Claim. (Cl. 317—231)



A transducer, comprising:

(a) a housing including a body portion having an elongate aperture therethrough along a longitudinal axis;

(b) a pair of flexible diaphragms affixed to said housing at opposite ends of said aperture;

(c) a redox system electrolyte filling the space within said aperture and between said diaphragms; and flowable along said axis in a straight flow path in either direction;

(d) a grid-like plate cathode transverse to said axis within said aperture;

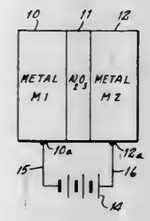
(e) a pair of members having alined orifices therein individually positioned over the respective exits of said aperture;

(f) a pair of grid-like anodes individually spaced between said cathode and said respective members;

(g) means for establishing a potential between said cathode and anodes for oxidizing components of said electrolytes in area adjacent to said anodes and reducing components of said electrolyte in areas adjacent said cathode; and

(h) a pair of perforated platelike sensing electrodes disposed across said aperture in respective locations between and spaced from said cathode and each respective anode for developing a signal proportional to the difference in ion concentrations in said respective locations due to displacement of said electrolyte through said aperture in response to flexing of said diaphragms.

3,359,466
METHOD OF IMPROVING THE ELECTRICAL CHARACTERISTICS OF THIN FILM METAL-INSULATOR-METAL STRUCTURES
Solomon R. Pollack, Philadelphia, and Clarence E. Morris, Audubon, Pa., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed June 18, 1962, Ser. No. 203,131
1 Claim. (Cl. 317—234)



A method of improving the electrical properties of a thin film structure comprising a film of electrically conductive metal, a film of evaporatively deposited aluminum oxide and another film of electrically conductive metal, said film of evaporatively deposited aluminum oxide having a thickness in the range 100–1000 Angstrom units and being positioned between and in contact with said films of electrically conductive metal, said films of electrically conductive metal having a thickness in the range 100–10,000 Angstrom units, which comprises at about room temperature impressing a voltage in the range from about 5 to about 25 volts across said film of evaporatively deposited aluminum oxide for a period of time in the range from about one-half minute to about five minutes, said impressed voltage and said period of time being sufficient in combination to effect a marked increase in the current flowing across said film of evaporatively deposited aluminum oxide at the end of said time period as compared with the current flowing across said film of evaporatively deposited aluminum oxide at the beginning of said time period.

3,359,467
RESISTORS FOR INTEGRATED CIRCUITS
Charles R. Cook, Jr., Lake Park, Fla., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Feb. 4, 1965, Ser. No. 430,409
2 Claims. (Cl. 317—234)

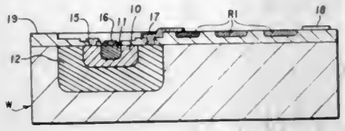
1. An integrated circuit comprising:

(a) a wafer of semiconductor material;

(b) at least one active circuit element formed adjacent a major face of said wafer by alternate layers having opposite conductivity types;

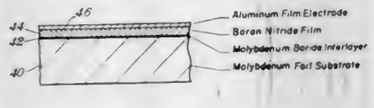
(c) a silicon oxide coating on said major face;

(d) at least one resistor formed adjacent to the surface of said silicon oxide coating laterally spaced from said active circuit element, the resistor being composed of an aluminum-silicon oxide alloy, and



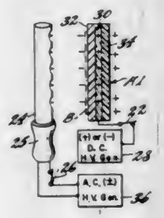
(e) conductive means overlying the oxide coating connecting the resistor to the active circuit element.

3,359,468
BORON NITRIDE FILM CAPACITOR
Robert J. Patterson, Dallas, and Rolf R. Haberecht, Richardson, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Original application Dec. 12, 1963, Ser. No. 330,023. Divided and this application Sept. 10, 1965, Ser. No. 505,204
10 Claims. (Cl. 317—258)



1. An electrical capacitor comprising:
a metal electrode,
a boron nitride film chemically bonded to the metal electrode by a metal boride interlayer, and
a metal film electrode bonded to the boron nitride film.

3,359,469
ELECTROSTATIC PINNING METHOD AND COPYBOARD
Warren W. Levy, Bala Cynwyd, Harold A. Schweriner, Lansdale, and Dolph Simons, Philadelphia, Pa., assignors to The Simco Company, Inc., Lansdale, Pa., a corporation of Pennsylvania
Filed Apr. 23, 1964, Ser. No. 362,049
7 Claims. (Cl. 317—262)

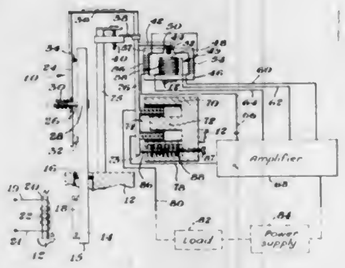


1. An electrostatic copyboard comprising a conductive plate, a non-conductive skin on said plate, means for applying a high D.C. voltage to said conductive plate so that the outer face of said skin will have a voltage induced thereon of the same polarity as said high D.C. voltage, means for abutting a sheet against said non-conductive skin, and air ionizing means in spaced juxtaposition with said skin and comprising a multi-pointed wand having a high voltage A.C. potential applied thereto whereby the sheet may be pinned with controlled static forces.

3,359,470
METHOD OF PIEZOELECTRICALLY ACTIVATING FERROELECTRIC MATERIALS
Masao Takahashi, Norio Tsubouchi, Tomeji Ohno, and Fumio Yamauchi, Tokyo, Japan, assignors to Nippon Electric Company, Limited, Tokyo, Japan, a corporation of Japan
Filed Aug. 10, 1965, Ser. No. 478,572
Claims priority, application Japan, Aug. 10, 1964, 39/45,524
2 Claims. (Cl. 317—262)

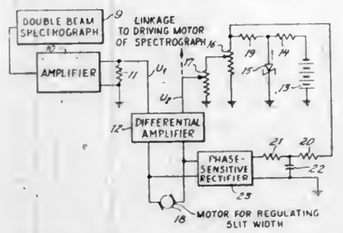
1. A method of piezoelectrically activating a ferroelectric material characterized by comprising successive steps of
applying an AC electric field of an intensity in excess of the coercive electric field intensity and less than the breakdown field intensity of said material,
and applying a DC electric field of an intensity in excess of the order of the coercive electric field intensity and less than the breakdown electric field intensity of said material.

3,359,471
FORCE BALANCE SYSTEM FOR SENSING THE FORCE BETWEEN TWO PERMANENT MAGNETS
Porter Hart, Lake Jackson, and Alfred V. Baker, Freeport, Tex., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed June 1, 1964, Ser. No. 371,409
12 Claims. (Cl. 318—22)



1. Force transducer apparatus comprising a frame, a balance beam, pivot means, said pivot means being fixedly coupled to said frame, said balance beam being movably coupled to said pivot means, electro-magnetic detection means including a magnetic core having a pair of spaced apart poles, said magnetic core being fixedly coupled to said frame, a metal element, said metal element being fixedly coupled to said balance beam and being disposed between said pole pieces, said detection means having circuit means coupled to the input of an amplifier having an input and output, an electromagnetic element and a first permanent magnetic element, one of said two last mentioned elements being fixedly coupled to said balance beam and the other element being fixedly coupled to said frame, said last mentioned two elements being spaced from one another but adapted to interact magnetically, said output of said amplifier being coupled to said electromagnetic element, a second permanent magnetic element and a permanently magnetizable element, one of said two last mentioned elements being fixedly coupled to said frame and the other element being fixedly coupled to said balance beam, and means for inducing discrete levels of magnetism in said magnetizable element at predetermined times, said magnetizable element being disposed adjacent to said second permanent magnet whereby their magnetic fields interact.

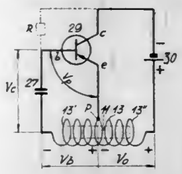
3,359,472
AUTOMATIC GAIN CONTROL SYSTEM FOR DOUBLE-BEAMED SPECTROGRAPH
Helmuth Frenk and Dieter Huelsmann, Wetzlar (Lahn), Germany, assignors to Ernst Leitz G.m.b.H., Wetzlar (Lahn), Germany, a corporation of Germany
Filed Apr. 20, 1964, Ser. No. 361,010
6 Claims. (Cl. 318—26)



1. An automatic gain control system for a double-beamed spectrograph, said spectograph including
a source of a reference potential consisting of the series combination of a resistor and potential source shunted by a zener diode,
a source of a measured potential,
a differential amplifier controlling a servomotor,
a first linear potentiometer to compensate for potential variations arising from transmissivity changes arising from a specimen when examined in said spectrograph,
said potentiometer having a linear resistance characteristic and having one fixed terminal connected to the sliding contact of a second linear potentiometer and having one grounded fixed terminal,
said first potentiometer having its slide contact connected to an input connection of said amplifier,
said second potentiometer having a first fixed terminal grounded and having a second fixed terminal connected via a resistor to said source of a reference potential,
said differential amplifier having its input derived from said reference potential and said measured potential,
said control system being characterized in that the output of said differential amplifier is connected to the input of a phase-sensitive rectifier,
the output of said rectifier is connected to an R-C network,
and said R-C network is also connected by means of a resistor to said second fixed terminal of said second potentiometer.

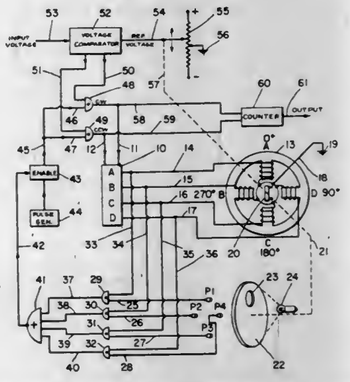
3,359,473
SELF-STARTING ELECTRONIC OSCILLATING DEVICE FOR CLOCKWORKS
Emilio Negri, Via Vanvitelli 41, Milan, Italy
Filed Feb. 25, 1965, Ser. No. 435,176
4 Claims. (Cl. 318—128)

1. A timekeeping and driving electromagnetic device for electrical clockworks, comprising an electronic circuit of the resistance-capacitance type having a natural frequency and including a transistor, a center-tapped coil of cylindrical configuration, said coil defining a longitudinal bore therein, said coil including a center-tap dividing the winding of said coil to form an exciting section and a driving section, a resistor and a capacitor connected in an exciting part of said circuit, and a timekeeping oscillating member electromagnetically coupled to said circuit; said timekeeping member including a balance wheel having a fly-wheel including an interrupted rim, a portion of which penetrates said bore in said coil, said fly-wheel including a hub, a single arm extending substantially radially outwardly of said hub, said rim being connected to said hub by said single arm, a permanent magnetic mounted on one end of said interrupted rim, a second arm connected to said hub and positioned diametrically opposite said first arm, a magnetic shield on a free end



of said second arm, said magnetic and shield forming an armature of an electromagnetic lying in the axis of said coil.

3,359,474
STEPPER MOTOR CONTROL AND STEP DETECTOR
Elvin C. Welch, Culver City, and Richard V. Spannagel, Inglewood, Calif., assignors, by mesne assignments, to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Maryland
Filed Nov. 27, 1964, Ser. No. 414,360
3 Claims. (Cl. 318—138)

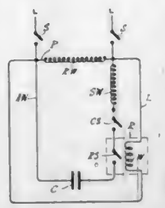


1. A stepper motor and step detector comprising, in combination: magnetic field generating coils positioned to establish a magnetic field in given selected directions depending upon which coils are energized; a rotor responsive to said magnetic field to align itself in the direction in which said magentic field is established; a control means having outputs connected to said coils such that signals on selected ones of said outputs energize selected ones of said coils, said control means having a pulse input terminal and being responsive to successive pulses received on said terminal to step said magnetic field through discrete angles and thereby successively step said rotor through said discrete angles; a step detector including means coupled to said rotor and responsive to stepping of said rotor from a given position to its next successive position to provide a signal; coincidence circuit means connected to receive said signal and connected to said outputs of said control means, said coincidence circuit means being responsive only to a coincidence of said signal and a signal on one of said outputs to said coils to step said magnetic field to said next successive position to provide a given signal; and enabling means connected to receive said given signal and enable a next successive pulse to be received at said pulse input of said control means, said enabling means blocking pulses to said input in the absence of said given signal, whereby said magnetic field cannot be stepped to a next successive position until such time as said rotor has been stepped to said position in alignment therewith.

3,359,475
CONTROL SWITCH CIRCUIT FOR DE-ENERGIZING THE STARTING CIRCUIT OF AN ELECTRICAL MOTOR

Emil S. Tamm, Fort Smith, Ark., assignor to Baldor Electric Company, Fort Smith, Ark., a corporation of Missouri

Filed Oct. 13, 1965, Ser. No. 495,496
4 Claims. (Cl. 318—221)

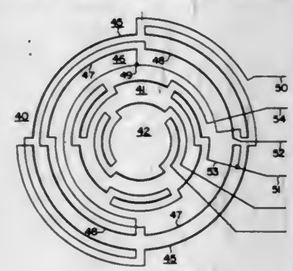


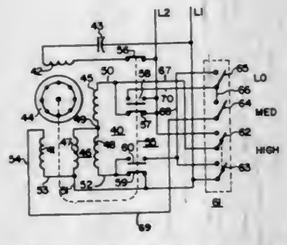
1. An electrical motor control for use in conjunction with a single phase alternating current motor having circuit lines and a stator circuit, a primary windings circuit contained in said stator circuit, an auxiliary windings circuit contained in said stator circuit and connected in parallel to said primary windings circuit, a centrifugal switch series connected in said auxiliary windings circuit, a capacitor series connected in said auxiliary windings circuit, a relay switch series connected in said auxiliary windings circuit, relay windings series connected in said circuit lines, said relay switch being responsive to the energizing of said relay windings, and means for de-energizing said relay windings for opening said responsive relay switch at a time prior to or simultaneously with the closing of said centrifugal switch thereby rendering said auxiliary windings circuit and series capacitor inoperative while said motor decelerates after being shutoff.

3,359,476
MULTI-SPEED SINGLE-PHASE MOTOR

Thomas Charlton, Lima, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Apr. 16, 1965, Ser. No. 448,776
14 Claims. (Cl. 318—224)



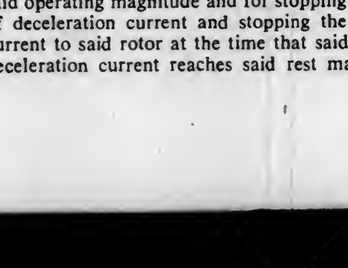


1. A multi-speed single-phase motor having a main primary winding and an auxiliary primary winding displaced from each other and adapted to be connected to a single-phase line, said main primary winding comprising first and second sections having the same number of poles with the poles coinciding in position, and means for connecting said first and second sections of the main winding to the line with the poles alternating in polarity for operation at one speed and for connecitng the second section only of the main winding to the line with all poles of the same polarity for operation at another speed.

3,359,477
ACCELERATION AND DECELERATION CONTROL SYSTEM FOR DC MOTOR

Makoto Wasai, Yokohama-shi, and Yasuo Azuma, Kawasaki-shi, Japan, assignors to Fujitsu Limited, Kawasaki, Japan, a corporation of Japan

Filed May 11, 1965, Ser. No. 454,922
Claims priority, application Japan, May 13, 1964, 39/26,866
6 Claims. (Cl. 318—262)



1. An acceleration and deceleration control system for a DC motor having a rotor which is accelerated from rest to operating speed and which is decelerated from operating speed to rest during normal operation, said rotor having a rotor winding through which acceleration current flows during acceleration of said rotor and through which deceleration current flows during deceleration of said rotor, operating current flowing therethrough during operating speed thereof, said control system comprising

rotor current supply means for supplying acceleration current, operating current and deceleration current to said rotor;

integrating means coupled to said rotor current supply means for integrating said acceleration current during acceleration of said rotor and for integrating said deceleration current during deceleration of said rotor;

clamping means connected between said integrating means and said rotor current supply means for clamping the integrated acceleration current when said integrated acceleration current reaches an operating magnitude corresponding to the operating speed of said rotor and for clamping the integrated deceleration current when said integrated deceleration current reaches a rest magnitude corresponding to zero operating speed;

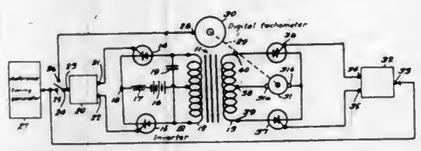
differentiating means connected to said integrating means for differentiating the integrated acceleration and deceleration currents; and

control means connected between said differentiating means and said rotor current supply means for stopping the supply of acceleration current and initiating the supply of operating current to said rotor at the time that said integrated acceleration current reaches said operating magnitude and for stopping the supply of deceleration current and stopping the supply of current to said rotor at the time that said integrated deceleration current reaches said rest magnitude.

3,359,478
SILICON CONTROLLED PHASE LOCKED SERVO DRIVE

Lowell D. Yates, El Paso, Tex., assignor to the United States of America as represented by the Secretary of the Army

Filed Aug. 3, 1965, Ser. No. 477,042
3 Claims. (Cl. 318—314)

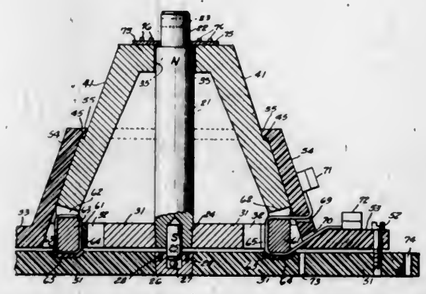


1. A silicon-controlled rectifier phase locked servo drive comprising in combination, a silicon-controlled rectifier inverter, a first electronic switching means for alternately gating the silicon-controlled rectifiers of said inverter, timing means for triggering said first electronic switching means, a motor, a motor control circuit coupled to the output of said inverter, said motor control circuit consisting of a pair of silicon-controlled rectifiers connected in a full wave rectifier circuit across the output of said silicon-controlled rectifier inverter for supplying current to said motor, and a second electronic switching means coupled to the gates of said pair of silicon-controlled rectifiers, said second electronic switching means being triggered by said timing means.

3,359,479
SYSTEM FOR BATTERY CHARGING

George Crompton, 710 Armada Road S., Venice, Fla. 33595

Filed June 30, 1964, Ser. No. 379,409
2 Claims. (Cl. 320—52)

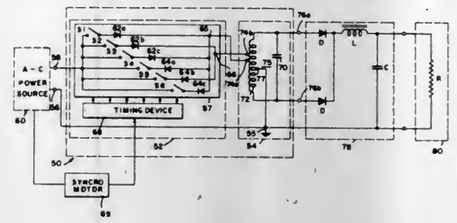


1. A D.C. electrical generating system comprising a D.C. electricity generating dynamo, an electric storage battery, a voltage regulator, a variable resistance device in said voltage regulator, means to exert mechanical pressure on said variable resistance, a solenoid opposing said means to exert mechanical pressure, a solenoid coil as a part of said solenoid, a main circuit from said dynamo to said variable resistance to said battery and back to said dynamo, a rectifier in said main circuit, a shunt circuit connecting said dynamo and said solenoid coil, and a second shunt circuit connecting the dynamo and the battery, said second shunt circuit having a rectifier and also having a switch.

3,359,480
SYNCHRONOUSLY CONTROLLED RESONANT AC TO AC CONVERTER

Thomas R. O'Meara, Malibu, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed May 23, 1966, Ser. No. 559,675
3 Claims. (Cl. 321—4)



1. In a synchronously controlled AC to AC converter the combination of:

an electrical energy source of an angular AC frequency, said energy source including an output circuit;

a first plurality of circuits comprising a first plurality of sequentially operated and parallel coupled circuit interrupters being coupled to the output circuit of said electrical energy source, said first plurality of circuits further comprising a current rectifier being coupled in series with each said interrupter means of said first plurality;

a second plurality of circuits comprising a second plurality of sequentially operated and parallel coupled interrupter means being coupled to the output circuit of said electrical source and in parallel with said first plurality of circuits, said second plurality of circuits further comprising a current rectifier coupled in series with each interrupter means of said second plurality;

a resonator means being responsive to the output of said first and said second plurality of circuits, said resonator means being capable of resonating at an odd multiple of the frequency of said electrical energy source; and

means for synchronously and alternately operating said first and said second plurality of interrupter means through a sequence of operations at predetermined equally spaced time intervals, said means being coupled to said first and said second plurality of circuits, said means being responsive to said electrical source.

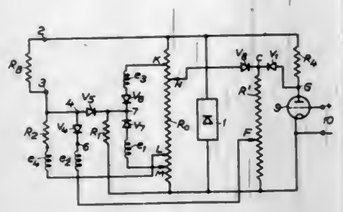
3,359,481
MEANS FOR DERIVING A CONTROL FUNCTION VOLTAGE FOR CONVERTERS

Lennart Björk, Ludvika, Sweden, assignor to Allmänna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a corporation of Sweden

Filed July 23, 1964, Ser. No. 384,658
Claims priority, application Sweden, Aug. 16, 1963, 8,959/63
5 Claims. (Cl. 321—27)

1. In a static current converter comprising a plurality of rectifiers arranged in at least two commutating groups, means for deriving a control function voltage for each of the rectifiers of said converters, said means comprising for each rectifier first, second and third A.C. voltage sources, means to feed said A.C. voltage sources from the commutation voltage for such rectifier, that is, the difference between the anode voltages of a particular rectifier and the preceding rectifier of the same commutation group; said feeding means comprising transformers

and phase shifting means, said commutation voltage being substantially a sinusoidal voltage, said feeding means for the first and second of said A.C. voltage sources including means to transform said commutation voltage into cosinusoidal voltages having the same phase displacement and amplitude but different base potentials, the third A.C. voltage having such amplitude, phase displacement and base potential as to form a transition voltage between said first and second cosinusoidal voltages



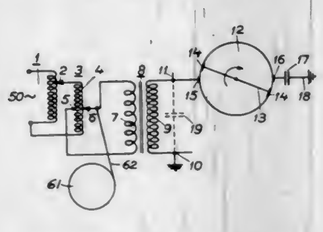
within a certain field of half a period of said control function voltage, at least one D.C. voltage source for deriving D.C. base potentials for said three A.C. voltage sources, a potentiometer, said D.C. voltage being connected to said potentiometer, each of said A.C. voltage sources having one terminal connected to a corresponding tap on said potentiometer, a connection between said A.C. voltage sources and the output terminals of said means comprising rectifiers between said A.C. voltage sources and said output terminals.

3,359,482

FREQUENCY CHANGER WITH A PLURALITY OF TRANSFORMERS AND A SYNCHRONOUSLY ROTATING MEANS

Jarle Sletbak, Trondheim, Norway, and Gunnar Nilsson, Tillberga, and Lars-Goran Virsberg, Vasteras, Sweden, assignors to Allmänna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a corporation of Sweden

Filed May 21, 1965, Ser. No. 457,748
Claims priority, application Sweden, June 4, 1964, 6,781/64
8 Claims. (Cl. 321—70)



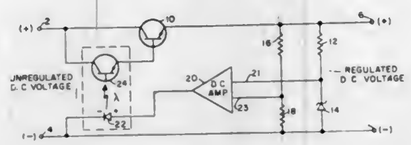
1. A device for transforming a first alternating voltage of a certain frequency to a second alternating voltage with a lower frequency, comprising a transformer, a source of said first alternating voltage, means connecting said transformer to said source, means in said connecting means for reversing the polarity of and for periodic variation of the voltage fed to the transformer, a capacitive load, and means operating synchronously with the frequency of said first alternating voltage for intermittently and periodically connecting the transformer with said capacitive load, whereby the second alternating voltage arises across said load, said means for reversing the polarity and for periodic variation of the voltage fed to the transformer being a second transformer, one winding of which has a contact fixed to the middle of said winding and a movable contact and means connecting the low voltage winding of the first transformer between said two contacts.

3,359,483

HIGH VOLTAGE REGULATOR

James R. Biard, Richardson, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Texas

Filed Nov. 29, 1963, Ser. No. 327,132
10 Claims. (Cl. 323—21)



1. A voltage regulator circuit, comprising:
(a) a pair of input terminals across which an input voltage to be regulated is to be applied,
(b) a pair of output terminals across which the regulated output voltage is developed,
(b_1) a reference source connected across said output terminals,
(c) regulator means connected between one of said input terminals and one of said output terminals for regulating said input voltage in response to a control signal,
(d) detector means connected across said output terminals and to said reference source for sensing a variation in the magnitude of said regulated output voltage when compared with said reference source and producing an electrical error signal proportional to said variation,
(e) photosensitive means coupled to said regulator means for generating said control signal in response to optical radiation incident thereon, and
(f) a light emitting device operatively connected to said detector means and optically coupled to said photosensitive means for generating said optical radiation which is directed on said photosensitive means in response to said error signal.

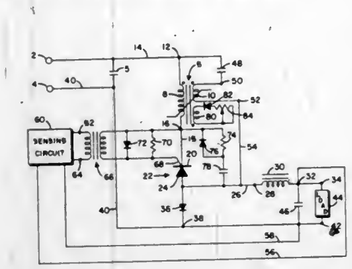
3,359,484

POWER SUPPLY APPARATUS

Lloyd A. Johnson, Minneapolis, Minn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Sept. 13, 1965, Ser. No. 487,003
9 Claims. (Cl. 323—22)

1. A voltage regulator for a direct power supply comprising:
(a) a source of unregulated direct current voltage;
(b) a saturable core transformer having at least a primary winding and a secondary winding;
(c) an electronic switching device having a control electrode adapted to receive control signals for changing the impedance of said switching device in response thereto;
(d) means connecting said primary winding and said electronic switching device in series circuit with a load and across said source of direct current voltage;
(e) a series resonant circuit including a capacitor connected to said secondary winding connected in parallel with said primary winding and said switching device;
(f) sensing means responsive to the voltage appearing across said load for producing control signals having a frequency proportional to the deviation of the load voltage from a predetermined value; and



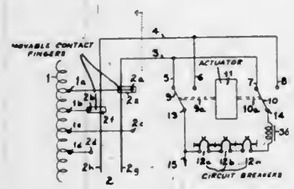
(g) means connecting the output of said sensing means to said control electrode, the arrangement being such that said switching device is turned on periodically by said control signal and turned off prior to saturation of said saturable core transformer under abnormal load conditions.

3,359,485

TAP CHANGING DEVICE FOR TRANSFORMER WINDINGS WITHOUT INTERRUPTING THE LOAD CURRENT

Karl J. Bühler, Nussbaumen, Switzerland, assignor to Aktiengesellschaft Brown, Boveri & Cie, Baden, Switzerland, a joint-stock company

Filed Sept. 8, 1964, Ser. No. 394,811
Claims priority, application Switzerland, Sept. 27, 1963, 11,939/63
6 Claims. (Cl. 323—43.5)



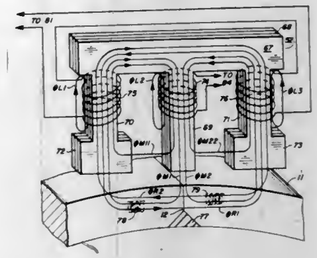
1. In a tap changer device for a controllable transformer having a winding provided with first and second sets of tap points, first and second tap changing switching means for connecting selected tapping points of said first and second sets respectively to first and second lead off conductors, a pair of diverter switches, each said diverter switch including a first contact member movable into selective engagement with a second or third contact member, circuit means connecting said second contact members of said diverter switches with said first lead off conductor, circuit means connecting said third contact members of said diverter switches with said second lead off conductor, an output lead connected to a first contact member of one of said diverter switches, a plurality of circuit breakers connected in series between said first contact members of said diverter switches, means biasing the contacts of said circuit breakers to a closed position, said circuit breaker contacts remaining closed when traversed by normal load currents taken off said tapped transformer winding but opening automatically by electrodynamic effect of the current carried thereby when said current rises above the normal load level as a result of a short circuit established through a portion of said transformer winding between taps thereon when said diverter switches are actuated, and time delay means opposing the action of said biasing means of said circuit breakers in re-closing the contacts thereof.

3,359,486

EDDY CURRENT SEAM TRACKING DEVICE UTILIZING AN E-SHAPED CORE WITH ELECTROMAGNETICALLY UNEQUAL PICK-UP COILS

Daniel R. Brosious, Bethlehem, Pa., assignor, by mesne assignments, to Bethlehem Steel Corporation, a corporation of Delaware

Filed Aug. 6, 1963, Ser. No. 300,211
5 Claims. (Cl. 324—40)



1. Apparatus responsive to a discontinuity in a conductive material, comprising:
(a) a source of alternating current,
(b) means disposed in inductive relation with said conductive material, comprising:
a substantially E-shaped ferromagnetic core having an inner leg and first and second outer legs, the geometry of said core being such that, when said core is inductively coupled to said material, the reluctance between said inner leg and said material is substantially greater than the reluctance between either of said outer legs and said material,
first coil means, connected to said source and coupled to said inner leg, for inducing eddy currents in said material,
second coil means comprising first and second electromagnetically unequal pick-up coils wound about said first and second outer legs, respectively, said pick-up coils being connected to each other so that voltages induced therein by flux produced by current in said first coil means are in series opposition,
(c) means, connected to said second coil means, for producing a D.C. signal dependent upon the difference between the phase of the voltage induced in said pick up coils by current in said first coil means and the phase of the vectorial sum of all the voltages induced in said pick up coils.

3,359,487

ELECTRICAL CONDUCTIVITY PROBE HAVING A CONDUCTIVE, SPONGY FLUID FILLED WIPER MEMBER FOR CHECKING INTERIOR COATINGS OF PIPE

Charles C. Nathan, Bellaire, and Julius J. Kilnar and Robert W. Pittman, Houston, Tex., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware

Filed Apr. 13, 1964, Ser. No. 359,192
5 Claims. (Cl. 324—54)

1. A probe for use in measuring electrical properties of interior coating on electrically conductive material pipe located below the surface in a deep well, comprising
an elongated body of electrically conductive material including
a reduced diameter shaft attached to a spear like end having a pointed tip;
an electrically conductive wiper located on said reduced diameter shaft portion of said elongated body

for establishing a conductive path to said pipe wherever it exists through said interior coating,

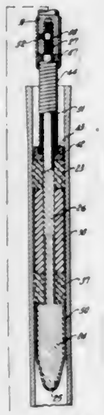
said conductive wiper comprising a homogeneous annular member having a spherical exterior surface for contacting the interior surface of the pipe,

said annular member comprising a spongy material having an electrically conductive fluid therein,

said annular member being in firm contact with said reduced diameter shaft;

an electrically conductive line connected to said body for completing a circuit from said body to the surface,

first electrically insulating coating means for covering said line to prevent any leakage path for current flow between said line and said pipe,



second electrically insulating coating means for covering substantially all of the exposed surface of said body except that covered by said conductive wiper,

electrically insulating wiper means located on said shaft in contact with said spear like end and spaced ahead of said conductive wiper for cleaning any conductive film off the surface of said interior coating,

said second coatings means covering both said spear like end and said shaft at least as far as the axial width of said insulating wiper,

an electrically insulating material spacer located axially between and in contact with both said annular member and said insulating wiper, and

spring means located on said elongated body for applying an axial bias against all three of said annular member, said spacer and said insulating wiper toward said spear like end of said body.

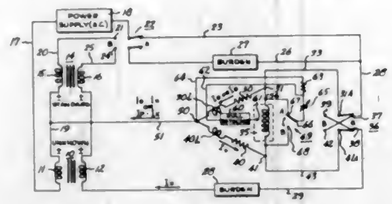
3,359,488

CURRENT COMPARING APPARATUS AND SHUNT IMPEDANCE ELEMENTS

John H. Park, Seattle, Wash., assignor to The Boeing Company, Seattle, Wash., a corporation of Delaware

Filed June 8, 1964, Ser. No. 373,405
9 Claims. (Cl. 324—55)

1. A current comparator comprising in combination: a first shunt impedance element having first and second sections; a second shunt impedance element having first and second sections; a first conductor connected in common to each of said first sections; an inductive voltage divider connected between said second sections; a null voltage detector and a resistor connected in series circuit between said first conductor and to an intermediate point of said inductive voltage divider; a capacitor connected to said



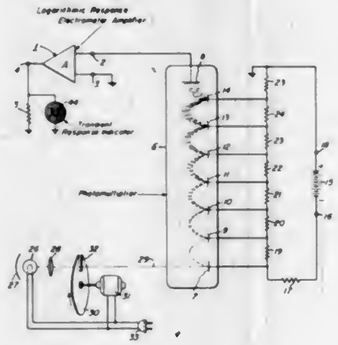
resistor; and switch means connected to said capacitor and adapted to selectively connect to either of said second sections.

3,359,489

PHOTOMULTIPLIER APPARATUS FOR DETERMINING THE TRANSIENT RESPONSE OF LOGARITHMIC ELECTROMETERS

Robert L. Watters, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

Filed Nov. 2, 1964, Ser. No. 408,250
1 Claim. (Cl. 324—57)



A transient current response measuring apparatus for determining the total transient performance of a logarithmic electrometer amplifier, having input and output means, over the full range of normal input current magnitude, said apparatus comprising:

(a) a vacuum photomultiplier light detecting device having a photoemissive cathode electrode, an electron-collecting anode electrode, and a plurality of secondary electron emissive dynode electrodes spaced at successive intervals between said cathode and anode;

(b) a direct current power supply conductively coupled to said cathode and dynode electrodes biasing said cathode electrode at a negative potential of given magnitude relative to ground potential and biasing said dynode electrodes at successively reduced negative potentials progressing from said cathode to said anode;

(c) means conductively coupling said anode electrode only to the input means of said amplifier, said anode electrode being isolated from said power supply;

(d) means intermittently illuminating said cathode electrode; and

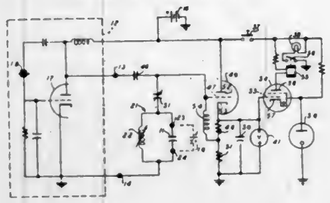
(e) transient response indicating means coupled to the output means of said amplifier.

3,359,490

SYSTEMS FOR TESTING THE TOLERANCES OF CAPACITIVE VALUES OF CAPACITORS

Edward R. Doubek, Jr., Brookfield, and Charles W. Reiley, Chicago, Ill., assignors to Western Electric Company Incorporated, New York, N.Y., a corporation of New York

Filed June 3, 1964, Ser. No. 372,219
2 Claims. (Cl. 324—60)



2. In a system for ascertaining if the value of an unknown capacitor fails to be between upper and lower limits of capacitance,

an oscillator for producing an output signal of constant amplitude and frequency;

a resonant circuit connected across the output of the oscillator; said resonant circuit including (1) a parallel combination of an inductor and the unknown capacitor and (2) a variable capacitor connected in series with the parallel combination; said resonant circuit being resonant at the output frequency of the oscillator if the unknown capacitor has a value between upper and lower limits of capacitance; said variable capacitor determining the magnitude of the signal produced across the resonant circuit at its resonant frequency;

a triode having a grid, an anode and a cathode, said grid connected to one end of the resonant circuit;

a pair of resistors serially connected between the cathode and the other end of the resonant circuit;

a bias capacitor connected between the cathode and the other end of the resonant circuit;

a choke inductor connected between the grid and the junction between the pair of resistors;

means for applying a voltage to the anode such that the triode is conductive except when negative portions of the voltage across the resonant circuit exceed a predetermined magnitude; and

means connected across the bias capacitor for sensing when the voltage across the bias capacitor exceeds a predetermined voltage to indicate that the unknown capacitor does not have a value between the upper and lower limits of capacitance.

3,359,491

SIGNAL WAVEFORM CHARACTERISTIC MEASURING SYSTEM HAVING STOP-START LOGIC CIRCUIT

Samuel R. McCutcheon, Aloha, Oreg., assignor to Tektronix, Inc., Beaverton, Oreg., a corporation of Oregon

Filed June 15, 1962, Ser. No. 202,814
17 Claims. (Cl. 324—68)

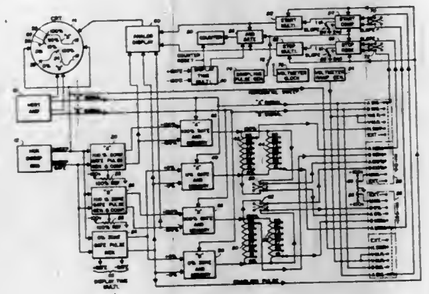
2. An electrical circuit for measuring the characteristics of electrical signal waveforms displayed on the fluorescent screen of an electron discharge display device, comprising:

means for generating a start limit signal and a stop limit signal related in time to two different preset limit portions of different ones of said waveforms;

means for applying said start and said stop signals to said display device in order to increase the brightness of the light image of said portions of said waveforms;

means for varying the preset limit related to at least one of said start and stop signals in order to move the brightened portion of said one waveform corresponding to said one signal along said one waveform to a desired place on said one waveform;

means for generating standard electrical pulses of a predetermined frequency;



means for separating some of said pulses into a group of pulses corresponding to the time interval between said start and stop signals, and relating the number of said standard pulses in said group to a characteristic of said waveforms; and

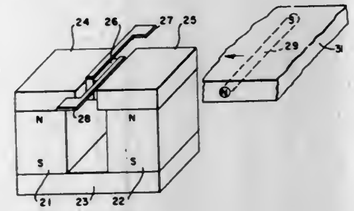
means for counting the number of pulses in said group in order to measure a characteristic of the waveform region between the start portion and the stop portion of said waveforms.

3,359,492

HALL DEVICE FOR MEASURING ANGULAR SPEED AND ANGULAR DISTANCE MOVED OF A ROTATING BODY

Friedrich Kuhrt and Julius Brunner, Nuremberg, Germany, assignors to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany a corporation of Germany

Filed Mar. 18, 1965, Ser. No. 440,769
Claims priority, application Germany, Mar. 20, 1964, S 90,125
7 Claims. (Cl. 324—70)



1. A device for producing an electrical signal corresponding to the angular speed and angular distance moved of a non-magnetic electrically conductive rotating body, comprising

at least one magnet supported by said body substantially perpendicularly to the direction of movement of said body;

a soft-magnetic base plate spaced from said body;

magnet means for producing eddy currents in said rotating body, said magnet means comprising a pair of spaced substantially parallel magnets each having a pole face in operative proximity with said body and each having an opposite pole face positioned on said soft-magnetic base plate and spaced from said body, said magnets having the same direction of magnetization and being positioned substantially perpendicularly to the magnet supported by said body;

a pair of soft-magnetic plates each provided on the pole face of a corresponding one of said magnets in proximity with said body, said soft-magnetic plates being spaced from each other to form an air gap between them;

a Hall device positioned in the air gap between said soft-magnetic plates; and

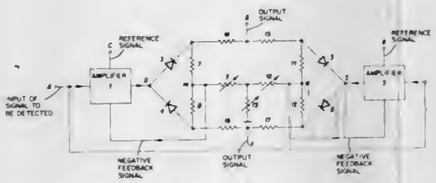
a pair of substantially L-shaped soft magnetic sheets each positioned between a corresponding one of said soft-magnetic plates and the adjacent side of said Hall device and each extending substantially perpendicularly to the direction of movement of said body for directing the lines of flux of the magnetic fields produced by said eddy currents in said body and by the magnet supported by said body to be cut by said Hall device so that said Hall device produces a Hall voltage proportional to the angular speed of said body and a pulse each time the magnet supported by said body passes said magnet means to indicate the angular distance moved by said body.

3,359,493

CIRCUIT OF PHASE-SENSITIVE DETECTOR

Jerzy Leslaw Naglowski, Goszczynskiego Str. 36, and Stefan Urbanski, Rozlucka Str. 10, both of Warsaw, Poland

Filed Dec. 29, 1964, Ser. No. 421,835
Claims priority, application Poland, Jan. 7, 1964, P 103,415
2 Claims. (Cl. 324—87)



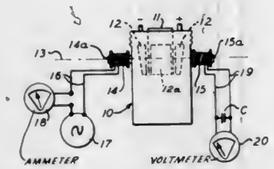
1. A phase sensitive signal detector circuit having good detection linearity, good zero stability, high detection efficiency unaffected by time, temperature, frequency, and interference signals and operating over a wide frequency range comprising: a signal input terminal for providing a signal-to-be-detected; a pair of signal output terminals; first and second electrically identical amplifiers, each having first, second, and third amplifier input terminals and an amplifier output terminal; means connecting said signal input terminal to said first amplifier input terminals of said amplifiers in parallel; means providing a first reference signal to said second amplifier input terminal of said first amplifier; means providing a second reference signal, 180 degrees out of phase with said first reference signal, to said second amplifier input terminal of said second amplifier; ring detector circuit means comprising a first arm having a first rectifier and a first impedance connected in series in the order named between said amplifier output terminal of said first amplifier and one of said signal output terminals, a second arm having a second rectifier and a second impedance connected in series in the order named between said amplifier output terminal of said first amplifier and the other of said signal output terminals, a third arm having a third rectifier and a third impedance connected in series in the order named between said amplifier output terminal of said second amplifier and said other of said signal output terminals, and a fourth arm having a fourth rectifier and a fourth impedance connected in series in the order named between said amplifier output terminal of said second amplifier and said one signal output terminal; a first pair of resistors connected in series between the junction of the rectifier and impedance of said first arm and the junction of the rectifier and impedance of said second arm; a second pair of resistors connected in series between the junction of the rectifier and impedance of said third arm and the junction of the rectifier and impedance of said fourth arm, whereby a first composite signal comprising a signal-to-be-detected component and a first reference signal component will appear at the junction between the first pair of resistors and a second composite signal comprising a signal-to-be-detected component and a second reference signal component will appear at the junction between the second pair of resistors; first negative feedback loop means for applying said first composite signal as a negative feedback signal to said third amplifier input terminal of said first amplifier; and second negative feedback loop means for applying said second composite signal as a negative feedback signal to said third amplifier input terminal of said second amplifier.

3,359,494

METHOD OF EXTERNALLY DETERMINING DISCHARGE CAPABILITY OF A BATTERY WITH A METAL ELECTRODE

George M. Anderson, Whippany, Sol S. Jaffe, West Orange, and Melville D. Bowers, Montville, N.J., assignors to McGraw-Edison Company, Elgin, Ill., a corporation of Delaware

Filed Aug. 10, 1964, Ser. No. 388,359
8 Claims. (Cl. 324—29.5)



1. The method of determining the discharge capability of a battery having a metal electrode which is consumed in proportion to the ampere hours discharged from the battery, which comprises placing a primary coil and a secondary coil in juxtaposition to the battery whereby the electromagnetic coupling field between the coils averses said metal electrode, connecting an A.C. source f input current of a predetermined frequency to said primary coil, measuring the induced voltage in said secondary coil, and determining the discharge capability of the battery from the ratio of the induced voltage to the input current.

3,359,495

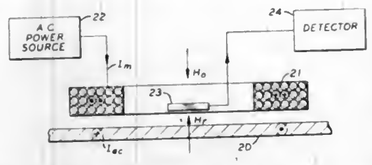
MAGNETIC REACTION TESTING APPARATUS AND METHOD OF TESTING UTILIZING SEMICONDUCTOR MEANS FOR MAGNETIC FIELD SENSING OF AN EDDY-CURRENT-REACTION MAGNETIC FIELD

Robert C. McMaster, Columbus, and Edwin D. Sisson, Worthington, Ohio, assignors to F. W. Bell, Inc., Columbus, Ohio, a corporation of Ohio

Filed Aug. 13, 1964, Ser. No. 389,409
17 Claims. (Cl. 324—40)

1. A magnetic-reaction test apparatus for nondestructive testing comprising inductor means energized to produce a time-varying magnetic field of pulse or periodic

waveform positioned in predetermined relationship to a material to be tested having specific parameters and disposed to electromagnetically couple said magnetic field with the material and effect an eddy-current reaction mag-



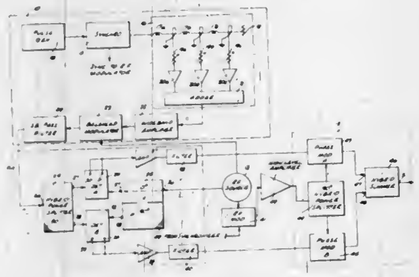
netic field related to parameters of the material, and magnetic-field-responsive means for sensing said eddy-current reaction field consisting of at least one semiconductor device positioned within said fields to provide a signal related to said eddy-current reaction field.

3,359,496

SINGLE SIDEBAND HIGH LEVEL RF MODULATOR HAVING SPECTRUM ADJUSTMENT

Joseph Burnsweig, Jr., and Larry H. O'Brien, Los Angeles, Calif., assignors to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed Mar. 25, 1966, Ser. No. 537,443
9 Claims. (Cl. 325—137)



1. A modulator system for generating a single sideband coded RF carrier at high level comprising:

a quadrature coder means for receiving a wideband coded single sideband signal at its input for generating two high level coding signals, said coding signals being in phase quadrature with respect to each other;

a high level modulator means coupled to said quadrature coder means and having an input capable of receiving two high level RF carrier signals, each RF carrier being of the same frequency and in phase quadrature with respect to each other, for modulating each of said RF carrier signals in accord with said coding signals; and

a code generator means coupled to the input of said quadrature code generator means for generating a single sideband, wideband coded signal.

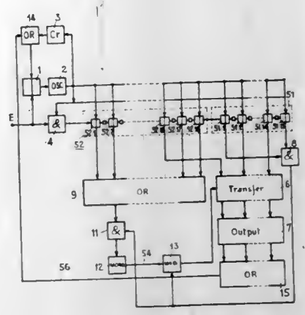
3,359,497

SYSTEM FOR GATING OUT CONTENTS OF SHIFT REGISTER IN RESPONSE TO PRESENCE OF PULSES IN SELECTED STAGES THEREOF

Claude L. Landes, Montreuil, Bois, Hauts-de-Seine, France, assignor to Societe Nouvelle d'Electronique et de la Radio-Industrie, a corporation of France

Filed Mar. 3, 1964, Ser. No. 348,925
Claims priority, application France, Mar. 5, 1963, 926,886, Patent 1,358,554
12 Claims. (Cl. 325—322)

1. In a system for decoding pulse-modulated code groups each including a pair of framing pulses spaced a prescribed number of pulse positions apart, a code-checking arrangement comprising multistage digital shift-register means, means generating timing pulses, means applying said timing pulses as shift pulses to the stages of the register means, a system input receiving said modulated code groups, means applying the pulses of the code groups serially to an initial stage of the register means to be shifted therethrough by said shift pulses, an



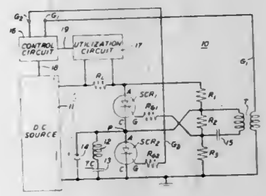
output device, and gating means connected to a pair of stages of the register means spaced correspondingly to the prescribed spacing of said framing pulses and responsive to the simultaneous presence of a pair of pulses of the code group in said pair of spaced stages for transferring the pulse code from the register means to said output device whereby only code groups having said framing pulses are transferred to said output device while other code groups are rejected.

3,359,498

VARIABLE WIDTH PULSE GENERATOR

William B. Harris, Bernardsville, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed May 28, 1964, Ser. No. 370,934
10 Claims. (Cl. 328—57)

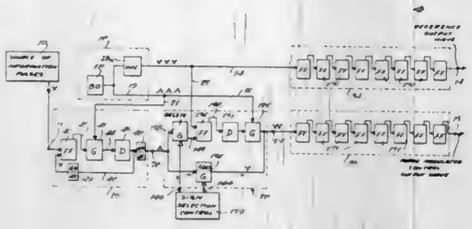


1. A variable width pulse generator comprising first and second controlled switches having first and second gate electrodes, respectively, said first and second switches being connected with a load across a source of substantially constant electric potential, means including first and second gate means connected to said first and second gate electrodes, respectively, for controllably closing said first and second switches in accordance with a timed sequence, a series tuned circuit responsive to the closing of said second switch for controllably opening said first and second switches and a normally reverse-biased diode shunting said series tuned circuit.

3,359,499
APPARATUS FOR RENDERING PULSE TRAINS NON-COINCIDENT AND ALGEBRAICALLY COMBINING THEM

James O. McDonough, Concord, Mass., and John Steranka, Jr., Van Nuys, Calif., assignors to Giddings & Lewis Machine Tool Company, Fond du Lac, Wis., a corporation of Wisconsin

Original application Oct. 24, 1957, Ser. No. 692,168, now Patent No. 3,258,667, dated June 28, 1966. Divided and this application Oct. 8, 1965, Ser. No. 505,222
12 Claims. (Cl. 328—157)

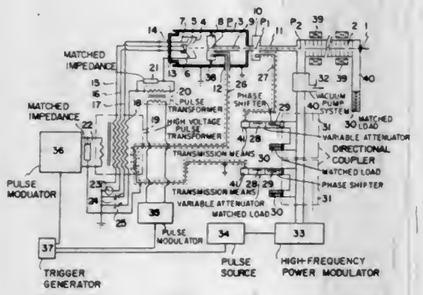


1. A chronizer for producing, from a series of successive signals and a string of signals, a chain of successive signals equal in number to the said series and each of which is non-coincident with any of the signals in said string, said chronizer comprising, in combination, a gate, means responsive to the occurrence of each signal in said series for opening said gate, means for supplying said string of signals to the input of said gate, means responsive to each signal passed by said gate for closing the latter, and means for producing in response to each signal passed by said gate a signal in said chain which is delayed a predetermined time interval from the passed signal, so that there is one signal in said chain for each signal in said series and which is non-coincident with any signal in said string.

3,359,500
CHARGED PARTICLE PHASE BUNCHING APPARATUS

Yasutsugu Takeda, Nakano-ku, Tokyo-to, and Akiji Maekawa, Kodaira-shi, Japan, assignors to Kabushiki Kaisha Hitachi Seisakusho, Tokyo-to, Japan, a joint-stock company of Japan

Filed Jan. 15, 1964, Ser. No. 337,855
Claims priority, application Japan, Jan. 18, 1963, 38/1,463
2 Claims. (Cl. 328—233)

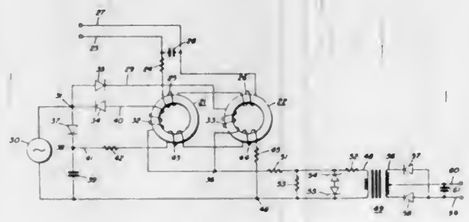


1. In a charged particle phase bunching apparatus provided with a charged particle source including a cavity resonator, a pulse transformer to cause charged particles to be projected from the said charged particle source, and means to cause the charged particles so projected from said source to be phase bunched by exciting high-frequency electromagnetic waves, the combination of a coaxial cable having one part thereof wound about the core of the pulse transformer, an exciting high-frequency wave source, and means to supply at least one portion of the power of the said exciting high-frequency electromagnetic waves from the said exciting high-frequency wave source through the said coaxial cable to said cavity resonator.

3,359,501
AUTOMATIC GAIN CONTROL IN A MAGNETIC AMPLIFIER

Paul H. Troutman, Schenectady, N.Y., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed Feb. 12, 1964, Ser. No. 344,514
1 Claim. (Cl. 330—8)



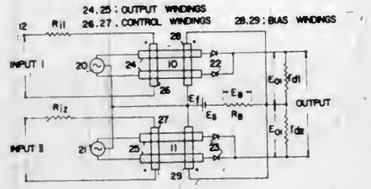
An automatic gain control circuit comprising:
a magnetic amplifier having a first magnetic core and a second magnetic core;
an alternating current source;
a load;
means for applying a bias signal to said magnetic amplifier comprising:
a first bias winding on said first magnetic core, and
a second bias winding on said second magnetic core wound in the same flux sense as said first bias winding and in series therewith;
means for applying a power signal to said magnetic amplifier comprising:
a first power winding on said first core, and
a second power winding on said second core wound in opposite sense to said first power winding;
means for applying a control signal to said magnetic amplifier comprising:
a first control winding on said first core wound in the same flux sense as said first and second bias windings, and
a second control winding on said second core in series with and wound in the same flux sense as said first control winding;
whereby a difference signal is produced; and
means for applying a signal to said power windings that is inversely proportional to said difference signal comprising:
a first diode having an anode and a cathode, said anode being connected to one side of said first power winding and said cathode being connected to one side of said alternating current source,
a second diode having an anode and cathode, said anode being connected to the same side of said alternating current source and said cathode being connected to one side of said second power winding, and

circuit means connecting said other sides of said first and second power windings and said load in series with the other of said alternating current source.

3,359,502
DIFFERENTIAL MAGNETIC AMPLIFIER CIRCUIT

Takeo Miura and Akio Miyamoto, Kitatama-gun, Tokyo-to, and Chikafusa Hirano, Hachioji-shi, Japan, assignors to Kabushiki Kaisha Hitachi Seisakusho, Chiyoda-ku, Tokyo-to, Japan, a joint-stock company of Japan

Filed Apr. 16, 1964, Ser. No. 360,235
Claims priority, application Japan, May 15, 1963, 38/24,074
1 Claim. (Cl. 330—8)

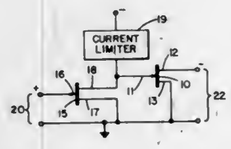


A differential magnetic amplifier circuit having first and second magnetic amplifiers, which comprises: a reference signal source; means to produce a sum of the output signals of said amplifiers; means to produce a different signal between said reference signal and said sum of the output signals; means to negatively feed back said difference signal to the respective input sides of said magnetic amplifiers; and means to produce an output difference signal between said two output signals of said amplifiers, whereby said sum of the output signals of said amplifiers always is maintained at a constant value.

3,359,503
HIGH GAIN AMPLIFIER EMPLOYING CASCADED OPPOSITE CONDUCTIVITY FIELD EFFECT TRANSISTORS

Raymond M. Warner, Jr., Scottsdale, Ariz., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois

Filed May 18, 1965, Ser. No. 456,760
9 Claims. (Cl. 330—17)

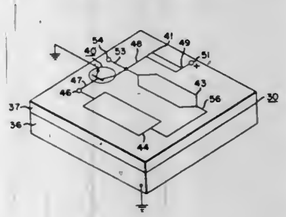


1. An amplifier circuit including in combination, a field effect output transistor having source, drain and gate electrodes, with the source electrode connected to a reference potential, a field effect input transistor having source, drain and gate electrodes, with the source electrode connected to said reference potential, said field effect output transistor being opposite in conductivity from said field effect input transistor, means connecting said drain electrode of said input transistor to said gate electrode of said output transistor, high impedance input circuit means connected to said gate electrode of said input transistor and having an input terminal, current limting means connecting said drain electrode of said input transistor to a bias terminal adapted to receive a bias potential of one polarity, and low impedance output circuit means connected to said drain electrode of said output transistor and having an output terminal, said amplifier circuit operating in response to an input signal and a bias potential of the polarity opposite to said one polarity applied to said input terminal and to a bias potential of said one polarity applied to said output terminal to provide an amplified signal in said output circuit means.

3,359,504
INDUCTANCELESS FREQUENCY SELECTIVE SIGNAL SYSTEM UTILIZING TRANSPORT DELAY

Robert Bento and Irving F. Barditch, Baltimore, and Charles G. Brooks, Raspeburg, Md., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed Mar. 25, 1964, Ser. No. 354,539
1 Claim. (Cl. 330—38)



A new article of manufacture constituting a frequency-selective signal translation system of the type in which a grounded emitter transistor has a phase-shifting device connected between the collector and the base of said transistor to produce a total of 360° phase shift and regenerative feedback for a selected band of frequencies, said article comprising an electrically-conductive and thermally-conductive substrate, and electrically-insulating, thermally-conductive layer in contiguous thermally-conductive relation with said substrate, a transistor amplifier fabricated within said layer and having a base, collector and an emitter connected in a grounded emitter configuration, a distributed RC network having two members including said substrate and a distributed resistance member integrally and rigidly fabricated with said insulating layer and said substrate to form a unitary body, said resistance member and said substrate constituting a distributed capacitance, said resistance member being connected in an alternating current feedback circuit between said collector and said base of said transistor and said resistance having characteristics such as to oppose the changes in gain of said transistor due to temperature changes.

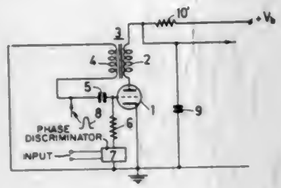
3,359,505
RELAXATION OSCILLATOR HAVING COMBINED DIRECT AND INDIRECT SYNCHRONIZATION

Wouter Smeulers, Emmasingel, Eindhoven, Netherlands, assignor to North American Phillips Company, Inc., New York, N.Y., a corporation of Delaware

Filed Mar. 24, 1966, Ser. No. 537,077
Claims priority, application Netherlands, Apr. 3, 1965, 65—4,263
9 Claims. (Cl. 331—10)

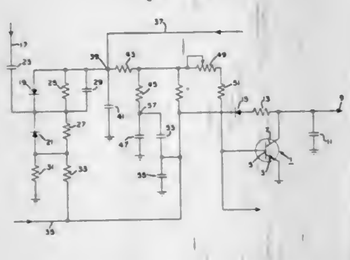
1. A synchronized relaxation oscillator circuit comprising a source of synchronizing pulses, an amplifier device having a control electrode and an output electrode, an input circuit connected to said control electrode, means for regeneratively coupling said output electrode to said input circuit whereby said oscillator has a natural fre-

quency lower than the frequency of said synchronizing pulses, means for deriving output pulses from said oscillator circuit, phase discriminator means, means applying said synchronizing pulses and output pulses to said phase discriminator means to produce a control voltage, means applying said control voltage to said input circuit whereby the oscillating frequency of said oscillator circuit is increased to substantially the frequency of said synchronizing pulses, and means applying said synchronizing pulses to said input circuit, said input circuit comprising capacitor means, means applying said synchronizing pulses to said control electrode by way of said capacitor



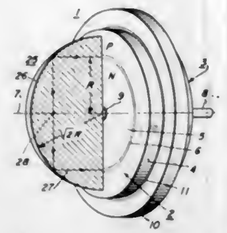
means with a substantially constant amplitude independent of the synchronization state of said oscillator circuit, said synchronization pulses having a polarity and amplitude to cause current flow through said device to charge said capacitor, and resistor means connected to discharge said capacitor thereby producing a frequency decreasing bias on said control electrode, said synchronizing pulses having an amplitude whereby the frequency decreasing effect due to charge on said capacitor means resulting from said synchronizing pulses substantially neutralizes the frequency increasing effect of application of said synchronizing pulses to said control electrode.

3,359,506
INSTANTANEOUS REFERENCE VOLTAGE FOR D.C. VOLTAGE CONTROLLED OSCILLATOR
James Anthony Fazio, Liverpool, N.Y., assignor to General Electric Company, a corporation of New York
Filed Mar. 10, 1965, Ser. No. 438,599
4 Claims. (Cl. 331—20)



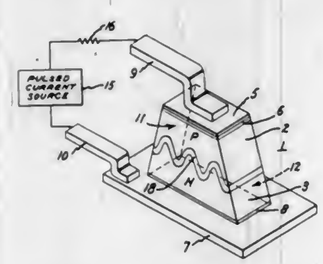
1. In an oscillator circuit the combination comprising:
(a) a D.C. supply voltage,
(b) means for producing a D.C. control voltage,
(c) a solid state D.C. controlled oscillator,
(d) circuit means connected between said means for producing a D.C. control voltage and said oscillator comprising a capacitive voltage divider including a pair of capacitors connected across said D.C. supply voltage to instantaneously provide a D.C. reference voltage for said oscillator at a midpoint of the capacitive voltage divider upon application of power to the circuit.

3,359,507
SEMICONDUCTOR JUNCTION LASER DEVICE
Robert N. Hall, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed Feb. 19, 1964, Ser. No. 345,884
11 Claims. (Cl. 331—94.5)



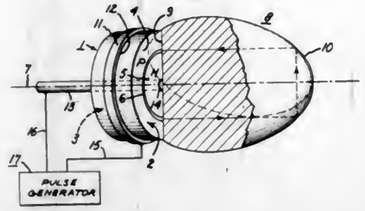
1. A semiconductor device for providing stimulated radiation comprising: a crystalline semiconductive body having a P-N junction region therein that is substantially symmetrically disposed relative to an axis and terminates in a planar surface of said body which is perpendicular to said axis; said junction region being adapted to emit radiation, from the edge thereof terminated by said surface, through said surface in a direction that is approximately parallel to said axis, in response to electrical excitation; means for providing said excitation; and external reflector means adjacent said junction for receiving said radiation from one portion of said edge, said reflector being shaped for double reflection of the radiation so received to the symmetrically opposite edge portion of said region.

3,359,508
HIGH POWER JUNCTION LASER STRUCTURE
Robert N. Hall, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed Feb. 19, 1964, Ser. No. 345,885
7 Claims. (Cl. 331—94.5)



1. A semiconductive junction laser comprising: a body of crystalline semiconductive material having degenerate N-type and P-type regions, a narrow serpentine P-N junction region between and contiguous with said degenerate regions extending linearly in at least one direction, and a pair of parallel reflecting faces for establishing a standing wave of electromagnetic energy in said junction region in said direction; said junction region being sufficiently curved, as viewed in planes parallel to said faces, so that any straight line drawn from a point in said junction region parallel to said faces extends through a distance in at least one of said degenerate regions that is longer than the effective absorption length for said radiation in said degenerate region, so that spurious radiation is suppressed.

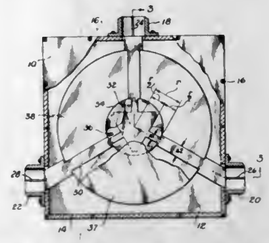
3,359,509
SEMICONDUCTIVE JUNCTION LASER WITH TEMPERATURE COMPENSATION
Robert N. Hall, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed Feb. 19, 1964, Ser. No. 345,886
6 Claims. (Cl. 331—94.5)



1. A temperature stabilized semiconductor junction laser device comprising: a monocrystalline body of semiconductive material having a P-N junction region therein for generating stimulated coherent radiation in at least one direction relative to said body in response to electrical excitation of said P-N junction region, said body having a planar surface perpend cular to said P-N junction; means for providing electrical excitation of said P-N junction region; and, a temperature compensating material having a planar surface located adjacent to said body, said temperature compensating material receiving said radiation and reflecting at an interior boundary thereof at least a portion of said radiation back to said P-N junction region, said temperature compensating material and said body together comprising an output frequency selective resonant cavity in which said radiation travels a first distance in the semiconductive material of said body and a second distance in said temperature compensating material, the ratio of said first distance to said second distance being approximately equal in magnitude and opposite in sign to the ratio of the temperature coefficient of refraction of said temperature compensating material to the temperature coefficient of refraction of said semiconductive material, so that the effect of temperature changes on the refractive index of said semiconductive body is cancelled, whereby the output frequency of said laser device is substantially independent of temperature changes.

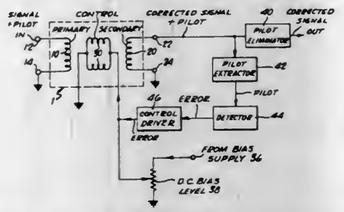
3,359,510
MICROWAVE STRIP TRANSMISSION LINE CIRCULATOR HAVING STEPWISE CHANGES IN CENTER CONDUCTOR WIDTH FOR IMPEDANCE MATCHING PURPOSES
Theodore D. Geiszler, Santa Clara, Calif., assignor to Western Microwave Laboratories Inc., Santa Clara, Calif.
Continuation of application Ser. No. 389,580, Aug. 14, 1964. This application June 1, 1967, Ser. No. 642,974
8 Claims. (Cl. 333—1.1)

1. In a broadband microwave transmission device, the improvement comprising, in combination:
first and second ground plane members disposed in spaced parallel relation to each other;
conductive planar means disposed between and in parallel relation with and spaced from said ground plane members, said conductive planar means having a central portion and a plurality of elongated members extending therefrom at equal angles, the spacing of said elongated members of said planar means with respect to said ground plane members being sufficient to support TEM-mode energization;
at least two bodies of gyromagnetic material adapted to be magnetized by a magnetic field and having a first selected dielectric constant disposed on opposite sides of at least said central portion of said planar means;
at least two bodies of material having a second selected dielectric constant on opposite sides of said elongated members of said planar means;



each of said elongated members of said planar means having like stepwise changes in width along the length thereof defining like discrete width regions such that there are impedance transformations which provide a wider bandwidth than if there were no stepwise changes, at least one of said stepwise changes in width being disposed between said bodies of gyromagnetic material.

3,359,511
AUTOMATIC GAIN CONTROL SYSTEM WITH PILOT SIGNAL
John F. Varnell, Jr., Atherton, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California
Filed Nov. 4, 1964, Ser. No. 408,839
7 Claims. (Cl. 333—16)

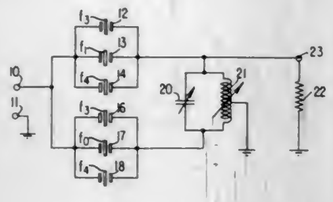


1. A closed loop automatic gain control system having a variable permeability transformer with a core, an input winding, control windings, and output winding, said control windings varying the permeability of said core in accordance with control currents therein to thereby vary the attenuation of signals coupled between said input and output windings, said input winding being coupled to a source of input signal having a pilot signal superimposed thereon, first means coupled to said output winding for passing the pilot signal and blocking the input signal, and second means coupled to the first means for demodulating the pilot signal to produce a D.C. signal representative of the deviation of the transformer from a nominal attenuation level for varying the control currents in the control windings to correct said deviation.

3,359,512
BAND PASS CRYSTAL FILTER CIRCUIT WITH SHARP CUTOFF
Stanley Malinowski, Park Ridge, and Corwin E. Livenick, Hickory Hills, Ill., assignors to Motorola, Inc., Chicago, Ill., a corporation of Illinois
Filed Dec. 6, 1963, Ser. No. 328,531
6 Claims. (Cl. 333—72)

1. A crystal filter of the band pass type for selecting signals applied between an input terminal and a common

terminal and providing an output signal between an output terminal and the common terminal, such filter including in combination, inductor means having first and second end terminals and an intermediate point connected to the common terminal, variable capacitor means connected in parallel across said inductor means, a first branch circuit including first, second and third crystals connected in parallel between said input terminal and said first end terminal, a second branch circuit including fourth, fifth and sixth crystals connected in parallel between said input terminal and said second end terminal, said first crystal being series resonant at a frequency to determine the lower frequency of the pass band of the

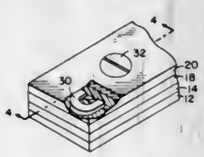


filter and said fourth crystal being series resonant at a frequency to determine the upper frequency of the pass band of the filter, said first and fourth crystals determining the limits of the filter pass band, said second and fifth crystals being series resonant at a first frequency below the lower limit of the filter pass band, said third and sixth crystals being series resonant at a second frequency above the upper limit of the filter pass band, said second, third, fifth and sixth crystals acting to attenuate signals in frequency bands including said first and second frequencies and adjacent the pass band of the filter, and means connecting one of said first and second end terminals to the output terminal.

3,359,513
STRIP TRANSMISSION LINE HAVING PHASE TRIMMER MEANS

Douglas J. Kelley, Lexington, Mass., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army

Filed Aug. 31, 1965, Ser. No. 484,139
1 Claim. (Cl. 333—84)

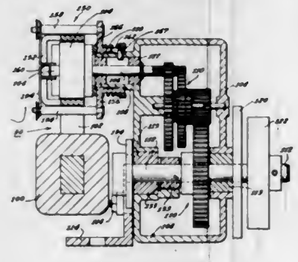


A stripline device comprising:
- a first conductive, longitudinally extending ground plate;
- a first dielectric layer in superimposed relation with said first dielectric layer;
- a second dielectric layer in superimposed relation with said first dielectric layer;
- a second conductive, longitudinally extending ground plate in superimposed relation with said second dielectric layer;
- said second plate and said second dielectric layer having coaxially aligned apertures formed therein;
- a conductive strip transmission line imbedded within said device therebetween said first and second dielectric layers extending along the longitudinal axis of said device, said strip transmission line being disposed in a plane common with its width and parallel to the adjacent dielectric layers, said line being return-bent at one end thereof so as to form a U-shaped portion;
- phase trimmer means adapted for adjusting the electric length of said stripline device, said trimmer means being defined by a single adjusting screw extending through said aligned apertures in a plane normal to the strip transmission line and located equidistantly between legs of said U-shaped portion.

3,359,514
ELECTRIC SCANNER

Ko Ko Gyi, Gardena, and Jacob Chapsky, Los Angeles, Calif., assignors, by mesne assignments, to Hersey-Sparling Meter Company, Dedham, Mass., a corporation

Filed Sept. 13, 1965, Ser. No. 486,880
5 Claims. (Cl. 335—68)



2. An electric scanner for use in a data acquisition system comprising:
- an electric motor;
- a coil for establishing a magnetic field in the vicinity of said motor upon flow of current through said coil;
- a switching assembly coupled with said motor and said coil and governed by the angular rotation of said motor for controlling current flow through said coil;
- a scanner circuit assembly coupled with said motor for acquiring data in response to the rotation of said motor; and
- a brake assembly including a braking member normally biased in braking relationship with said motor, said braking member being responsive to said magnetic field for movement out of said braking relationship in response to the establishment of said field by current flow through said coil.

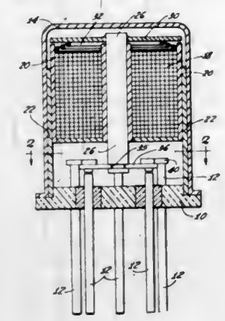
3,359,515
MINIATURE RELAY

John B. Thatcher, Mountain View, Calif., assignor to Torr Laboratories, Inc., Los Angeles, Calif., a corporation of California

Filed Mar. 3, 1966, Ser. No. 531,514
4 Claims. (Cl. 335—126)

1. An electric switching unit including: a base; means for supporting an electrical energizing coil on said base; an insulated rod slidable in said coil perpendicular to the plane of said base and forming an armature for the unit, said insulated rod having a notch formed therein adjacent the the lower end thereof; a magnetic member affixed to said rod and magnetically coupled to said coil so as to cause said rod to move in a first direction perpendicular

to the plane of said base to a first position when said coil is energized; biasing spring means for causing said rod to move in a second direction perpendicular to the plane of said base to a second position when said coil is deenergized; a plurality of rigid terminal pins extending through said base; and an elongated resilient movable

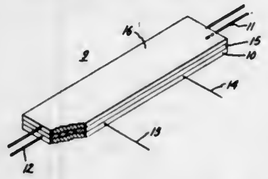


contact having a V-shaped strip-like configuration affixed to one of said terminal pins and having a free end spanning a second of said terminal pins, said movable contact having an intermediate portion extending into said notch in said insulated rod and engaging said insulated rod to be moved thereby, so that the free end of said movable contact selectively contacts said second terminal pin as said rod moves between said first and second positions.

3,359,516
ASYMMETRIC SUPERCONDUCTIVE DEVICE

Paul S. Swartz and Howard R. Hart, Jr., Schenectady, N.Y., assignors to General Electric Company, a corporation of New York

Filed Oct. 3, 1966, Ser. No. 583,876
9 Claims. (Cl. 335—216)



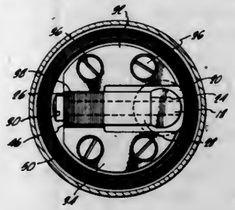
1. An asymmetrically conducting superconductive device comprising an elongated active strip of superconductive material having a surface; an elongated control strip of conductive material disposed parallel to and adjacent said superconductive strip; an insulating medium interposed between said strips; means for applying a current to said control strip to produce a magnetic field perpendicular to said active strip; said magnetic field ranging from a positive maximum to a negative maximum across the width of said active strip; and means for applying a current to said active strip in the direction of said elongation.

3,359,517
ROTARY MAGNETIC ACTUATOR

Harry F. Rayfield, Arcadia, Calif., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Filed Oct. 23, 1965, Ser. No. 503,332
2 Claims. (Cl. 335—272)

1. An electromagnetic actuator comprising an outer housing of magnetic material having an enclosed substantially cylindrical chamber, a wire coil inside and concentric with the chamber, magnetic pole pieces secured to the housing within the chamber, the pole pieces projecting toward each other within the coil with their inner ends spaced apart to form a non-magnetic gap, an output shaft journalled in the housing and extending through the chamber within the coil, the shaft being positioned away from the axis of the coil and chamber, an elongated

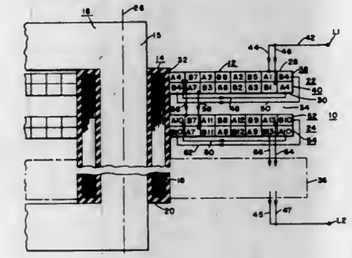


armature extending parallel to and diametrically opposite the shaft within the coil, whereby the axis of the coil is positioned between the shaft and the armature, and means including a spacer member supporting the armature from the shaft, the armature bridging substantially the entire length of the chamber in overlapping relation to the pole pieces.

3,359,518
INTERLEAVED WINDINGS EFFECTING A UNIFORMLY DISTRIBUTED SURGE POTENTIAL

Gerhard M. Stein, Sharon, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

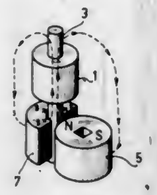
Filed July 28, 1966, Ser. No. 568,666
10 Claims. (Cl. 336—70)



1. A winding for electrical inductive apparatus comprising
- a plurality of serially connected pancake coils having first and second major opposed surfaces and disposed in spaced side-by-side relation to form a winding structure having first and second ends,
- at least one of said pancake coils having a plurality of radially interleaved sections, each having a plurality of spirally wound turns formed of an electrical conductor,
- the electrical conductor of each of said radially interleaved sections having a plurality of axially disposed conductive strands having first and second ends, dividing each radially interleaved section into a plurality of axially disposed sections,
- and means electrically connecting the second ends of the conductive strands of the axially disposed sections of at least one of said radially interleaved sections with the first ends of the conductive strands of the axially disposed sections of a different radially interleaved section, with the electrically connected axially disposed sections of the different radially interleaved sections being in rotational symmetry with one another,

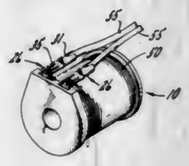
said means including a plurality of spaced electrical conductors disposed to successively occupy first, second and third common planes, with said first common plane including the second ends of the axially disposed conductive strands of said at least one radially interleaved section, said second plane being in parallel relation adjacent one of the major opposed outer surfaces of said at least one pancake coil, and said third common plane including the first ends of the axially disposed conductive strands of said different radially interleaved sections.

3,359,519
VARIABLE INDUCTOR HAVING CORE SATURATION CONTROLLED BY MAGNET
Richard Pieters, Emmasingel, Eindhoven, Netherlands, assignor to North American Philips Company, Inc., New York, N.Y., a corporation of Delaware
Filed Aug. 10, 1965, Ser. No. 478,590
Claims priority, application Netherlands, Aug. 11, 1964, 64—9,206
6 Claims. (Cl. 336—110)



1. A variable inductor comprising a ferromagnetic core having a saturable section, a coil disposed on said core so that a portion of the core is exposed at one end, a cylindrical diametrically magnetized magnet mounted for rotation about a given axis, said magnet engaging said end of the core so that said axis of rotation is parallel to said core end, and a U-shaped permanent magnet magnetized so that the poles of one polarity lie along the inner surface thereof and the poles of opposite polarity lie along the outer surface thereof, said U-shaped magnet being disposed so as to partially surround said core end with the open side of the U adjacent but spaced apart from said cylindrical magnet.

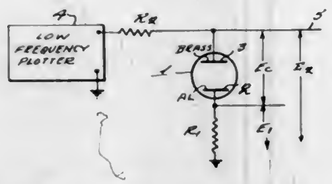
3,359,520
LEAD ATTACHMENT MEANS AND METHOD FOR ELECTRICAL COILS
James A. Foerster, Fort Wayne, Ind., assignor to Wabash Magnetics, Inc., Wabash, Ind., a corporation of Indiana
Filed Aug. 26, 1965, Ser. No. 482,854
6 Claims. (Cl. 336—192)



1. Lead-in attachment means comprising an elongated terminal having a pair of feet formed thereon at one end thereof, said feet projecting axially of said terminal from the one end thereof and having a pair of claws which face toward the other end of said terminals, a projection integral with said terminal and projecting into a punched out rectangular portion in the center of said terminal, said terminal being formed at its other end with a curled portion comprising a pair of oppositely and sidewardly extending projections which are curved about an axis to define a part cylindrical shape adopted to receive a lead for crimping the terminal about the lead.

3. A coil arrangement comprising a bobbin, a coil of wire wound on said bobbin, a terminal mounted on said bobbin, said terminal being centrally punched out to define a projection, the end of said coil wire being wound on and soldered to said projection, an insulated lead wire having a bared end received within said terminal, said terminal being crimped about said lead wire, and encapsulation surrounding said coil and terminal and the connection of said terminal and said lead wire.

3,359,521
BISTABLE RESISTANCE MEMORY DEVICE
Dong W. Lew, Briarcliff Manor, and Eugene P. Finger, Brewster, N.Y., assignors to Cognitronics Corporation, Briarcliff Manor, N.Y., a corporation of New York
Filed Oct. 26, 1965, Ser. No. 513,613
36 Claims. (Cl. 338—20)

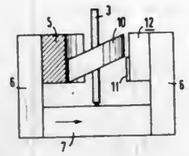


7. A bistable resistance memory device comprising:
a cell having a pair of metal electrodes of different material selected from the group consisting of aluminum, magnesium, brass, cadmium and steel,
a material layer separating said electrodes,
said cell being capable of exhibiting a hysteresis effect in its voltage-current characteristic so as to be switchable between two different stable resistance states having a resistance ratio up to at least about 20 to 1.
said layer comprising a dielectric material consisting essentially of a synthetic resin film having dispersed therein discrete particles of a resistance material selected from the group consisting of carbon, ferric oxide and fluorescein and having a thickness of about 10^{-5} to 5×10^{-4} inches.
said resin being selected from the group consisting of vinyl toluene-butadiene resin and a linear polyester in a 5–40 weight percent dispersion, and,
said discrete particles being provided in an amount of about 0.01 to 1% by weight of said resin.

3,359,522
CONTACT-FREE ROTARY RESISTOR ARRANGEMENT
Adolf Albrecht and Paul Hini, Erlangen, Germany, assignors to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt and Erlangen, Germany, a corporation of Germany
Filed Sept. 30, 1965, Ser. No. 491,687
Claims priority, application Germany, Oct. 3, 1964, S 93,611, S 93,612
8 Claims. (Cl. 338—32)

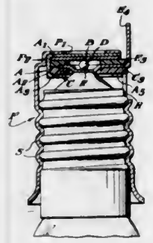
4. Contact-free rotary resistor arrangement comprising a magnetic circuit including a pair of magnetically excited stationary pole shoes of magnetic material disposed in opposite spaced relationship and defining an air gap therebetween, at least one semiconductor field plate located on one of said pole shoes within said air gap, a yoke mounted within said air gap and having a rotary axis disposed perpendicularly to the lines of force of said magnetic circuit, said yoke having at least one end face located at an inclined angle with respect to said axis,

said pole shoes and said yoke having peripheral surfaces at least partly opposing one another, said air gap adjacent said field plate being traversible by the peripheral surface of said yoke during each cycle of rotation of said yoke about said axis so as to produce a varying magnetic field in said air gap and consequently in said field plate,



and means for connecting said field plate at the ends thereof in an electrical circuit whereby current induced in said field plate travels in a path substantially along the length of said field plate, said field plate, when connected in said electrical circuit, having a resistance characteristic varying in accordance with the angle of rotation of said yoke.

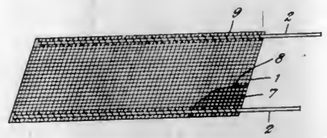
3,359,523
SHUNT DEVICE
Shih-Woo Lou, 395 Queen's Road E., 4th Floor, Victoria, Hong Kong
Filed Jan. 26, 1966, Ser. No. 523,139
6 Claims. (Cl. 338—70)



1. A shunt device for series-connected electric lamps mounted at the normally closed end of an Edison type socket, said device comprising a cylindrical metal shell constituting a terminal and electrically connected to the conducting wall of the socket and having a closure base wall, a first metal disc within and in electrical contact with said shell on said base, a second metal disc within said shell, insulating members in said shell insulating the second said disc from the first disc and from the shell, a cavity between the first and second discs within the shell, an oxide metal coating on the surface of one disc within said cavity, and an electrically conducting movable member in said cavity to provide contact between the surface coating and the surface of the uncoated disc, the said second disc constituting a second terminal, the top of the shell being open so that the upper surface of said second disc provides a contact for the centre base contact of an electric lamp when engaged in the socket.

3,359,524
FLEXIBLE HEATING ELEMENTS
Daniel Gallacher, Glasgow, and Thomas W. McGill, Bishopton, Renfrewshire, Scotland, assignors to Ioco Limited, Glasgow, Scotland, a British company
Filed Sept. 2, 1964, Ser. No. 393,937
Claims priority, application Great Britain, Nov. 11, 1963, 44,493/63
2 Claims. (Cl. 338—212)

1. An electrical heating element including a flexible sheet of material consisting of a woven fabric coated with electrically conductive rubber, two spaced substantially parallel and elongated conductors disposed on said coated flexible sheet, each conductor extending along an opposite edge of the flexible sheet, said conductors and coated sheet providing a current path such that the current passes from one conductor through the portion of the flexible sheet extending between the two conductors



to the second conductor, each said conductor comprising a plurality of strands of conductive material wound around a core of textile material and each said strand comprising a plurality of lengths of electrically conductive material wound around a core of textile material, and stitching passing over the respective conductors securing the conductors to the surface of said flexible woven fabric sheet coated with electrically conductive rubber.

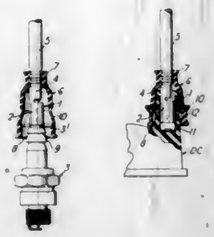
3,359,525
ELECTRIC HEATING ELEMENT
Leo P. Hubbuch, Lima, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Oct. 14, 1964, Ser. No. 403,903
15 Claims. (Cl. 338—308)

1. An electric heating element heat-stable up to temperatures of about 600° F. which comprises:
(A) an electric heat generating unit comprising carbon dispersed in a binder of a material selected from the group consisting of aromatic polyimides, aromatic polyamides and aromatic polybenzimidazoles, said unit having means for connecting it to an electric power source; and
(B) an electrically-insulating heat conductive coating in adherent contact with the surface of said unit, said coating comprising a polymer selected from the group consisting of aromatic polyimides, aromatic polyamides and aromatic polybenzimidazoles.

3,359,526
CONNECTOR AND INSULATING SLEEVE FOR SPARK PLUG OR DISTRIBUTOR
Roel Bakker, Turin, Italy, assignor to AMP Incorporated, Harrisburg, Pa.
Continuation of application Ser. No. 397,932, Sept. 21, 1964. This application Mar. 22, 1967, Ser. No. 625,266
Claims priority, application Italy, Sept. 30, 1963, 5,000/63
5 Claims. (Cl. 339—26)

1. An electrical connector assembly for mating with a spark plug stem or a female receptacle of a distributor cap, the assembly comprising an electrical connector arranged resiliently to engage the spark plug stem or to be received in the receptacle to form a connection therewith, a connection section formed integrally with the connector and being connected to the end of an electrical lead, and an insulating sleeve surrounding the connector, the sleeve having a first portion tightly engaging the lead, a second portion in essentially coaxial and spaced relationship with the connection between the connection section and electrical lead, a third portion comprising a thin annular flexible sealing ring formed integrally with said third portion, said sealing ring extending inwardly toward an axis of said sleeve and forming an entrance through which said spark plug stem or the distributor receptacle passes,

said sealing ring being spaced from an outer end of said connector, and a fourth portion connecting the second and third portions, the fourth portion having a thickness less than that of the second and third portions so that the fourth portion is capable of being collapsed to permit

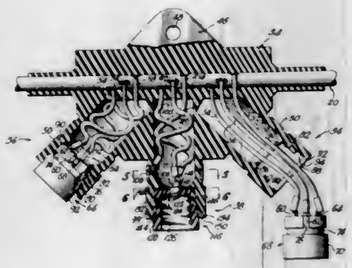


the connector to be connected with the spark plug stem or the receptacle to form an electrical connection therebetween with the sleeve surrounding the connection and the sealing ring sealingly engaging the spark plug stem or the outer surface of the receptacle.

3,359,527
PORTABLE INSULATED ELECTRIC DISTRIBUTION APPARATUS

Oliver M. Hart, West Cornwall, Conn. 06796

Filed Aug. 23, 1965, Ser. No. 481,583
5 Claims. (Cl. 339—59)

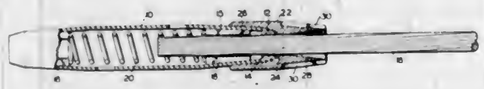


1. Portable insulated electric distribution apparatus comprising a body of insulation material having a plurality of electrical conductors embedded within a portion thereof, said body of insulation material defining an unobstructed cavity opening outwardly thereof, said electrical conductors extending within said unobstructed cavity and being loosely received therewithin, said electrical conductors being of sufficient length so as to extend outwardly of the cavity for attaching the conductors to an electrical connector means, a readily removable electrical connector means snugly received within said cavity and held in place solely by frictional engagement, means for connecting said connector means with said conductors, said connector means including a molded second body of insulation material having an annular groove formed therein and a longitudinally extending groove formed therein disposed at substantially right angles to said annularly extending groove and intersecting said annularly extending groove, said body of insulation material defining an annularly extending rib extending into said cavity and a longitudinally extending rib extending into said cavity disposed at substantially right angles to said annularly extending rib, said annularly extending rib fitting snugly within said annularly extending groove in the connector means for holding the connector means in operative position, said longitudinally extending rib extending into said longitudinally extending groove in said connector means for aligning said connector means within said cavity and for preventing relative rotation between the connector means and said first-mentioned body means when the connector means is in operative position.

3,359,528
WIRE INSERTING GUIDE FOR WIRE CONNECTORS

Julian W. Scholz, 6001 SE. Laurel St., Portland, Oreg. 97222

Continuation of abandoned application Ser. No. 370,165, May 26, 1964. This application Aug. 15, 1966, Ser. No. 575,488
3 Claims. (Cl. 339—65)

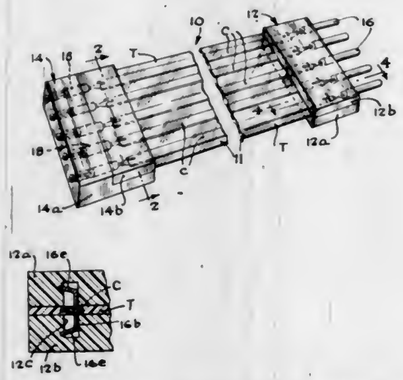


1. A wire guide for a connector adapted to receive a wire through an end opening therein, said guide being made of breakable material and having a central bore for slidably receiving a wire to be inserted into said connector, means defining a socket on one end of said guide for fitting over one end of a connector, frictionally connecting itself to a connector with said bore aligned with the end opening of the connector, and means defining an outwardly tapered socket on the other end of said guide leading into said central bore for guiding a wire into said bore.

3,359,529
ELECTRICAL CONNECTOR ASSEMBLY

William H. McKee, West Covina, Calif., assignor to United-Carr Incorporated, Boston, Mass., a corporation of Delaware

Filed May 6, 1966, Ser. No. 548,096
5 Claims. (Cl. 339—100)



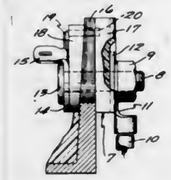
1. An improved electrical connector unit for connecting terminal elements to ribbon-like conductors disposed within an electrical cable comprising, in combination:
   - a pair of complementary connector bodies in the form of blocks of insulating material adapted to be assembled in a face-to-face relation with a portion of the cable sandwiched therebetween;

   - formed channels in the connector unit disposed in parallel, aligned relation in the plane of the connector unit; and
   - a plurality of electrical terminal elements, one insertable within each of said formed channels, said terminal elements each having block engaging means to maintain said connector bodies in assembled, sandwiched relation about the cable and provide continuous clamping action between said connector bodies, said terminal elements each having a cutting edge insertable into a ribbon conductor to establish electrical continuity when the terminal element is inserted into the formed channel.

3,359,530
ELECTRICAL TERMINAL UNIT

Floyd M. Minks, Campbellsport, Wis., assignor to Kiekhaefer Corporation, Chicago, Ill., a corporation of Delaware

Filed Aug. 4, 1966, Ser. No. 570,243
6 Claims. (Cl. 339—126)



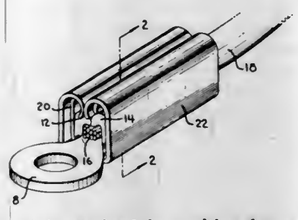
1. A terminal connector for connection to a support having a mounting opening, comprising
   - a body of insulating material having a central opening, said body having edge grooves at opposite sides of the central opening which include side walls and a bottom wall, said grooves generally corresponding to the mounting opening for mating therewith,
   - a contact pin extending through the opening and having an inner plate-like member abutting the inner face of the body, said member extending laterally outwardly of the bottom wall of the groove and including a tab, the outer end of the tab extending laterally into a slot in the body, the opposite end of said pin being adapted to receive a clamping member for securing a contact member to the pin, and
   - an outer plate-like member engaging the outer face of the body and aligned with the inner plate-like member, said outer plate-like member extending laterally outwardly of the bottom wall.

3,359,531
INSULATED ELECTRICAL CONNECTION

Ralph Rupp Lau, Harrisburg, Pa., assignor to AMP Incorporated, Harrisburg, Pa.

Filed Sept. 23, 1965, Ser. No. 489,577
7 Claims. (Cl. 339—213)

1. An electrical connection comprising a terminal having a tongue portion and a ferrule portion, said ferrule being formed from an open U-shaped configuration, an insulated electrical conductor having the insulation stripped from one end thereof to thereby expose a length of bare wire, said wire being disposed within said ferrule, the free ends of said ferrule being bent inwardly into engagement with said wire and with each other to form a permanent electrical and mechanical connection therewith, said ferrule having an internal surface completely surrounding said wire and an external closed surface, an insulating member formed from an open U-shaped configuration and receiving said ferrule, said insulating member comprising a composite structure of metallic and non-metallic material, the free ends of said member being bent inwardly into engagement with the external surface of said ferrule and with the insulation on said electrical conductor, whereby said insulating member completely surrounds

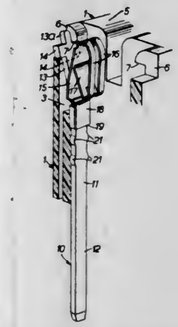


said ferrule and is retained in position by a spring-like force exerted by said member on said ferrule and conductor.

3,359,532
ELECTRICAL CONTACT AND EDGE CONNECTOR HAVING SUCH A CONTACT

Thomas William Bowley, Bramcote, and Leslie Haynes Smith, West Bridgford, England, assignors to United-Carr Incorporated, Boston, Mass., a corporation of Delaware

Filed Mar. 30, 1966, Ser. No. 538,787
Claims priority, application Great Britain, Apr. 12, 1965, 15,462/65
5 Claims. (Cl. 339—217)



1. An electrical connector comprising a body of insulating material having a cavity opening at one end on to one face of the body to define a conductor receiving opening, a two-piece contact assembled in the cavity through said opening and including as one piece rigid metal post element extending axially within said cavity and as a second piece a resilient metal arm secured to the post and extending inwardly of the cavity for resiliently engaging a conductor to be inserted, the post element including an angularly disposed end portion formed with lateral projections for snapping under a shoulder in the connector body adjacent the open end of the conductor receiving opening, the post element also including a tail projecting outwardly of the opposite face of the connector body for attachment to a lead wire.

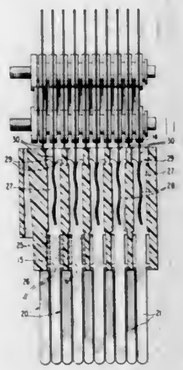
3,359,533
CONNECTOR FOR MULTI-CONTACT RELAYS AND THE LIKE

Robert J. Barry, Cedar Grove, N.J., assignor to Federal Tool Engineering Co., Cedar Grove, N.J., a corporation of New Jersey

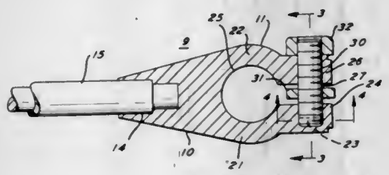
Filed Apr. 8, 1966, Ser. No. 541,151
2 Claims. (Cl. 339—217)

1. A connector for multi-contact relays and the like comprising a dielectric block-like body portion, a plurality of separated through passages formed in said body

portion, each passage having raised ribs extending along one pair of opposed side walls thereof throughout a substantial portion of the length of the passage, said ribs terminating somewhat inwardly of the ends of the passage and the ends of the body portion, said ribs having relatively narrow longitudinal grooves formed therein, the opposite ends of the ribs constituting laterally opposed shoulders, and a flat, plate-like, metallic connector tang longitudinally insertable within each of said passages, each connector tang having a leading, resilient, bifurcated connector section formed by a sinusoidal slot extending therethrough, a pair of lateral projections formed on the leading ends of the bifurcated connector section for interlocking engagement with said laterally opposed shoulders formed by one end of said ribs, said lateral projections having rounded leading edges forming a tapered mouth communicating with said sinusoidal slot to thereby facilitate the insertion of the tang into said passage and the entry of a spring contact into the sinusoidal slot of the tang, a second pair of lateral projections formed on the tang for interlocking engagement with said laterally opposed shoulders formed by the opposite ends of said ribs, said grooves receiving the longitudinal edge portions of the tang between the two pairs of lateral projections to thereby prevent lateral displacement and turning of the tang about its longitudinal axis when the tang is assembled in the passage.

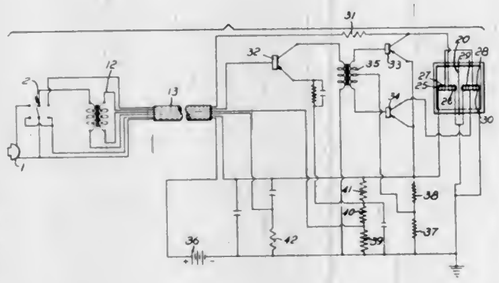


3,359,534
BATTERY TERMINAL
Jack R. Lewis, Norristown, and George D. Nagle, Conshohocken, Pa. (both % Keystone Cable Corp., 3347 N. Stokley St., Philadelphia, Pa. 19140)
Filed Nov. 9, 1965, Ser. No. 506,929
2 Claims. (Cl. 339—226)



1. A battery terminal comprising
a portion for cable connection, and
a post retaining assembly,
said assembly including two connected arms with free ends having tongues extending therefrom in spaced relation,
a threaded shank with one end of said shank embedded in one of said tongues,
said end of said shank having a transverse end slot with which the material of said tongue is in engagement to prevent rotation of said shank with respect to said tongue,
the other of said tongues having an opening therethrough through which said shank extends,
said arms and said shank enclosing a cavity for the reception of a battery post, and
a retaining nut on said shank and engageable with said other of said tongues for moving said tongues toward each other for clamping.

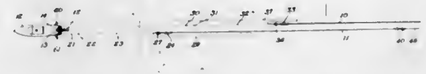
3,359,535
UNDERWATER COMMUNICATOR
Herbert J. Webb and Josephine R. Webb, both of Rockford Bay, Idaho 83859
Filed Jan. 6, 1966, Ser. No. 519,085
10 Claims. (Cl. 340—5)



1. In a device for underwater communication, including:
an electrical power source;
an amplifier operatively connected to the power source;
and a diaphragm of magnetic material having one surface in water contact when in use;
the improvement in a transducer coupled with the diaphragm comprising:
a first magnetic core spaced outwardly adjacent to one surface of said diaphragm;
a first signal coil operatively connected to said amplifier, said signal coil being wound about said magnetic core;
a first field coil wound about said core;
a second magnetic core identical to said first magnetic core and located in opposition thereto outwardly adjacent the remaining surface of said diaphragm;
a second signal coil operatively connected to said amplifier, said second signal coil being wound about said second magnetic core;
a second field coil wound about said second magnetic core;
and selectively operable switch means connected to said first and second field coil and to said power source to complete an electrically conductive circuit between said field coil and said power source.

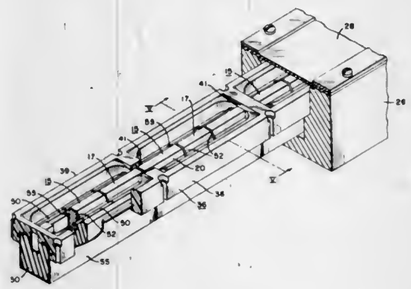
8. A transducer for underwater communication comprising:
a diaphragm of magnetic material having one surface in water contact when in use;
and a pair of opposed magnetic structures of identical design, located outwardly adjacent the respective surfaces of said diaphragm, each magnetic structure comprising:
a core having one end terminating adjacent the diaphragm, but spaced therefrom;
a signal coil wound about said core;
and a field coil superimposed on said core.

3,359,536
CONTROL OF MARINE SEISMIC SYSTEMS
Herbert D. Coburn, Jr., Dallas, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Dec. 12, 1963, Ser. No. 330,115
9 Claims. (Cl. 340—7)



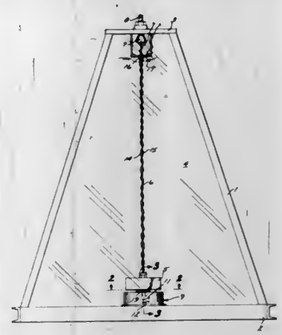
9. In a seismic exploration system, the combination which comprises:
(a) a marine vessel,
(b) a seismic detector streamer,
(c) which means including a towing cable connected to the forward end of said streamer and a conductor cable connected to said vessel laterally of said winch means and to the front of said streamer with a loop of length to accommodate movement of said streamer relative to said vessel under control of said winch means, and
(d) anchor means at the end of said streamer opposite said vessel responsive to towing forces on said streamer to produce drag forces which inversely vary in magnitude with respect to the magnitude of said towing forces to cause said loop to vary in length.

3,359,537
TRANSDUCER
Fred G. Geil, Verona, Robert H. Whittaker, Franklin Township, Export, and John H. Thompson, Penn Hills, Pa., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 30, 1964, Ser. No. 379,111
18 Claims. (Cl. 340—8)



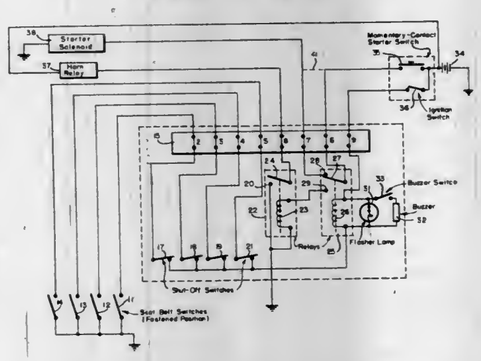
1. A transducer comprising:
an elongated oscillatory driving element having front, rear, and side surfaces;
a sound absorbing material having an acoustic impedance approximately equal to that of the water medium in which the transducer is operating, and surrounding said rear surface and extending up said side surfaces of said elements; and
positioning means contacting said front surface of said driving element for maintaining a positional orientation of said element.

3,359,538
PENDULUM TYPE SEISMOGRAPH
Harold A. Raphael, Bellflower, Calif., assignor to Harold A. Raphael, Jr., and David A. Raphael
Filed Aug. 22, 1966, Ser. No. 573,931
4 Claims. (Cl. 340—17)



1. A pendulum type seismograph comprising a pendulum weight, means suspending the pendulum weight for oscillatory movement, a driving magnet fixedly mounted below the pendulum weight, electrical means coupling the pendulum weight and the driving magnet, recording means in said electrical means to record regular and irregular oscillation of the pendulum weight, said driving magnet including a coil surrounding the magnet and an electrical coil in the pendulum weight, a switch means operable by the pendulum to turn the electrical current on and off in said electrical means, said switch means including a contact ring surrounding the means suspending the pendulum weight, said contact ring being included in the electrical means coupling the pendulum weight and the driving magnet.

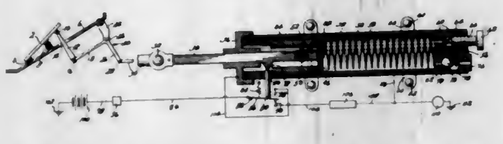
3,359,539
SEAT BELT IGNITION INTERLOCK AND ALARM
Joseph Fink, 19890 Grandview Drive, Topanga, Calif. 90290
Filed July 29, 1964, Ser. No. 385,996
9 Claims. (Cl. 340—53)



1. A seat belt alarm and safety device for a motor vehicle having an electrically started motor and at least one seat belt, said device comprising a first normally closed switch controlling only the starting of the vehicle

motor, a second normally closed switch fastened to a seat belt to be opened thereby when said belt is properly fastened, and means connected to said second switch when it is closed to open said first switch when attempts are made to start said vehicle motor.

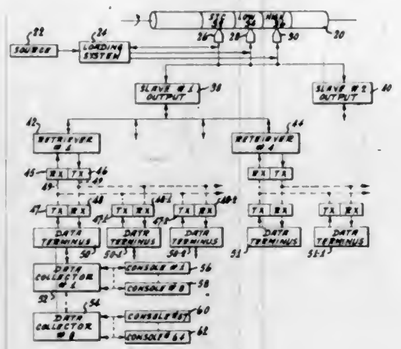
3,359,540
SAFETY SIGNAL SYSTEM FOR MOTOR VEHICLES
Russell N. Dunavan, 8619 Hadley, Overland Park, Kans. 66212
Filed Apr. 28, 1965, Ser. No. 451,527
8 Claims. (Cl. 340—72)



1. A safety signal system for a motor vehicle having an accelerator pedal adapted by depression thereof to increase the speed of said vehicle and by release thereof to decrease the speed of said vehicle, said signal system comprising:
(a) an electrically actuated signal device adapted to be mounted on said vehicle,
(b) a normally closed first electric switch,
(c) a normally open second electric switch.
(d) a first electric circuit including said signal device, said first switch and a source of electric power,
(e) a second electric circuit including said signal device, said second switch and said source of electric power,
(f) means operable by said accelerator pedal to open said first switch whenever said pedal is depressed, and
(g) means operable by said accelerator pedal to close said second switch whenever said pedal is released at greater than a predetermined rate.

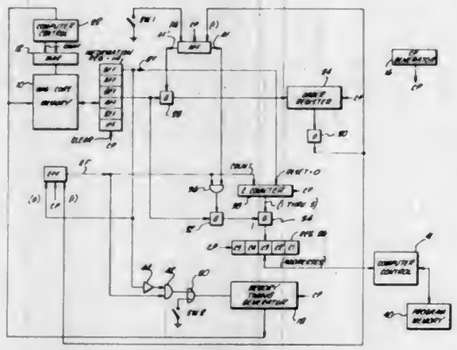
3,359,541
DATA RETRIEVAL SYSTEM HAVING PLURAL ADDRESSED REMOTE REQUEST STATIONS
Stanley H. Hunkins, Cherry Hill, N.J., Peter W. Beresin, Philadelphia, Pa., and Robert S. Sinn, Seaside Park, N.J., assignors to Ultronic Systems Corporation, a corporation of Delaware
Filed Dec. 30, 1963, Ser. No. 334,098
6 Claims. (Cl. 340—152)

1. A data retrieval system comprising
(a) a memory for storing data,
(b) a plurality of request units,
(c) data retrieving means and data terminus means remote therefrom connected thereto by request and reply communication channels,
(d) said data retrieving means including means responsive to requests for obtaining reply data from said memory and means for transmitting corresponding replies,
(e) said data terminus means including means for connection of a plurality of request units thereto, means responsive to said request units for transmitting requests to said data retrieving means, means for supplying data in corresponding replies to corresponding request units, and means for sequentially enabling request units connected thereto, in which the improvement comprises
(f) means for connecting a plurality of said remote data terminus means in common to said request and reply communication channels,
(g) means at said data retrieving means for inserting in a reply to one data terminus means an address of another data terminus means,
(h) means at said plurality of data terminus means for recognizing in replies to requests from other data terminus means the respective addresses allocated thereto,



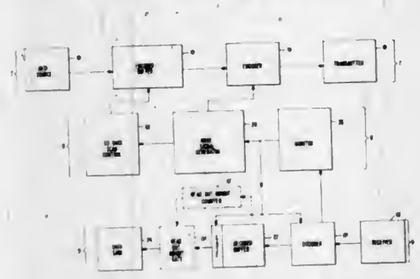
(i) and means responsive to recognition of an address at a data terminus means for transmitting a request of a request unit connected thereto and supplying the corresponding reply thereto.

3,359,542
VARIABLE LENGTH ADDRESS COMPUTER
Charles E. Macon, Altadena, Robert S. Barton, Sierra Madre, Paul A. Quantz, Thousand Oaks, and George T. Shimabukuro, Monterey Park, Calif., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Apr. 19, 1965, Ser. No. 449,028
4 Claims. (Cl. 340—172.5)



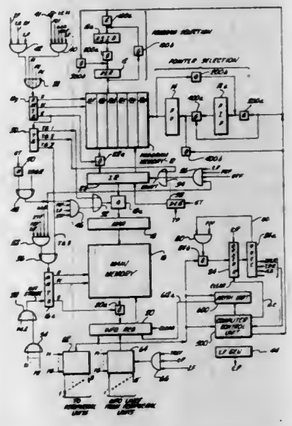
1. In a digital computer having multiple variable length addresses, the combination comprising a plurality of register means each having a predetermined number of character storage positions therein arranged in a predetermined order for storing a complete address therein, memory means for storing and reading out addresses representing complete and partial addresses which are represented by a series of characters, the partial addresses having less characters than a complete address and the last character of a partial address having a unique signal identifying the same, first counting means for counting the address characters read from the memory means and for providing an indication of the position in a register means into which each address character is to be stored, gating means for storing each address character read from the memory means into the position of the register means indicated by said first counting means, means for monitoring the address characters read from the memory means and for causing the first counting means to be reset to an initial condition upon detection of said unique signal in an end address character, and second counting means for providing a count corresponding to each of said register means responsive to said unique signal in an end address character for causing said second counting means to count to the next register means, said gating means additionally being coupled to said second counting means for causing the address characters read from the memory means to be stored into the correct register means as designated by the second counting means.

3,359,543
DATA TRANSMISSION SYSTEM
Francis P. Corr, Rockville, and Alexander H. Frey, Jr., Gaithersburg, Md., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed July 2, 1965, Ser. No. 469,125
12 Claims. (Cl. 340—172.5)



12. A communications terminal in an adaptive, dual request-retransmit data transmission system comprising:
a transmitting means including means for buffering recently transmitted data, means for encoding data into message blocks for transmission and means for transmitting the message blocks, said message blocks having more than one format with each format differing in resistance to adverse conditions on the transmission link, each of said message blocks having an OK/RQ signal and a mode synchronizing signal;
a receiving means including means for receiving message blocks, means for decoding and detecting data, errors, OK/RQ signals and mode synchronizing signals from the received message blocks, means for buffering received data and means for reading out error-free data;
an adaptive control means including means responsive to said receiving means for adapting the decoding operation in said receiving means and the encoding operation in said transmitting means to a first message format more resistant to adverse conditions when said receiving means detects an error or an RQ signal in the received message block, means for signaling to the other terminal in the transmission link the adaptation of transmitted message blocks to the first message format by inserting an RQ signal in the transmitted message block, means responsive to said receiving means for adapting the decoding operation in said receiving means to a second message format less resistant to adverse conditions when said receiving means detects a mode synchronizing signal indicating the message format of received message blocks is being changed to the second message format, means responsive to said receiving means for adapting the encoding operation in said transmitting means to the second message format when said receiving means detects a plurality of error-free received message blocks and means for signaling to the other terminal in the transmission link the adaptation of the transmitted message block to the second message format by inserting in the transmitted message block a mode synchronizing signal indicating the message format is being changed to the second message format.

3,359,544
MULTIPLE PROGRAM COMPUTER
Charles E. Macon, Altadena, and Robert S. Barton, Sierra Madre, Calif., Paul A. Quantz, Doylestown, Pa., and George T. Shimabukuro, Monterey Park, Calif., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Aug. 9, 1965, Ser. No. 478,251
18 Claims. (Cl. 340—172.5)

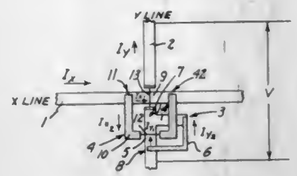


1. In a digital computer the combination comprising main memory means, program memory means for storing a plurality of sets of program addresses, each of said sets of program addresses comprising the addresses of an order and an operand, program register means arranged for selecting one of said sets of program addresses, second address register means for serially selecting said addresses within the selected program set, means for reading the selected program addresses of a selected program set out of the program memory means, means for addressing said main memory means with the read out program addresses, means for modifying the read out program addresses, and means for rewriting the modified addresses back into the same places in the program memory means from which they are read.

3,359,545
BIT ORGANIZED CRYOGENIC MEMORY CELL
Vernon L. Newhouse and Harold H. Edwards, Schenectady, N.Y., assignors to General Electric Company, a corporation of New York
Filed Dec. 18, 1964, Ser. No. 419,430
7 Claims. (Cl. 340—173.1)

5. A memory matrix comprising a plurality of Y lines intersecting a plurality of X lines to define unique memory locations, each of said memory locations comprising a first branched circuit connected in said Y line and a

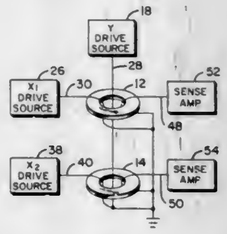
second branched circuit connected in said X line, one of the branches of said second branched circuit being disposed in cryotron grid relation to one of the branches in said first branched circuit, and said Y line at a memory location being disposed in cryotron grid relation with respect to the remaining branch of said second branched circuit, connection means for coupling a current to said Y lines, said one branch of said second branched circuit being of greater inductance than said remaining branch thereof, addressing means for addressing said Y lines disposed between said connection means and said Y lines, a sensing circuit coupled to said Y lines through said addressing circuit for detecting voltage produced in a Y line selected by currents in intersecting X and Y lines, and a switching means for decoupling said sensing means when information is being entered into said memory matrix.



3,359,546
MAGNETIC MEMORY SYSTEM EMPLOYING LOW AMPLITUDE AND SHORT DURATION DRIVE SIGNALS

Raymond H. James, Bloomington, Minn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Dec. 26, 1963, Ser. No. 333,331
9 Claims. (Cl. 340—174)

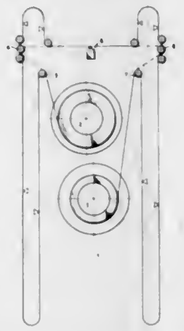


1. A magnetic memory device, comprising:
a magnetizable memory element having a substantially rectangular hysteresis characteristic and being capable of being operated in a time-limited, an amplitude-limited or a saturated condition as a function of a magnetic field of a predetermined amplitude-duration characteristic;
said element having a switching threshold NI_o;
said element having substantially no irreversible flux change when affected by an amplitude-limited drive field of approximately $NI_o/4$;
said element having a relatively substantial irreversible flux change when subjected to an amplitude-limited drive field of approximately $NI_o/2$;
first write drive means for coupling a positive polarity amplitude-limited first write drive field of approximately $NI_o/4$ to said element;
second write drive means for coupling a positive polarity amplitude-limited second write drive field of approximately $NI_o/4$ to said element;
read drive means for coupling a negative polarity saturating read drive field to said element;
readout means for providing a readout signal when said element undergoes a flux change when affected by said read drive field;
said read drive field causing a substantial readout signal to be induced in said readout means when said element has been previously affected by concurrent application of said first and second write drive fields;
said read drive field causing an insubstantial readout signal to be inducted in said readout means when said element has not been previously affected by concurrent application of said first and second write drive fields.

3,359,547
MAGNETIC TAPE RECORDER

Walter Lehnert, Munich, Germany, assignor to Siemens Aktiengesellschaft, a corporation of Germany

Filed Dec. 3, 1963, Ser. No. 327,634
Claims priority, application Germany, Dec. 5, 1962, S 82,749
5 Claims. (Cl. 340—174.1)



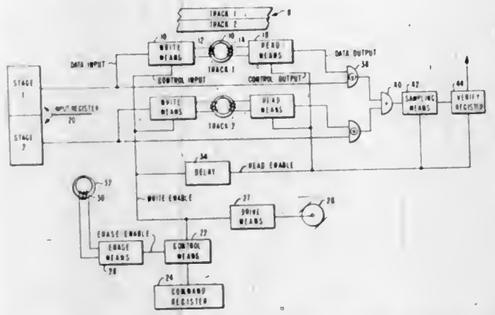
1. A magnetic tape recorder for data processing machines, comprising a relatively fixed tape reel and an exchangeable tape reel, tape transport members, a magnetic head system, and buffer cassettes for the tape arranged to receive tape operatively extending between said reels and the magnetic head system, said buffer cassettes being constructed in the form of vertically extending, downwardly directed vacuum chambers which are laterally spaced and have openings in their upper portions for the passage of tape therethrough, said tape transport members and said magnetic head system being centrally disposed at a height in the vicinity of said cassette openings, with the air gap of said magnetic head system facing upwardly, said reels being arranged one above the other and disposed below said magnetic head system between said buffer cassettes, said reels having their axes laterally mutually displaced to dispose each reel relatively closely adjacent to a respective buffer cassette with the tape adapted to extend from each reel to the respective adjacent buffer cassette and form a downwardly directed loop therein.

3,359,548
MAGNETIC RECORDING AND VERIFYING SYSTEM

Hajime Yoshii, Morgan Hill, and Max M. Liang, San Mateo, Calif., assignors to Ampex Corporation, Redwood City, Calif., a corporation of California

Filed Mar. 27, 1964, Ser. No. 355,260
6 Claims. (Cl. 340—174.1)

1. In combination with a source of successively provided binary digits randomly defining "1" and "0" states, apparatus for recording said digits in a recording medium and for verifying that said digits are properly recorded by sensing the recorded digits in the medium, said apparatus comprising:
a magnetic medium;
a single magnetic head coupled to said medium;
a write and a read winding coupled to said head;
write means responsive to the "1" and "0" states of said successively provided binary digits for successively initiating current in said write winding for orienting the flux in the magnetic medium to selectively indicate said "1" or "0" state;
motor drive means for moving said medium with respect to said head after said write means responds to one of said digits;

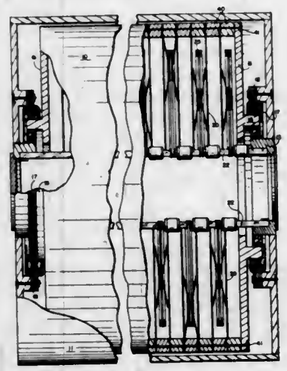


read means responsive to said medium moving with respect to said head for providing an output signal from said read winding indicative of the state of a recorded binary digit;
comparison means for directly comparing the digit state indicated by said read means with the state of the digit concurrently provided by said source, said comparison means including a logical exclusive Or circuit coupled at its input to said read means and directly to said source of binary digits; and
timing control means for determining a digit time interval T coupled to said write and read means and to the motor drive means, said timing control means including delay means coupled to the read means.

3,359,549
RANDOM ACCESS MAGNETIC DISC FILE ASSEMBLY

William A. Farrand, Fullerton, and Norman E. Marcum, Laguna Beach, Calif., assignors to North American Aviation, Inc.

Filed Sept. 8, 1964, Ser. No. 394,976
12 Claims. (Cl. 340—174.1)

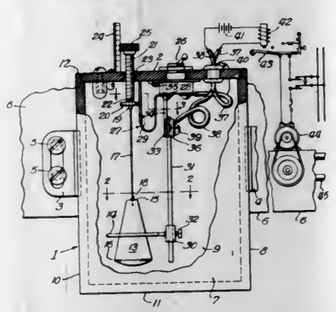


1. A record disc comprising
a radially pre-tensioned annular disc held taut at its periphery to form a flat pre-stressed record surface, means passing through the center of said annular disc for supporting at least one transducer close to said record surface, including means for varying the position of said transducer radially along said surface, and means for rotating said disc.

3,359,550
TILT CONTROL DEVICE

Leonard R. Christensen, 4205 Fullerton Ave., Chicago, Ill. 60639

Filed Apr. 15, 1965, Ser. No. 448,367
8 Claims. (Cl. 340—282)



1. A tilt control device including a housing having attachment means to mount the device on a part of an apparatus subject to a given position and/or to bodily motion between permissible limits for the normal operation of said apparatus, said device comprising a floating contact in said housing, a support member on said housing, a suspension means on said support member depending therefrom and connected with said floating contact to orient said latter contact in a predetermined elevated position within said housing, a rigid ring contact in said housing encircling said floating contact at a predetermined transverse level and in given spaced relation in all directions radially about said floating contact, and a rigid support bar connected with said housing to depend laterally adjacent and beyond said rigid ring contact, said rigid ring contact including slidable means with locking screw on said support bar to dispose said rigid contact in a vertically adjusted and selected rigid and fixed operable position level in relation to said floating contact, said coacting contacts being electrically connected with a normally deenergized alarm circuit and providing means to energize said alarm circuit whenever said apparatus part is abnormally bodily displaced causing said floating contact to engage said ring contact through the motion imparted to the housing of said device by said apparatus part.

3,359,551
SYSTEM FOR REMOTELY CONTROLLING THE OPERATION OF A POWER DISTRIBUTION NETWORK

Richard L. Dennison, Minneapolis, Minn., assignor to Magnetic Controls Co., Minneapolis, Minn., a corporation of Minnesota

Filed Jan. 24, 1963, Ser. No. 253,537
26 Claims. (Cl. 340—310)

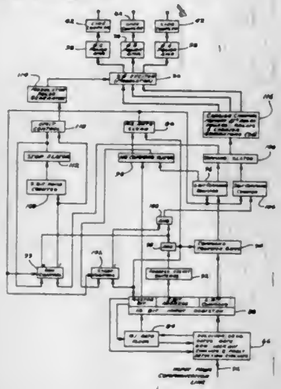
1. A load control system comprising:
(a) a power line;
(b) a plurality of oscillators for supplying carrier signals of different frequencies to said power line;
(c) a relay means associated with each oscillator;
(d) means interposed between said various relay means and said power line for connecting each relay means to said power line so as to apply a carrier signal to said line having the frequency of the os-

cillator with which the particular relay means that is then connected is associated;

(e) means for triggering said last-mentioned means into operation a prescribed number of times so as to interruptedly apply that carrier signal to said line and thereby provide a series of pulses for transmission along said line;

(f) means for preselecting the sequence said relay means are to be energized;

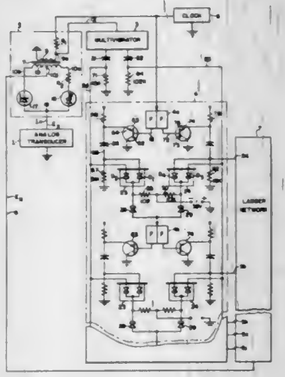
(g) means connected to said determining means for starting said triggering means each time a relay means is energized;



(h) means connected to said triggering means for causing the next selected relay means to be energized after completion of the preceding prescribed number of triggering times, and

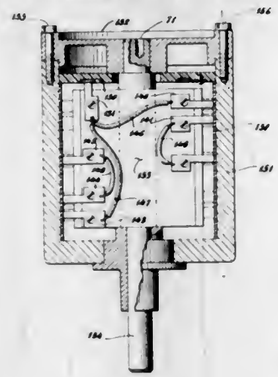
(i) means responsive to receipt of said transmitted pulses at remote points along said power line for removing loads connected to said power line in accordance with the particular carrier frequencies of said pulses and in accordance with the number of such pulses having said particular frequencies.

3,359,552
ANALOG TO DIGITAL CONVERTOR SYSTEM
Charles P. Holt, Jr., Baltimore, Md., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 19, 1964, Ser. No. 368,485
14 Claims. (Cl. 340—347)



1. An analog-to-digital converter comprising comparator means, monostable multivibrator means having its input connected to said comparator and adapted to be triggered by signals therefrom, a counter having a plurality of bistable multivibrator counter stages, means for supplying synchronously clock pulses to said comparator and to the first of said stages of said counter, logic steering gates operably connected to the outputs of said stages and to said monostable multivibrator means, said gates being responsive to signals only from said counter stages to cause said counter to count in one direction and responsive to simultaneous signals from said monostable multivibrator means and said counter stages to count in the opposite direction.

3,359,553
ENCODER
Larkin B. Scott, Fort Worth, Tex., assignor to The Perkin-Elmer Corporation, Norwalk, Conn., a corporation of New York
Filed June 8, 1964, Ser. No. 373,323
5 Claims. (Cl. 340—347)



1. A decimal encoder comprising:

a first track of conductive sections arranged in five groups of ten sections each from which signals are generated which correspond to the units digit of numbers which may be read out;

a second track of five conductive sections from which signals are generated which correspond to the even tens digit of numbers which may be read out, each conductive section in said second track positioned in fixed spatial relationship with respect to one group of ten sections in said first track;

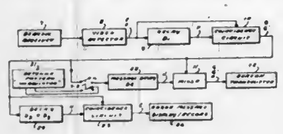
a third track of five conductive sections from which signals are generated which correspond to the odd tens digit of numbers which may be read out, each conductive section in said third track positioned in fixed spatial relationship with respect to one group of ten sections in said first track;

means for supplying electrical energy;

and means for sequentially coupling said electrical energy alternately to conductive sections in said second and third tracks and for sequentially connecting that section in said second and third tracks to which said energy is at any time coupled to the ten conductive sections of the spatial related group in said first plurality.

3,359,554
RADAR-BEACON SYSTEM WITH TWO-WAY COMMUNICATION CAPABILITY
Adolf-E. Hoffmann-Heyden, Eau Gallie, Fla., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Air Force
Filed Sept. 19, 1966, Ser. No. 580,547
3 Claims. (Cl. 343—6.5)

1. In a radar tracking system employing a beacon at the target, wherein the radar periodically radiates an interrogating signal comprising a tracking pulse followed after a predetermined fixed time interval by an identification pulse, and wherein the beacon reply similarly comprises a tracking pulse followed after said fixed interval by an identification pulse, apparatus providing two-way communication between said radar and said beacon, said apparatus comprising: a selectively operable message sending means at said radar for changing the value of said

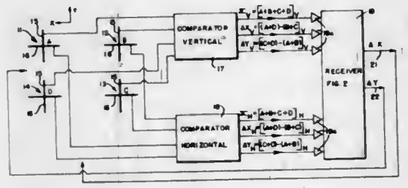


fixed time interval; a radar message receiving means at said beacon responsive only to a pair of successive pulses separated by the changed value of said fixed time interval; a selectively operable message sending means at said beacon for inserting a pulse between the tracking and identification pulses of said beacon reply at a fixed delay after said track pulse; and a beacon message receiving means at said radar responsive only to a pair of successive pulses separated by said fixed delay.

ERRATUM

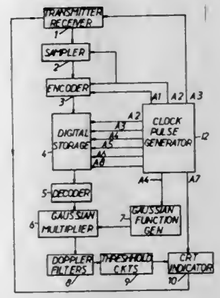
For Class 343—16 see:
Patent No. 3,359,442

3,359,555
POLARIZATION DIVERSITY MONOPULSE TRACKING RECEIVER
Ralph E. Taylor, Silver Spring, Md., assignor to the United States of America as represented by the National Aeronautics and Space Administration
Filed Aug. 30, 1966, Ser. No. 576,521
17 Claims. (Cl. 343—16)



1. In a monopulse tracking system responsive to radiation of arbitrary polarization, a signal source for deriving first and second sum signals indicative of the amount of radiation received by said array in first and second polarization directions, respectively, and for deriving first and second difference signals indicative of the position of a source of said radiation, said first and second difference signals being respectively indicative of difference components polarized in said first and second directions, said first and second sum signals having an arbitrary phase difference equal to the phase difference between said difference signals, means responsive to the phase difference between said sum signals for aligning said difference signals into the same phase, and means for linearly combining said phase aligned difference signals.

3,359,556
PULSE DOPPLER RADARS
Henri Jean Bosc, Paris, Gerard Marie Edouard van den Broek d'Obrenan, Versailles, and Jean-Marie Henri Colin, Sceaux, France, and Jean Marie Villemagne, deceased, late of Issy-les-Moulineaux, France, by Jeanne Anne Marie Marquet, Michael Marie Pierre Villemagne, and Bernadette Lucie Andree Marie Villemagne, co-administrators, all of Issy-les-Moulineaux, France, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Dec. 13, 1965, Ser. No. 531,639
Claims priority, application France, Dec. 14, 1964, 998,546, Patent 1,438,257
10 Claims. (Cl. 343—17.2)



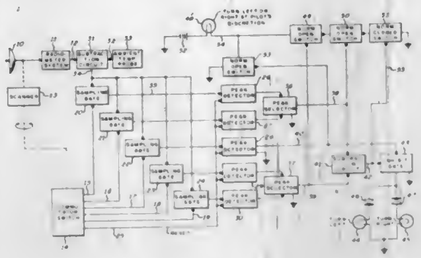
1. In a pulse Doppler radar system which includes transmitting means for radiating radar pulses, means for receiving echoes of said radar pulses reflected by distant objects, and coherent phase detection means within said receiving means for providing video signals in which the instantaneous signal amplitudes are a function of the phase difference of said received echoes as compared to the phase of electromagnetic energy with said radiated pulses, the combination which comprises: means for sampling at least a portion of each repetition period successively in range increments representative of the pulse amplitude from said phase detection means within said increment; first and second storage means each containing a plurality of digital storage elements arranged to store said digital code groups for a plurality of range increments over a plurality of repetition periods; means for reading said storage means by successive range increments at a rate independent of the storage rate to produce a composite digital output signal; decoding means responsive to said composite digital output signal for producing a composite video signal representative of the video signals over a plurality of said repetition periods; means for signal weighting by multiplying said video signals by a factor which varies from a low value at the beginning of each reading cycle, passes through a maximum and thereafter decreases toward the end of said reading cycle; filter means responsive to said weighted video for passing only those signals having amplitude modulation values corresponding to predetermined Doppler frequencies; and control means associated with the timing functions of said radar system for switching between said first and second storage means such that one of said storage means is read while the other is receiving data to be stored.

3,359,557
CLEAR AIR TURBULENCE ADVANCE WARNING AND EVASIVE COURSE INDICATOR USING RADIOMETER
Benjamin R. Fow, Waltham, Richard F. Hazel, Marlboro, and Wayne D. Mount, South Lincoln, Mass., assignors to Sperry Rand Corporation, a corporation of Delaware
Filed Feb. 14, 1966, Ser. No. 527,219
7 Claims. (Cl. 343—100)

7. Means for producing an advance warning of clear air turbulence comprising

radiometer means producing a first signal representing the temperature of a known volume of air in a known direction relative to the direction in which a protected aircraft is heading,

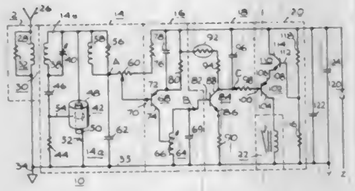
means producing a second signal representing the temperature of the air at the location of said aircraft,



comparison means receiving said first and second signals and producing a third signal representing the difference therebetween, and

means receiving said third signal and producing a fourth signal in the event said third signal exceeds a predetermined value representing a likelihood of clear air turbulence within said volume of air.

3,359,558
RECEIVER ARRANGEMENT
William A. Schanbacher, 7200 W. 90th St., Los Angeles, Calif. 90045
Filed May 18, 1964, Ser. No. 368,232
11 Claims. (Cl. 343—225)



1. A command receiver of the type adapted to receive a transmitted signal, which signal has a preselected radio frequency amplitude modulated by a preselected audio frequency, and to energize a relay in response thereto comprising, in combination:

an antenna for receiving the transmitted signal;

a radio frequency transformer having a primary winding and a secondary winding, and said primary winding connected to said antenna;

a first detector having a first predetermined signal gain for a first condition of operation and a second predetermined signal gain greater than said first for a second condition of operation, and said first detector coupled to said secondary winding of said radio frequency transformer for receiving the transmitted signal coupled thereto by said secondary winding and said first detector having a cyclical frequency generating means for cyclically establishing therein at a predetermined squelch frequency rate, an oscillatory signal condition at said preselected radio frequency, modulated by said preselected audio frequency and said preselected squelch frequency and said first detector having filter means to filter said preselected radio frequency and said squelch frequency to provide a detected audio frequency signal at said preselected audio frequency;

amplification means coupled to said first detector for receiving said detected audio frequency signal and generating a DC control signal in a response thereto, said DC control signal having a magnitude proportional to the strength of the transmitted signal received by said antenna;

a relay;

a relay driver and gain control coupled to said amplification means and to said relay for receiving said DC control signal and energizing said relay in response thereto for the condition of said DC control signal being present for a predetermined time interval and having a magnitude at least as great as a predetermined threshold value; and

said first condition of operation comprising said relay de-energized and said second condition of operation comprising said relay energized, and said cyclical frequency generating means responsive to said energizing of said relay to provide said second predetermined signal gain for the condition of said relay energized and to provide said first predetermined signal gain for the condition of said relay de-energized; and

said predetermined threshold value of said DC control signal corresponding to a minimum sensitivity value of the transmitted signal for the condition of said relay de-energized and said minimum threshold value of said DC control signal corresponding to a cut-off value of the transmitted signal, less than said minimum sensitivity value for the condition of said relay energized.

3,359,559
IMPULSE-TYPE TELESCOPING ANTENNA
William M. Guinn, Cincinnati, Ohio, assignor to Avco Corporation, Cincinnati, Ohio, a corporation of Delaware
Filed Nov. 29, 1963, Ser. No. 326,660
11 Claims. (Cl. 343—901)



1. In a vehicular radio antenna, the combination of:

a base;

a first tubular section rigidly secured to said base;

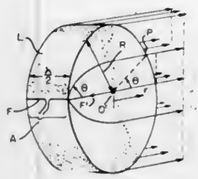
a plurality of tubular sections of successively smaller diameters nested within said first tubular section and axially movable with respect thereto;

a first source of motive power for propelling all of said movable sections upwardly;

means for releasably locking the lower end of each movable section with the upper end of the section of next larger diameter when the sections are propelled upwardly;

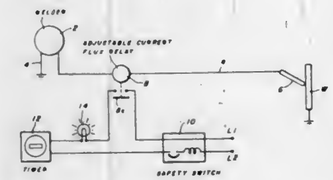
and a second source of motive power for disengaging the mated ends of said sections and propelling said movable sections downwardly.

3,359,560
CYLINDRICAL DIELECTRIC LENS
Robert L. Horst, Lancaster, Pa., assignor to Armstrong Cork Company, Lancaster, Pa., a corporation of Pennsylvania
Original application Aug. 17, 1962, Ser. No. 217,751, now Patent No. 3,256,373, dated June 14, 1966. Divided and this application Sept. 28, 1965, Ser. No. 508,405
9 Claims. (Cl. 343—911)



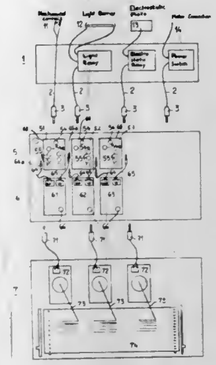
1. A dielectric lens of substantially circular cross-section comprising a matrix of substantially unity index dielectric beads supporting an array of metallic flexible needle-like slivers interspersed and at least partially bent around said beads, said matrix and array comprising an artificial dielectric material having substantially constant density throughout said lens, said beads having a diameter no greater than one-eighth wavelength at the operating frequency of said lens, said metallic slivers having a length no greater than one-eighth wavelength at the operating frequency of said lens, the concentration of said metallic slivers in said matrix varying smoothly in radial directions from the central axis of said circular cross-section of said lens to the outermost surface thereof.

3,359,561
APPARATUS FOR INDICATING AND RECORDING PERIODS OF OPERATION OF A MACHINE
Robert E. Shostek, Johnstown, Pa., assignor to United States Steel Corporation, a corporation of Delaware
Continuation of application Ser. No. 186,260, Apr. 9, 1962. This application July 15, 1964, Ser. No. 384,037
3 Claims. (Cl. 346—17)



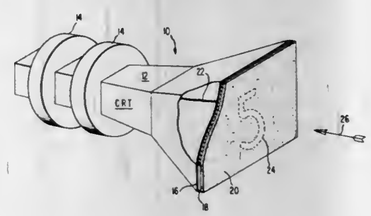
1. Apparatus for indicating and recording periods of actual operation under load of an electric powered machine having a load cable and in which a magnetic field is set up around the load cable when current passes therethrough, said apparatus comprising a flux relay through which said cable passes, said flux relay being adustable for operation by different load currents, said magnetic field inducing a corresponding magnetic field in the flux relay to energize the same, a source of electric power connected to said flux relay, and a timer connected to said source of electric power in series with said flux relay for indicating and recording operating time.

3,359,562
APPARATUS FOR PLOTTING TIME-SEQUENCE CURVES FOR TIME STUDY
Rudolf Stäubli, Frohburgstr. 88, Zurich, Switzerland
Filed July 15, 1965, Ser. No. 472,212
Claims priority, application Switzerland, July 17, 1964, 9,398/64
12 Claims. (Cl. 346—35)



1. Apparatus for plotting diagrams of succeeding transverse time-lines for time study comprising, in combination: electrical signal transmitters provided at a work site for determining the working steps performed thereat, a programming device and a combination device provided for each electrical signal transmitter, each electrical signal transmitter being operatively coupled via a programming device with at least two of said combination devices, each combination device incorporating at least two conductors for receiving signals from given programming devices and generated by said electrical signal transmitters, a writing device operatively coupled with each combination device, each writing device remaining switched-in by means of a continuous pulse received from an associated combination device via a conductor of the said associated combination device for such length of time until a next pulse according to the program arrives at a different conductor, and means provided for each combination device to ensure that a similar pulse appearing at the same conductor does not effect any change in the switching conditions.

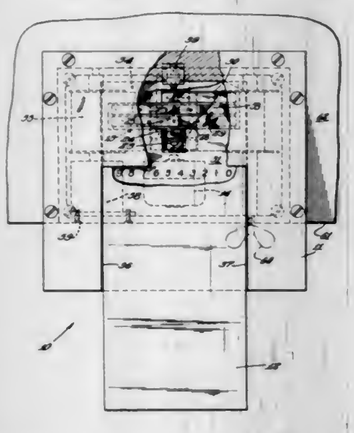
3,359,563
ELECTRON BEAM THERMAL IMAGING DISPLAY SYSTEM
Kenneth J. Stetten, McLean, Va., assignor, by mesne assignments, to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 22, 1965, Ser. No. 474,115
9 Claims. (Cl. 346—76)



1. An indicia related information display system including a film, said film exhibiting localized variations in

optical transmissivity upon the application at localized areas thereof of temperatures greater than the ambient temperature of said film, a surface, means for selectively heating said surface over indicia related portions thereof, said surface being in thermal communication with said film, said indicia related source of heat adapted to selectively traverse areas of said surface in accordance with a variable source of information.

3,359,564
MARK SENSE TIME STAMP
Lester Barton Dean, 1716 Noble Ave., Springfield, Ill. 62704
Filed Sept. 27, 1965, Ser. No. 490,413
3 Claims. (Cl. 346—81)



1. An apparatus for printing on a recording medium an information representative of time, comprising

(a) a frame having a platform for supporting such a recording medium, said platform having an opening therein,

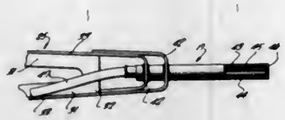
(b) a plurality of continuous belts mounted on said frame for movement in close relation to said platform across the opening therein,

(c) a plurality of printing elements mounted on each of said belts and spaced at least the width of the opening and a sufficient distance from one another such that only one of said elements on each of said belts is engageable with the recording medium at any given point in the travel of said belts, the width of said printing element being substantially less than the width of said opening,

(d) means for continuously driving one of said belts at a predetermined rate and another of said belts at a rate greater than said predetermined rate and in synchronism with one another, and

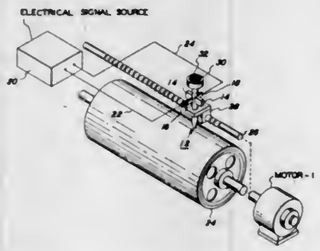
(e) means for urging each of said belts toward the recording medium to engage a respective one of said printing elements on each of said belts with the recording medium to form a mark sense at positions corresponding to selected data positions to indicate discrete periods of elapsed time, such that an information is recorded on the recording medium which is representative of time, the several components of each recorded information each being formed by a respective one of said printing elements and being additive with one another to form the representation of time.

3,359,565
OSCILLOGRAPH STYLUS AND SUPPORT ARM THEREFOR
Neil John Griffith, Arcadia, Calif., assignor to Consolidated Electrodynamics Corporation, Pasadena, Calif., a corporation of California
Filed Sept. 30, 1966, Ser. No. 583,347
7 Claims. (Cl. 346—139)



1. A stylus for a heat-writing recording oscillograph and the like comprising a pair of concentric tubular elements fabricated of electrically conductive material having high resistivity and high strength at elevated temperatures, electrically nonconductive insulation means disposed between the tubular elements for nonconductively mounting the elements to each other, the insulation means having a coefficient of thermal expansion substantially equal to the coefficient of thermal expansion of the tubular elements, means conductively interconnecting the tubular elements at one end of the pair, means mounting the tubular elements in cantilever fashion at the other end of said pair, and electrical conductor means connected to each element at a location therealong spaced from said one end of the pair for electrically energizing the tubular elements for heating the same.

3,359,566
MOTOR ACTION CAPILLARY
Daniel J. Donalies, Rochester, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Aug. 1, 1966, Ser. No. 569,463
3 Claims. (Cl. 346—140)



1. A recording apparatus of the type wherein information in the form of electrical signals is recorded on receiving sheets by the deposition of drops of ink including

a capillary tube positioned adjacent to a record receiving sheet with an open end closely spaced from the surface of the sheet,

means to supply an electrically conductive ink to the capillary,

a pair of magnets positioned adjacent to the capillary in position to provide a field of flux at right angles to the capillary,

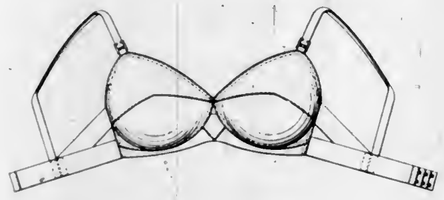
a pair of electrodes extending into the capillary into contact with fluid in the base of the capillary, and

means to pass electrical current through the electrodes in accordance with electrical signals received which causes the ink to flow.

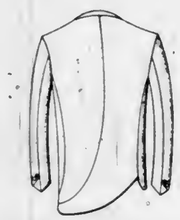
DESIGNS

DECEMBER 19, 1967

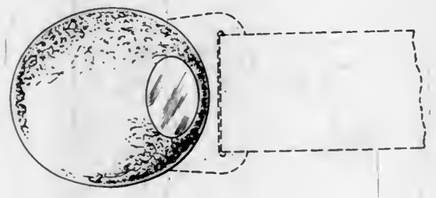
209,564
BRASSIERE
Moe Tuschman, Flushing, N.Y., assignor to Sarong, Inc., Dover, Del., a corporation of Delaware
Filed June 30, 1966, Ser. No. 2,882
Term of patent 14 years
(Cl. D2—24)



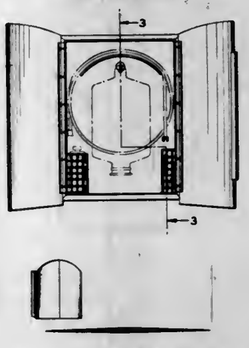
209,565
TUXEDO COAT
Sokratis I. Zavitsanos, 2005 Columbia Road NW., Washington, D.C. 20009
Filed Mar. 31, 1967, Ser. No. 6,456
Term of patent 14 years
(Cl. D2—187)



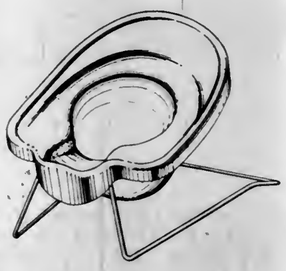
209,566
SAFETY BELT BUCKLE
George H. Jantzen, New York, N.Y., assignor to M. Steinthal & Company, Incorporated, New York, N.Y., a corporation of New York
Filed Mar. 7, 1967, Ser. No. 6,101
Term of patent 14 years
(Cl. D2—408)



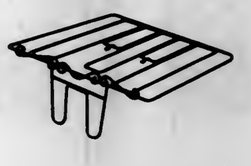
209,567
BATHROOM CABINET FOR DOUCHE EQUIPMENT
Gloria Ann Hutchins, Sullivan, Mo. (3542 Connor Ave., St. John, Mo. 63121)
Filed Dec. 7, 1966, Ser. No. 4,954
Term of patent 14 years
(Cl. D4—3)



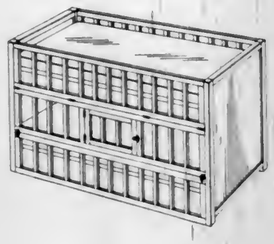
209,568
BABY TRAINING SEAT
Angel R. De Castro, 25—79 43rd St., Long Island City, N.Y. 11103
Filed June 7, 1967, Ser. No. 7,393
Term of patent 14 years
(Cl. D4—5)



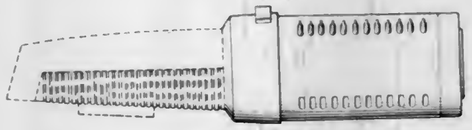
209,569
BEDSPREAD HOLDER
Sam Galson, Chicago, Ill., assignor to Chaum & Lescht Enterprises, Inc., Chicago, Ill., a corporation of Illinois
Filed Aug. 17, 1966, Ser. No. 3,505
Term of patent 14 years
(Cl. D5—2)



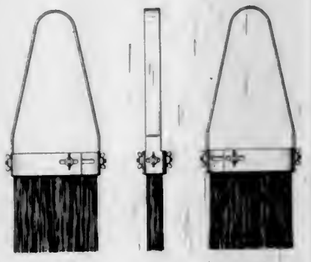
209,570
BUNK CRIB
William A. Van Riper, 3149–G E. Euclid Ave., Lynwood, Calif. 90262
Filed Dec. 19, 1966, Ser. No. 5,108
Term of patent 14 years
(Cl. D5—5)



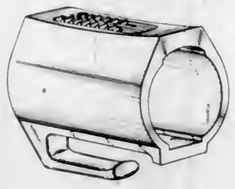
209,571
POWER DRIVEN HAIRBRUSH BODY
William J. Rakocy, Clifton, and Seymour Rappoport, Rumson, N.J., assignors to Ronson Corporation, Woodbridge, N.J., a corporation of New Jersey
Filed Feb. 28, 1966, Ser. No. 1,199
Term of patent 14 years
(Cl. D9—2)



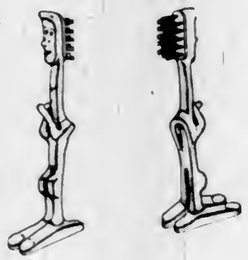
209,572
COMBINED DISPOSABLE BRISTLE UNIT AND ADJUSTABLE PAINTBRUSH HANDLE
Bill G. Blount, 1417 Oak Lea Drive, Irving, Tex. 75060
Filed Nov. 10, 1966, Ser. No. 4,618
Term of patent 14 years
(Cl. D9—2)



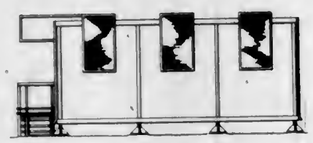
209,573
COMBINED COUPLING, VACUUM CLEANER SUCTION CONTROL AND TOOL HOLDER
Karl Eric Leinfelt, Solna, Sweden, assignor to Aktiebolaget Electrolux, Stockholm, Sweden, a corporation of Sweden
Filed Nov. 14, 1966, Ser. No. 4,641
Claims priority, application Sweden May 16, 1966
Term of patent 14 years
(Cl. D9—2)



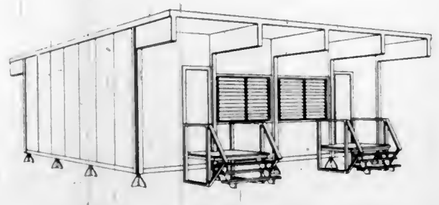
209,574
TOOTH BRUSH
Paul I. Zandberg, 8208 Romaine St., Los Angeles, Calif. 90046, and Charles F. Taylor, 2160 El Cajonita St., La Habra, Calif. 90631
Filed Apr. 7, 1967, Ser. No. 6,579
Term of patent 14 years
(Cl. D9—2)



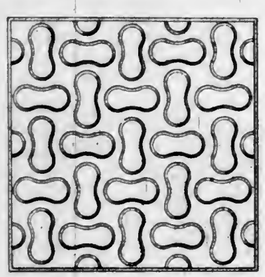
209,575
BUILDING
Joe M. Wah, San Francisco, and Theodore A. Johnson, Oakland, Calif., assignors to Building Research, Inc., San Francisco, Calif., a corporation of Nevada
Filed Oct. 28, 1966, Ser. No. 4,462
Term of patent 14 years
(Cl. D13—1)



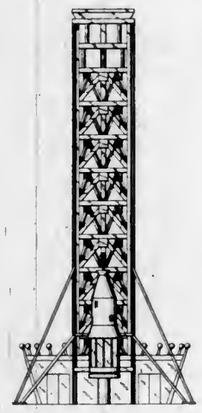
209,576
BUILDING
Joe M. Wah, San Francisco, and Theodore A. Johnson, Oakland, Calif., assignors to Building Research, Inc., San Francisco, Calif., a corporation of Nevada
Filed Oct. 28, 1966, Ser. No. 4,463
Term of patent 14 years
(Cl. D13—1)



209,577
FLOOR COVERING UNIT
Michele Pompili, Milan, Italy, assignor to Pirelli, Società per Azioni, Milan, Italy
Filed Jan. 6, 1967, Ser. No. 5,333
Claims priority, application Italy July 23, 1966
Term of patent 14 years
(Cl. D13—1)



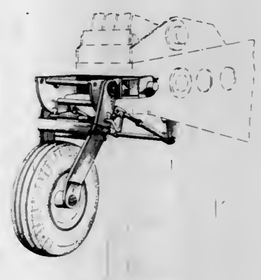
209,578
COMBINED BUILDING AND ELEVATOR
Richard R. Rodin, Minneapolis, Minn., assignor to R & R Industries, Inc., Minneapolis, Minn., a corporation of Minnesota
Filed Apr. 12, 1967, Ser. No. 6,662
Term of patent 14 years
(Cl. D13—1)



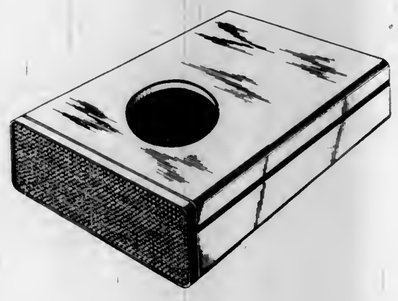
209,579
PASSENGER VEHICLE
Robert H. Gurr, Costa Mesa, Calif., assignor to Wed Enterprises, Inc., Glendale, Calif., a corporation of California
Filed Sept. 6, 1966, Ser. No. 3,751
Term of patent 14 years
(Cl. D14—3)



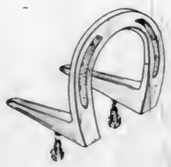
209,580
CRANE BOOM POINT WHEEL CART
Alfred G. Reapsummer, % Crane Carts, 1020 NE. 44th St., Fort Lauderdale, Fla. 33309
Filed Apr. 26, 1967, Ser. No. 6,844
Term of patent 14 years
(Cl. D14—3)



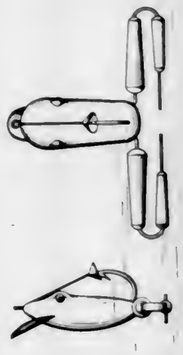
209,581
REFRIGERATION UNIT MOUNTABLE ON THE EXTERIOR OF A VEHICLE
Eliot F. Noyes, New Canaan, and Robert E. Graf, Wilton, Conn., assignors to Cummins Engine Company, Inc., Columbus, Ind., a corporation of Indiana
Filed Mar. 24, 1967, Ser. No. 6,374
Term of patent 14 years
(Cl. D14—6)



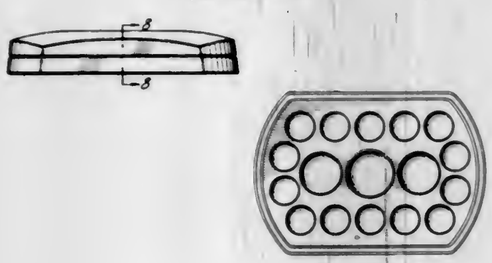
209,582
HOOD ORNAMENT
Grey J. Conrad, 2466 Ivanhoe, Pontiac, Mich. 48053
Filed July 8, 1966, Ser. No. 3,053
Term of patent 14 years
(Cl. D14—18)



209,583
COMBINED FISH LURE AND WEED GUARD
Joseph J. Sabol, Hazleton, Pa., assignor of fifty percent to Joseph J. Ustynoski, Hazleton, Pa.
Filed Jan. 26, 1967, Ser. No. 5,570
Term of patent 14 years
(Cl. D22—27)



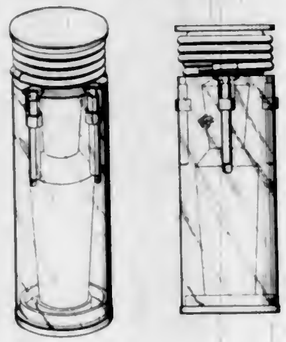
209,584
COMBINED MIXING AND STAINING DENTAL TRAY
Frederick L. Towe, 4826 Gentry Ave., North Hollywood, Calif. 91607
Filed Dec. 22, 1966, Ser. No. 5,146
Term of patent 14 years
(Cl. D24—1)



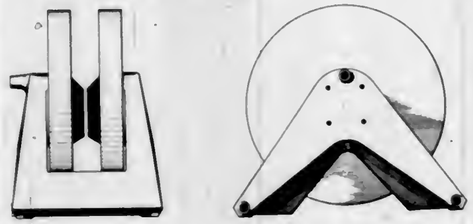
209,585
DENTAL JET PRODUCING UNIT
Samuel J. Koch, 999 Green St., San Francisco, Calif. 94133
Filed July 12, 1967, Ser. No. 7,769
Term of patent 14 years
(Cl. D24—1)



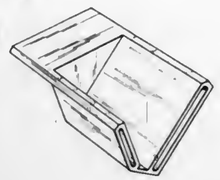
209,586
DENTAL JET PRODUCING KIT
Samuel J. Koch, 999 Green St., San Francisco, Calif. 94133
Filed July 12, 1967, Ser. No. 7,778
Term of patent 7 years
(Cl. D24—1)



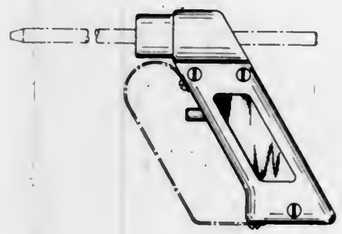
209,587
ELECTROMAGNET UNIT
Jerome R. Singer, Berkeley, Calif., assignor to Alpha Scientific Laboratories, Inc., Berkeley, Calif., a corporation of California
Filed July 13, 1966, Ser. No. 3,068
Term of patent 14 years
(Cl. D26—1)



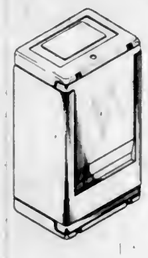
209,588
TELEPHONE SUBSCRIBER TERMINAL BLOCK CONNECTOR
Edward S. Baker, Lawrence, Kans., assignor to Paul H. Snider, Wichita, Kans.
Filed July 20, 1966, Ser. No. 3,141
Term of patent 14 years
(Cl. D26—1)



209,589
ELECTRIC ARC TYPE CUTTING GUN
Henry H. Jenkins, 864 W. Hacienda Drive, Corona, Calif. 91720
Filed Sept. 30, 1966, Ser. No. 4,116
Term of patent 14 years
(Cl. D26—1)



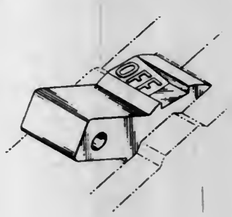
209,590
STORAGE AND TRANSPORT CONTAINER FOR COMPUTER FILM CHIPS
John D. Jagger, Los Gatos, Calif., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed May 16, 1966, Ser. No. 2,300
Term of patent 14 years
(Cl. D26—5)



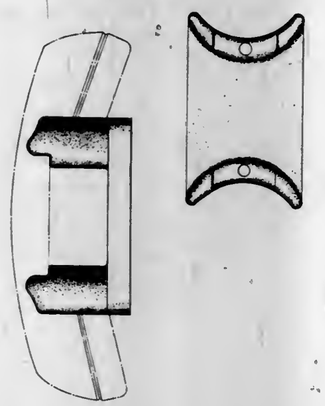
209,591
KNOB
Herbert J. Hampel, Philadelphia, and Milton I. Ross, Bala-Cynwyd, Pa.; said Hampel assignor to The Ross Manufacturing Company, Southampton, Pa., a corporation of Pennsylvania
Filed Apr. 14, 1966, Ser. No. 1,899
Term of patent 14 years
(Cl. 26—13)



209,592
HANDLE FOR A CIRCUIT BREAKER OR THE LIKE
Wolfgang E. Wilckens, Johannesburg, Transvaal, Republic of South Africa, assignor to Heinemann Electric Company, Trenton, N.J., a corporation of New Jersey
Filed Aug. 9, 1966, Ser. No. 3,401
Term of patent 14 years
(Cl. D26—13)



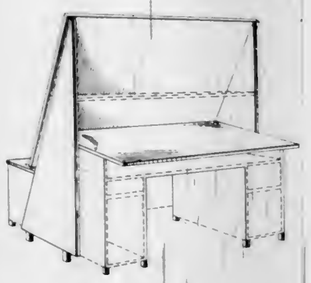
209,593
TELEPHONE HANDSET SUPPORT
Harry W. McCune, Indianapolis, Ind., assignor to Bell Telephone Laboratories, Incorporated, Berkeley Heights, N.J., a corporation of New York
Filed Dec. 6, 1966, Ser. No. 4,927
Term of patent 14 years
(Cl. D26—14)



209,594
BADGE
Peter Robert Anelli, P.O. Box 10, Darlaston, Wednesbury, Staffordshire, England
Filed Aug. 29, 1966, Ser. No. 3,617
Claims priority, application Great Britain Mar. 1, 1966
Term of patent 14 years
(Cl. D29—2)



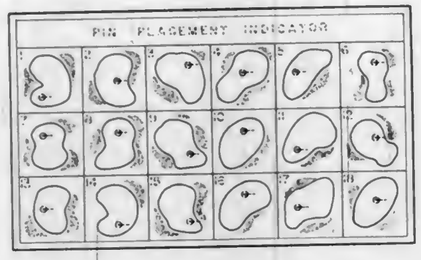
209,595
WORK DESK UNIT FOR A DESIGN ENGINEER
Warren A. Nielsen, 258 N. Wilson St., Pasadena, Calif. 91106
Filed May 2, 1966, Ser. No. 2,105
Term of patent 14 years
(Cl. D33—7)



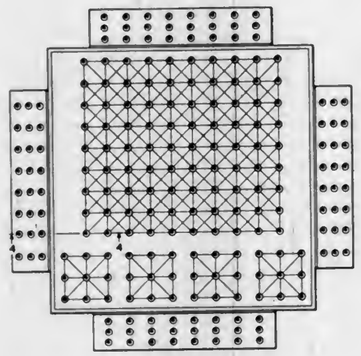
209,596
PLAYGROUND CLIMBER
Vello Hubel, Toronto, Ontario, Canada, assignor to Protective Plastics Limited, Don Mills, Ontario, Canada, a corporation of Canada
Filed Aug. 16, 1966, Ser. No. 3,479
Term of patent 3½ years
(Cl. D34—5)



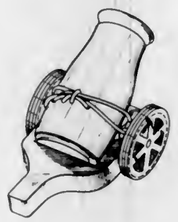
209,597
PIN PLACEMENT INDICATOR BOARD FOR GOLF COURSES
Everett M. De La Fariest, 4125 Haines St., San Diego, Calif. 92109
Filed Jan. 23, 1967, Ser. No. 5,517
Term of patent 14 years
(Cl. D34—5)



209,598
GAME BOARD
Howard Tharp, 1300 Lynhaven Place, St. Louis, Mo. 63147
Filed Mar. 27, 1967, Ser. No. 6,383
Term of patent 14 years
(Cl. D34—5)



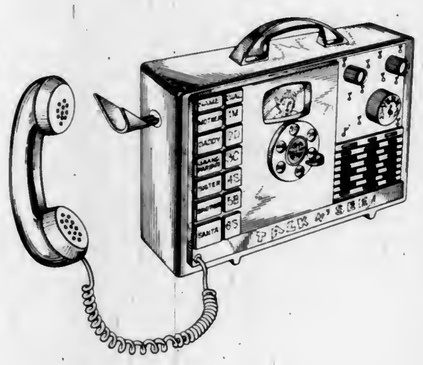
209,599
CANNON BANK
James Wilson Craighead, 3120 Blake St., Denver, Colo. 80205
Filed June 20, 1966, Ser. No. 2,734
Term of patent 3½ years
(Cl. D34—11)



209,600
SKI BOOT SUPPORT
Johan G. F. Heuvel, 7895 Mountain Sights, Apt. 35, Montreal, Quebec, Canada
Filed Feb. 24, 1967, Ser. No. 5,938
Term of patent 14 years
(Cl. D34—14)



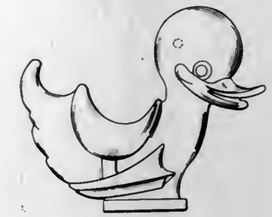
209,601
MUSICAL TELEPHONE TOY
Ernest J. Swimmer, 340 E. 52nd St. 10022, and Alan A. Hicks, 1349 Lexington Ave. 10028, both of New York, N.Y.
Filed June 14, 1966, Ser. No. 2,671
Term of patent 14 years
(Cl. D34—15)



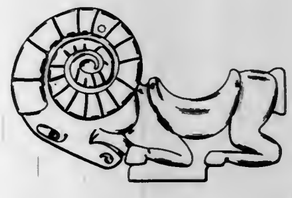
209,602
CHICKEN-SHAPED SEAT FOR PLAYGROUND APPARATUS
Robert S. Wormser, Hillsdale, Mich., assignor to Game-Time, Inc., Litchfield, Mich., a corporation of Michigan
Filed Aug. 17, 1966, Ser. No. 3,495
Term of patent 14 years
(Cl. D34—15)



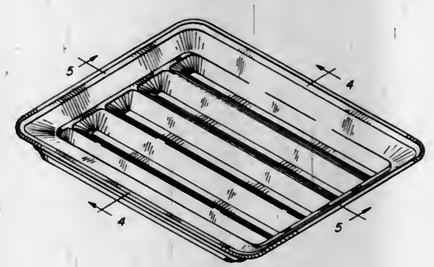
209,603
DUCK-SHAPED SEAT FOR PLAYGROUND APPARATUS
Robert S. Wormser, Hillsdale, Mich., assignor to Game-Time, Inc., Litchfield, Mich., a corporation of Michigan
Filed Aug. 17, 1966, Ser. No. 3,496
Term of patent 14 years
(Cl. D34—15)



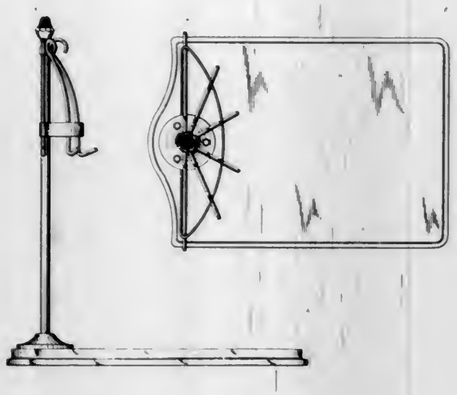
209,604
RAM-SHAPED SEAT FOR PLAYGROUND APPARATUS
Robert S. Wormser, Hillsdale, Mich., assignor to Game-Time, Inc., Litchfield, Mich., a corporation of Michigan
Filed Aug. 17, 1966, Ser. No. 3,512
Term of patent 14 years
(Cl. D34—15)



209,605
BROILER TRAY
Richard J. Zoeller, Pittsburgh, Robert L. Walker, Apollo, and Regis A. Fleck, Tarentum, Pa., assignors to Aluminum Company of America, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 22, 1966, Ser. No. 3,558
Term of patent 14 years
(Cl. D44—1)



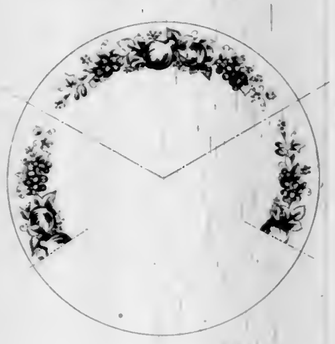
209,606
COMBINED SLICING BOARD AND UTENSIL RACK
Mel Appel, Livingston, and Martin Schnur, West Orange, N.J., assignors to Elpo Industries Inc., Fair Lawn, N.J., a corporation of New Jersey
Filed Mar. 2, 1967, Ser. No. 6,034
Term of patent 14 years
(Cl. D44—1)



209,607
PALETTE
Clifford T. Lloyd, Aurora, Colo., assignor to Lloyd Products, Inc., a corporation of Colorado
Filed Feb. 13, 1967, Ser. No. 5,792
Term of patent 14 years
(Cl. D44—15)



209,608
PLATE OR SIMILAR ARTICLE
Ryotaro Takeoka, 221 Kitayamoto-cho, Nishikasugai-gun, Aichiken, Japan
Filed Mar. 6, 1967, Ser. No. 6,072
Term of patent 7 years
(Cl. D44—15)



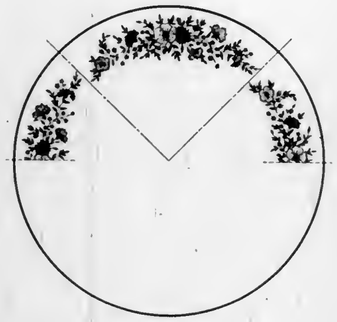
209,609
PLATE OR SIMILAR ARTICLE
Ryotaro Takeoka, Nishikasugai-gun, Aichiken, Japan, assignor to Noritake Co., Inc., New York, N.Y., a corporation of New York
Filed Mar. 6, 1967, Ser. No. 6,073
Term of patent 7 years
(Cl. D44—15)



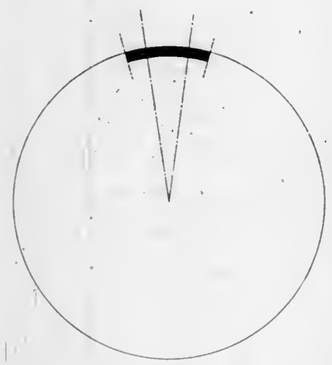
209,610
PLATE OR SIMILAR ARTICLE
Ryotaro Takeoka, Nishikasugai-gun, Aichiken, Japan, assignor to Noritake Co., Inc., New York, N.Y., a corporation of New York
Filed Mar. 6, 1967, Ser. No. 6,074
Term of patent 3½ years
(Cl. D44—15)



209,611
PLATE OR SIMILAR ARTICLE
Ryotaro Takeoka, Nishikasugai-gun, Aichiken, Japan, assignor to Noritake Co., Inc., New York, N.Y., a corporation of New York
Filed Mar. 6, 1967, Ser. No. 6,075
Term of patent 7 years
(Cl. D44—15)



209,612
PLATE OR SIMILAR ARTICLE
Ryotaro Takeoka, 221 Kitayamoto-cho, Nishikasugai-gun, Aichiken, Japan
Filed Mar. 6, 1967, Ser. No. 6,068
Term of patent 7 years
(Cl. D44—15)



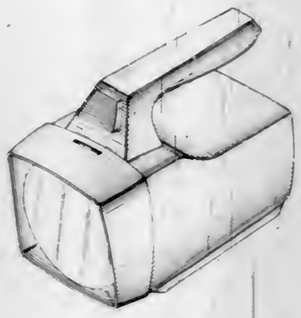
209,613
COMBINED COASTER AND HOLDER FOR A BEVERAGE CAN
Edward J. Paprocki, 86—48 Sancho St., Hollis, N.Y. 11423
Original design application July 19, 1966, Ser. No. 3,127. Divided and this application May 16, 1967, Ser. No. 7,140
Term of patent 14 years
(Cl. D44—21)



209,614
COMBINED COASTER AND HOLDER FOR A BEVERAGE CAN
Edward J. Paprocki, 86—48 Sancho St., Hollis, N.Y. 11423
Original design application July 19, 1966, Ser. No. 3,127. Divided and this application May 16, 1967, Ser. No. 7,150
Term of Patent 14 years
(Cl. D44—21)



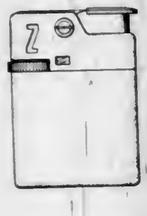
209,615
PORTABLE HAND LANTERN
William H. Doring, Old Greenwich, Conn., and David O. Chase, Camillus, and Martin V. Maloney, Skaneateles, N.Y., assignors to Union Carbide Corporation, a corporation of New York
Filed June 22, 1967, Ser. No. 7,554
Term of patent 14 years
(Cl. D48—24)



209,616
CIGARETTE-LIGHTER OR SIMILAR ARTICLE
Robert Hocq, 59 Blvd. d'Auteuil, Boulogne-Billancourt, Hauts-de-Seine, France
Filed June 9, 1965, Ser. No. 2,622
Claims priority, application France, Dec. 22, 1965
Term of patent 14 years
(Cl. D48—27)



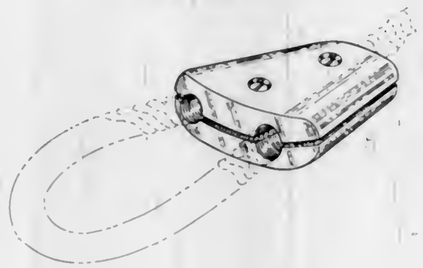
209,617
GAS CIGARETTE LIGHTER
Zenzaburo Yoshino, Tokyo, Japan, assignor to Zenza Bronica Kogyo Kabushiki Kaisha, Tokyo, Japan
Filed Dec. 12, 1966, Ser. No. 5,001
Claims priority, application Japan, June 14, 1966
Term of patent 3½ years
(Cl. D48—27)



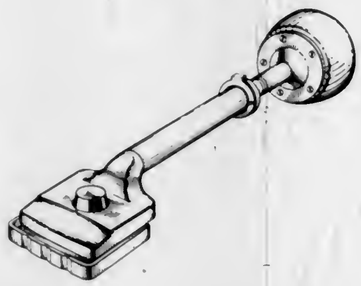
209,618
RECORD JACKET SUPPORT CLIP
Dubi Leumi, 2035 Chestnut St., Philadelphia, Pa. 19103
Filed Oct. 13, 1966, Ser. No. 4,270
Term of patent 14 years
(Cl. D54—1)



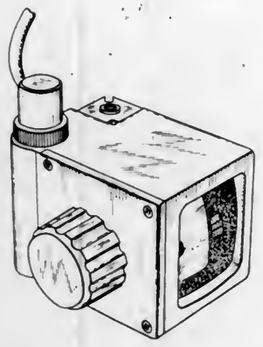
209,619
CLAMP FOR BOAT MOORING LINES OR THE LIKE
Robert R. Reay, 1799 Oxford St., Grosse Pointe Woods, Mich. 48236
Filed Jan. 20, 1967, Ser. No. 5,495
Term of patent 14 years
(Cl. D54—11)



209,620
CARPET KICKER
George A. Kochanowski, Chicago, Ill., assignor to Kinkead Industries Incorporated, Chicago, Ill., a corporation of Illinois
Filed Nov. 4, 1966, Ser. No. 4,554
Term of patent 14 years
(Cl. D54—13)



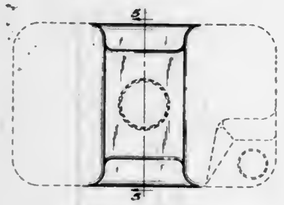
209,621
READING DEVICE FOR MEASURING RODS OR THE LIKE
Heinz Kraus, Traunreut, Upper Bavaria, Germany, assignor to Johannes Heidenhain, Traunreut uber Traunstein, Germany, a corporation of Germany
Filed Oct. 14, 1966, Ser. No. 4,283
Term of patent 14 years
(Cl. D57—1)



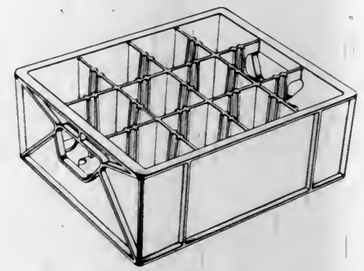
209,622
SHOPPING BAG
Fritzi Klopfenstein, Weston, Conn., assignor to Interstate Bag Company, Inc., Walden, N.Y., a corporation of Virginia
Filed Feb. 10, 1966, Ser. No. 1,000
Term of patent 14 years
(Cl. D58—2)



209,623
JUG
Earl L. Schaper and Stanley A. Marcus, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Jan. 3, 1966, Ser. No. 422
Term of patent 14 years
(Cl. D58—5)

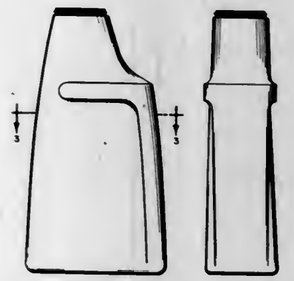


209,624
CASE FOR BEVERAGE BOTTLES OR THE LIKE
Kashichi Hirota, 691 Sanda-Higashi-cho, Hachioji-shi, Tokyo, Japan
Original design application Mar. 9, 1966, Ser. No. 1,366. Divided and this application Dec. 15, 1966, Ser. No. 5,364
Claims priority, application Japan Nov. 5, 1965
Term of patent 14 years
(Cl. D58—5)

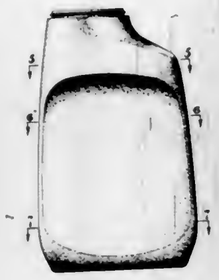


209,625
BOTTLE
David G. Hills, Collinsville, Conn., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Filed Sept. 28, 1966, Ser. No. 4,062
Term of patent 14 years
(Cl. D58—6)

209,626
BOTTLE
David G. Hills, Collinsville, Conn., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Filed Sept. 28, 1966, Ser. No. 4,065
Term of patent 14 years
(Cl. D58—6)



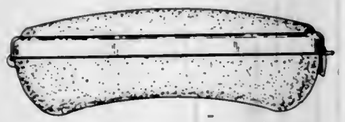
209,627
BOTTLE
Harold J. Vanderhyde, North Merrick, N.Y., assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
Filed Dec. 12, 1966, Ser. No. 5,000
Term of patent 14 years
(Cl. D58—6)



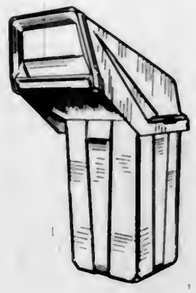
209,628
EGG CARTON
Richard E. Burnsworth, Irwin, John W. Kirkpatrick, McKeesport, and Walter Jerry Schade, Irwin, Pa., assignors to SBK Inc., Irwin, Pa., a corporation of Pennsylvania
Filed Jan. 4, 1966, Ser. No. 440
Term of patent 14 years
(Cl. D58—11)



209,629
BOX
Brock F. Brockway, Mill Valley, Calif., assignor to E. D. Bullard Company, Sausalito, Calif.
Filed Feb. 16, 1966, Ser. No. 1,074
Term of patent 14 years
(Cl. D58—12.6)



209,630
WASTE RECEPTACLE
Ralph E. Weimer, Lombard, Ill., assignor to McDonald's System, Inc., a corporation of Illinois
Filed Aug. 22, 1966, Ser. No. 3,554
Term of patent 14 years
(Cl. D58—17)



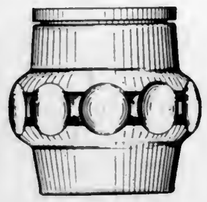
209,631
CONTAINER FOR OIL PRODUCTS OR THE LIKE
Earl L. Schaper and Bobbie G. Caldwell, Midland, Mich., and Carroll J. Macalusa, Baton Rouge, La., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Continuation of design applications Ser. No. 437 and Ser. No. 437, Jan. 4, 1966. This application Dec. 19, 1966, Ser. No. 5,116
Term of patent 14 years
(Cl. D58—17)



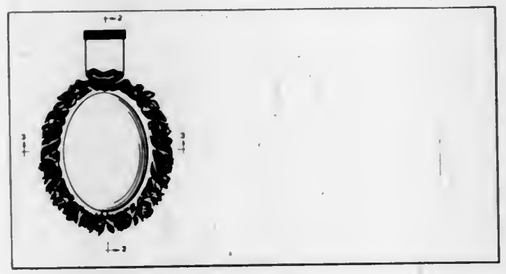
209,632
CONTAINER FOR OIL PRODUCTS OR THE LIKE
Carroll J. Macalusa, Baton Rouge, La., and Earl L. Schaper, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Feb. 3, 1967, Ser. No. 5,674
Term of patent 14 years
(Cl. D58—17)



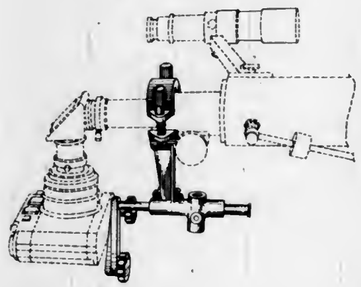
209,633
JAR
Martin Schnur, West Orange, and Mel Appel, Livingston, N.J., assignors to American Can Company, New York, N.Y., a corporation of New Jersey
Filed Dec. 30, 1965, Ser. No. 393
Term of patent 14 years
(Cl. D58—25)



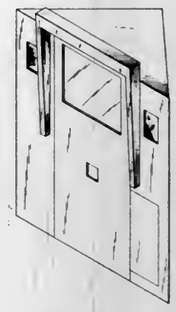
209,634
WRAPPING PAPER FOR A BOX COVER
Darrell Bernard Lea, Kogarah, New South Wales, Australia, assignor to Ricci Redmond Chocolate Co. Pty. Limited, Kogarah, New South Wales, Australia, a corporation of Australia
Filed Feb. 21, 1966, Ser. No. 1,144
Claims priority, application Australia Sept. 27, 1965
Term of patent 14 years
(Cl. D59—2)



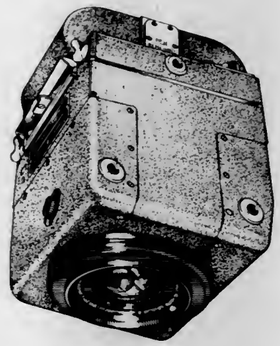
209,635
CAMERA MOUNT FOR A TELESCOPE OR SIMILAR ARTICLE
Willard H. Korte, North Miami Beach, Fla., assignor to Tasco Sales, Inc., Miami, Fla., a corporation of Florida
Filed Dec. 6, 1965, Ser. No. 86
Term of patent 14 years
(Cl. D61—1)



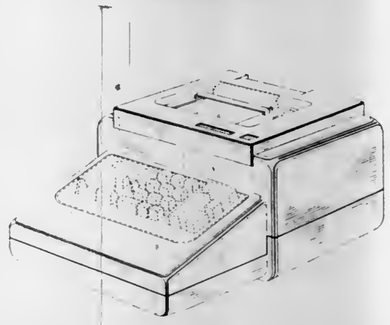
209,636
SELF-CONTAINED FILM PROJECTION CABINET
Edwin Busch, 1815 Seminole, Saginaw, Mich. 48603
Filed Feb. 15, 1966, Ser. No. 1,049
Term of patent 14 years
(Cl. D61—1)



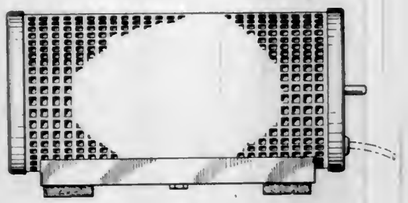
209,637
CAMERA
Robert W. Moore, Chicago, Ill., assignor to Chicago Aerial Industries, Inc., a corporation of Delaware
Filed Mar. 16, 1966, Ser. No. 1,487
Term of patent 14 years
(Cl. D61—1)



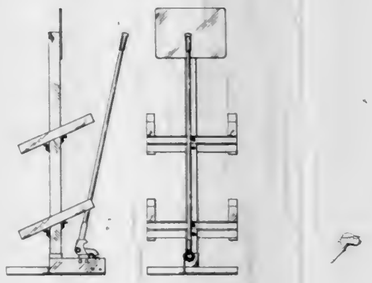
209,638
CALCULATING MACHINE
Ettore Sottsass, Milan, Italy, assignor to Ing. C. Olivetti & C., S.p.A., Ivrea, Turin, Italy, a corporation of Italy
Filed Oct. 3, 1966, Ser. No. 4,133
Claims priority, application Italy Apr. 13, 1966
Term of patent 14 Years
(Cl. D64—11)



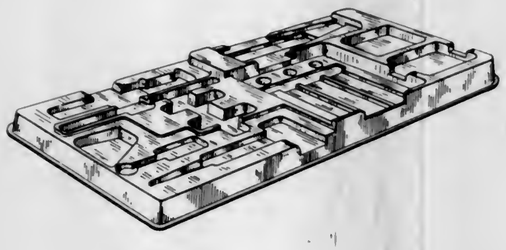
209,639
AQUARIUM PUMP
Morris R. Gare, 1473 Maple Ave., Hillside, N.J. 07205
Filed Nov. 14, 1966, Ser. No. 4,639
Term of patent 14 years
(Cl. D65—1)



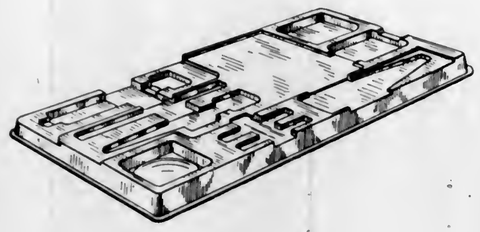
209,640
COMBINED DISPLAY STAND AND CUTTER FOR CHAINS OR THE LIKE
Adolph L. Platky and William F. Dean, Jr., St. Louis County, Mo., assignors to Nixdorff-Krein Manufacturing Company, St. Louis, Mo., a corporation of Delaware
Filed Jan. 26, 1967, Ser. No. 5,571
Term of patent 14 years
(Cl. D80—9)



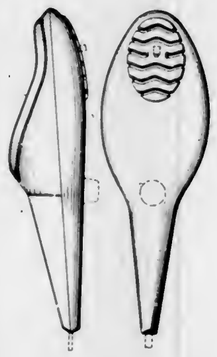
209,641
TRAY FOR MEDICAL EQUIPMENT
Allan M. Goldberg, Sepulveda, Calif., assignor to Pharmaseal Laboratories, Glendale, Calif., a corporation of California
Filed Jan. 30, 1967, Ser. No. 5,594
Term of patent 14 years
(Cl. D83—1)



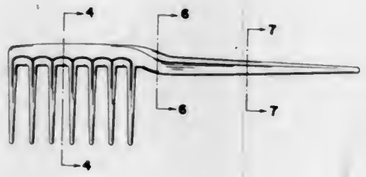
209,642
TRAY FOR MEDICAL EQUIPMENT
Allan M. Goldberg, Sepulveda, Calif., assignor to Pharmaseal Laboratories, Glendale Calif., a corporation of California
Filed Jan. 30, 1967, Ser. No. 5,608
Term of patent 14 years
(Cl. D83—1)



209,643
COMBINED HEATING AND MASSAGING UNIT
Ulysses S. Mozneck, Trumbull, Conn., assignor to Casco Products Corporation, Bridgeport, Conn., a corporation of Connecticut
Filed Mar. 14, 1967, Ser. No. 6,214
Term of patent 14 years
(Cl. D83—1)



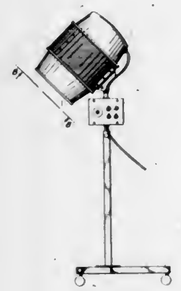
209,644
HAIR COMB
James E. Tucker, Chicago, Ill., assignor to The Gillette Company, Boston, Mass, a corporation of Delaware
Filed May 5, 1967, Ser. No. 6,967
Term of patent 14 years
(Cl. D86—8)



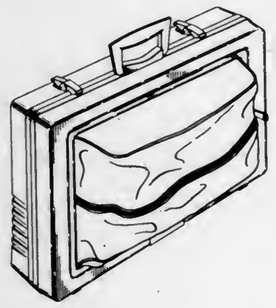
209,645
VANITY MIRROR
Jack Pleasants, Somerville, N.J., assignor to Eanco, Inc., Hatboro, Pa., a corporation of Pennsylvania
Filed Feb. 3, 1966, Ser. No. 909
Term of patent 14 years
(Cl. D86—10)



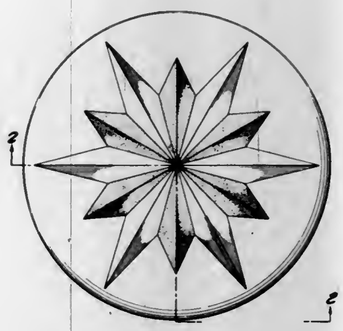
209,646
HAIR COLOR PROCESSING APPARATUS
Michael Angelo Gagliano, 3934 S. Expressway, Jacksonville, Fla. 32210
Filed Aug. 12, 1966, Ser. No. 3,456
Term of patent 14 years
(Cl. D86—10)



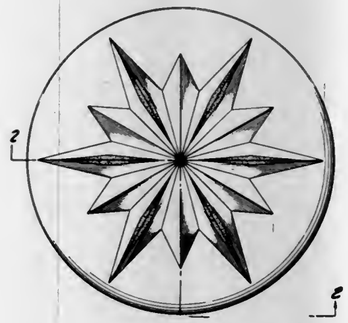
209,647
LUGGAGE CASE HAVING A CONVERTIBLE SIDE SECTION
David O. Chase, Camillus, and Martin V. Maloney, Skaneateles, N.Y., assignors to Scott Aviation Corporation, Lancaster, N.Y.
Filed Jan. 3, 1967, Ser. No. 5,278
Term of patent 14 years
(Cl. D87—5)



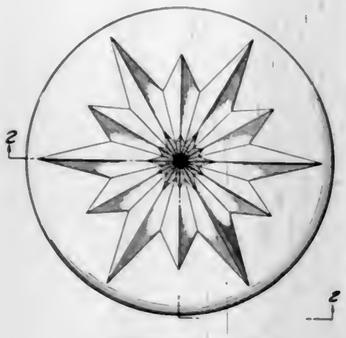
209,648
SHADE UMBRELLA
Carl R. Meyer, 2512 E. Vine St., West Covina, Calif. 91790
Filed Dec. 17, 1965, Ser. No. 220
Term of patent 14 years
(Cl. D88—3)



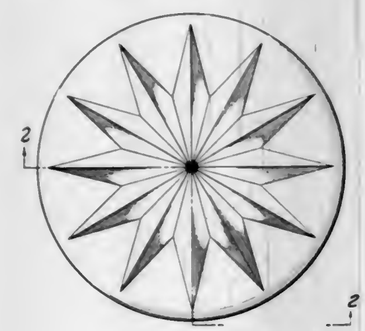
209,649
SHADE UMBRELLA
Carl R. Meyer, 2512 E. Vine St., West Covina, Calif. 91790
Filed Dec. 17, 1965, Ser. No. 223
Term of patent 14 years
(Cl. D88—3)



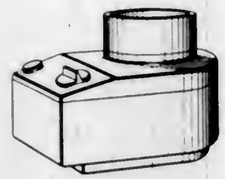
209,650
SHADE UMBRELLA
Carl R. Meyer, 2512 E. Vine St., West Covina, Calif. 91790
Filed Dec. 17, 1965, Ser. No. 225
Term of patent 14 years
(Cl. D88—3)



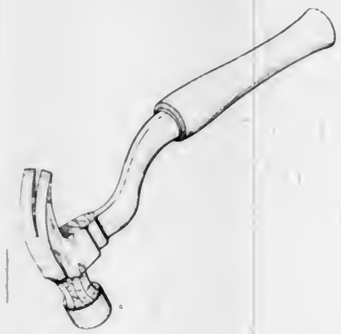
209,651
SHADE UMBRELLA
Carl R. Meyer, 2512 E. Vine St., West Covina, Calif. 91790
Filed Dec. 17, 1965, Ser. No. 226
Term of patent 14 years
(Cl. D88—3)



209,652
BASE FOR A BLENDER OR THE LIKE
Reinhold Weiss, Frankfurt am Main, Germany, assignor to Braun Aktiengesellschaft, Frankfurt am Main, Germany
Filed Nov. 4, 1966, Ser. No. 4,549
Term of patent 7 years
(Cl. D89—1)



209,653
HAMMER OR THE LIKE
Jerome Vogel, 48 Stewart Ave., Pittsburgh, Pa. 15227
Filed Sept. 12, 1966, Ser. No. 3,827
Term of patent 14 years
(Cl. D93—4)



LIST OF REISSUE PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 19TH DAY OF DECEMBER, 1967

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

Bennett, William O., W. W. Mutter, and E. Van Haaften, to Bulova Watch Co., Inc. Electronically-controlled timepiece and motion transformer therefor. Re. 26,322, 12–19–67, Cl. 74—142.

Bjork, Carl K.: *See*—
Hradel, Joseph R., and Bjork. Re. 26,325.

Bulova Watch Co., Inc.: *See*—
Bennett, William O., Mutter, and Van Haaften, Re. 26,322.

Caldwell, Samuel C.: *See*—
Peaslee, Lawrence R., and Caldwell. Re. 26,327.

Dow Chemical Co., The: *See*—
Hradel, Joseph R., and Bjork. Re. 26,325.

Fontaine, Paul J., to Westinghouse Air Brake Co. Wood chipper. Re. 26,323, 12–19–67, Cl. 241—28.

General Electric Co.: *See*—
Peaslee, Lawrence R., and Caldwell. Re. 26,327.

Groot, Dirk J.: *See*—
Van der Feyst, Willen H., and Groot. Re. 26,326.

Hradel, Joseph R., and C. K. Bjork, to The Dow Chemical Co. Ammonium nitrate explosive composition containing ammonia. Re. 26,325, 12–19–67, Cl. 149—1.

Land, Edwin H., to Polaroid Corp. Photographic apparatus. Re. 26,324, 12–19–67, Cl. 95—13.

Mutter, William W.: *See*—
Bennett, William O., Mutter, and Van Haaften. Re. 26,322.

NV. Optische Industrie "De Oude Delft": *See*—
Van der Feyst, Willen H., and Groot. Re. 26,326.

Peaslee, Lawrence R., and S. C. Caldwell, to General Electric Co. System for providing a range of determinate frequencies from a variable speed source. Re. 26,327, 12–19–67, Cl. 321—61.

Polaroid Corp.: *See*—
Land, Edwin H. Re. 26,324.

Van der Feyst, Willen H., and D. J. Groot, to NV. Optische Industrie "De Oude Delft." Automatic diaphragm control for aerial camera. Re. 26,326, 12–19–67, Cl. 352—141.

Van Haaften, Egbert: *See*—
Bennett, William O., Mutter, and Van Haaften. Re. 26,322.

Westinghouse Air Brake Co.: *See*—
Fontaine, Paul J. Re. 26,323.

LIST OF PLANT PATENTEES

Garabedian, John M., to Peach & Willow Farms. Plum tree. 2,783, 12–19–67, Cl. 38.

Peach & Willow Farms: *See*—
Garabedian, John M. 2,783.

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Aktiebolaget Electrolux: *See*—
Leinfelt, Karl E. 209,573.

Alpha Scientific Laboratories, Inc.: *See*—
Singer, Jerome R. 209,587.

Aluminum Co. of America: *See*—
Zoeller, Richard J., Walker, and Fleck. 209,605.

American Can Co.: *See*—
Schnur, Martin, and Appel. 209,633.

Anelli, Peter R. Badge. 209,594, 12–19–67, Cl. D29—2.

Appel, Mel, and M. Schnur, to Elpo Industries Inc. Combined slicing board and utensil rack. 209,606, 12–19–67, Cl. D44—1.

Appel, Mel: *See*—
Schnur, Martin, and Appel. 209,633.

Baker, Edward S., to P. H. Snider. Telephone subscriber terminal block connector. 209,588, 12–19–67, Cl. D26—1.

Bell Telephone Laboratories, Inc.: *See*—
McCune, Harry W. 209,593.

Blount, Bill G. Combined disposable bristle unit and adjustable paint brush handle. 209,572, 12–19–67, Cl. D9—2.

Building Research, Inc.: *See*—
Wah, Joe M., and Johnson. 209,576.

Brockway, Brock F., to E. D. Bullard Co. Box. 209,629, 12–19–67, Cl. D58—12.6.

Bullard, E. D. Co.: *See*—
Brockway, Brock F. 209,629.

Burnsworth, Richard E., J. W. Kirkpatrick, and W. J. Schade, to SBK Inc. Egg carton. 209,628, 12–19–67, Cl. D58—11.

Busch, Edwin. Self-contained film projection cabinet. 209,636. 12–19–67, Cl. D61—1.

Braun Aktiengesellschaft: *See*—
Weiss, Reinhold. 209,652.

Caldwell, Bobbie G.: *See*—
Schaper, Earl L., Caldwell, and Macalusa. 209,631.

Casco Products Corp.: *See*—
Mozneck, Ulysses S. 209,643.

Chase, David O.: *See*—
Doring, William H., Chase, and Maloney. 209,615.

Chase, David O., and M. V. Maloney, to Scott Aviation Corp. Luggage case having a convertible side section. 209,647, 12–19–67, Cl. D87—5.

Chaum & Lescht Enterprises, Inc.: *See*—
Galson, Sam. 209,569.

Chicago Aerial Industries, Inc.: *See*—
Moore, Robert W. 209,637.

Conrad, Grey J. Hood ornament. 209,582, 12–19–67, Cl. D14—18.

Craighead, James W. Cannon bank. 209,599, 12–19–67, Cl. D34—11.

Cummins Engine Co., Inc.: *See*—
Noyes, Eliot F., and Graf. 209,581.

Dean, William F., Jr.: *See*—
Platky, Adolph L., and Dean. 209,640.

De Castro, Angel R. Baby training seat. 209,568, 12–19–67, Cl. D4—5.

De La Fariest, Everett M. Pin placement indicator board for golf courses. 209,597, 12–19–67, Cl. D34—5.

Doring, William H., D. O. Chase, and M. V. Maloney, to Union Carbide Corp. Portable hand lantern. 209,615, 12–19–67, Cl. D48—24.

Dow Chemical Co., The: *See*—
Macalusa, Carroll J., and Schaper. 209,632.
Schaper, Earl L., and Marcus. 209,623.
Schaper, Earl L., Caldwell, and Macalusa. 209,631.

Eanco, Inc.: *See*—
Pleasants, Jack. 209,645.

Elpo Industries Inc.: *See*—
Appel, Mel, and Schnur. 209,606.

Fleck, Regis A.: *See*—
Zoeller, Richard J., Walker, and Fleck. 209,605.

Gaglinano, Michael A. Hair color processing apparatus. 209,646. 12–19–67, Cl. D86—10.

Galson, Sam, to Chaum & Lescht Enterprises, Inc. Bedspread holder. 209,569, 12–19–67, Cl. D5—2.

Game-Time, Inc.: *See*—
Wormser, Robert S. 209,602.
Wormser, Robert S. 209,603.
Wormser, Robert S. 209,604.

Gare, Morris R. Aquarium pump. 209,639, 12–19–67, Cl. D65—1.

Gillette Co., The: *See*—
Tucker, James E. 209,644.

Goldberg, Allan M., to Pharmaseal Laboratories. Tray for medical equipment. 209,641, 12–19–67, Cl. D83—1.

Goldberg, Allan M., to Pharmaseal Laboratories. Tray for medical equipment. 209,642, 12–19–67, Cl. D83—1.

Graf, Robert E.: *See*—
Noyes, Eliot F., and Graf. 209,581.

Gurr, Robert H., to Wed Enterprises, Inc. Passenger vehicle. 209,579, 12–19–67, Cl. D14—3.

Hampell, Herbert J., and M. I. Ross, to The Ross Mfg. Co. Knob. 209,591, 12–19–67, Cl. D26—13.

Heidenhain, Dr. Johannes: *See*—
Kraus, Heinz. 209,621.

Heinemann Electric Co.: *See*—
Wilckens, Wolfgang E. 209,592.

Heuvel, Johan G. F. Ski boot support. 209,600, 12–19–67, Cl. D34—14.

Hicks, Alan A.: *See*—
Swimmer, Ernest J., and Hicks. 209,601.

Hills, David G., to Monsanto Co. Bottle. 209,625, 12–19–67, Cl. D58—6.

Hills, David G., to Monsanto Co. Bottle. 209,626, 12–19–67, Cl. D58—6.

Hirota, Kashichi. Case for beverage bottles or the like. 209,624, 12–19–67, Cl. D58—5.

Hocq, Robert. Cigarette-lighter or similar article. 209,616, 12–19–67, Cl. D48—27.

Hubel, Vello, to Protective Plastics Ltd. Playground climber. 209,596, 12–19–67, Cl. D34—5.

Hutchins, Gloria A. Bathroom cabinet for douche equipment. 209,567, 12–19–67, Cl. D4—3.

Ing. C. Olivetti & C., S.p.A.: *See*—
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International Business Machines Corp.: *See*—
Jagger, John D. 209,590.

Interstate Bag Co., Inc.: *See*—
Klopfenstein, Fritzi. 209,622.

Jagger, John D., to International Business Machines Corp. Storage and transport container for computer film clips. 209 590, 12–19–67, Cl. D26—5.

Jantzen, George H., to M. Steinthal & Co., Inc. Safety belt buckle. 209,566, 12–19–67, Cl. D2—408.

Jenkins, Henry H. Electric arc type cutting gun. 209,589, 12–19–67, Cl. D26—1.

Johnson, Theodore A.: *See*—
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Wah, Joe M., and Johnson. 209,576.

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Burnsworth, Richard E., Kirkpatrick, and Schade. 209,628.

Klopfenstein, Fritzi, to Interstate Bag Co., Inc. Shopping bag. 209,622. 12–19–67, Cl. D58—2.

Koch, Samuel J. Dental jet producing unit. 209,585, 12–19–67, Cl. D24—1.

Koch, Samuel J. Dental jet producing kit. 209,586, 12–19–67, Cl. D24—1.

Kochanowski, George A. Carpet kicker. 209,620, 12–19–67, Cl. D54—13.

Korte, Willard H., to Tasco Sales, Inc. Camera mount for a telescope or similar article. 209,635, 12–19–67, Cl. D61—1.

Kraus, Heinz, to Dr. J. Heidenhain. Reading device for measuring rods or the like. 209,621, 12–19–67, Cl. D57—1.

Lea, Darrell B., to Ricci Redmond Chocolate Co., Pty., Ltd. Wrapping paper for a box cover. 209,634, 12–19–67, Cl. D59—2.

Leinfelt, Karl E., to Aktiebolaget Electrolux. Combined coupling, vacuum cleaner suction control and tool holder. 209,573, 12–19–67, Cl. D9—2.

Lenza Bronica Kogyo Kabushiki Kaisha: *See*—
Yoshino, Zenzaburo. 209,617.

Leuml, Dubi. Record jacket support clip. 209,618, 12–19–67, Cl. D54—1.

Lloyd, Clifford T., to Lloyd Products, Inc. Palette. 209,607, 12–19–67, Cl. D44—15.

Lloyd Products, Inc.: *See*—
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Schaper, Earl L., Caldwell, and Macalusa. 209,631.

Macalusa, Carroll J., and E. L. Schaper, to The Dow Chemical Co. Container for oil products or the like. 209,632. 12–19–67, Cl. D58—17.

Maloney, Martin V.: *See*—
Doring, William H., Chase, and Maloney. 209,615.
Chase, David O., and Maloney. 209,647.

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Schaper, Earl L., and Marcus. 209,623.

McCune, Harry W., to Bell Telephone Laboratories, Inc. Telephone handset support. 209,593, 12–19–67, Cl. D26—14.

McDonalds System, Inc.: *See*—
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Meyer, Carl R. Shade umbrella. 209,649, 12–19–67, Cl. D88—3.

Meyer, Carl R. Shade umbrella. 209,650, 12–19–67, Cl. D88—3.

Meyer, Carl R. Shade umbrella. 209,651, 12–19–67, Cl. D88—3.

Monsanto Co.: *See*—
Hills, David G. 209,625.
Hills, David G. 209,626.

Moore, Robert W., to Chicago Aerial Industries, Inc. Camera. 209,637, 12–19–67, Cl. D61—1.

Mozneck, Ulysses S., to Casco Products Corp. Combined heating and massaging unit. 209,643, 12–19–67, Cl. D83—1.

Nielsen, Warren A. Work desk unit for a design engineer. 209,595, 12–19–67, Cl. D33—7.

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Takeoka, Ryotaro. 209,610.
Takeoka, Ryotaro. 209,611.

Noyes, Eliot F., and R. E. Graf, to Cummins Engine Co., Inc. Refrigeration unit mountable on the exterior of a vehicle. 209,581, 12–19–67, Cl. D14—6.

Paprocki, Edward J. Combined coaster and holder for a beverage can. 209,613, 12–19–67, Cl. D44—21.

Paprocki, Edward J. Combined coaster and holder for a beverage can. 209,614, 12–19–67, Cl. D44—21.

Pharmaseal Laboratories: *See*—
Goldberg, Allan M. 209,641.
Goldberg, Allan M. 209,642.

Pirelli, Societa per Azioni: *See*—
Pompili, Michele. 209,577.

Platky, Adolph L., and W. F. Dean, Jr., to Nixdorff-Krein Mfg. Co. Combined display stand and cutter for chain or the like. 209,640, 12–19–67, Cl. D80—9.

Pleasants, Jack, to Eanco, Inc. Vanity mirror. 209,645, 12–19–67, Cl. D86—10.

Pompili, Michele, to Pirelli, Societa per Azioni. Floor covering unit. 209,577, 12–19–67, Cl. D13—1.

Procter & Gamble Co., The: *See*—
Vanderhyde, Harold J. 209,627.

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Hubel, Vello. 209,596.

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Towe, Frederick L. Combined mixing and staining dental tray. 209,584, 12–19–67, Cl. D24—1.

Tucker, James E., to The Gillette Co. Hair comb. 209,644, 12–19–67, Cl. D86—8.

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Van Riper, William A. Bunk crib. 209,570, 12–19–67, Cl. D5—5.

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Wah, Joe M., and T. A. Johnson. Building. 209,575, 12–19–67, Cl. D13—1.

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Wormser, Robert S., to Game-Time, Inc. Duck-shaped seat for playground apparatus 209,602. 12–19–67, Cl. D34—15.

Wormser, Robert S., to Game-Time, Inc. Ram-shaped seat for playground apparatus. 209,604. 12–19–67, Cl. D34—15.

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TO WHOM

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Anderson, George M., S. S. Jaffe, and M. D. Bowers, to McGraw-Edison Co. Method of externally determining discharge capability of a battery with a metal electrode. 3,359,494, 12–19–67, Cl. 324—29.5.

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Anthony, Walter H., F. A. Zoda, and K. H. Walterick, to Circle F Mfg. Co. Rotary dimmer switch of the canopy type. 3,359,393, 12–19–67, Cl. 200—155.

Antill, John E., to United Kingdom Atomic Energy. Ceramic fuel element for a gas-cooled nuclear reactor including a metallic fuel container provided with an oxidation resistant coating. 3,359,176, 12–19–67, Cl. 176—82.

Anton, Joe. V-block clamp construction. 3,358,990, 12–19–67, Cl. 269—118.

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Bailey, Donald L., to Union Carbide Corp. Aqueous mixture and silicone oil in water emulsion containing siloxane wetting agents. 3,359,212, 12–19–67, Cl. 252—312.

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Clark, John. Sequence timing device. 3,359,381, 12-19-67, Cl. 200—38

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Cooke, William E., D. E. Bury, and P. Smits, to Aluminium Laboratories Ltd. Continuous anodizing process and apparatus. 3,359,189, 12-19-67, Cl. 204—28.

Cooke, William E., and N. O. Helwigh, to Aluminium Laboratories Ltd. One-side anodizing of aluminum sheet. 3,359,190, 12-19-67, Cl. 204—28.

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Cratsa, Steve N., to Koppers Co., Inc. Floating soap. 3,359,206, 12-19-67, Cl. 252—92.

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Criner Gaspard X., to Monsanto Co. Linear polyurea elastomers. 3,359,243. 12-19-67, Cl. 260—77.5.

Crompton, George. System for battery charging. 3,359,479, 12-19-67, Cl. 320—52.

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Croxton, William B. Spinning apparatus and method utilizing miniature carding rolls. 3,358,432, 12-19-67, Cl. 57—50.

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Cunningham, Beulah F., and B. W. Thompson. Combined hairbrush and style lift. 3,358,211, 12-19-67, Cl. 15—105.

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Cyba, Henryk A., to Universal Oil Products Co. Addition reaction products of oxyalkylenated phosphorus compounds and N-containing polymers. 3,359,347, 12-19-67, Cl. 260—925.

Dadd, Morris V., to Johnson Products, Inc. Lubricant flow metering means for engine rocker arm lubrication system. 3,358 658 12-19-67, Cl. 123—90.

Dahlman, Per O., and P. M. Thrasher, to International Business Machines Corp. Ideally lossless resonant transfer of energy between bandpass filters of equal bandwidth. 3,359,370, 12-19-67, Cl. 179—15.

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Daniel, Benjamin S., to Techniservice Corp. Process and apparatus for crimping strands. 3,358,345, 12-19-67, Cl. 28—1.

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Murakami, Hiromi, and Y. Morizumi, to Nippon Electric Co., Ltd. Dielectric shield for ultrahigh frequency thermionic tubes. 3,359,446, 12–19–67, Cl. 313—242.
Murdoch, Colin A. Projectile hypodermic syringes. 3,358,685, 12–19–67, Cl. 128—215.
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Newman, George. Bumper guard assembly. 3,359,030, 12–19–67, Cl. 293—1.
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Nilsson, Bengt E., to Aktiebolaget Electrolux. Vacuum cleaner cover latch control. 3,359,025, 12–19–67, Cl. 292—117.
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Nommensen, Johan P., and H. Waning, to Stamicarbon N.V. Device for the production of artificial filaments by the melt spinning method. 3,358,326, 12–19–67, Cl. 18—8.
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Obenshain, David N., to West Virginia Pulp and Paper Co. Machine frame structure. 3,359,054, 12–19–67, Cl. 312—352.
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Oddi, Piero, to Montecatini Edison S.p.A. Process for making porous expanded-thermoplastic articles. 3,359,353, 12–19–67, Cl. 264—53.
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Offner, Abe, to The Perkin-Elmer Corp. Stable cylindrical lens systems. 3,359,056, 12–19–67, Cl. 350—181.
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Olson, Robert L., and E. L. Kochey, Jr., to Combustion Engineering, Inc. Water cooled furnace joint for mixing header arrangement. 3,358,650, 12–19–67, Cl. 122—6.
Olsson, Curt S., to Aktiebolaget Atomenergi. Device for operating neutron-absorbing rods in nuclear reactors. 3,359,172, 12–19–67, Cl. 176—36.
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Ormond, Alfred N. Linearization of output signals from load cell bridge circuits. 3,358,501, 12–19–67, Cl. 73—141.
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Orr, James E., to Litton Precision Products, Inc. Frequency stable crossed field device having thermal sensitive means connected between the slow wave structure and sole electrode. 3,359,450, 12–19–67, Cl. 315—3.5.
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Osborn, Stephen W., T. F. Wells III, and E. L. Kutch, to Thiokol Chemical Corp. Zinc or mercury salt catalytic process. 3,359,248, 12–19–67, Cl. 260—79.7.
Osborne, Charles D. Air heater utilizing cooking stove heating elements. 3,358,670, 12–19–67, Cl. 126—110.
Osborne, Charles D. Space heater and cooker. 3,358,671, 12–19–67, Cl. 126—110.
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Zauner, Otto. 3,358,810.
Owings, Robert S., to Texas Instruments Inc. Electronic component assembly including a mounting bracket with removable loops. 3,359,360, 12–19–67, Cl. 174—52.
Oyler, John F., to Dravo Corp. Spillage chute for traveling grate machine. 3,358,981, 12–19–67, Cl. 266—21.
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Pacciarini, Antonio, and D. Gilletta, to Pirelli S.p.A. Apparatus for producing the tread band of flexible tread rings while in a plastic state. 3,358,330, 12–19–67, Cl. 18—17.
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Page, Kingman W., to Dresser Industries, Inc. Valve construction for reciprocating type compressor. 3,358,710, 12–19–67, Cl. 137—512.1.
Paige, Hilliard W., to General Electric Co. Satellite orbit changing system. 3,359,407, 12–19–67, Cl. 235—150.2.
Palm, Bengt A., to Aktiebolaget Separator. Method for sterilizing the filling pipe of a filling machine. 3,359,062, 12–19–67, Cl. 21—56.
Palmer, Earl W., and R. B. L. Jones, to Anaconda American Brass Co. Vacuum sealing plug. 3,358,869, 12–19–67, Cl. 220—24.5.
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Palmer, Reed A., to Robertshaw Controls Co. Pneumatic actuator and parts therefor or the like. 3,358,566, 12–19–67, Cl. 92—9.
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Panhard, Paul, to Andre Citroen, Societe Anonyme. Devices for starting a double action free piston engine having a single cylinder. 3,358,656, 12–19–67, Cl. 123—46.
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Papin, Joseph E., to Tung-Sol Electric Inc. Control valve. 3,359,043, 12–19–67, Cl. 303—52.
Pappas, Phillip M. Continuous gas burner strip and apparatus for making the same. 3,359,401, 12–19–67, Cl. 219—81.
Pappo, Raphael, and M. G. Scaros, to G. D. Searle & Co. (Optionally 17-alkylated)-3-oxa-5α-androstan-17β-ols, esters corresponding and intermediates thereto. 3,359,282, 12–19–67, Cl. 260—345.2.
Pareira, Herbert E. Kitchen utensils for handling and dispensing ice cream and the like. 3,358,619, 12–19–67, Cl. 107—48.
Parigi, Paolo. Drawing board or work table with raisable and inclinable working surface. 3,358,620, 12–19–67, Cl. 108—6.
Park, John H., to The Boeing Co. Current comparing apparatus and shunt impedance elements. 3,359,488, 12–19–67, Cl. 324—55.
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Parker, Harry W., to Phillips Petroleum Co. Method of fracturing subterranean strata. 3,358,764, 12–19–67, Cl. 166—42.
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Worth, Lewis R., Parmer and J. F. 3,358,609.
Parr, Edward L. Post painter. 3,358,312, 12–19–67, Cl. 15—230.11.
Parr, Edward L., to W. L. Thompson. Rotor lock out. 3,358,482, 12–19–67, Cl. 70—255.
Parr, Edward L. Turbine water sprinkler. 3,358,930, 12–19–67, Cl. 239—210.
Parsons, David G.: *See*—
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Parvi, Ludovic: *See*—
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Patai, Saul, Y. Halpern, and M. Michman, to Yissum Research Development Co. Process for preparing tetraphenylfuran. 3,359,284. 12–19–67, Cl. 260—346.1.
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Patrignani, Theo. to Manurhin. Transmission device. 3,358,524, 12–19–67, Cl. 74—250.
Patterson, Robert J., and R. R. Haberecht, to Texas Instruments Inc. Boron nitride film capacitor. 3,359,468, 12–19–67, Cl. 317—258.
Patterson, Roger W., to Eastman Kodak Co. Intermittent drive mechanism. 3,358,518, 12–19–67, Cl. 74—125.5.
Pattijn, Hendrik A., E. F. Hendricx, J. F. Willems, and A. J. Van Paesschen, to Gevaert Photo-Producten N.V. Optical brightening of photographic materials. 3,359,102, 12–19–67, Cl. 96—1.8.
Paxton, Allen D. Gusset bottom bags in roll form and method of making same. 3,358,823, 12–19–67, Cl. 206—58.
Pearson, Alan, and G. MacZura. to Aluminum Co. of America. Dry grinding of alumina. 3,358,937, 12–19–67, Cl. 241—15.
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Peebles, Bruce, Industries Ltd.: *See*—
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Peene, Guido, to Trefilerles Leon Bekaert, SpRL. Cord composed of filaments or strands of different diameters. 3,358,435, 12–19–67, Cl. 57—145.

Pelson, Ernest. Spool construction. 3,358,943, 12–19–67, Cl. 242—125.2.

Pelzer, Hans: *See*—
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Pence, Roy J., to The Regents of the University of California. Imidazole, pyrazole and oxazole insecticides for fiber eating insects. 3,359,158, 12–19–67, Cl. 167—37.

Penn, Franz, to Vereinigte Osterreichische Eisen- und Stahlwerke Aktiengesellschaft. Blowing device for carrying out top blowing processes. 3,358,982, 12–19–67, Cl. 266—34.

Pennell, Harry. Soap cake holder and dispenser. 3,359,052, 12–19–67, Cl. 312—229.

Pennino, Charles J., and M. W. Gaylord, to Koppers Co., Inc. Bonded non-metallic tie plate. 3,358,925, 12–19–67, Cl. 238—287.

Perdue, Richard R., to W. R. Grace & Co. Packaging. 3,358,900, 12–19–67, Cl. 229—30.

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Perez-Mendez, Victor, and J. M. Pfab, to United States of America, Atomic Energy Commission. Magnetostrictive readout for wire spark chambers. 3,359,421, 12–19–67, Cl. 250—83.6.

Perkin-Elmer Corp., The: *See*—
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Perreau, Pierre, to Societe d'Instrumentation Schlumberger. Multidock magnetic recording apparatus. 3,359,007, 12–19–67, Cl. 274—4.

Perry, Bryan J., Jr., to Kitchen & Perry, Inc. Curing apparatus for press-free garments and the like. 3,358,386, 12–19–67, Cl. 34—208.

Perry, Landis H. Combination lock. 3,358,479, 12–19–67, Cl. 70—25.

Perry, Robert H., Jr., and L. C. Jennings, to Esso Research and Engineering Co. Process for color improvement of β-vinyladipic acid. 3,359,311, 12–19–67, Cl. 260—537.

Perry, Russell, to General Time Corp. Electronic counter. 3,359,406, 12–19–67, Cl. 235—92.

Petelinkar, Richard A., to General Electric Co. Distillation of dimethylchlorosilane in presence of added HCl. 3,359,186, 12–19–67, Cl. 203—34.

Petering, Wilbur H., and W. A. Callahan, to Detrex Chemical Industries, Inc. Composition and method of inhibiting corrosion of cupreous metals by amine-stabilized unsaturated chlorinated hydrocarbons. 3,359,209, 12–19–67, Cl. 252—153.

Petersen, Povl V., and T. Huld, to Kefalas A/S. Thiaxanthenols, process of producing and anti-tussive compositions thereof. 3,359,161, 12–19–67, Cl. 167—55.

Peterson, Clifford D.: *See*—
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Peterson, Harry L. Fluid pressure system for use in controlling steering of outboard motors and the like. 3,358,564, 12–19–67, Cl. 91—375.

Peterson, James L., to The Joyce Corp. Process for preparing a protective coating. 3,359,181, 12–19–67, Cl. 106—14.

Petro-Tex Chemical Corp.: *See*—
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Pettie, Lewis F., Jr., and H. J. Bichsel, to Westinghouse Electric Corp. Arc welding apparatus. 3,359,403, 12–19–67, Cl. 219—131.

Petty, Billy C., A. R. Hendrickson, and L. S. Brown, to The Dow Chemical Co. Liquid nitrogen in well operations. 3,358,763, 12–19–67, Cl. 166—42.

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Purdy, Haydn V., and R. C. McIntosh. Electrical equipment for coding intelligence. 3,358,816, 12–19–67, Cl. 199—1.

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Roberts, Carleton W., and D. H. Haigh, to The Dow Chemical Co. Halophenoxy norbornenes. 3,359,328, 12–19–67, Cl. 260—612.

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Rossi, Irving, to Concast, Inc. Cooling and apron arrangement for continuous casting molds. 3,358,744, 12-19-67, Cl. 164—282.

Rossnan, Michael. Apparatus for shaping and cooking food. 3,358,588, 12-19-67, Cl. 99—426.

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Schroedter, Willburt W., and W. G. Schuetzenduebel, to Combustion Engineering, Inc. Method and apparatus for steam turbine startup. 3,358,450, 12-19-67, Cl. 60—105.

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48	3,358,874	48	3,359,410	50	3,358,557	53	3,358,818	55	3,358,371	55	3,358,908
	3,358,997		3,359,443		3,358,932		3,358,823		3,358,378		3,358,911
	3,359,004		3,359,465	51	Re.26,327		3,359,488		3,358,397		3,358,939
	3,359,016		3,359,468		3,358,367	54	3,358,769		3,358,420		3,358,991
	3,359,046		3,359,471		3,358,454		3,358,779		3,358,510		3,359,000
	3,359,144		3,359,478		3,358,576		3,358,866		3,358,580		3,359,018
	3,359,225		3,359,483		3,358,596		3,358,946		3,358,608		3,359,024
	3,359,259		3,359,536		3,358,597		3,359,212		3,358,618		3,359,121
	3,359,270		3,359,553		3,359,070		3,359,247		3,358,654		3,359,200
	3,359,308	49	3,358,504		3,359,117		3,359,260		3,358,668		3,359,300
	3,359,351		3,358,512		3,359,142		3,359,324		3,358,793		3,359,316
	3,359,360		3,358,754		3,359,350		3,359,337		3,358,839		3,359,530
	3,359,401	50	3,358,374		3,359,563	55	3,358,360		3,358,863		

Design Patents

6	209,570	6	209,597	9	209,622	17	209,644	27	209,578	36	209,601
	209,574		209,629		209,625	18	209,593	29	209,567		209,613
	209,575		209,641		209,626	20	209,588		209,598		209,614
	209,576		209,642		209,643	22	209,632		209,640		209,627
	209,579		209,648	11	209,565	26	209,582	34	209,571		209,647
	209,584		209,649	12	209,580		209,602		209,606	42	209,583
	209,585		209,650		209,635		209,603		209,633		209,591
	209,586		209,651		209,646		209,604		209,639		209,605
	209,587	8	209,599	17	209,569		209,619		209,645		209,618
	209,589		209,607		209,627		209,623	36	209,564		209,628
	209,590	9	209,581		209,630		209,631		209,566		209,653
	209,595		209,615		209,637		209,636		209,568	48	209,572

Plant Patents

6	2,783										

U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

December 19, 1967 Volume 845 Number 3

TRADEMARKS

NOTICES

Search Room Hours

The move of the Public Search Room to Crystal Plaza is now underway and should be completed sometime in January.

Effective Jan. 2, 1968, the Public Search Room at Crystal Plaza will be open from 8 a.m. to 8 p.m. on workdays; it will not be open on Saturdays.

RICHARD A. WAHL,
Assistant Commissioner.

Nov. 30, 1967.

International Convention for the Protection of Industrial Property

Accession of Togo to the Lisbon 1958 Revision

The Secretary of State has been notified by the Embassy of Switzerland of the accession of the Republic of Togo to the International Convention for the Protection of Industrial Property, as last revised at Lisbon on October 31, 1958. The accession became effective on September 10, 1967.

EDWARD J. BRENNER,
Commissioner of Patents.

Nov. 20, 1967.

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 40,411 (CROWN), Crown Central Petroleum Corporation, Lubricants; **Reg. No. 251,712** (CROWN ETC. AND DESIGN), same, Motor oil for lubricating purposes; **Reg. No. 256,110** (CROWNZOL, ETC. AND DESIGN), same, Gasoline and oils adapted to be used as motor fuels and for illuminating and lubrication purposes; **Reg. No. 273,320** (CROWNZOL), same, **filed** Sept. 21, 1967, D.C., N.D. Ala. (Birmingham), Doc. 67–521, *Standard Oil Company* v. *Crown Central Petroleum Corporation.*

Reg. No. 208,285 (STAR ETC. IN A CIRCULAR DESIGN), The Columbus Vending Company, Vending machines, **filed** Sept. 13, 1967, D.C., S.D.N.Y., Doc. 67–C–3621, *Bercy Industries, Inc.* v. *Rialto Products, Inc.*

Reg. No. 233,742 (LIBBY'S), Libby, McNeill & Libby, Canned fruits and berries; **Reg. No. 708,172**, same, Canned goods—namely, fruits, fruits and grain, etc.; **filed** Dec. 2, 1965, D.C., S.D. Calif. (Fresno), Doc. 2725–ND, *Libby, McNeill & Libby* v. *Tony Simone, doing business as Simone Fruit Co. and Simone Packing Co.* Defendants permanently enjoined, Sept. 21, 1967.

Reg. No. 246,665 (BRIGHT STAR ETC. AND DESIGN), Bright Star Battery Co., Electric batteries; **Reg. No. 247,941** (REPRODUCTION STAR IN CIRCLE), same, Electric batteries, viz, flashlight batteries, radio and wireless batteries, etc.; **Reg. No. 362,599** (BRIGHT STAR AND DESIGN), same, Dry cell batteries and flashlight casings; **Reg. No. 575,640**, same, Photoflash battery and bulb tester; **Reg. No. 707,501**, same, Photoflash batteries and bulb testers; **Reg. No. 714,670**, same, Dry cell batteries, radio batteries, etc., **filed** July 20,

CONDITION OF TRADEMARK APPLICATIONS AS OF OCTOBER 31, 1967

Total number of applications awaiting action [excluding renewals and Sec. 12 (c)]	17,038
Date of oldest new application	Dec. 13, 1966
Date of oldest amended application (filing date)	Oct. 21, 1964

C. M. WENDT, Director, Trademark Examining Operation

TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application	
	New	Amended
(I) L. J. BETTENDORF, Classes 2, 3, 4, 5, 7, 9, 10, 11, 27, 28, 30, 32, 33, 37, 38, 39, 40, 41, 42, 43, 50; Certification Marks, Classes A and B	1-16-67	1-11-66
(II) F. H. WETHERBEE, Classes 1, 6, 15, 18, 45, 46, 47, 48, 49, 51, 52; Collective Membership Mark, Class 200	1-18-67	11-1-65
(III) P. S. BALL, Classes 19, 21, 23, 26, 31, 34, 35, 36	12-13-66	4-16-65
(IV) M. E. ABRAMSON, Classes 8, 12, 13, 14, 16, 17, 20, 22, 24, 25, 29, 44; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, and 107	12-19-66	10-21-64
Renewals (All Classes)	10-16-67	
Sec. 12(c) Publications (All Classes)	10-16-67	

Applications filed during the month of October 1967—2,473

Registrations Issued ---------- 384—No. 840,679 to No. 841,062
Renewals Issued ---------- 60

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed: subscription price, $12.00 per annum, foreign mailing $4.00 additional; single copies, 25 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 20 cents each. Address orders to the Commissioner of Patents, Washington, D.C., 20231.

1967, D.C., W.D. Wis. (Madison), Doc. 67-C-95, *Bright Star Industries Incorporated v. Marathon Battery Company.*

Reg. No. 247,941. (See Reg. No. 246,665.)

Reg. No. 251,712. (See Reg. No. 40,411.)

Reg. No. 256,150. (See Reg. No. 40,411.)

Reg. No. 273,320. (See Reg. No. 40,411.)

Reg. No. 362,599. (See Reg. No. 246,665.)

Reg. No. 364,683. (See Reg. No. 824,761.)

Reg. No. 416,133. (See Reg. No. 825,761.)

Reg. No. 424,892 (MICRO-THREAD PULSATOR), Rite-Way Products Company, Pulsators for milking machines; **Reg. No. 524,217** (ACME), The Schatz Manufacturing Company, Ball bearing casters for furniture and trunks, **filed** Sept. 1, 1965, D.C., W.D. Tex. (Pecos), Doc. C-67-89-P, *Robert A. Cottrell et al. v. Halliburton Company.* Order of dismissal, Oct. 5, 1967.

Reg. No. 521,081 (RANCH STYLE), Waples-Platter Company, doing business as Great Western Foods Company, Canned beans, canned spaghetti, and coffee; **Reg. No. 726,319** (RANCH STYLE ETC. AND DESIGN), same, Canned pinto beans, **filed** May 11, 1966, D.C., S.D. Tex. (Corpus Christi), Doc. C.A. 66-C-42, *Waples-Platter Co. v. H.E.B. Grocery Co.* Dismissed with prejudice, Oct. 4, 1967.

Reg. No. 524,217. (See Reg. No. 424,892.)

Reg. No. 529,080 (ORLON), E. I. du Pont de Nemours and Company, Synthetic fiber-forming polymers and copolymers of acrylic acid, etc.; **Reg. No. 536,272,** same, Yarns of synthetic fibers, **filed** July 12, 1967, D.C., E.D.N.Y. (Brooklyn), Doc. 67C-667, *E. I. du Pont de Nemours & Co. v. Cameo Fashion Knits, Inc.* Consent judgment filed for injunction, Oct. 5, 1967.

Reg. No. 533,798. (See Reg. No. 824,761.)

Reg. No. 536,272. (See Reg. No. 529,080.)

Reg. No. 543,934 (BLACK FRUSTO-CONICAL TIP AT THE END OF PENCIL BODY OPPOSITE WRITING POINT), A. T. Cross Pencil Company, Mechanical pencils, **filed** Aug. 11, 1967, D.C., S.D.N.Y., Doc. 67-C-3073, *A. T. Cross Company v. Aversa & Martin, Inc.*

Reg. No. 575,640. (See Reg. No. 246,665.)

Reg. No. 613,858 (AMERICAN), American Machine Works, Inc., Wire stitching machines, **filed** Sept. 11, 1967, D.C., E.D. Wis. (Milwaukee), Doc. 65-C-134, *W. R. Pabich Mfg. Co., Inc. v. American Machine Works, Inc., Jollen, Inc. et al.* Defendant, Jollen, Inc. enjoined, Sept. 11, 1967.

Reg. No. 630,745. (See Reg. No. 824,761.)

Reg. No. 641,270. (See Reg. No. 824,761.)

Reg. No. 642,226. (See Reg. No. 824,761.)

Reg. No. 656,314. (See Reg. No. 824,761.)

Reg. No. 658,682. (See Reg. No. 824,761.)

Reg. No. 660,010. (See Reg. No. 824,761.)

Reg. No. 665,835 (HERSHEY'S), Hershey Creamery Company, Ice cream and butter, **filed** Nov. 17, 1966, D.C., S.D.N.Y., Doc. 66-C-3915, *Hershey Creamery Company v. Hershey Chocolate Corporation et ano.* Judgment dismissing action, Sept. 20, 1967.

Reg. No. 707,501. (See Reg. No. 246,665.)

Reg. No. 708,172. (See Reg. No. 233,742.)

Reg. No. 714,670. (See Reg. No. 246,665.)

Reg. No. 714,761 (MC MULLEN AND DESIGN), J. R. McMullen Company, Inc., Women's blouses, women's sweaters, dresses, skirts, women's slacks and shorts, **filed** Mar. 10, 1965, D.C., S.D.N.Y., Doc. 65-C-721, *J. R. McMullen Co., Inc. v. E. J Korvette, Inc* Order dismissing action, Sept 5, 1967.

Reg. No. 726,319. (See Reg. No. 521,081.)

Reg. No. 755,336 (FLECTO AND DESIGN), The Flecto Company, Inc., Protective coating—namely, paints, varnishes, and enamels for interior and exterior use, **filed** Sept. 19, 1967, D.C., E.D. Wash. (Spokane), Doc. C3062, *The Flecto Company, Inc. v. Atlas Seamless Flooring Manufacturing, Inc.*

Reg. No. 801,100 (A TO Z), A to Z Rental, Inc., Service of renting tools, equipment, and vehicles, **filed** Mar. 20, 1967, D.C., N.D. Ill. (Freeport), Doc. 67-C-15, *A to Z Rental, Inc. v. Gene Smith and Howard G. Smith, doing business as A to Z Rental Sales & Services.* Judgment for plaintiff, Sept. 13, 1967. **Same, filed** Mar. 28, 1967, D.C., N.D. Ill (Freeport), Doc. 67-C-144, *A to Z Rental, Inc. v. James W. Furrow, doing business as A-Z Rents It.* Defendant infringed and is permanently restrained and enjoined, Sept. 26, 1967. **Same, filed** Apr. 4, 1967, D.C., N.D. Ill. (Freeport), Doc. CA-4-826, *A to Z Rental, Inc. v. Gary A. Fox and Charles A. Kimbrough, doing business as A-Z Rental Sales.* Plaintiff owner, defendants infringed and permanently enjoined, Oct. 2, 1967.

Reg. No. 809,675 (STAND'N SNACK), Stand'n Snack Shops, Inc., Restaurant services, **filed** Oct. 6, 1967, D.C., M.D. Fla. (Jacksonville), Doc. 67-676-C-J, *Stand'n Snack Shops, Inc. v. Bud's Sip'n Snack, Inc. et al.*

Reg. No. 811,736 (SEA LARK), Sea B's, Inc., Women's and misses' beachwear—namely, swim suits, **filed** Feb. 6, 1967, D.C., S.D.N.Y., Doc. 67-C-520, *Sea B's Inc. v. Roxanne Swim Suit Company, Inc.* Consent judgment, defendant enjoined, Sept. 20, 1967.

Reg. No. 824,760. (See Reg. No. 824,761.)

Reg. No. 824,761 (CHEVRON), Standard Oil Company of California, Emulsified petroleum hydrocarbon additive for water, etc.; **Reg. No. 364,683,** same, Lubricating oils, flushing oils; **Reg. No. 416,133,** same; **Reg. No. 533,798,** same, Services rendered at applicant's automotive service stations, etc.; **Reg. No. 630,745,** same, Kerosene, fuel oil, furnace oil, diesel fuel, etc.; **Reg. No. 641,270,** same, Petroleum waxes and petrolatums, kerosenes, fuel and heating oils, etc.; **Reg. No. 642,226,** same, Chemical preparations and compounds, etc.; **Reg. No. 656,314,** same, Petroleum waxes and petrolatums, kerosenes, fuel and heating oils, etc.; **Reg. No. 658,682,** same, Petroleum waxes, white oils and petrolatums, etc.; **Reg. No. 660,010,** same, Rust preventing and filter coating petroleum compounds, etc.; **Reg. No. 824,760,** same, Emulsified petroleum hydrocarbon additives, etc., **filed** Sept. 12, 1967, D.C., E.D. Wash. (Spokane), Doc. C3060, *Standard Oil Company of California v. Robert Lipe.*

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 228,113. Atwood Vacuum Machine Company, Rockford, Ill. Filed Sept. 20, 1965.

ATWOOD

Owner of Reg. Nos. 774,436 and 832,205.

Class 19—Vehicles

For Door Hinges, Hood Hinges, Hood Latches, Seat Adjusters, Parking Brake Controls, Trailer Couplers and Hitches, Permanently Mountable Trailer Jacks, and Brake Actuators.

First use 1934.

Class 25—Locks and Safes

For Automotive, Mobile Home and Trailer Hardware—Namely, Door Locks and Trunk Locks.

First use about 1915.

SN 228,863. Abbey Rents, d.b.a. Best Rentals, Los Angeles, Calif. Filed Sept. 29, 1965.

BEST RENTALS

The word "Rentals" is disclaimed apart from the mark as shown.

Class 2—Receptacles

For Vacuum Jugs, Serving Trays, and Wash Tubs for Icing Beverages.

First use Mar. 1, 1948, on serving trays.

Class 4—Abrasives and Polishing Materials

For Sandpaper.

First use Aug. 1, 1961.

Class 6—Chemicals and Chemical Compositions

For Wall Paper Remover.

First use Aug. 1, 1961.

Class 8—Smokers' Articles, Not Including Tobacco Products

For Ash Trays.

First use Mar. 1, 1948.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Cooking and Ice Cube Kettles, Non-Electric Coffee Pots and Staples.

First use Jan. 1, 1960, on cooking and ice cube kettles.

Class 15—Oils and Greases

For Lantern and Stove Liquid Fuels Such as Kerosene, and Candles.

First use Jan. 1, 1950, on candles.

Class 21—Electrical Apparatus, Machines, and Supplies

For Three Way Ground Adaptors, Extension Cords, Electric Vacuum Cleaners and Attachments, Electric Fans, Electric Pointers for Use in Lectures, Automatic Microphone Stands, Amplifiers, Intercom Equipment, Wireless Microphones, AM-FM Radios, Speakers, Horn and Stand, Lavalier Microphones, TV Sets, Walkie-Talkies, Closed Circuit TV Cameras, Readmission Lights, Megaphone-Loud Hailers, Electric Coffee Pots, Incandescent and Fluorescent Lamps, Spot and Path Lights, Dimmer Switches, Low Voltage Generators, and Hot Lines for Caterers.

First use Mar. 1, 1948, on low voltage generators.

Class 22—Games, Toys, and Sporting Goods

For Umbrella Tents, Bicycle Exercisers, Sleeping Bags for Outdoor or Campers' Use, or Similar Recreational Use, Air Mattresses and Pumps Therefor.

First use Jan. 1, 1955, on bicycle exercisers.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Spike Disc Lawn Aerators, Earth Augers, Drill Bits, Stapling Guns, Sledge Hammers, Chain Operated Hoists, Fertilizer Spreaders, Mandrels for Use With Drill and Hole Saws, Mason-Trowels, Post Hole Diggers, Plumber Snakes, Meat Carving Sets, Base Metal Tableware, Chain Saws and Chain Grinders and Parts Therefor, Electric Hedge and Shrub Trimmers, Electric Car Polishers and Bonnets and Sanders Therefor; Portable Electric Drills, Floor Polishers, Belt Sanders and Replacement Belts Therefor, Rug Shampoo Machines and Appliances Therefor, Electric Saws and Sabre Saws and Hole Saws and Blades Therefor.

First use Mar. 1, 1948, on base metal tableware.

Class 26—Measuring and Scientific Appliances

For Baby Scales, Photographic Projectors, Projection Screens, Electric Prompters for Display Remarks To Be Delivered Orally in Company With Photographic Projectors, and Photographic Slide Viewers.

First use Mar. 1, 1948, on baby scales.

Class 28—Jewelry and Precious-Metal Ware

For Silver Plated Metal Ware—Namely, Cake Server Sets, Candlestick Holders and Candelabras, Chafing Dishes, Champagne Buckets, Compotee, Sugar Bowls and Creamers, Lazy Susans, Water Pitchers, Coffee and Tea Pourers, Seafood Servers, Coffee Urns, Serving Trays.

First use Mar. 1, 1948, on silver plate cake server sets.

Class 30—Crockery, Earthenware, and Porcelain

For China Dishware.

First use Mar. 1, 1948.

Class 31—Filters and Refrigerators

For Ice Chests.

First use July 1, 1961.

Class 32—Furniture and Upholstery

For Baby High Chairs and Playpens and Cribs, Cots, Mattresses, Tray Stands, Champagne Carts, Camp Chairs, Dining Chairs, Card Tables, Beverage Bars, Bar Stools, Aisle Standards and Ropes Therefor, Costumers for Hanging Garments, Garment Racks, Champagne Stands, Folding Screens, Settees, Poker Tables, Dining Tables, Banquet Tables, Child's Banquet Tables, Garden Dining Tables, Snack Tables, Display Tables,

Cocktail Tables, Bridge Tables, Smoking Stands, Luau Table Legs, Cushions, Spotlight Stands, Window Walls for Temporary Garden Enclosures, Pillows, Lecterns.
First use Mar. 1, 1948, on cots.

Class 33—Glassware

For Glassware—Namely, Beer Mugs, Punch Bowls and Ladles, Salad Bowls, Cocktail Bowls, Champagne Glasses, Creamers, Sugar Bowls, Punch Cups, Goblets, Liqueur Glasses.
First use Mar. 1, 1948, on glass salad bowls.

Class 34—Heating, Lighting, and Ventilating Apparatus

For Butane Space Heaters, Luau Torches, Barbecue Braziers, Candle Lamps, Lantern and Stove Mantles, Gasoline Lanterns, and Camp Stoves.
First use Mar. 1, 1948, on barbecue braziers.

Class 36—Musical Instruments and Supplies

For Tape Cartridges, Automatic Turntables, Stereo Tape Recorders, Portable Phonographs, Automatic Repeating Tape Recorders.
First use Apr. 27, 1964.

Class 41—Canes, Parasols, and Umbrellas

For Garden Umbrellas.
First use Mar. 1, 1948.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Table Linens—Namely, Tablecloths, Garden Cloths, Napkins, Tea Towels, and Blankets.
First use Mar. 1, 1948, on blankets.

Class 44—Dental, Medical, and Surgical Appliances

For Back Rests for Therapeutic Uses, Balkan Frames, Bradford Frames and Bradford Turners Used as Aids for Rendering Bed Pan Service to Patients in Full Pelvic Casts and Facilitating Turning of Patients by Attendants, Adjustable Hospital Beds, Fracture Beds, Vasoscillator Beds, Breast Pumps, Therapeutic Constrictors, Baby Incubators, Hyperextension Frames, Inhalators, Cold Quartz Lamps, Ultra Violet Lamps, Dehumidifier Lamps, Infra-Red Lamps, Mercury-Quartz Lamps, Sun Lamps, Stupe Kettles for Heating Water or Medicaments Into Which Cloth or Tow Are Dipped Prior to Application to Patients, Medical and Surgical Instrument Tabels and Massage Tables, Buck Extension Apparatus for Applying Traction to Fractors, Hospital Bed Trapezes, Invalid Walkers, Massagers, Toilet Commodes for Sick Room Use, Crutches, Canes, Walk Aids, Suction Machines, Patient Lifters, Safety Sides for Beds, Overbed Tables, Wheel Chairs, Oxygen Face Masks, Oxygen Regulators, Oxygen Catheters, Croup Tents, Refrigerated Tents, Intermittent Positive Pressure Breathing Apparatus, Alternating Pressure Pads, Oxygen Purifiers, Hospital Heat Cradles, Hospital Linen Cradles, Intravenous Stands, Whirlpool Bath Apparatus, Hospital Bedboards, Thermo-Chemical Heat Pads, Stomach Pumps, Diathermy Apparatus, Fracture Frames, Sitz Baths, Irrigating Stands, Hospital Bed Screens, Stretchers, Traction Apparatus, Therapeutic Trapezes, Traction Accessories—Namely, Spreaders, Foot Plates, Knee Slings, Pelvic Slings, and Weights With Hanger.
First use Mar. 1, 1948, on stretchers.

Class 50—Merchandise Not Otherwise Classified

For Extension Ladders, Luau Mats, Canvas Canopies, and Canvas Runners.
First use Jan. 1, 1950, on canvas canopies.

Class 52—Detergents and Soaps

For Rug Shampoo.
First use Aug. 1, 1961.

SN 237,875. Adelmo Scalera, New York, N.Y. Filed Feb. 2, 1966.

MISCA

Class 39—Clothing

For Knitted Garments—Namely, Sweaters, Skirts, Dresses, Coats, and Jackets.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Knitted Fabrics—Namely, Cotton and Wool.

First use Jan. 28, 1966.

SN 240,983. Telemation, Inc., Salt Lake City, Utah. Filed Mar. 14, 1966.



No registration rights are claimed herein for the letters TM apart from the mark as shown in the drawing; but applicant waives none of its common law rights in the mark.

Class 26—Measuring and Scientific Appliances

For Televising Systems Comprising (a) a Visual Read-Out Printer, a Television Pickup Camera, Paper Handling Equipment and Associated Circuitry, (b) a Television Pickup Camera, Instruments Scanned by the Camera and Associated Electronic Control Circuitry, and (c) a Lectern With Television Monitor Equipment.

Class 101—Advertising and Business

For Distributorship Services in the Field of Closed Circuit or Educational Television Equipment.

Class 103—Construction and Repair

For Installing and Maintenance of Television Systems.

First use June 1963.

SN 252,442. Yazaki Corporation, Minato-ku, Tokyo, Japan. Filed Aug. 15, 1966.



Class 19—Vehicles

For Vehicle Instrument Panel.
First use Jan. 31, 1965; in commerce Mar. 21, 1965.

Class 21—Electrical Apparatus, Machines, and Supplies

For Light Source Kit Consisting of Bracket, Bulb, Bulb Socket and Electric Wire, a Bulb Itself, and Remote Control Starter Switch.
First use Jan. 31, 1965; in commerce Mar. 21, 1965.

Class 26—Measuring and Scientific Appliances

For Meters and Gauges—Namely, Oil Pressure Gauge, Ammeter, Volt Meter, Water Temperature Gauge, Oil Pressure and Volt Meter, Oil Pressure and Ammeter, Oil Pressure-Ammeter and Water Temperature Gauge, Oil Pressure-Ammeter and Volt Meter, Oil Pressure-Ammeter and Tachometer, Oil Pressure-Ammeter and Auto Clock, Electric Tachometer, Cam Dwell Tester, Coil Tester, Alternator Diode and Ignition Cable Tester, Idle Tachometer, Compression Tester, Engine Vacuum and Fuel Pump Tester, Odometer, Regulator-Generator Tester, Sending Unit for Temperature Gauge, Oil Pressure Gauges and Ammeters and Components Thereof and Timing Light.
First use Jan. 31, 1965; in commerce Mar. 15, 1966.

Class 27—Horological Instruments

For Auto Clock.
First use Jan. 31, 1965; in commerce Dec. 1, 1965.

SN 254,937. Masten Corporation, Chicago, Ill. Filed Sept. 22, 1966.



The drawing is lined for the color red. Applicant disclaims the words "Mark of Quality" apart from the mark.

Class 14—Metals and Metal Castings and Forgings

For Bronze Castings.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Machinery Bearings.

First use July 1, 1966.

SN 255,855. Aeromatic A.G., Muttenz, Switzerland. Filed Oct. 6, 1966.

AEROMATIC

Class 31—Filters and Refrigerators

For Mechanical Apparatus and Machines Employing Filters for Cleaning Tablets, De-Dusting Tablets and Dust-Collecting in the Pharmaceutical Industry, for De-Dusting and for Collecting Dust in the Chemical, Plastics, Food and Cement Industries and in Any Other Industry in Which Dust-Producing Devices Are Employed.

Class 34—Heating, Lighting, and Ventilating Apparatus

For Fluid Bed Dryers for the Drying of Materials and Products in the Chemical, Pharmaceutical, Textile and Food Industries and Other Industries.

First use July 21, 1966; in commerce about Aug. 5, 1966; about August 1960 in a different form.

SN 256,077. The Dow Chemical Company, Midland, Mich. Filed Oct. 10, 1966.



Owner of Reg. Nos. 140,588, 831,674, and others.

Class 103—Construction and Repair

For Custom Fabrication of Electromechanical Parts, Assemblies and Prototypes.

Class 106—Material Treatment

For Custom Machining of Metals, Ceramics, Plastics and of Electromechanical Parts.

First use at least as early as 1954; 1895 as to "Dow"; 1910 in a different form.

SN 259,499. Heartland Productions, Incorporated, Des Moines, Iowa. Filed Nov. 28, 1966.



Class 36—Musical Instruments and Supplies

For Phonograph Records.
First use Oct. 10, 1966.

Class 38—Prints and Publications

For Commercially Produced Movie Films for Showing in Movie Theaters and the Like.
First use Oct. 12, 1966.

SN 260,622. Sample-Durick, Incorporated, Chicopee, Mass. Filed Dec. 13, 1966.



Owner of Reg. Nos. 58,436 and 544,737.

Class 2—Receptacles

For Sanitary Paper Containers—Namely, Paper Sputum Cups, Paper Flasks and Utility Boxes.

Class 44—Dental, Medical, and Surgical Appliances

For Medical and Dental Appliances—Namely, Non-Disposable Sputum Cup Holders.

First use November 1957; Apr. 12, 1906, in a different form.

SN 266,386. S. C. Johnson & Son, Inc., Racine, Wis. Filed Mar. 10, 1967.

STEP-SAVER-BASKET

Class 4—Abrasives and Polishing Materials

For Protective Waxes, Polishing Preparations—Namely, Furniture Polishes, Floor Polishes, Automobile Polishes and Cleaner/Polishes, Kitchen and Appliance Polishes, Shoe Dressings and Polishes.

Class 6—Chemicals and Chemical Compositions

For Insect Repellents, Insecticides, Sanitizing and Disinfectant Preparations, and Air Deodorants.

Class 52—Detergents and Soaps

For Cleaning Preparations for Use on Hard Surfaces Such as Floors, Walls, Cabinets, Appliances, Furniture, Automobiles, etc.

First use on or about Mar. 1, 1955.

SN 276,721. Tipp-Ex Vertrieb G.m.b.H. & Co. K.G., Frankfurt, am Main, Germany. Filed July 25, 1967.



Class 6—Chemicals and Chemical Compositions

For Correction Fluid for Use on Typing Errors.
First use January 1967.

Class 37—Paper and Stationery

For Correction Paper for Use on Typewritten Material.
First use January 1964.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

SN 249,401. Murray Baum, Ashton, Idaho. Filed July 1, 1966.



The drawing is lined for the color blue.
For Seed Potatoes.
First use Nov. 15, 1954.

SN 252,651. Archie M. Erickson, d.b.a. The John Wieman Holly, Sherwood, Oreg. Filed Aug. 18, 1966.

POLY-PACK HOLLY

The word "Holly" is disclaimed apart from the mark as shown.
For Holly.
First use June 17, 1966.

Class 2—Receptades

SN 235,208. John E. Mitchell Company, Inc., Dallas, Tex. Filed Dec. 23, 1965.

ICEE

Owner of Reg. No. 724,170.
For Disposable Plastic Coated Beverage Cups.
First use Aug. 31, 1961.

SN 255,905. Lincoln Metal Products Corporation, Brooklyn, N.Y. Filed Oct. 6, 1966.

PAPEROLA

For Wall Mounted Dispenser for Sheet Material in Rolls Such as Paper Towels.
First use Sept. 20, 1966.

SN 261,899. Vichek Plastics Company, Middlefield, Ohio. Filed Jan. 3, 1967.

ADVENTURER

For Utility Boxes for Carrying and Storing Fishing Tackle, Tools, Hunting Supplies and the Like.
First use Sept. 17, 1964.

SN 262,556. Amway Corporation, Ada, Mich. Filed Jan. 16, 1967.

AMWAY

Owner of Reg. Nos. 707,656, 779,397, and others.
For Empty Soap Dispensers, Plastic Bottles and Tubes, Shopping Bags, Paperboard Boxes, Laundry Bags and Trays.
First use on or about Apr. 2, 1964.

SN 262,557. Amway Corporation, Ada, Mich. Filed Jan. 16, 1967.



Owner of Reg. Nos. 707,656, 779,397, and others.
For Empty Soap Dispensers, Plastic Bottles and Tubes, Shopping Bags, Paperboard Boxes, Laundry Bags and Trays.
First use on or about Apr. 2, 1964.

Class 4—Abrasives and Polishing Materials

SN 266,058. Merit Products, Inc., Los Angeles, Calif. Filed Mar. 6, 1967.

SAND-O-FLEX

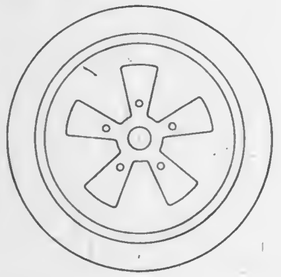
For Sanding Wheels and Parts Thereof, and Abrasive Refills for Sanding Wheels.
First use Dec. 20, 1944.

SN 266,244. Michigan Hot Rod Association, Centerline, Mich. Filed Mar. 8, 1967.

MHRA

For Metal Polish and Cleaner for Automobiles.
First use Feb. 15, 1966.

SN 266,246. Michigan Hot Rod Association, Centerline, Mich. Filed Mar. 8, 1967.



For Metal Polish and Cleaner for Automobiles.
First use Feb. 15, 1966.

Class 5—Adhesives

SN 244,962. Beta Industries, Inc., Collierville, Tenn. Filed May 5, 1966.

BETA BOND

The word "Bond" in the mark is disclaimed, apart from the mark.
For Polyester Adhesive for General Use, as for Example, To Bond Marble, Granite, Fiberglass, Wood, Steel, Aluminum, Concrete and Brick.
First use Mar. 25, 1963.

SN 265,731. Positive Chemical Corporation, Grand Rapids, Mich. Filed Mar. 1, 1967.



Applicant disclaims any and all rights to the exclusive use of the word "Adhesives" as being a part of its trademark.
For Industrial Solvent Base and Water Emulsion Formulations, Manufactured for Use as Industrial Cements, for Bonding Similar or Dissimilar Substrates to Themselves or Other Surfaces by Chemical Means.
First use Dec. 1, 1965.

Class 6—Chemicals and Chemical Compositions

SN 263,487. Scripto, Inc., Atlanta, Ga. Filed Jan. 27, 1967. Owner of Reg. Nos. 765,736 and 712,694.



For Fuel for Cigar, Cigarette, and Pipe Lighters.
First use Nov. 23, 1966.

SN 264,203. Eaton Allen Corp., Brooklyn, N.Y. Filed Feb. 8, 1967.



The words "Opaque" and "Liquid" are disclaimed apart from the mark as a whole. Owner of Reg. Nos. 736,991 and 754,335.
For Chemical Solutions for Masking Erroneous Type Impressions.
First use at least as early as 1963.

SN 267,477. Colgate-Palmolive Company, New York, N.Y. Filed Mar. 23, 1967.

SUMMER GODDESS

Owner of Reg. Nos. 430,977, 799,244, and others.
For Fabric Softener.
First use Nov. 21, 1966.

SN 267,955. Philip Lochman & Company, Evanston, Ill. Filed Mar. 30, 1967.

PHICO

For Lithographic and Photoengraving Chemicals—Namely, Cold Top Enamel, Hot Top Enamel, Contact Developers, Fixing Agents, Hardening Agents, Enamel Developers, Resistant Concentrates, Streak Eliminators, Resist Fixers, Etching Solutions, and Fountain Solutions.
First use January 1950.

SN 268,227. Safety First Products Corporation, Elmsford, N.Y. Filed Apr. 3, 1967.

UNI-KEM

For Dry Powder Sodium Bicarbonate Fire Extinguishing Chemicals.
First use Oct. 15, 1966.

SN 268,539. Uniroyal, Inc., New York, N.Y. Filed Apr. 6, 1967.

ALANAP PLUS

Owner of Reg. No. 574,094.
For Herbicide.
First use Jan. 6, 1965.

SN 268,906. Varney Chemical Corporation, Janesville, Wis. Filed Apr. 11, 1967.

VAREX

For Surfactants.
First use June 3, 1965.

SN 268,907. Varney Chemical Corporation, Janesville, Wis. Filed Apr. 11, 1967.

VARION

For Amphoteric Anionic and Cationic Surface-Active Agents.
First use Dec. 1, 1966.

SN 268,953. Geigy Chemical Corporation, Ardsley, N.Y. Filed Apr. 12, 1967.

PREBANE

For Chemical Ingredient Used in the Manufacture of Herbicides.
First use Mar. 30, 1967.

SN 268,954. General Aniline & Film Corporation, New York, N.Y. Filed Apr. 12, 1967.

VIVIFLOW

For Wetting Agent for Processing Photographic Film and Paper.
First use Aug. 17, 1966.

SN 269,097. Pearsall Chemical Corporation, Phillipsburg, N.J. Filed Apr. 13, 1967.

FLEXCHLOR

For Plasticizers.
First use January 1966.

SN 269,210. Pennsalt Chemicals Corporation, Philadelphia, Pa. Filed Apr. 14, 1967.

SQUELCH

For Chemical Agent for Masking Odors.
First use December 1966.

SN 269,578. Sterling Drug Inc., New York, N.Y. Filed Apr. 19, 1967.

OXOCHEK

For Dyes.
First use Mar. 22, 1967.

SN 269,810. Valley Chemical Company, Greenville, Miss. Filed Apr. 21, 1967.

KILSOBAN

For Herbicide.
First use Mar. 14, 1967.

SN 269,891. Hercules Incorporated, Wilmington, Del. Filed Apr. 24, 1967.

TORBIDAN

For Insecticides and Insecticidal Formulations.
First use Apr. 17, 1967.

SN 269,900. Irving J. Kane, New York, N.Y. Filed Apr. 24, 1967.

X-OUT

For Anti-Pollution Filter Spray.
First use Apr. 14, 1967.

SN 270,018. Velsicol Chemical Corporation, Chicago, Ill. Filed Apr. 25, 1967.

THIBAN

For Fungicides.
First use Mar. 14, 1967.

SN 270,037. Alliance Color and Chemical Corporation, Newark, N.J. Filed Apr. 26, 1967.

POLYPAD

For Dyestuffs for Textiles.
First use in or about February 1967.

SN 270,054. General Fire Extinguisher Corp., Northbrook, Ill. Filed Apr. 26, 1967.

TRIPLEX

For Fire Extinguisher Powder.
First use Aug. 22, 1960.

SN 270,614. Sandoz, Inc., Hanover, N.J. Filed May 3, 1967.

NYLOFIXAN

For Reserving and Fixing Agent for Polyamide Fibers.
First use Feb. 24, 1965.

SN 270,663. Dresser Industries, Inc., Dallas, Tex. Filed May 4, 1967.

SULFINOX

For Chemical Additive to Fluids Used in the Drilling of Oil and Gas Wells.
First use Mar. 30, 1967.

SN 279,662. Martin Marietta Corporation, New York, N.Y. Filed Sept. 5, 1967.

dykolite

For Dyestuffs.
First use July 26, 1967; Nov. 12, 1965, in a different form.

SN 281,754. J. R. Simplot Company, Boise, Idaho. Filed Oct. 4, 1967.

SIMPLOT

For Sulphuric Acid, Phosphoric Acid, and Ammonium Phosphate.
First use at least as early as Sept. 9, 1959.

Class 7 — Cordage

SN 272,904. African Ropes and Twines Limited, Nairobi, Kenya, Africa. Filed June 2, 1967.

TWIGA

Owner of African Reg. No. 13,321, dated Aug. 22, 1965.
For Sisal Twines and Ropes.

SN 272,961. St. Regis Paper Company, New York, N.Y. Filed June 2, 1967.

ST REGIS

Owner of Reg. Nos. 377,917, 824,262, and others.
For Wire Ties Adapted for Tying Bags and Other Binding Purposes.
First use on or about Jan. 1, 1965.

Class 8 — Smokers' Articles, Not Including Tobacco Products

SN 273,486. Frank J. Curran Co., Downers Grove, Ill. Filed June 9, 1967.

FIRE WALL

For Ash Trays.
First use May 26, 1967.

SN 273,487. Frank J. Curran Co., Downers Grove, Ill. Filed June 9, 1967.

SAFTI-ROUND

For Ash Trays.
First use Mar. 11, 1966.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

SN 259,532. The Dow Chemical Company, Midland, Mich. Filed Nov. 28, 1966.

FORRON

Owner of Reg. No. 692,635.
For Blasting Agent.
First use Aug. 15, 1966.

SN 259,533. The Dow Chemical Company, Midland, Mich. Filed Nov. 28, 1966.

THERMOPRIMER

For Blasting Agents.
First use Aug. 15, 1966.

Class 10 — Fertilizers

SN 253,122. Arthur F. Couch, d.b.a. Sure Crop Chemical Company, Bayard, Nebr. Filed Aug. 25, 1966.

SURE-CROP

For Fertilizers.
First use 1956.

SN 275,354. J. R. Simplot Company, Boise, Idaho. Filed July 5, 1967.

Simplot Soilbuilders

Without relinquishing any of the common law rights therein, no claim is made to the word "Soilbuilders" apart from the mark as shown. Owner of Reg. Nos. 435,430, 798,704, and others.
For Fertilizers.
First use at least as early as Jan. 15, 1945.

Class 11 — Inks and Inking Materials

SN 263,394. Olympia Werke AG, Wilhelmshaven, Germany. Filed Jan. 26, 1967.

Olympia

For Ink Ribbons for Office Machines, Carbon Ribbons for Office Machines, and Carbon Paper.
First use 1930; in commerce Sept. 30, 1966.

SN 264,201. The Cronite Co., Inc., North Bergen, N.J. Filed Feb. 8, 1967.

KB KROME-BRITE

Owner of Reg. No. 590,992.
For Engravers' Water Based Ink.
First use Sept. 15, 1966.

Class 12 — Construction Materials

SN 249,580. Riverside Laboratories, Geneva, Ill. Filed July 5, 1966.



For Paper, Plain, Colored or Printed, Coated With Various Organic Resinous Materials for Lamination to Hardboard, Plywood, and Other Core Material.
First use July 1958.

SN 252,244. Otto Buehner and Company, d.b.a. Buehner Schokbeton, Salt Lake City, Utah. Filed Aug. 12, 1966.

LIKON

For Pre-Cast, Insulated Concrete Architectural Building Panels or the Like.
First use on or about June 16, 1966.

SN 256,919. Robert T. Bogan, Jr., Albuquerque, N. Mex. Filed Oct. 21, 1966.

WEATHERWOOD

For Wood Doors.
First use April 1966.

SN 260,227. Anaconda Aluminum Company, Louisville, Ky. Filed Dec. 7, 1966.



Owner of Reg. No. 543,004.
For Building Products—Namely, Doors and Door Frames, Windows and Window Frames, Panels, Partitions, Building Trim, Store Fronts, Curtain Walls, Architectural Extrusions and Hardware, Components and Accessories Therefor, Sold Together as a Unit.
First use Aug. 10, 1966.

SN 262,032. Edward Hines Lumber Co., Chicago, Ill. Filed Jan. 6, 1967.

HEEL-TITE

For Plywood.
First use April 1962.

SN 262,893. Elwin G. Smith & Co., Inc., Pittsburgh, Pa. Filed Jan. 19, 1967.

RIB-LINE

The word "Rib" is disclaimed apart from the mark as shown. Owner of Reg. No. 680,639.
For Industrial Metal Roofing, and Siding; and Metal Panels for Making Buildings and Enclosures.
First use July 15, 1966.

SN 270,099. National Homes Corporation, Lafayette, Ind. Filed Apr. 27, 1967.

FOR THE ACTION GENERATION

For Prefabricated Homes.
First use Feb. 2, 1967.

SN 270,433. Synterra Corporation, Sacramento, Calif. Filed May 1, 1967.

MONOPLATE

For Resinous-Matrix, Mineral-Filled Toppings and Coatings for Floors and Other Structural Surfaces.
First use May 18, 1966.

SN 281,428. U.S. Plywood-Champion Papers Inc., New York, N.Y. Filed Sept. 29, 1967.

UNIVAR

Owner of Reg. Nos. 373,739 and 596,207.
For Plywood, Wood, and Wood Fiber Products in the Construction, Building, Industrial, and Furniture Fields, i.e., Doors, Wall and Partition Panels, and Architectural Plywoods.
First use on or about July 20, 1967.

SN 281,531. U.S. Plywood-Champion Papers Inc., New York, N.Y. Filed Oct. 2, 1967.

UNICHROME

Owner of Reg. Nos. 373,739 and 596,207.
For Plywood, Wood, and Wood Fiber Products in the Construction, Building, Industrial, and Furniture Fields, i.e., Doors, Wall and Partition Panels, and Architectural Plywoods.
First use on or about Aug. 8, 1967.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

SN 254,324. Pittsburgh Railways Company, Cary, Ill. Filed Sept. 12, 1966.

SEA-SWIRL

Owner of Reg. No. 704,181.
For Aerosol Valves, Valve Caps, Dispensing Heads, and Parts and Attachments Therefor.
First use July 7, 1966.

SN 256,968. Fredk. A. Power & Sons, Ltd., Birmingham, England. Filed Oct. 21, 1966.

QUIKLINK

For Bale Ties.
First use Jan. 1, 1962; in commerce Jan. 1, 1962.

SN 262,900. Wood Conversion Company, St. Paul, Minn. Filed Jan. 19, 1967.

CONWED

Owner of Reg. Nos. 820,946, 832,362, and others.
For Plastic Tubing.
First use about Nov. 25, 1966.

SN 262,987. John B. Wagner, d.b.a. John Wagner Assoc., Walnut Creek, Calif. Filed Jan. 20, 1967.

DRIVALL

For Fasteners for Fastening Drywall Panels to Metal and Wood Studs, Including Nails and Screws and Other Special Fasteners for Drywall Construction.
First use Sept. 25, 1965.

SN 264,064. Kirsch Company, Sturgis, Mich. Filed Feb. 6, 1967.

ACCORDIA-FOLD

For Drapery Hardware—Namely, Drapery Tape Having Snaps Thereon.
First use Jan. 10, 1967.

SN 266,496. Auto-Vehicle Parts Co., Newport, Ky. Filed Mar. 13, 1967.

FASNER-PAK

For Nuts, Screws, Bolts, and Washers, Sold in Package Form.
First use Feb. 15, 1967.

SN 267,116. Auto-Vehicle Parts Co., Newport, Ky. Filed Mar. 20, 1967.



For Nuts, Screws, Bolts, and Washers, Sold in Package Form.
First use Feb. 15, 1967.

SN 275,197. H. M. Harper Company, Morton Grove, Ill. Filed July 3, 1967.

HARRISON-WEISE

For Window Cleaning Safety Devices Adapted To Be Installed in Buildings, and Parts Therefor.
First use at least as early as 1940.

Class 14 — Metals and Metal Castings and Forgings

SN 262,238. Ziv Steel & Wire Co., Chicago, Ill. Filed Jan. 9, 1967.

ZIV'S "SUPER"

The word "Super" is disclaimed, apart from the mark as shown. Owner of Reg. Nos. 196,670, 650,376, and others.
For High Speed Steel.
First use March 1925.

Class 16 — Protective and Decorative Coatings

SN 251,173. Ajem Laboratories, Inc., Livonia, Mich. Filed July 28, 1966.

JEM SHIELD

Owner of Reg. Nos. 641,141, 822,689, and others.
For Protective Coatings Capable of Being Stripped From Non-Porous Materials, and Compounds for Applying Same, Including Coatings for Use as Protective Masking Against Dust, Paint, Oil, or Other Contaminants.
First use Dec. 10, 1965.

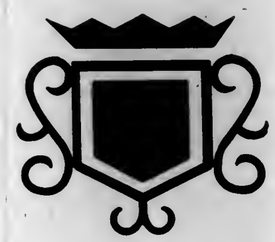
Class 17 — Tobacco Products

SN 248,324. Bayuk Cigars Incorporated, Philadelphia, Pa., assignee of Garcia y Vega, Inc., New York, N.Y. Filed June 17, 1966.

EUREKAS

For Cigars.
First use 1917.

SN 265,965. The American Tobacco Company, New York, N.Y. Filed Mar. 6, 1967.



For Cigarettes.
First use Feb. 13, 1967.

SN 265,966. The American Tobacco Company, New York, N.Y. Filed Mar. 6, 1967.

FIFTY FIFTY

For Cigarettes.
First use Feb. 13, 1967.

SN 273,001. Monaco Cigar Corporation, Tampa, Fla. Filed June 5, 1967.

Martinique

For Cigars.
First use May 19, 1967.

SN 281,859. The American Tobacco Company, New York, N.Y. Filed Oct. 5, 1967.

ESQUIRE

For Cigarettes.
First use Oct. 2, 1967.

Class 19—Vehicles

SN 249,762. Heider Manufacturing Co., Carroll, Iowa. Filed July 7, 1966.

HEIDER

For Farm Equipment—Namely, Wagons, and Wagon Boxes.
First use Jan. 8, 1903.

SN 255,598. Chris-Craft Industries, Inc., Pompano Beach, Fla. Filed Oct. 3, 1966.

COMMANDER

For Boats.
First use Sept. 14, 1949.

SN 259,890. All American Racers, Inc., Santa Ana, Calif. Filed Dec. 2, 1966.



The drawing is lined for the color grey.
For Automobiles, Including, but Not Limited to, Racing Vehicles.
First use Apr. 1, 1966.

SN 263,615. Self Energising Disc Brakes Limited, Bedfont, Middlesex, England. Filed Jan. 30, 1967.



For Braking Device for Resisting Jack-Knifing in Articulated Vehicles.
First use March 1965; in commerce January 1966.

SN 266,727. Bright Star Industries, Inc., Clifton, N.J. Filed Mar. 15, 1967.

OP-TRICKS

For Novelty Optical Display Devices Designed To Be Attached to Other Objects Such as Bicycles, Motorcycles, and the Like.
First use Feb. 23, 1967.

SN 272,418. Southern Fiber Glass Products, Inc., Sanford, Fla. Filed May 25, 1967.

SPRINT

For Boats (Inboard and Outboard).
First use at least as early as May 8, 1967.

SN 282,309. The Anchorage, Inc., Warren, R.I. Filed Oct. 12, 1967.

DYERCRAFT

Owner of Reg. No. 411,768.
For Boats.
First use July 29, 1955.

SN 282,310. The Anchorage, Inc., Warren, R.I. Filed Oct. 12, 1967.

GLAMOUR GIRL

For Boats.
First use Mar. 21, 1951.

SN 282,312. The Anchorage, Inc., Warren, R.I. Filed Oct. 12, 1967.

DYER

For Boats.
First use Jan. 4, 1962.

Class 20—Linoleum and Oiled Cloth

SN 251,385. Congoleum-Nairn Inc., Kearny, N.J. Filed Aug. 1, 1966.

CANYONSTONE

For Plastic Coverings of the Smooth Surface, Resilient Type for Surfaces Such as Floors, Walls, Countertops, and the Like, in the Form of Rolls, Rugs, and Tiles.
First use June 19, 1966.

SN 251,387. Congoleum-Nairn Inc., Kearny, N.J. Filed Aug. 1, 1966.

REFLECTION

For Plastic Coverings of the Smooth Surface, Resilient Type for Surfaces Such as Floors, Walls, Countertops, and the Like, in the Form of Rolls, Rugs, and Tiles.
First use July 20, 1966.

SN 252,754. Reverso Products, Inc., Brooklyn, N.Y. Filed Aug. 19, 1966.

TRU-VINYL CREST

For Embossed Solid Sheet Vinyl Wall Covering.
First use in or about August 1963.

Class 21—Electrical Apparatus, Machines, and Supplies

SN 203,838. T.M.C. Power Distribution Incorporated, Alexandria, Va. Filed Oct. 12, 1964.

STATIC NO-BREAK

For Precise Electric Power Supply Syatem.
First use at least as early as Sept. 14, 1964.

SN 236,996. Hunt Electronics Company, Dallas, Tex. Filed Jan. 21, 1966.

HUNT

For Incandescent and Fluorescent Light Dimmers, Light Sensitive Photoelectric Power Controls, Semiconductor Bilateral Switches and Gated Bilateral Switches of the Triac Type, Semiconductor Trigger Diodes, and Motor Driven Power Controls.
First use at least as early as September 1962.

SN 242,651. Oak Electro/Netics Corp., Crystal Lake, Ill., assignee of Phillips-Eckardt Electronic Corporation, Joliet, Ill. Filed Apr. 4, 1966.



The mark consists of a stylized representation of the lowercase letters "pc." Owner of Reg. No. 420,692.
For Low Amperage Electromechanical Relay Comprising an Actuating Coil, an Armature, and Plural Contacts Operated Thereby.
First use during November 1963.

SN 244,081. Compagnie Francaise Thomson Houston-Hotchkiss Brandt, Paris, France, by change of name from Compagnie Francaise Thomson-Houston, Paris, France. Filed Apr. 22, 1966.

SERVO-GAUSS

Priority claimed under Sec. 44(d) on French Reg. No. 701,791, dated Nov. 17, 1965.
For Magnetic Coils, Electromagnets, Electromagnetic Devices, and Parts Thereof.

SN 245,650. Sylvan Simons, d.b.a. Video Industries Company, Port Chester, N.Y. Filed May 5, 1966.

ASTROTENNA

For Antennas and Antenna Accessories, Said Antenna Accessories Being Antenna Couplers, Antenna Beam Splitters, Antenna Traps, and Antenna Wire.
First use Sept. 13, 1965.

SN 247,251. The Okonite Company, Passaic, N.J. Filed June 3, 1966.

KEN-TEL

For Telephone Cables.
First use May 31, 1962.

SN 247,732. Statitrol Corporation, Denver, Colo. Filed June 9, 1966.

STATITROL

Owner of Reg. No. 799,043.
For Ionization Fire Detection Equipment.
First use Jan. 18, 1965.

SN 260,712. Amperex Electronic Corporation, Hicksville, N.Y. Filed Dec. 14, 1966.

autosert

For Transistors.
First use Sept. 23, 1966.

SN 261,068. General RF Fittings, Inc., Boston, Mass. Filed Dec. 19, 1966.

GRFF

For Coaxial Transmission Line Apparatus, Parts and Components.
First use in or before October 1955.

SN 261,686. Sireno Signal Mfg. Corp., Kearny, N.J. Filed Dec. 29, 1966.

SIRENO SPEAKER-LIGHT

Applicant disclaims "Speaker-Light" apart from the mark as shown. Owner of Reg. No. 505,723.
For Signal Lighting for Emergency Vehicles.
First use February 1966.

SN 262,055. Nicholl Brothers, Inc., Kansas City, Mo. Filed Jan. 6, 1967.

THE HELPER

For Battery Operated Lanterns.
First use Sept. 24, 1966.

SN 262,628. Frederick A. Rose, d.b.a. Wisconsin Audio Equipment Co., Madison, Wis. Filed Jan. 16, 1967.

TRAINERETTE

For Desk Amplifier for Teaching Sound Discrimination to Persons of Normal Hearing.
First use Sept. 8, 1965.

SN 263,028. Dare Products, Incorporated, Battle Creek, Mich. Filed Jan. 23, 1967.

SIGNET

For Electric Fence Insulators, Insulator Mounting Assemblies, and Parts Thereof.
First use Aug. 22, 1966.

SN 263,260. Fieldcrest Mills, Inc., Spray, N.C. Filed Jan. 25, 1967.

AQUAWARM

For Automatic Electric Bed Coverings.
First use Sept. 22, 1966.

SN 263,274. Kay Electric Company, Pine Brook, N.J. Filed Jan. 25, 1967.

SONA MARKER

Applicant disclaims the word "Marker" apart from the mark as shown. Owner of Reg. No. 551,688 and others.
For Time-Mark Generator for Use With Spectrum Analyzers.
First use Dec. 7, 1966.

SN 264,068. LTV Ling Altec, Inc., Anaheim, Calif. Filed Feb. 6, 1967.

DEBONAIRE

For Loudspeaker Systems, Cabinets Therefor, and Parts and Components Thereof.
First use Aug. 1, 1966.

SN 264,342. Reynolds Electrical & Engineering Co., Inc., Santa Fe, N. Mex. Filed Feb. 9, 1967.

by AZTEC

Owner of Reg. No. 826,375.
For Radiant Electric Desk Heaters; Proportioning Device for Electric Resistance Heaters; Cylindrical Radiant Heating Devices for Heating Plastic Tubes for Bending; and Wall and Ceiling Heating Panels.
First use December 1963.

SN 264,451. Sonus Corporation, Natick, Mass. Filed Feb. 10, 1967.

SONULITE

For Acoustically Controlled Electric Lamps.
First use Feb. 1, 1967.

SN 264,760. Radar Design Corporation, Syracuse, N.Y. Filed Feb. 15, 1967.

RADITE #75

For Microwave Absorber Stock Used in Waveguide and Coaxial Lines and Circuitry.
First use on or about Mar. 1, 1963.

SN 264,968. The Ross Manufacturing Company, Southampton, Pa. Filed Feb. 17, 1967.

TRANSIPADS

For Transistor Mounting Pads.
First use March 1958.

SN 265,336. Roto-Finish Company, Kalmazoo, Mich. Filed Feb. 23, 1967.

ROTO FINISH

The drawing is lined for the color red, but applicant does not claim any particular color as a feature of its mark. Owner of Reg. Nos. 397,895, 647,055, and others.
For Electrical Apparatus—Namely, Vibratory Motors.
First use 1960.

SN 265,528. Intellux Inc., Goleta, Calif. Filed Feb. 27, 1967.

intellux

For Printed Circuitry—Namely, Multilayer Printed Circuit Boards and Inlaid Printed Circuits; and Integrated Circuits Used as Components for Electronic Equipment—Namely, Microcircuit Logic Modules, and Hybrid Microcircuits.
First use at least as early as 1960.

SN 265,941. Z & T Importing Co., Inc., City of Commerce, Calif. Filed Mar. 3, 1967.

SENTRY-GLO

For Lighted Clock Dials Forming a Part of Clock Radios.
First use August 1966.

SN 266,364. Sonotone Corporation, Elmsford, N.Y. Filed Mar. 9, 1967.

SONOTONE

Owner of Reg. No. 327,079 and others.
For Electrical Products for Audio Use—Namely, Microphones, Loudspeakers, Loudspeaker Systems, Headset Assemblies, and Accessories Therefor.
First use during 1958.

SN 268,041. General Electric Company, Hendersonville, N.C. Filed Mar. 31, 1967.

ECONOGLOW

For Luminaires.
First use during February 1967.

SN 268,043. General Electric Company, Hendersonville, N.C. Filed Mar. 31, 1967.

FILTERGLOW

For Luminaires.
First use during February 1967.

SN 277,751. Chomerics, Inc., Arlington, Mass. Filed Aug. 8, 1967.

CHO-TRON

For Radio Frequency Pressure Seals Consisting of Metal Sheathed Rubber Rings.
First use in or about March 1963.

Class 22 — Games, Toys, and Sporting Goods

SN 169,484. Santo Tessaro, d.b.a. Calzaturificio di Santo Tessaro, and Calzaturificio di Sante Tessaro, Treviso, Italy. Filed May 22, 1963.

SAN MARCO

Owner of Italian Reg. No. 123,104, dated May 2, 1955.
For Ski Boots.
First use Sept. 21, 1954; in commerce Sept. 21, 1954.

SN 248,626. Gert F. Kölbel G.m.b.H., Hannover, Germany. Filed June 21, 1966.

TELEPANDER

The word "Telepander" is a coined expression. Owner of German Reg. No. 810,562, dated Oct. 6, 1965.
For Apparatus for Gymnastics and Sports, Including Home Gymnastics.

SN 249,429. William J. Gray, d.b.a. Ohio Spaceball Sales, Inc., Toledo, Ohio. Filed July 1, 1966.

SPACEBALL

For Hollow Spherical Vehicle Suitable for Occupancy, for Recreational Enjoyment and Play.
First use June 20, 1966.

SN 251,133. Johann Höfler, Plastik-Spielwarenfabrik, Furth, Bavaria, Germany. Filed July 27, 1966.

BIG PLASTIC

No claim of exclusive right is made to "Plastic" for the goods recited. The drawing is lined for the color red, but the color is not claimed as a feature of the mark. Owner of German Reg. No. 818,278, dated Nov. 19, 1965.
For Plastic Toys.

SN 251,574. Vornado, Inc., Garfield, N.J. Filed Aug. 2, 1966.

ACCU-FLYTE

For Golf Balls and Clubs, and Sporting Goods.
First use on or about Feb. 25, 1966.

SN 251,910. General Recreation Industries, Inc., Minneapolis, Minn. Filed Aug. 8, 1966.

Snooz-ee

For Sleeping Bags.
First use July 20, 1966.

SN 253,325. Marden-Kane Inc., New York, N.Y. Filed Aug. 29, 1966.

TIGERINO

For Game Cards Used in the Promotion of Goods and Services.
First use Aug. 11, 1966.

SN 253,734. Cubco, Inc., Nutley, N.J. Filed Sept. 2, 1966.
Owner of Reg. No. 746,856.



For Ski Bindings.
First use Apr. 28, 1965.

SN 255,626. Hutch Athletic Goods Company, Cincinnati, Ohio. Filed Oct. 3, 1966.

HUTCH

For Sporting and Game Equipment—Namely, Protective Football and Baseball Equipment, Game Balls, Boxing Gloves, Striking Bags, Baseball Mitts, Baseball and Softball Masks, Bats, and Bases.
First use 1906.

SN 261,756. SW Industries, Inc., Newton, Mass. Filed Dec. 30, 1966.



The representation of a bowling ball is disclaimed apart from the mark.
For Bowling Balls and Accessory Equipment.
First use Nov. 9, 1966.

SN 262,339. Axel L. Johnson, Tucson, Ariz. Filed Jan. 11, 1967.

DOUBLE-CROSS

XX

For Special Deck of Cards and Three Booklets of Rules for Playing Three Different Games With Said Cards.
First use July 15, 1959.

SN 265,687. Bluegill Tackle Manufacturing Company, Fuquay-Varina, N.C. Filed Mar. 1, 1967.

INSTAMATIC

For Plastic and Cork Fishing Floats.
First use on or about Dec. 1, 1966.

SN 266,217. Firma Adidas-Sportschuhfabriken Adi Dassler KG., Herzogenaurach, near Nuremberg, Germany. Filed Mar. 8, 1967.

AZTECA-GOLD

Priority claimed under Sec. 44(d) on German application filed Nov. 23, 1966; Reg. No. 829,597, dated Feb. 8, 1967.
For Spiked Shoes for Athletic Purposes.

SN 267,659. Gilbert B. Plott, Jr., d.b.a. Hav-A Squeeze, Tuscumbia, Ala. Filed Mar. 27, 1967.

HAV-A SQUEEZE

For Rubber Exercise Ball.
First use Jan. 16, 1965.

SN 268,155. Columbia Products Company, Columbia, S.C. Filed Apr. 3, 1967.

WONDER POLE

No claim is made to the word "Pole" apart from the mark as shown. Owner of Reg. Nos. 731,087, 773,569, and 794,409.
For Vaulting Pole for Use in the Sport of Pole Vaulting.
First use on or about Sept. 23, 1966.

SN 270,638. Yakima Bait Co., Granger, Wash. Filed May 3, 1967.

ROOSTER TAIL

For Fishing Lures.
First use Aug. 1, 1957.

SN 270,639. Yakima Bait Co., Granger, Wash. Filed May 3, 1967.

WORDEN'S

For Fishing Lures and Lines.
First use January 1946.

SN 270,679. Hassenfeld Bros. Inc., Pawtucket, R.I. Filed May 4, 1967.

THaT KiD!

For Toy Doll.
First use on or about Feb. 27, 1967.

SN 270,757. The Coleman Company, Inc., Wichita, Kans. Filed May 5, 1967.

LOCK-O-MATIC

For Tent Poles.
First use 1960.

SN 271,383. The Ohio Art Company, Bryan, Ohio. Filed May 12, 1967.

RING-BAC

For Toy Guns.
First use Apr. 25, 1967.

SN 272,504. Kohner Bros., Inc., East Paterson, N.J. Filed May 26, 1967.

SURPRISE BOX

For Pop-Up Toy.
First use Mar. 8, 1967.

SN 273,182. Raymon W. Cook, d.b.a. Ray Cook, San Antonio, Tex. Filed June 6, 1967.

FLOATING-FACE

For Golf Clubs.
First use Mar. 22, 1967.

SN 274,154. Mattel, Inc., Hawthorne, Calif. Filed June 19, 1967.

LAVERNE LOCKET

The mark is fanciful, and is not known to refer to any particular individual. No claim of exclusive right is made to the word "Locket," apart from the mark as shown, for the goods recited.
For Dolls, Doll Clothing, and Doll Accessories.
First use May 29, 1967.

SN 274,159. Mattel, Inc., Hawthorne, Calif. Filed June 19, 1967.

LUANA LOCKET

The mark is fanciful, and is not known to refer to any particular individual. No claim of exclusive right is made to the word "Locket," apart from the mark as shown, for the goods recited.
For Dolls, Doll Clothing, and Doll Accessories.
First use May 29, 1967.

SN 279,899. Mattel, Inc., Hawthorne, Calif. Filed Sept. 8, 1967.

SGT. STORM

The mark is fanciful, and is not known to refer to any particular individual.
For Dolls, Doll Clothing, and Doll Accessories.
First use Aug. 15, 1967.

SN 279,900. Mattel, Inc., Hawthorne, Calif. Filed Sept. 8, 1967.

SGT. STEEL

The mark is fanciful, and is not known to refer to any particular individual.
For Dolls, Doll Clothing, and Doll Accessories.
First use Aug. 15, 1967.

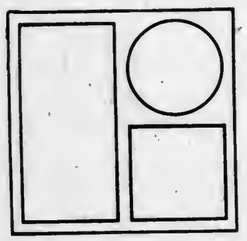
Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

SN 233,810. Monarch Road Machinery Company, Grand Rapids, Mich. Filed Dec. 2, 1965.

HY-LO

Owner of Reg. Nos. 782,802 and 797,130.
For Power Hydraulic Controls, Hydraulic Pressure Pumps, and Components Thereof, for Use in Controlling the Positioning of Snow and Earth Moving Blades Mounted on Vehicles.
First use on or before Nov. 8, 1965.

SN 236,101. Litton Industries, Inc., Beverly Hills, Calif. Filed Jan. 10, 1966.



The mark consists of the letters "li." Owner of Reg. No. 703,170.
For Mechanical Business Machinery—Namely, Typewriters, Printing Apparatus, and the Components Therefor; and Vibrating Screens.
First use on or about Sept. 1, 1962.

SN 238,549. Meyer Products, Inc., Cleveland, Ohio. Filed Feb. 10, 1966.

SNO-FLO

For Control Attachment Adapted for Mounting on Snow-Plows in the Nature of a Deflector To Direct Plowed Snow Away From the Windshield of a Plow Vehicle.
First use on or about Dec. 15, 1965.

SN 242,664. The Raymond Corporation, Greene, N.Y. Filed Apr. 4, 1966.



Owner of Reg. No. 729,699.
For Material Handling Machinery—Namely, Lift Trucks and Pallet Handling Trucks of Both the Riding-Operator and Walking-Operator Types, and Parts Thereof.
First use Feb. 2, 1966.

SN 243,080. Bishman Manufacturing Company, Osseo, Minn. Filed Apr. 11, 1966.

HERCULES



For Vehicle Lift.
First use Dec. 16, 1965.

SN 244,220. International Beverage Controls, Inc., Wichita, Kans. Filed Apr. 25, 1966.

AutoTap

For Automatic Dispensing Equipment for Beverages, Not Coin-Operated nor Having a Refrigerating Capability.
First use on or about Apr. 8, 1966.

SN 244,544. The Warner & Swasey Company, Cleveland, Ohio. Filed Apr. 28, 1966.

DUPLEX BEAVER

Owner of Reg. Nos. 681,768 and 692,738.
For Industrial Vehicles, Optionally Equipped or Provided With a Material Handling Device, for Lifting and Transporting Materials.
First use Mar. 30, 1966.

SN 245,963. Pratt & Whitney Inc., West Hartford, Conn. Filed May 18, 1966.

MEGA CHIP

Applicant disclaims the word "Chip" apart from the mark as shown.
For Cutting Tools, Tool Bits, and Cut-Off Blades for Use With Machine Tools.
First use Apr. 18, 1966, on cutting tools.

SN 246,249. Bakuer American Co., Skokie, Ill. Filed May 23, 1966.

BAKUER

For Precision Machine Tool Accessories and Equipment for Metal Working.
First use prior to Oct. 5, 1965.

SN 246,575. L.M. & L. Corporation, Claremont, N.H. Filed May 25, 1966.

REZ-A-FLO

For False Twist Tube Assemblies and Inserts Therefor, Used on Spinning Frames in the Textile Fiber Industry.
First use Apr. 20, 1966.

SN 247,425. Virginia Industries, Inc., Philadelphia, Pa. Filed June 6, 1966.

BEAMCO SPECIALTY BALL CO.

No registration rights are claimed for the words "Beamco Specialty Ball Co." and the representation of the ball bearing apart from the mark as shown, but applicant waives none of its common law rights in the mark or any feature thereof.
For Ball Bearings.
First use on or about Apr. 28, 1966.

SN 248,130. The Gorman-Rupp Company, Mansfield, Ohio. Filed June 15, 1966.

G&R

For Industrial Pumps, Pumping Apparatus, Accessories Therefor, and Parts Thereof.
First use Apr. 15, 1966.

SN 248,401. Aero-Motive Manufacturing Company, Kalamazoo, Mich. Filed June 20, 1966.

Owner of Reg. No. 705,200.
For Cord Reels, Cable Reels, and Hose Reels.
First use at least as early as Jan. 1, 1949.

SN 249,085. Sternco Industries, Inc., Allendale, N.J. Filed June 27, 1966.

Delta

Owner of Reg. No. 780,613 and others.
For Aquarium Pumps.
First use Sept. 4, 1962.

SN 251,021. Unarco Industries, Inc., Chicago, Ill. Filed July 25, 1966.

EQUIPCO

Owner of Reg. No. 346,067.
For Hand Brakes, Loading Devices, Load Restraining Apparatus, Load Dividers, Bulkheads, and Side Fillers.
First use 1931 on hand brakes.

SN 254,450. Johnny Roberts, Inc., Tampa, Fla. Filed Sept. 14, 1966.

BELTROL

For Continuous Tension Belt Adjusting Bracket.
First use on or about Aug. 5, 1966.

SN 254,631. Safe-Guide Cutter Co., Inc., Syracuse, N.Y. Filed Sept. 16, 1966.

For Device for Cutting Sheet Material Such as Paper and Fabric Comprising a Bar Adapted To Be Positioned on the Sheet, and a Cutter Manually Movable Along Said Bar.
First use Apr. 7, 1965.

SN 257,978. Pitman Manufacturing Company, Grandview, Mo. Filed Nov. 4, 1966.

WOOD|CHUCK

For Wood Chipping Machines.
First use August 1966.

SN 258,115. Holley Carburetor Company, Warren, Mich. Filed Nov. 7, 1966.

CENTRI-VAC

For Engine Governors and Parts Therefor.
First use Sept. 1, 1945.

SN 258,224. Girsberger & Tschappu, Glattbrugg, near Zurich, Switzerland. Filed Nov. 8, 1966.

CORKY

Owner of Swiss Reg. No. 201,635, dated Dec. 23, 1963.
For Cork Extractors.

SN 258,514. Elastizell Corporation of America, Alpena, Mich. Filed Nov. 14, 1966.

Zell-erator

For Apparatus for Blending Liquids in Controllable Proportions.
First use June 6, 1962.

SN 260,000. Aktiebolaget Gense, Eskilstuna, Sweden. Filed Dec. 5, 1966.

FACETTE

For Stainless Steel Flatware.
First use during the late summer or early fall of 1950; in commerce during the late summer or early fall of 1950.

SN 260,001. Aktiebolaget Gense, Eskilstuna, Sweden. Filed Dec. 5, 1966.

ELLIPS

For Stainless Steel Flatware.
First use during the late summer or early fall of 1952; in commerce during the late summer or early fall of 1952.

SN 260,142. The Cross Company, Fraser, Mich. Filed Dec. 6, 1966.

FASTRANSFER

For Drilling Machines, Milling Machines, Boring Machines, Tapping Machines, Metal Cutting Machines, Automatic Assembly Machines, and Presses.
First use Nov. 28, 1966.

SN 260,523. A. C. Bryson, Decatur, Ill. Filed Dec. 12, 1966.

SPOT *Herbicide Control*

No claim is made to the words "Herbicide" and "Control," apart from the mark, without waiving any common law rights therein.
For Attachment for Grain Planters for Applying Herbicides to Soil.
First use Mar. 14, 1966.

SN 260,737. Fischer Industries, Inc., Cleveland, Ohio. Filed Dec. 14, 1966.

The mark consists of the letters "FI."
For Overhead and Belt Conveyors; Cranes; Hoists; Tractors; Track, Rails, and Trolleys for Overhead Conveyors; Industrial Vacuum Cleaners; Centrifugal Separators; Chip Wringers; Steel Belting; Parts Feeders; Power Clutches; Vertical Stackers and Horizontal Conveyors for Industrial Products; and Parts and Accessories for All of the Foregoing.
First use Oct. 1, 1966.

SN 260,869. Miehle-Goss-Dexter, Incorporated, Chicago, Ill. Filed Dec. 15, 1966.

MIEHLE

Owner of Reg. Nos. 30,070 and 527,084.
For Printing Presses, Die Cutting and Creasing Presses and Stripping Machinery for Such Presses, Roll Stands, Web Rewinders, Folders, Feeders, Laminating Units, and Repair Parts Therefor.
First use on or about Sept. 1, 1958.

SN 260,958. Rampe Manufacturing Company, Cleveland, Ohio. Filed Dec. 16, 1966.

JIFFI-LINER

For Replaceable Liners for Machines Used in Cleaning, Deburring, Deflashing, Polishing, or Otherwise Finishing Workpieces.
First use September 1966.

SN 261,037. Belson Corporation, New York, N.Y. Filed Dec. 19, 1966.

Owner of Reg. No. 787,488.
For Air Vacuum Equipment for Garment Pressing Machines.
First use March 1946.

SN 261,038. Belson Corporation, New York, N.Y. Filed Dec. 19, 1966.

HOFFMAN

Owner of Reg. No. 789,001.
For Air Vacuum Equipment for Garment Pressing Machines.
First use during March 1933.

SN 261,336. True-Trace Corporation, El Monte, Calif. Filed Dec. 22, 1966.

TRACERMATION

For Controls for Metal Cutting Machine Tools, Which Machine Tools Have One or More Slide Axes Under Tracer Controls, Tracer Valves, and Sub-Systems for the Programming and Automatic Control of Said Machine Tools.
First use Nov. 22, 1966.

SN 261,356. Auto-Chlor System, Inc., Memphis, Tenn. Filed Dec. 23, 1966.

Auto-Chlor

Owner of Reg. Nos. 363,438, 557,756, and others.
For Commercial Dishwashing Machines.
First use in or about 1955.

SN 261,499. Jasper Engine Exchange, Inc., Jasper, Ind. Filed Dec. 27, 1966.

JASPER GO!

Applicant disclaims the representation of the engine, apart from the mark as shown.
For Automobile Engines and Transmissions, and Truck Engines and Transmissions.
First use July 1, 1964.

SN 262,505. Professional Instruments Company, Minneapolis, Minn. Filed Jan. 13, 1967.

HYDRO STEP

For Machine Tool Headstocks and Spindle Units.
First use Apr. 16, 1966.

SN 262,840. Advanced Car Specialties Limited, Scarborough, Ontario, Canada. Filed Jan. 19, 1967.

TAPER TIPS

For Automobile Muffler Extensions.
First use Sept. 14, 1957; in commerce Sept. 14, 1957.

SN 263,567. Harnischfeger Corporation, West Milwaukee, Wis. Filed Jan. 30, 1967.

SWING CIRCLE

For Slewing Rims for Earth Working and Construction Equipment.
First use Jan. 13, 1967.

SN 263,638. The Wyatt Manufacturing Company, Inc., Salina, Kans. Filed Jan. 30, 1967.

JAYHAWK

Owner of Reg. No. 427,511.
For Tillage Implements.
First use during March 1958.

SN 263,663. William Gluck, d.b.a. Gluco, Monroeville, Pa. Filed Jan. 31, 1967.

Moldomat

For Automatic Molding Machinery.
First use Dec. 15, 1965.

SN 263,916. Imperial Knife Associated Companies, Inc., Providence, R.I. Filed Feb. 3, 1967.

CORINTH

For Stainless Steel Knives, Forks, and Spoons.
First use Jan. 3, 1967.

SN 264,442. Oneida, Ltd., Oneida, N.Y. Filed Feb. 10, 1967.

SEAFLOWER

For Stainless Flatware.
First use Jan. 30, 1967.

SN 264,751. Metaline Products, Inc., Elkhart, Ind. Filed Feb. 15, 1967.

STALLION

For Garden Tractors.
First use Feb. 6, 1967.

SN 265,285. Eaton Yale & Towne Inc., Cleveland, Ohio. Filed Feb. 23, 1967.



For Sheaves, Pulleys, and Parts Thereof.
First use Oct. 17, 1966.

SN 265,337. Roto-Finish Company, Kalamazoo, Mich. Filed Feb. 23, 1967.



The drawing is lined for the color red, but applicant does not claim any particular color as a feature of the mark. The word "Finish" is disclaimed apart from the mark as shown.
Owner of Reg. Nos. 397,895, 647,055, and others.
For Deburring, Cleaning, Descaling, Burnishing, Finishing, and Polishing Apparatus.
First use 1942.

SN 265,536. Lilliston Implement Company, Albany, Ga. Filed Feb. 27, 1967.

RIGHT-O-WAY

For Rotary Cutters for Cutting Grass, Weeds, Brush, and the Like.
First use on or about June 1, 1965.

SN 265,896. The Gleason Works, Rochester, N.Y. Filed Mar. 3, 1967.

ACRAFORM

Owner of Reg. No. 356,268.
For Gears.
First use on or about Dec. 3, 1937.

SN 265,919. Polyurethane Engineering Techniques Co., Inc., Lake Bluff, Ill. Filed Mar. 3, 1967.

PETCO

For Printing and Industrial Rollers Having Resilient Surfaces.
First use May 13, 1964.

SN 266,203. Dreier Brothers, Inc., Chicago, Ill. Filed Mar. 8, 1967.

LOW BOY

For Hacksaws.
First use Aug. 30, 1960.

SN 267,190. Signode Corporation, Chicago, Ill. Filed Mar. 20, 1967.

STALLION

For Pneumatic Nailing Tools.
First use Oct. 10, 1966.

SN 269,152. G. T. Schjeldahl Company, Northfield, Minn. Filed Apr. 14, 1967.

COROFLEX

For Offset Gravure Printing Presses.
First use Mar. 12, 1967.

SN 276,983. Pittsburgh Plate Glass Company, Pittsburgh, Pa. Filed July 28, 1967.

CAPCO

For Power Driven Brushes.
First use at least as early as May 17, 1967.

SN 281,851. Schnellpressenfabrik Koenig & Bauer Aktiengesellschaft, Wurzburg, Germany. Filed Oct. 5, 1967.

ROTAREGISTA

Owner of U.S. Reg. No. 716,096.
For Combination Wrap-Around Plate Register Device for Use in Conjunction With a Sheet-Fed Letterpress.
First use at least as early as May 3, 1967; in commerce May 3, 1967.

SN 282,328. Eversharp, Inc., Milford, Conn. Filed Oct. 12, 1967.

S.S.T.

For Safety Razors, Safety Razor Blades, and Dispensers Therefor.
First use Sept. 20, 1967.

Class 24 — Laundry Appliances and Machines

SN 248,821. McGraw-Edison Company, Milwaukee, Wis. Filed June 23, 1966.

LOADSTAR

For Laundry Apparatus—Namely, Laundry Dryers, and Parts Therefor.
First use Dec. 14, 1961.

SN 258,875. American Foam Latex Corp., Pittsburgh, Pa. Filed Nov. 17, 1966.



Mrs. America

The term "America" is disclaimed separate and apart from the mark as shown.
For Ironing Board Pad and Cover.
First use 1954.

SN 266,365. Southern Mills, Inc., Atlanta, Ga. Filed Mar. 9, 1967.

CAL-TOP

For Fabric Covers for Use Over Padding Used on Laundry Presses.
First use on or about Feb. 27, 1967.

Class 26 — Measuring and Scientific Appliances

SN 242,139. Barry Wright Corp., Watertown, Mass., assignee of Mathatronics, Inc., Waltham, Mass. Filed Mar. 29, 1966.

EMD 8-48

For Electrical Data Signal Processing Apparatus—Namely, Digital Computers and Calculators.
First use at least as early as Dec. 30, 1965.

SN 249,043. Mr. Mod Shop, Inc., New Orleans, La. Filed June 27, 1966.



"Authentic" is disclaimed apart from the mark as shown.
Owner of Reg. No. 825,729.
For Sunglasses.
First use Jan. 21, 1966.

SN 255,333. L'Electronique Appliquee, Paris, France. Filed Sept. 28, 1966.

ELATRON

Priority claimed under Sec. 44(d) on French Reg. No. 709,161, dated Mar. 30, 1966.
For Electronic Data Processing Equipment.

SN 259,975. Servo Corporation of America, Hicksville, N.Y. Filed Dec. 2, 1966.

SERVOMASTER

Owner of Reg. Nos. 338,806, 722,544, and others.
For Data Storage and Command System.
First use Aug. 3, 1964.

SN 262,368. American Polarizers, Inc., Philadelphia, Pa. Filed Dec. 15, 1966.



SUN-BAR

The drawing is lined for the colors orange, gray, and brown, and color is claimed as an integral part of the mark.
For Polarized Optical Blanks.
First use Nov. 30, 1966.

SN 266,340. Magna Sales Company, Chicago, Ill. Filed Mar. 9, 1967.

SIGHT-MATE

For Binocular Magnifiers.
First use on or about Feb. 21, 1967.

SN 266,346. Mite Corporation, New Haven, Conn. Filed Mar. 9, 1967.

SEW SURE

For Thread Tension Measure.
First use Jan. 27, 1967.

SN 266,373. Textron Inc., Rochester, N.Y. Filed Mar. 9, 1967.

SHURSITE

Owner of Reg. Nos. 321,012, 798,531, and others.
For Lenses for Spectacles.
First use Nov. 7, 1966.

SN 266,397. Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany. Filed Mar. 10, 1967.

VARIOSCOP

Owner of German Reg. No. 822,067, dated July 21, 1966.
For Photographic Printing and Enlarging Equipment.

SN 266,413. Eastman Kodak Company, Rochester, N.Y. Filed Mar. 10, 1967.

MAGNAFICHE

For Microfilm Reader.
First use Nov. 4, 1966.

SN 266,954. Van-L, Ltd., Green Bay, Wis. Filed Mar. 16, 1967.

VAN L CORRECTO

For Golf Club Adjusting and Measuring Machines.
First use Mar. 17, 1965.

SN 267,049. Magna Sales Company, Chicago, Ill. Filed Mar. 17, 1967.

SIGHT-MASTER

For Binocular Magnifiers.
First use on or about Mar. 8, 1967.

SN 267,313. David P. Bushnell, Altadena, Calif. Filed Mar. 22, 1967.

ULTRA VISION

For Binoculars.
First use Aug. 20, 1966.

SN 267,822. Engler Instrument Company, Jersey City, N.J. Filed Mar. 29, 1967.

INDICAP

For Tire Pressure Indicators.
First use Feb. 28, 1967.

SN 267,826. Gamco Industries, Inc., d.b.a. Creative Visuals, Big Spring, Tex. Filed Mar. 29, 1967.

Xpōs·a·line

For Exposure Control Devices for Projection Transparencies.
First use Mar. 16, 1967.

SN 268,799. Tectronics Manufacturing Corporation, Bremen, Ind. Filed Apr. 10, 1967.



For Ground Fault Sensing Device.
First use Jan. 26, 1967.

SN 268,861. Books, Inc., Washington, D.C. Filed Apr. 11, 1967.

ENCYCLOVISION

For Microfilm Viewer.
First use Mar. 14, 1967.

SN 275,984. Pittsburgh Plate Glass Company, Pittsburgh, Pa. Filed July 14, 1967.

PPG INDUSTRIES

For Optical and Opthalmic Glasses.
First use at least as early as Apr. 19, 1967.

SN 279,994. Thexton Manufacturing Company, Hopkins, Minn. Filed Sept. 11, 1967.

HYDRO-MITE

For Hydrometer-Type Battery Testers.
First use Mar. 26, 1963.

Class 27 — Horological Instruments

SN 262,760. Kalman Berger, Brooklyn, N.Y. Filed Jan. 18, 1967.

LADY BYRON

The name "Lady Byron" constituting the mark is a fanciful name.
For Watches.
First use Jan. 10, 1967.

SN 262,761. Kalman Berger, Brooklyn, N.Y. Filed Jan. 18, 1967.

LORD BYRON

The name "Lord Byron" constituting the present mark is that of "Baron George Gordon," deceased.
For Watches.
First use Jan. 10, 1967.

SN 267,070. Société Anonyme de la Manufacture d'Horlogerie Audemars Piguët & Co., Le Brassus, Vaud, Switzerland. Filed Mar. 17, 1967.

AUDEMARS PIGUET

The mark is the name of the founder of applicant's firm, who has been dead for many years.
For Watches, Clocks, Stop Watches, Time Recorders, Chronometers, Chronographs, Watch Movements, and Parts of All of the Foregoing.
First use 1883; in commerce 1883.

SN 273,162. Benrus Watch Company, Inc., New York, N.Y. Filed June 6, 1967.

GERVAIS-PENARD

For Watches.
First use Nov. 7, 1966.

Class 28 — Jewelry and Precious-Metal Ware

SN 249,044. Mr. Mod Shop, Inc., New Orleans, La. Filed June 27, 1966.



"Authentic" is disclaimed apart from the mark as shown.
Owner of Reg. No. 825,736.
For Jewelry.
First use Jan. 21, 1966.

SN 258,605. Sterling Merchandise Company, Akron, Ohio. Filed Nov. 14, 1966.

ADORE

For Rings.
First use July 19, 1966.

SN 268,309. B. B. Greenberg Co., Cranston, R.I. Filed Apr. 4, 1967.

MINI-PINS

For Jewelry—Namely, Brooches.
First use on or about Nov. 22, 1966.

SN 270,934. Mitchell Designs, New York, N.Y. Filed May 8, 1967.

MCO
MITCHELL DESIGNS

Applicant disclaims the word "Designs" apart from the mark as shown.
For Jewelry, Either of Precious, or Semi-Precious Quality, and/or Costume Jewelry.
First use Oct. 1, 1966.

SN 272,272. Gotham Wedding Ring Co., Inc., New York, N.Y. Filed May 24, 1967.

GWR

For Finger Rings Made of Precious Metal.
First use on or about May 15, 1967.

SN 272,709. Danal Jewelry Company, Providence, R.I. Filed May 31, 1967.

Barrettini

Owner of Reg. No. 831,508.
For Jewelry.
First use on or about May 9, 1967.

Class 29 — Brooms, Brushes, and Dusters

SN 257,293. Metro Wholesale Corporation, New York, N.Y. Filed Oct. 26, 1966.

DURACREST

Owner of Reg. Nos. 716,061, 811,624, and others.
For Terry Tile Cloths, Cleaning Brushes, Mops, Brooms and Paint Brushes.
First use July 1961 on terry tile cloths.

Class 32 — Furniture and Upholstery

SN 254,853. American Foam Latex Corp., Pittsburgh, Pa. Filed Sept. 21, 1966.

AMFOAM

The outlined map of the United States is disclaimed apart from the mark as shown.
For Stuffed Pillows.
First use February 1965.

SN 257,295. Metro Wholesale Corporation, New York, N.Y. Filed Oct. 26, 1966.

DURACREST

Owner of Reg. Nos. 716,061, 811,624, and others.
For Dinette Sets.
First use October 1964.

SN 265,129. United States Rubber Company, New York, N.Y. Filed Feb. 20, 1967.

MAJESTIC

For Mattresses and Mattress Foundations.
First use Feb. 6, 1967.

SN 269,802. Springer-Penguin, Inc., Mount Vernon, N.Y. Filed Apr. 21, 1967.

ARBATOVE

For Resistant Type of Wood Made Up Into Finished Furniture—Namely, Tables and Bars.
First use at least as early as Sept. 25, 1965.

SN 270,293. Robert L. Slesinger, d.b.a. Cobar Creations, Hutchinson, Minn. Filed Apr. 28, 1967.

COBAR

For Barrel Furniture—Namely, Living-Room, Dining Room, Recreation Room, and Office Furniture.
First use Nov. 3, 1966.

SN 281,516. Knoll Associates, Inc., New York, N.Y. Filed Oct. 2, 1967.

Owner of Reg. Nos. 557,746, 638,430, and others.
For Articles of Furniture—Namely, Tables, Desks, Seats, Chairs, Stools, Couches, Sofas, Beds, Chests, Cabinets, and Trays.
First use June 22, 1967.

Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 257,066. Midland-Ross Corporation, Toledo, Ohio. Filed Oct. 24, 1966.

DRY-CEL

For Dehumidification Units.
First use Oct. 14, 1966.

SN 257,296. Metro Wholesale Corporation, New York, N.Y. Filed Oct. 26, 1966.

DURACREST

Owner of Reg. No. 811,624 and others.
For Gas Hot Water Heaters and Barbecue Grills.
First use July 1962 on gas hot water heaters.

SN 261,737. Lennox Industries Inc., Marshalltown, Iowa. Filed Dec. 30, 1966.

HUMIDIWHEEL

For Domestic and Commercial Humidifiers.
First use Oct. 21, 1965.

SN 261,932. Litecontrol Corporation, Watertown, Mass. Filed Jan. 4, 1967.

PARACEL

For Louvers for Lighting Fixtures.
First use Oct. 19, 1966.

SN 261,979. Eutectic Welding Alloys Corporation, Flushing, N.Y. Filed Jan. 5, 1967.

MANUMATIC

For Welding Electrodes and Welding Rods.
First use Oct. 31, 1966.

SN 261,980. Eutectic Welding Alloys Corporation, Flushing, N.Y. Filed Jan. 5, 1967.

VERTECTIC

For Welding Electrodes and Welding Rods.
First use Oct. 31, 1966.

SN 262,321. Eclipse Fuel Engineering Co., Rockford, Ill. Filed Jan. 11, 1967.

CONVECTO-FLAME

For Combination Gas/Oil Burners for Industrial Use.
First use on or about Nov. 15, 1965.

SN 262,766. The Coleman Company, Inc., Wichita, Kans. Filed Jan. 18, 1967.

REBEL

For Travel Trailer Air Conditioners.
First use on or before June 9, 1966.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 244,701. The General Tire & Rubber Company, Akron, Ohio. Filed S.R. May 2, 1966; Am. P.R. Oct. 25, 1967.

HCT

For Tires.
First use January 1949.

SN 244,702. The General Tire & Rubber Company, Akron, Ohio. Filed S.R. May 2, 1966; Am. P.R. Oct. 25, 1967.

DCL

For Tires.
First use July 1958.

SN 250,270. Hewitt-Robins Incorporated, Stamford, Conn. Filed July 14, 1966.

HEWITT ROBINS

Owner of Reg. Nos. 352,392 and 549,790.
For Industrial Rubber Products—Namely, Conveyor Belting Power Transmission Belts, Hose, Couplings and Sleeves for Flexible Hose, Diaphragms, Gaskets, Expansion Joints, Machinery Packing, Linings for Chutes and Rubber Shock Insulators and Industrial Rubber-Like Articles Custom Molded to Customers' Specifications.
First use at least as early as 1949.

SN 261,964. American Biltrite Rubber Co., Inc., Chelsea, Mass. Filed Jan. 5, 1967.

CONCORD CORREPEL

For Hose—Namely, Steam Hose.
First use Nov. 17, 1966.

SN 263,259. Federal-Mogul Corporation, Southfield, Mich. Filed Jan. 25, 1967.

For Fabricated Gaskets of All Types and Gasket Materials.
First use Oct. 4, 1966.

SN 265,189. H. K. Porter Company, Inc., Pittsburgh, Pa. Filed Feb. 21, 1967.

PETROLINE

For Gasoline Pump Hose.
First use Jan. 24, 1956.

SN 265,204. George Murray Tire Company, Peoria, Ill. Filed Feb. 21, 1967.

MURCO

For Tires.
First use Aug. 10, 1966.

SN 265,513. The Gates Rubber Company, Denver, Colo. Filed Feb. 27, 1967.

Gardenette

Owner of Reg. No. 376,162.
For Hose, More Particularly Garden Hose.
First use Aug. 14, 1939.

SN 265,530. Johns-Manville Corporation, New York, N.Y. Filed Feb. 27, 1967.

JOHNS-MANVILLE

Owner of Reg. Nos. 272,689, 566,486, and others.
For Friction Blocks, Elements, Linings and Facings, for Brakes and Clutches.
First use 1901.

Class 36 — Musical Instruments and Supplies

SN 251,458. Organ-Meister, Inc., Miami Beach, Fla. Filed Aug. 1, 1966.

ORGAN-MEISTER

For Phonograph Records, Tape Recorders, Reproducers, and Parts Therefor.
First use July 28, 1966.

SN 253,322. MCA Inc., Universal City, Calif. Filed Aug. 29, 1966.



For Phonograph Records.
First use June 24, 1966.

SN 261,194. Chicago Musical Instrument Co., Chicago, Ill. Filed Dec. 21, 1966.

FARFISA

For Electronic Organs, Electronic Accordions and Parts Thereof—Namely, Tone Signal Transducers.
First use at least as early as Sept. 30, 1964.

Class 37 — Paper and Stationery

SN 237,529. CPS Industries, Inc., Chicago, Ill. Filed Jan. 28, 1966.



For Decorative Gift Wrapping Materials—Namely, Pre-Assembled Decorative Paper Enclosures, Envelopes, Wrappers, and Bags.
First use Jan. 20, 1966.

SN 244,973. Clingmaster, Inc., Bronx, N.Y. Filed May 5, 1966.

VYNO

For Plastic Sheet Material—Namely, Wrapping Self-Sealing, Transparent Plastic Film, for Food, Wearing Apparel, and Toys.
First use February 1963.

SN 256,647. Cartiera di Cairate, S.p.A., Milan, Italy. Filed Oct. 18, 1966.

CANDIDO

Owner of Italian Reg. No. 171,854, dated Sept. 29, 1965.
For Wadding and Cellulose Products—Namely, Facial Tissues.

SN 260,365. Southwest Forest Industries, Inc., Phoenix, Ariz. Filed Dec. 8, 1966.

SNOWFLAKE NEWS

The word "News" is disclaimed apart from the mark as shown.
For Newsprint.
First use at least as early as Feb. 1, 1962.

SN 260,428. James M. Herman, New York, N.Y. Filed Dec. 9, 1966.

JOB-ETTE

For Memorandum Booklet Containing Pages of Printed Items for Recording Data of Useful Information to Job-Seekers.
First use Oct. 10, 1966.

SN 260,493. Koh-I-Noor, Inc., Bloomsbury, N.J. Filed Dec. 12, 1966.

LITE-A-LINE

For Writing Instruments Particularly Adaptable for Highlighting—Namely, Pens With Synthetic Points Used To Mark Reading Matter in Such a Manner as To Have Specific Words Stand Out From the General Text.
First use at least as early as June 20, 1966.

SN 262,558. Amway Corporation, Ada, Mich. Filed Jan. 16, 1967.

AMWAY

For Unprinted or Partially Printed Forms, Post Cards, Writing Paper, Pads, Envelopes, and Pens.
First use on or about Apr. 25, 1963.

S N263,524. Bennett Brothers, Inc., New York, N.Y. Filed Jan. 30, 1967.

IDENT-A-TAG

For Gift Card and Gift Tag and for a Series of Gift Cards and Gift Tags in a Mail Order Catalog, Which Cards and Tags Are Partially Printed.
First use Sept. 20, 1966.

SN 266,040. Allen Hollander Co., Inc., Bronx, N.Y. Filed Mar. 6, 1967.

BRITE-STIK

For Pressure-Sensitive Labels Used To Mark and Identify Magnetic Tape Reels Used in Electronic Data Processing.
First use December 1960.

SN 266,041. Allen Hollander Co., Inc., Bronx, N.Y. Filed Mar. 6, 1967.

REEL-IDENT

For Pressure-Sensitive Labels Used To Mark and Identify Reel Cases, Trays, Racks, Control Panels, and Other Equipment.
First use December 1960.

SN 267,856. Scrantom's Book & Stationery Co., Inc., Rochester, N.Y. Filed Mar. 29, 1967.

Perfect Penmanship

For Tablets, Loose Leaf Fillers, and Notebooks.
First use at least as early as 1936.

SN 268,769. Scott Paper Company, Delaware County, Pa. Filed Apr. 10, 1967.

DEMURE

For Facial and Bathroom Tissue.
First use Mar. 16, 1967.

SN 268,770. Scott Paper Company, Delaware County, Pa. Filed Apr. 10, 1967.

RALLY

For Paper Towels.
First use Mar. 16, 1967.

Class 38 — Prints and Publications

SN 217,782. Plastichrome Greetings, Inc., d.b.a. Grand Award Division, Jamaica Plain, Mass. Filed Apr. 30, 1965.

GRAND AWARD

For Greeting Cards.
First use in or about May 1962.

SN 252,347. William Carroll, d.b.a. Largeprint Publications, North Hollywood, Calif. Filed Aug. 15, 1966.

THE SIGHTSAVER SERIES

For Books, Magazines, Still and Motion Picture Films.
First use Aug. 1, 1966.

SN 254,636. Standard Brands Incorporated, New York, N.Y. Filed Sept. 16, 1966.

MANNA ABOUT TOWN

For Newspaper Column.
First use Jan. 22, 1964.

SN 264,337. Oxford Industries, Inc., Los Angeles, Calif. Filed Feb. 9, 1967.

LET'S LIVE

For Magazine.
First use Feb. 15, 1933.

SN 264,465. Industrial Acoustics Company, Inc., Bronx, N.Y. Filed Dec. 27, 1966.



Owner of Reg. No. 744,105 and others.
For Printed Matter—Namely, Data Sheets, Technical Bulletins and Reproductions of Drawings, Relating to Noise Control and Acoustics.
First use February 1965.

SN 264,577. The Objectivist, Inc., New York, N.Y. Filed Feb. 13, 1967.

THE OBJECTIVIST

For Magazine Devoted to Expounding a Philosophy and Applying This Philosophy to All Aspects of Modern Culture.
First use before Jan. 31, 1962.

SN 265,439. Sacred Design Associates, Inc., Minneapolis, Minn. Filed Feb. 24, 1967.

SACRED DESIGN

Owner of Reg. Nos. 823,092 and 823,093.
For Printed, Lithographed, Photo-Engraved, or Otherwise Prepared Sheets, To Be Used as Church Announcements or Bulletins, or the Like, Either Folded or Unfolded, Which Are Designed To Carry Information, Messages, Announcements or the Like, Selected by the Purchasers or Users.
First use November 1957.

SN 270,043. The Billboard Publishing Company, Cincinnati, Ohio. Filed Apr. 26, 1967.

SOUNDMAKERS

For Magazine.
First use Mar. 27, 1967.

SN 279,594. Booz-Allen Applied Research Inc., Chicago, Ill. Filed Sept. 5, 1967.

PROBE

For Company Magazine Devoted to Its Research and Development Programs and Activities.
First use May 31, 1964.

SN 282,655. The Hearst Corporation, New York, N.Y. Filed Oct. 17, 1967.

WHAT DO YOU KNOW?

Owner of Reg. No. 231,594.
For Syndicated Newspaper Feature.
First use Mar. 28, 1927.

Class 39 — Clothing

SN 135,194. Eloesser-Heynemann Company, San Francisco, Calif. Filed Jan. 4, 1962.

GOLD LABEL

For Work or Utility Clothing—Namely, Overalls, One-Piece Work Suits, Outer Shirts, Jackets, and Trousers.
First use August 1927.

SN 234,903. Hudson Hosiery Company, Charlotte, N.C. Filed Dec. 20, 1965.

YOUNG 'N LOVELY

For Ladies' Hosiery.
First use Nov. 24, 1965.

SN 252,927. Proudfoot Hosiery Corp., New York, N.Y. Filed Aug. 23, 1966.

Proudfoot

Owner of Reg. No. 524,223.
For Hosiery for Ladies, Men, Boys, and Girls.
First use on or about Oct. 20, 1959.

SN 252,928. Proudfoot Hosiery Corp., New York, N.Y. Filed Aug. 23, 1966.

Proudfoot

Owner of Reg. No. 524,223.
For Hosiery for Ladies, Men, Boys, and Girls.
First use on or about Oct. 20, 1959.

SN 254,553. J. R. McMullen Company, Inc., New York, N.Y. Filed Sept. 15, 1966.

the Busy Bodys

For Women's Outer Dress and Sport Shirts, Blouses, Sweaters, Dresses, Skirts, Slacks, and Outer Shorts.
First use Sept. 9, 1966.

SN 254,874. Hanes Corporation, Winston-Salem, N.C. Filed Sept. 21, 1966.

STAY-POSE

For Hosiery, Particularly Support Stockings.
First use Sept. 8, 1966.

SN 257,057. Johnston, Inc., Dallas, Tex. Filed Oct. 24, 1966.

BETTI-JOHN

The name "Betti-John" is fanciful.
For Children's Lingerie—Namely, Robes, Pajamas, Gowns, Undershirts, and Topper Sets.
First use Mar. 1, 1966.

SN 257,073. Murray Olewitz, Inc., New York, N.Y. Filed Oct. 24, 1966.

2 PLUS 2

For Men's and Boys' Slacks and Jackets.
First use Oct. 6, 1966.

SN 257,946. L. Andrew Donaldson, Sarasota, Fla. Filed Nov. 4, 1966.

TUK

For Ornamental Device To Be Worn at the Collar in Lieu of a Necktie.
First use Feb. 15, 1965.

SN 258,070. Cromwell Mills, New York, N.Y. Filed Nov. 7, 1966.

Scotties

For Infants' and Children's Knitted Outerwear—Namely, Creepers, Polo Shirts, Cardigans, Shorts, Pants, and Pajamas Made of Textiles of Rayon, Cotton, and Combinations Thereof.
First use January 1945.

SN 258,358. Cluett, Peabody & Co., Inc., New York, N.Y. Filed Nov. 10, 1966.

COT-N-RITE

For Dress and Negligee Shirts Made Wholly or Partially of Cotton.
First use Sept. 2, 1966.

SN 258,773. John Bambach Hosiery Company, Philadelphia, Pa. Filed Nov. 16, 1966.

Bamrose

For Women's Hosiery.
First use Sept. 20, 1948.

SN 260,274. Pert Fashions, Inc., New York, N.Y. Filed Dec. 7, 1966.

KANA

The mark "Kana" is fictitious.
For Dresses.
First use Nov. 28, 1966.

SN 261,132. Bridallure, Inc., Philadelphia, Pa. Filed Dec. 20, 1966.

NANCY ANGELA

Applicant's related company owns Reg. No. 528,964.
For Bridesmaid Gowns.
First use Nov. 16, 1966.

SN 261,971. Carlos Sinigagliesi & Cia. S.A. Ind. & Com., Buenos Aires, Argentina. Filed Jan. 5, 1967.

CA-SI

For Men's and Women's Underwear.
First use 1940; in commerce July 18, 1966.

SN 262,119. Ben Elias Co., Inc., New York, N.Y. Filed Jan. 9, 1967.

SOUR PUSS

For Blouses, Sweaters, Dresses, Slacks, Skirts, and Jackets.
First use Dec. 27, 1966.

SN 262,931. Endicott Johnson Corporation, Endicott, N.Y. Filed Jan. 20, 1967.

HORNETS

For Rubber and Canvas Footwear.
First use Jan. 21, 1966.

SN 263,450. Cambridge Rubber Company, Cambridge, Mass. Filed Jan. 27, 1967.

ALLCOURT

For Shoes.
First use Dec. 27, 1966.

SN 263,488. Shelby Seamless Hosiery Mills, Inc., Shelby, N.C. Filed Jan. 27, 1967.

SERGIO FRANCHINI

The name Sergio-Franchini is a fanciful designation.
For Hosiery.
First use Jan. 25, 1967.

SN 263,839. Lujay Industries, Inc., New York, N.Y. Filed Feb. 2, 1967.

SLAKTOPS

For Socks and Bootees.
First use Jan. 18, 1967.

SN 264,346. Tami Sportswear, San Francisco, Calif. Filed Feb. 9, 1967.

Mical

For Sweaters.
First use September 1966.

SN 264,567. E. R. Moore Company, Niles, Ill. Filed Feb. 13, 1967.

MOORE-LYN

Owner of Reg. No. 599,395.
For Uniforms.
First use Oct. 4, 1966.

SN 264,722. Boss Manufacturing Company, Kewanee, Ill. Filed Feb. 15, 1967.

SNO BUNNIES

For Work Gloves Made of Fabric.
First use Feb. 22, 1965.

SN 266,610. Westbury Fashions, Inc., New York, N.Y. Filed Mar. 13, 1967.

SUBURBAN CORNER

For Ladies' Dresses.
First use Jan. 7, 1967.

SN 266,671. Maidenform, Inc. New York, N.Y. Filed Mar. 14, 1967.

CALICO SCALLOP SHELL

Applicant makes no claim to the exclusive right to the word "Calico" apart from the mark as shown. Owner of Reg. Nos. 829,507, 829,510, and others.
For Foundation Garments and Lingerie.
First use Mar. 6, 1967.

SN 266,774. Modern Shoe Company, St. Louis, Mo. Filed Mar. 15, 1967.

PERMA-SHINE

For Men's and Women's Shoes.
First use Aug. 6, 1965.

SN 266,783. John Plain & Company, Chicago, Ill. Filed Mar. 15, 1967.

COACHMAN

For Men's Underwear—Namely, Briefs, Boxer Shorts, Sleeveless Shirts, T-Shirts, and Thermal Underwear.
First use July 1959.

SN 266,813. Uniroyal, Inc., New York, N.Y. Filed Mar. 15, 1967.

ROYAL TOPPER

Applicant disclaims the word "Topper" apart from the mark as shown. Owner of Reg. No. 814,070.
For Plastic and Waterproof Rainwear.
First use Jan. 17, 1967.

SN 266,992. C. W. Anderson Hosiery Company, Clinton, S.C. Filed Mar. 17, 1967.

AME-LOU

For Ladies' Hosiery.
First use Sept. 25, 1953.

SN 268,545. Zip Hosiery Co., Cincinnati, Ohio. Filed Apr. 6, 1967.

ZIPS

For Hosiery—Namely, Men's and Boys' Work Socks.
First use 1962.

SN 269,185. Gross Galesburg Co., Galesburg, Ill. Filed Apr. 14, 1967.

SNO-KING

For Jackets, Vests, and Insulated Coveralls.
First use October 1952.

SN 269,923. Penobscot Shoe Company, Boston, Mass. Filed Apr. 24, 1967.

Trampeze Imperials

Owner of Reg. Nos. 394,070, 755,128, and others.
For Shoes.
First use Mar. 15, 1967.

SN 270,144. Lorna Fashions, Inc., Dallas, Tex. Filed Apr. 27, 1967.

LADY LORNA

For Women's and Misses' Dresses, Blouses, Skirts, Shorts, and Pedal-Pushers.
First use February 1966.

SN 270,162. Sea & Ski Corporation, San Francisco, Calif. Filed Apr. 27, 1967.

SEA & SKI

Owner of Reg. Nos. 746,568, 827,197, and others.
For Beach Towels and Footwear.
First use Apr. 10, 1967.

SN 272,039. Fit-Rite Pants Company, Inc., New York, N.Y. Filed May 22, 1967.

"COMFORTEERS"

For Men's and Boys' Trousers and Slacks.
First use May 15, 1967.

SN 272,040. Fit-Rite Pants Company, Inc., New York, N.Y. Filed May 22, 1967.

THE "ONE AND ONLY"

For Men's and Boys' Trousers and Slacks.
First use May 15, 1957.

SN 272,627. Charles Pindyck, Inc., New York, N.Y. Filed May 29, 1967.

ROYAL CREST

For Undershirts, Gowns, and Kimonos for Infants.
First use May 24, 1967.

SN 272,824. Forum Sportswear, Inc., New York, N.Y. Filed June 1, 1967.

Forum

Owner of Reg. No. 826,902.
For Sportswear—Namely, Sweaters.
First use Jan. 4, 1965.

SN 273,190. Flexnit Company, Inc., New York, N.Y. Filed June 6, 1967.

DIMINISH

For Girdles.
First use May 17, 1967.

SN 281,418. Hart Schaffner & Marx, Chicago, Ill. Filed Sept. 29, 1967.

ROYAL BIRKDALE

For Blazers.
First use May 22, 1967.

Class 40—Fancy Goods, Furnishings, and Notions

SN 256,476. Jerry Romantini, Elmhurst, N.Y. Filed Oct. 14, 1966.

PARUCCA

For Wigs.
First use Mar. 15, 1966.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 254,682. Vera M. Harrison and Hazel M. Haren (joint owners), Columbus, Ohio. Filed Sept. 19, 1966.

LID-ETTE

For Toilet Lid Covers.
First use Aug. 31, 1966.

SN 256,518. Balatum S.A. (Societe Anonyme), Balsieux, Nord, France. Filed Oct. 17, 1966.

balatex

Owner of French Reg. No. 9,214, dated Dec. 19, 1962 (Roubaix); Natl. Inst. No. 198,438.
For Rugs and Carpets.

SN 257,145. Anglo Fabrics Company, Inc., New York, N.Y. Filed Oct. 25, 1966.

ANGLO SAXONY

Owner of Reg. No. 432,910.
For Woolen and Worsted Piece Goods.
First use July 31, 1945.

SN 257,939. Concord Fabrics Inc., New York, N.Y. Filed Nov. 4, 1966.

ISLAND CLOTH CONCORD FABRIC

No claim is made to the words "Cloth" and "Fabric" apart from the mark as shown. Owner of Reg. No. 824,124.
For Textile Fabrics Made of Cotton and/or Synthetic Fibers.
First use May 2, 1966.

SN 261,447. Anglo Fabrics Company, Inc., New York, N.Y. Filed Dec. 27, 1966.

ANGLOSHEEN

Owner of Reg. Nos. 435,361, 636,015, and 687,164.
For Woolen and Worsted Piece Goods, Particularly for Use in Articles of Wearing Apparel as Overcoats, Suits, Jackets and Skirts for Women and Men.
First use Feb. 16, 1946.

SN 262,915. Anglo Fabrics Company, Inc., New York, N.Y. Filed Jan. 20, 1967.

ANGLO-HANDICRAFT

Owner of Reg. Nos. 435,798, 636,015, and 689,163.
For Woolen and Worsted Piece Goods Used Particularly for the Manufacture of Articles of Wearing Apparel.
First use Nov. 28, 1945.

SN 264,124. Stauffer Chemical Company, New York, N.Y. Filed Feb. 7, 1967.

FILMTEX

For Multiple Ply Laminated Fabrics for Use in Making Into Outdoor Furniture Upholstery, Umbrellas, Tarpaulins, Tablecloths, Boat Decking, Sporting Goods, and the Like.
First use at least as early as December 1952.

SN 266,009. DHJ Industries Inc., New York, N.Y. Filed Mar. 6, 1967.

MELLO-FUSE

Owner of Reg. Nos. 638,104 and 793,427.
For Fusible Inter-Linings and Inter-Facings Manufactured and Produced From Natural and/or Synthetic Fibers for Use in the Collars, Cuffs, Collar Bands, and Center Plackets of Men's and Boys' Dress and Sport Shirts, as Well as Ladies' Blouses.
First use Feb. 2, 1967.

SN 273,003. Cone Mills Corporation, Greensboro, N.C. Filed June 5, 1967.

COLT CORD

The word "Cord" is disclaimed apart from the mark as shown.
For Cotton Piece Goods.
First use Mar. 16, 1967.

Class 44—Dental, Medical, and Surgical Appliances

SN 253,784. Noel Robbins, Chatham, N.J. Filed Sept. 2, 1966.

DENTJECTOR

For Dental Anesthesia Instrument.
First use on or about Oct. 4, 1965.

SN 261,219. The Kendall Company, Walpole, Mass. Filed Dec. 21, 1966.

O-B

Owner of Reg. No. 224,096.
For Surgical Dressings and Sanitary Napkins and Tampons.
First use on or about Feb. 6, 1926.

SN 265,311. Kimberly-Clark Corporation, Neenah, Wis. Filed Feb. 23, 1967.

K.T.'S

For Sanitary Napkins, Sanitary Tampons, and Belts or Holders for Sanitary Napkins.
First use Feb. 1, 1967.

SN 265,495. Deseret Pharmaceutical Company, Inc., Sandy, Utah. Filed Feb. 27, 1967.

FILTERMASK

For Surgical Masks.
First use Oct. 30, 1961.

SN 265,557. Howard M. Richardson, Philadelphia, Pa. Filed Feb. 27, 1967.

DENTREX

For Dental Hose Reels and Valves.
First use Dec. 3, 1966.

SN 265,828. The Kendall Company, Walpole, Mass. Filed Mar. 2, 1967.

ULTREER

For Elastic Hosiery.
First use Oct. 12, 1965.

SN 266,261. Sigma Sales Corp. of California, d.b.a. Sigma Engineering Co., North Hollywood, Calif. Filed Mar. 8, 1967.

COM-FIT

For Ear Plugs.
First use May 16, 1960.

SN 276,391. Telan Corporation, Denver, Colo. Filed July 20, 1967.

TELAN

For Medical Laboratory and Biological Laboratory Supplies—Namely, Disposable Tubes and Containers for Blood Analyses.
First use May 15, 1967.

SN 279,595. Braude Electronics Corporation, Gardena, Calif. Filed Sept. 5, 1967.

AFFIRM

For Electronic Facial Massager, for Medical, Therapeutic, or Cosmetic Applications.
First use July 21, 1967.

SN 282,241. Home Dental Aids Company, d.b.a. Home Dental Aids Co., Inc., Bakersfield, Calif. Filed Oct. 11, 1967.

Bite'n Hold

For Plastic Liner Strips for Relining Dentures.
First use Sept. 27, 1967.

SN 282,248. Parke, Davis & Company, Detroit, Mich. Filed Oct. 11, 1967.

GAMBIT

For Therapeutic Hosiery.
First use on or before Sept. 28, 1967.

Class 45—Soft Drinks and Carbonated Waters

SN 241,892. Good-O-Beverages, Inc., Bronx, N.Y. Filed Mar. 25, 1966.

GOOD-O

For Soft Drinks—Namely, Kola Champagne.
First use in or about March 1947.

Class 46—Foods and Ingredients of Foods

SN 206,641. Nishimoto Trading Co., Ltd., Ikuta-ku, Kobe, Japan. Filed Nov. 20, 1964.

SHIRAUME

The Japanese literal meaning of the mark "Shiraume," may be translated into English as "white plum blossom."
For Foods—Namely, Dry Vegetables and Rice, and Canned Vegetables.
First use on or about Nov. 1, 1964; in commerce on or about Nov. 1, 1964.

SN 238,037. Boggiatto Ranch & Packing Company, Inc., d.b.a. Boggiatto Packing Co., Castroville, Calif. Filed Feb. 4, 1966.

WINTER-KIST

For Fresh Vegetables.
First use Jan. 19, 1961.

SN 240,478. Richard K. Ransom, d.b.a. Hickory Farms of Ohio, Toledo, Ohio. Filed Mar. 8, 1966.

Hickory Farms OF OHIO

Without relinquishing any common law rights therein, no claim is made to the word "Ohio" apart from the mark as shown. Owner of Reg. No. 706,395.
For Cheeses, Cheese Dips and Spreads; Coffee; Tea; Dressings for Salads and the Like; Crackers, Cookies, Bread, Flour, and Pancake Mixes, Cakes; Jams, Jellies, Marmalades and Preserves; Canned Soups, Canned Oysters, Canned Sardines, Canned Hams, Sausages; Pickled Foods—Namely, Peppers, Watermelon, Cantalope, Honeydew; Pickles, Vegetable Relishes; Horseradish, Spices and Mustards; Meat and Seafood Sauces; Fruit and Otherwise Flavored Ice Cream Toppings; Shelled Nuts and Peanuts; Candy Covered Nuts; Snack Items—Namely, Seasoned Sesame Stix, Celery Bits, Onion Sesames, Chicken Mushroom, and Cheese Flavored Strips; Candy; Sauerkraut.
First use at least as early as March 1952.

SN 240,620. Israel Dehydrated Products Limited, Ramat-Gan, Israel. Filed Mar. 10, 1966.

SHALOM

The English translation of the Hebrew word "Shalom" is "peace." Owner of Israeli Reg. No. 23,322, dated June 11, 1964.
For Soups and Soup Powders.

SN 245,667. Balanced Foods, Inc., New York, N.Y. Filed May 16, 1966.

BALANCED

Owner of Reg. Nos. 651,530, 791,925, and others.
For Sugar.
First use July 1965.

SN 245,848. Parker's Products, Inc., Fort Worth, Tex. Filed May 17, 1966.

DIXIE DPECAN

The word "Pecan" is disclaimed apart from the mark as shown.
For Imitation Ice Cream, Ice Cream, and Ice Milk.
First use July 14, 1961.

SN 251,423. Gordon L. Guilliams, d.b.a. Nob Hill Ice Cream Company, Portland, Oreg. Filed Aug. 1, 1966.

IT'S A HOMER!

For Frozen Foods—Namely, Ice Cream and Ice Milk Sandwiches.
First use September 1965.

SN 253,878. Hulman & Company, Terre Haute, Ind. Filed Sept. 6, 1966.

FARMERS PRIDE

Owner of Reg. No. 186,093.
For Canned Fruits and Vegetables; Enriched and Self-Rising Flour; Corn Meal; Whole, Ground, and Pickling Spices and Seasonings of a Spice Nature; Food Flavoring Extracts; Food Coloring; Edible Seeds; Jellies; Canned Shrimp, Salmon, and Tuna Fish; Ketchup; Chili Sauce; Pickles and Olives; and Vinegar.
First use 1906.

SN 257,989. Seaboard Allied Milling Corporation, d.b.a. George Urban Milling Company, Buffalo, N.Y. Filed Nov. 4, 1966.

HUMMER

For Flour.
First use about 1926.

SN 259,069. American Bakeries Company, Chicago, Ill. Filed Nov. 21, 1966.

MICKEY

For Bakery Goods—Namely, Cakes, Pies, and Cookies.
First use Sept. 26, 1959.

SN 259,261. Oulevay S.A., Morges, Vaud, Switzerland. Filed Nov. 22, 1966.

Oulevay

Priority claimed under Sec. 44(d) on Swiss Reg. No. 217,700, dated May 25, 1966. Owner of U.S. Reg. Nos. 748,124, 769,648, and others.
For Biscuits, Cookies, Wafers, Waffles, Pastries, Cakes, Chocolates, Chocolate for Eating, and Candies.

SN 264,851. Reddi-Wip, Inc., Los Angeles, Calif. Filed Feb. 16, 1967.

REDDI-WIP

Owner of Reg. Nos. 560,710, 803,498, and others.
For Non-Dairy, Vegetable-Derived, Liquid Creamer and Non-Dairy Whip Topping.
First use Jan. 25, 1967.

SN 265,391. Balanced Foods, Inc., North Bergen, N.J. Filed Feb. 24, 1967.

BALANCED

Owner of Reg. Nos. 651,530, 815,554, and others.
For Table Syrups To Be Used as Food Toppings.
First use Jan. 23, 1967.

SN 266,134. Armed Forces Citrus Association, Ltd., McAllen, Tex. Filed Mar. 7, 1967.

A.F.C.A.

Applicant disclaims the right to exclusive use of the word "Brand" apart from the mark as shown.
For Fresh Citrus Fruit.
First use Dec. 15, 1966.

SN 268,074. The Rath Packing Company, Waterloo, Iowa. Filed Mar. 31, 1967.

CEDAR FARM

Owner of Reg. Nos. 93,495, 771,999, and others.
For Refrigerated Meats and Prepared Meat Products.
First use in or about June 1954.

SN 268,206. The Mar-Gold Corporation, Atlanta, Ga. Filed Apr. 3, 1967.

MELLO-GOLD

Owner of Reg. No. 585,929.
For Soft Margarine.
First use Mar. 14, 1967.

SN 268,263. Zevo, Inc., Los Angeles, Calif. Filed Apr. 3, 1967.

FAMILY-MATE

For Powdered Non-Dairy Milk.
First use Mar. 20, 1967.

SN 268,466. Armour and Company, d.b.a. North American Provisions Company, Chicago, Ill. Filed Apr. 6, 1967.

LOMBARDIA

Owner of Reg. No. 710,995.
For Sausages.
First use on or prior to Dec. 31, 1939.

SN 268,664. Advico, Inc., Yakima, Wash. Filed Apr. 10, 1967.

FUNNY FARM

For Bread.
First use on or about Mar. 15, 1967.

SN 268,876. Fisher Flouring Mills Co., Seattle, Wash. Filed Apr. 11, 1967.

GALA

For Wheat Products—Namely, Wheat Flour and Wheat Cereals.
First use Mar. 27, 1967.

SN 269,083. Lowe's, Inc., Cassopolis, Mich. Filed Apr. 13, 1967.

PETPAK

Owner of Reg. No. 334,906.
For Food for Birds, Fish, Turtles, and Hamsters.
First use 1936.

SN 269,422. The Glidden Company, d.b.a. Durkee Famous Foods, Cleveland, Ohio. Filed Apr. 18, 1967.

DUROL

For Hydrogenated Vegetable Oils.
First use May 21, 1964.

SN 270,715. Snow Flake Canning Company, Corinna, Maine. Filed May 4, 1967.

BAXTER'S FINEST

For Canned Fruits and Vegetables.
First use 1923.

SN 279,251. Adams and Brooks, Inc., Los Angeles, Calif. Filed Aug. 29, 1967.

CANDY PALACE CANDIES

Applicant disclaims the words "Candy" and "Candies" apart from the mark as shown.
For Salted and Unsalted Nuts; Candied Nuts, Being Nuts With a Candy or Confection Coating; Nut Confections, Being Candy Confections Containing Nuts; Popped Popcorn; Popcorn Confections, Being Popcorn With a Candy or Confection Coating; and Candy.
First use July 1955.

SN 279,906. S and W Fine Foods, Inc., San Francisco, Calif. Filed Sept. 8, 1967.

WORLD OF FOODS

The word "Foods" is disclaimed apart from the mark as shown.
For Gift Packs of Assorted Specialty Foods Principally Prepared by Others and Selected and Packaged by Applicant.
First use Aug. 25, 1967.

SN 281,748. Market Confections, Inc., d.b.a. Western Candy Co., Los Angeles, Calif. Filed Oct. 4, 1967.

CHAMP

Owner of Reg. No. 431,179.
For Candy; Salted and Unsalted Nuts; Nut Confections, Being Candy Confections Containing Nuts; Ice Cream Sandwiches; Frozen Filled Ice Cream Cones; Ice Cream Bars.
First use Aug. 10, 1945.

SN 282,031. Marlan Company, Chicago, Ill. Filed Oct. 9, 1967.

LICKITY SPLITS

Owner of Reg. Nos. 719,738, 740,305, and 760,430.
For Cookies.
First use Sept. 25, 1967.

Class 47 — Wines

SN 238,844. C. Da Silva (Vinhos), S.A.R.L., d.b.a. C. Da Silva Ltd., Vila Nova de Gaia, Portgual. Filed June 12, 1967.

DOM SILVANO

For Wines.
First use on or about Oct. 7, 1961; in commerce Oct. 7, 1961.

Class 48 — Malt Beverages and Liquors

SN 253,746. Henninger-Bräu Kommanditgesellschaft Auf Aktien, Frankfurt am Main, Germany. Filed Sept. 2, 1966.

HHB

Owner of German Reg. No. 415,960, dated Dec. 14, 1929.
For Beer.

Class 49 — Distilled Alcoholic Liquors

SN 241,977. Przedsiebiorstwo Handlu Zagranicznego "Agros," Warsaw, Poland, assignee of Centrala Handlu Zagranicznego "Rolimpex," Warsaw, Poland. Filed Mar. 28, 1966.



The word "Luksusowa" translated into English means "luxury." No claim is made to the exclusive use of the words "Extra Vodka Luksusowa" apart from the mark as a whole.
Owner of Polish Reg. No. 45,122, dated Sept. 7, 1965; and U.S. Reg. Nos. 757,016, 828,311, and others.
For Vodka.

SN 253,169. Ramada Inns, Inc., Phoenix, Ariz. Filed Aug. 25, 1966.



Owner of Reg. Nos. 686,471 and 741,047.
For Gin, Scotch Whiskies, Bourbon Whiskies, and Vodka.
First use Feb. 10, 1961.

SN 262,565. James Buchanan & Company Limited, Piccadilly, London, England. Filed Jan. 16, 1967.



"BLACK & WHITE"

Owner of U.S. Reg. Nos. 68,310 and 331,807.
For Scotch Whisky.
First use July 18, 1966; in commerce July 18, 1966; 1932 in a different form.

SN 265,297. Joseph S. Finch and Company, New York, N.Y. Filed Feb. 23, 1967.

MELROSE

Owner of Reg. Nos. 307,180, 677,085, and others.
For Whiskies, Gin, Vodka, and Prepared Alcoholic Cocktails.
First use in or about 1875.

SN 267,360. Tennessee Walking Horse Company, Turkey Creek, Tenn. Filed Mar. 22, 1967.

GO-BOY

For Blended Whiskey.
First use Jan. 12, 1967.

Class 50 — Merchandise Not Otherwise Classified

SN 238,473. Woodford Manufacturing Co., Des Moines, Iowa. Filed Feb. 9, 1966.

STEEL SAFE

The term "Steel" is disclaimed apart from the mark as shown.
For Dock Plates.
First use on or about July 15, 1965.

SN 246,416. Donald N. Yates, Gibsonia, Pa. Filed May 23, 1966.

LITHACTION

For Screens of Parallel Lines in Overlying Relation, Illuminated From a Light Source or From Natural Ambient Light; One Screen Carrying Artwork for Advertising or Other Illustrative Purposes, Viewed Through the Other Screen and the Lines of the Two Screens Being Spaced and Grouped to Create the Appearance of Objects or Materials in Motion When the Screens Are Shifted in Respect to Each Other.
First use in or about May 1965.

SN 263,432. Afco Rubber Corporation, North Canton, Ohio. Filed Jan. 27, 1967.

BRIGADIER

For Stair Treads.
First use May 15, 1958.

Class 51 — Cosmetics and Toilet Preparations

SN 264,711. American Home Products Corporation, New York, N.Y. Filed Feb. 15, 1967.

TOTAL BEAUTY

For Depilatory.
First use Feb. 2, 1967.

SN 265,846. Rexall Drug and Chemical Company, d.b.a. Vanda Cosmetics Company, Los Angeles, Calif. Filed Mar. 2, 1967.

A LA FRANCAIS

For Cologne.
First use Feb. 3, 1967.

SN 265,989. Clairol Incorporated, New York, N.Y. Filed Mar. 6, 1967.

HIMSELF

For Cologne.
First use Oct. 24, 1966.

SN 265,991. Clairol Incorporated, New York, N.Y. Filed Mar. 6, 1967.

NATURALLY YOUNG

For Hair Tinting, Dyeing, and Coloring Preparation.
First use Oct. 24, 1966.

SN 266,171. Plough, Inc., Memphis, Tenn. Filed Mar. 7, 1967.

NOSKOTE

Owner of Reg. No. 569,319.
For Paste or Coating To Be Used Especially in Applying to the Head, Face, Nose, Lips, Ears and Pate for Protecting Them Against Severe Sun Burn.
First use during the winter season of 1945 and 1946.

SN 266,333. Invincible Products Corp., Chicago, Ill. Filed Mar. 9, 1967.

LLPF

For Hair Spray, Hair Conditioners, Hand Creme, Cleansing Creme, and Permanent Waving Solution.
First use Dec. 23, 1965.

SN 267,372. Yardley of London, Inc., Totowa, N.J. Filed Mar. 22, 1967.

Oh! de Madrid

Applicant disclaims any rights to the word "Madrid" apart from the mark as shown. Owner of Reg. Nos. 824,183, 833,049, and others.
For Cologne.
First use Mar. 3, 1967.

SN 238,297. F. W. Hampshire & Co. Limited, Derby, England. Filed Apr. 4, 1967.

LOXENE

Owner of British Reg. No. 700,509, dated Aug. 14, 1951.
For Hair Creams.

SN 274,860. Colgate-Palmolive Company, New York, N.Y. Filed June 27, 1967.

SPREE

Owner of Reg. Nos. 389,695, 758,625, and others.
For Talcum Powder.
First use Dec. 1, 1966.

SN 277,596. Eversharp, Inc., Milford, Conn. Filed Aug. 7, 1967.

RAIN WOOD

Owner of Reg. Nos. 808,956 and 811,843.
For Men's Toiletries—Namely, After Shave Lotion and Cologne.
First use June 21, 1967.

SN 277,597. Eversharp, Inc., Milford, Conn. Filed Aug. 7, 1967.

NIGHT WOOD

Owner of Reg. Nos. 808,956 and 811,843.
For Men's Toiletries—Namely, After Shave Lotion and Cologne.
First use June 21, 1967.

SN 277,598. Eversharp, Inc., Milford, Conn. Filed Aug. 7, 1967.

NITE WOOD

Owner of Reg. Nos. 808,956 and 811,843.
For Men's Toiletries—Namely, After Shave Lotion and Cologne.
First use June 21, 1967.

Class 52 — Detergents and Soaps

SN 256,614. Unichem Inc., Greenville, N.C. Filed Oct. 17, 1966.

U

For Heavy Duty Detergent Compositions for Industrial Use.
First use Aug. 1, 1966.

SN 257,287. Metro Wholesale Corporation, New York, N.Y. Filed Oct. 26, 1966.

DURACREST

Owner of Reg. Nos. 761,169, 811,624, and others.
For Steam Iron Cleaners.
First use January 1966.

SN 261,321. Pennsalt Chemicals Corporation, Philadelphia, Pa. Filed Dec. 22, 1966.

RED DOG

For Drain Cleaner.
First use Aug. 31, 1966.

SN 263,904. General Aniline & Film Corporation, New York, N.Y. Filed Feb. 3, 1967.

GAF

Owner of Reg. No. 658,185 and others.
For Washing, Scouring and Cleansing Agents, Detergents, Pencil and Ink Eradicators, Spot Cleaners, and Solvent Cleaners in Liquid, Solid Particle, and Shaped Solid Form for Household and Industrial Uses.
First use on or about Sept. 4, 1951, as to washing and scouring agents.

SN 267,153. Huntington Laboratories, Inc., Huntington, Ind. Filed Mar. 20, 1967.

MATAR

For Germicidal Detergent.
First use Feb. 15, 1967.

SN 267,242. W. R. Grace & Co., New York, N.Y. Filed Mar. 21, 1967.

Q/M #1

For Cleaner for Metal Equipment for Use Particularly in the Food, Meat, Rabbit, and Poultry Industries.
First use Feb. 2, 1967.

SN 267,357. Simoniz Company, Chicago, Ill. Filed Mar. 22, 1967.

REDDI FLOW

Owner of Reg. Nos. 602,015 and 794,912.
For Liquid Drain Cleaner.
First use Feb. 23, 1967.

SN 268,289. Caron Corporation, New York, N.Y. Filed Apr. 4, 1967.

ROYAL BAIN DE CHAMPAGNE

The mark translates from the French as "royal champagne bath." Owner of Reg. Nos. 164,476, 506,744, and others.
For Hand, Bath, and Facial Soap.
First use September 1965.

SN 269,138. F. W. Hampshire & Co. Limited, Derby, England. Filed Apr. 4, 1967.

LOXENE

Owner of British Reg. No. 700,509, dated Aug. 14, 1951.
For Hair Shampoos.

SN 282,324. Circle Research Laboratories, Inc., Glen Ridge, N.J. Filed Oct. 12, 1967.

URI-SAFE

For Enzymatic Urinal Cleaner.
First use Aug. 28, 1967.

SERVICE MARKS

Class 100 — Miscellaneous

SN 228,865. Abbey Rents, d.b.a. Best Rentals, Los Angeles, Calif. Filed Sept. 29, 1965.

BEST RENTALS INC.

The representation of the map of the State of Texas and the Words "Rental" and "Inc." are disclaimed apart from the mark as shown. Owner of Reg. No. 440,758.
For Rental of Sick Room and Party Equipment and Supplies, Power Tools and Miscellaneous Consumer Rental Articles.
First use Mar. 1, 1948.

SN 230,337. The Tennessee Squire Association, Lynchburg, Tenn. Filed Sept. 10, 1965.

TENNESSEE SQUIRE

Without prejudice to the common law rights, applicant disclaims the word "Tennessee" apart from the mark as shown.
For Services Comprising the Promotion and Preservation of Tennessee Lore, Culture, Art, and Way of Life.
First use Mar. 25, 1965.

SN 230,338. The Tennnessee Squire Association, Lynchburg, Tenn. Filed Sept. 10, 1965.

TENNESSEE SQUIRE

Without prejudice to the common law rights, applicant disclaims the word "Tennessee" apart from the mark as shown.
For Services Comprising the Promotion and Preservation of Tennessee Lore, Culture, Art, and Way of Life.
First use Mar. 25, 1965.

SN 233,250. Contemporary Research, Inc., Waltham, Mass. Filed Nov. 24, 1965.

CR

For Research and Development Services in the Physical and Chemical Sciences, Particularly in Connection With Metallurgical Materials and Applications.
First use Oct. 27, 1965.

SN 251,191. Cuna International, Inc., Madison, Wis. Filed July 28, 1966.



Applicant disclaims the words "Credit Union" apart from the mark as shown. Owner of Reg. Nos. 720,474 and 623,499.
For Association Services to Member Credit Unions To Promote Their Operations.
First use Mar. 4, 1966; 1924 in a different form.

SN 253,966. Farrell's, Inc., Portland, Oreg. Filed Sept. 7, 1966.



Without relinquishing any of its common law rights, applicant disclaims the words "Ice Cream Parlour" apart from the mark as shown.
For Restaurant and Carry-Out Food Services.
First use June 1, 1963.

SN 259,852. Ramada Inns, Inc., Phoenix, Ariz. Filed Dec. 1, 1966.

JUST CALL ME SMILEY

For Hotel and Inn Service.
First use June 16, 1966.

SN 262,808. Ramada Inns, Inc., Phoenix, Ariz. Filed Jan. 18, 1967.

WE SMILE MORE

For Hotel and Inn Services.
First use June 16, 1966.

SN 264,164. Religious Educators Foundation, Washington, D.C. Filed Feb. 7, 1967.



For Soliciting Endowment Funds and the Awarding of Said Funds to Students, Usually From a Religious Community.
First use January 1967.

SN 266,669. Laverne International Ltd., New York, N.Y. Filed Mar. 14, 1967.



Owner of Reg. No. 813,851.
For Designing of Furniture, Textiles, Wall Coverings and Accessories and Layouts for Others Incorporating Said Designs; Design and Decorating Services.
First use July 15, 1964.

Class 101 — Advertising and Business

SN 257,988. Scooper Dooper Ice Cream Shoppes, Inc., Pennsauken, N.J. Filed Nov. 4, 1966.

SCOOPER DOOPER

Owner of Reg. No. 833,812.
For Ice Cream and Confectionery Store Services.
First use Aug. 4, 1966.

SN 258,613. Tenneco Oil Company, Houston, Tex. Filed Nov. 14, 1966.

TOP TEN

For Retail Food and General Merchandise Store Services.
First use June 20, 1963.

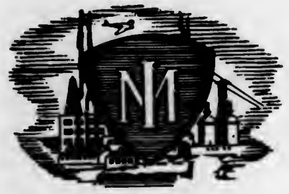
SN 276,713. Target Stores, Inc., Minneapolis, Minn. Filed July 24, 1967.



The drawing is lined for red. Owner of Reg. Nos. 816,107, 825,086, and others.
For Retail Department Store, Retail Grocery Store, Retail Bakery, Prescription Compounding and Dispensing and Restaurant and Snack Bar Services.
First use on or about Apr. 30, 1962.

Class 102 — Insurance and Financial

SN 246,570. Investors Mutual, Inc., Minneapolis, Minn. Filed May 25, 1966.



The drawing is lined for shading only.
For Services as an Investment Company of the Kind Generally Known as a Mutual Fund.
First use Jan. 10, 1942.

SN 262,114. Bankamerica Service Corporation, San Francisco, Calif., assignee of Bank of America National Trust and Savings Association, San Francisco, Calif. Filed Jan. 9, 1967.

BANKAMERICARD

Owner of Reg. Nos. 523,612, 583,738, and 696,899.
For Credit Financing Services, Including Administering Consumer Credit Plans and Collecting Through Central Billing Systems.
First use Sept. 18, 1958.

SN 264,553. La Bow, Haynes Company, Inc., Seattle, Wash. Filed Feb. 13, 1967.

INSURANCE WITH EMPHASIS

The word "Insurance" is disclaimed apart from the mark as shown.
For Insurance Brokerage Services.
First use Mar. 10, 1966.

SN 279,791. Peninsular Life Insurance Company, Jacksonville, Fla. Filed Sept. 7, 1967.



Owner of Reg. No. 779,640.
For Underwriting Life, Disability, Property and Title Insurance and Selling of Mutual Fund Shares.
First use June 26, 1967.

Class 103 — Construction and Repair

SN 275,811. Pete Collins Company, Denver, Colo. Filed July 12, 1967.



Applicant hereby disclaims exclusive rights in and to the expressions "Maintenance," "Construction" and "Engineering," and "Cable TV," apart from the mark as shown. The name "Pete Collins" is a nickname of "James Floyd Collins," president of applicant corporation, whose consent is of record.
For Maintenance, Construction, and Repair of CATV Systems.
First use January 1966.

Class 105 — Transportation and Storage

SN 256,325. Viking Freight Company, St. Louis, Mo. Filed Oct. 12, 1966.

PACESETTER

For Trucking and Storage of the Goods of Others.
First use Aug. 3, 1966.

SN 260,299. Irish Truck Lines, Inc., Montebello, Calif. Filed Nov. 21, 1966.



The drawing is lined for green and the color is claimed as an important feature of the mark.
For Truck Transportation of the Goods of Others.
First use May 26, 1965.

Class 107 — Education and Entertainment

SN 238,414. Frank Engli, d.b.a. The Greeting Craft School, Nyack, N.Y. Filed Feb. 9, 1966.

GREETING CRAFT

For Correspondence Courses in Art.
First use December 1962.

SN 250,547. Arlene Zupp, Mentor, Ohio. Filed July 18, 1966.

PHYSFITS

For Conducting Exercise Classes for Physical Fitness and Dance-Like Entertainment Services.
First use during April 1966.

SN 258,774. Bankers Management & Services, Inc., Dallas, Tex. Filed Nov. 16, 1966.

THE IN CROWD

For Entertainment Services—Namely, Musical Entertainment Services Rendered by a Vocal and Instrumental Group.
First use Mar. 1, 1966.

SN 260,197. Statni Divadelni Studio, Prague, Czechoslovakia. Filed Dec. 6, 1966.

ČERNÉ DIVADLO PRAHA

The words "Divadlo Praha" meaning "Theater Prague" are disclaimed apart from the mark as shown. The mark's textual portion "Černé Divadlo Praha" means in English translation "Black Theater Prague." Owner of Czechoslovakian Reg. No. 156,239, dated Sept. 29, 1964.
For Artistic Entertainment Services, Particularly Arranging of Theatrical, Television, Cabaret, Variety, Musical, and Declamatory Productions and Performances.

SN 260,884. Rotairport, Inc., Lexington, Ky. Filed Dec. 15, 1966.

ROTAIRPORT INC.

For Educational Services—Namely, Providing Flight and Ground Instruction for Qualifying an Individual for Obtaining a Rotorcraft-Helicopter License or Rating.
First use on or about June 16, 1962.

SN 264,212. Hoopeston Junior Chamber of Commerce, Hoopeston, Ill. Filed Feb. 8, 1967.

NATIONAL SWEETHEART

For Providing Entertainment in the Form of Beauty Contests.
First use Sept. 1, 1948.

SN 264,798. Frank Cariola, Brooklyn, N.Y. Filed Feb. 16, 1967.

SOUL SURVIVORS

For Entertainment Services in the Form of Popular Music Rendered by a Vocal Group.
First use Mar. 20, 1966.

COLLECTIVE MEMBERSHIP MARKS

Class 200

SN 260,897. University of Miami, d.b.a. The University of Miami, Coral Gables, Fla. Filed Dec. 15, 1966.

GREAT SEAL UNIVERSITY OF MIAMI CORAL GABLES FLORIDA 1926

Applicant disclaims the words "Coral Gables, Florida" apart from the mark as shown. The Latin phrase "Magna Est Veritas" means "great is the truth." The Latin wording appearing on the shield means "investigation (discovery), preservation, and dissemination of knowledge." Owner of Reg. No. 685,322.
For Indicating Membership in the Student Body of the University of Miami, or as an Alumnus Thereof.
First use June 14, 1966.

TRADEMARK REGISTRATIONS ISSUED
PRINCIPAL REGISTER

Class 1 — Raw or Partly Prepared Materials

840,679. DUTCH BOY. National Lead Company. SN 248,155. Pub. 10–3–67. Filed 6–15–66.

840,680. DUTCH BOY ACRYLIC PLASTIC AND DESIGN. National Lead Company. SN 248,156. Pub. 10–3–67. Filed 6–15–66.

840,681. FIBER 43. FMC Corporation. SN 258,520. Pub. 10–3–67. Filed 11–14–66.

840,682. PYRALIN. E. I. du Pont de Nemours and Company. SN 267,377. Pub. 8–22–67. Filed 3–23–67.

840,683. MAGI-SKIN. Fabric Leather Corporation. SN 271,309. Pub. 10–3–67. Filed 5–12–67.

840,684. NUCLON. Pittsburgh Plate Glass Company. SN 275,726. Pub. 10–3–67. Filed 7–11–67.

Class 2 — Receptacles

840,685. $VACO_2$. Scientific-Atlanta, Inc. SN 231,872. Pub. 10–3–67. Filed 10–5–65.

840,686. PREVAL P ETC. AND DESIGN. Precision Valve Corporation. MULTIPLE CLASS (Classes 2 and 13). SN 259,622. Pub. 10–3–67. Filed 11–29–66.

840,687. SOLU-SAFE. American Hospital Supply Corporation. SN 261,965. Pub. 10–3–67. Filed 1–5–67.

840,688. AMCREST. Aimcee Wholesale Corporation. SN 262,472. Pub. 10–3–67. Filed 1–13–67.

840,689. VERSA-TAINER. National Can Corporation. SN 262,879. Pub. 10–3–67. Filed 1–19–67.

840,690. BAR-QUET. Floral Development Corp. SN 263,045. Pub. 10–3–67. Filed 1–23–67.

840,691. LORD BALTIMORE PRESS. International Paper Company. SN 263,069. Pub. 10–3–67. Filed 1–23–67.

840,692. FLORALENE. Beacon Products Corp. SN 263,737. Pub. 10–3–67. Filed 2–1–67.

840,693. ST. JOE AND DESIGN. St. Joe Paper Company. SN 271,313. Pub. 10–3–67. Filed 5–12–67.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

840,694. SASSYGRASS TENNIS TOTE. Thomas Pride Mills, Inc. SN 252,040. Pub. 10–3–67. Filed 8–9–66.

840,695. BERGANS ORIGINAL. A/S Bergans Meis og Ryggsekk. SN 265,477. Pub. 10–3–67. Filed 2–27–67.

Class 4 — Abrasives and Polishing Materials

840,696. PIPELINER. Avco Corporation. SN 261,274. Pub. 10–3–67. Filed 12–22–66.

840,697. SILVER MAGIC. Reed & Barton. SN 261,595. Pub. 10–3–67. Filed 12–28–66.

840,698. EAGER BEAVER. James H. Rhodes & Company. SN 262,067. Pub. 10–3–67. Filed 1–6–67.

840,699. AMCREST. Aimcee Wholesale Corporation. SN 262,471. Pub. 10–3–67. Filed 1–13–67.

840,700. PROVIDE. S. C. Johnson & Son, Inc. SN 273,229. Pub. 10–3–67. Filed 6–7–67.

840,701. FAVOR. S. C. Johnson & Son, Inc. SN 273,230. Pub. 10–3–67. Filed 6–7–67.

Class 5 — Adhesives

840,702. SAFIRE. Diamond Alkali Company. SN 273,836. Pub. 9–26–67. Filed 6–14–67.

Class 6 — Chemicals and Chemical Compositions

840,703. STAUFFER CHEMICALS AND DESIGN. Stauffer Chemical Company. MULTIPLE CLASS (Classes 6, 10, 18, and 46). SN 215,022. Pub. 10–3–67. Filed 3–25–65.

840,704. ASHLAND. Ashland Oil & Refining Company. MULTIPLE CLASS (Classes 6 and 15). SN 247,175. Pub. 10–3–67. Filed 6–3–66.

840,705. LANPHOS. American Hydrolan Corporation. SN 252,335. Pub. 10–3–67. Filed 8–15–66.

840,706. RAPIDEX. Harris Paint Company. MULTIPLE CLASS (Classes 6, 12, and 16). SN 253,874. Pub. 10–3–67. Filed 9–6–66.

840,707. TYCHEM. International Latex & Chemical Corporation. SN 257,782. Pub. 10–3–67. Filed 11–2–66.

840,708. COTHIX. Cosan Chemical Corporation. MULTIPLE CLASS (Classes 6 and 16). SN 258,674. Pub. 10–3–67. Filed 11–15–66.

840,709. NATATEL. Chas. Pfizer & Co., Inc. SN 262,281. Pub. 10–3–67. Filed 1–10–67.

840,710. PIXAMATIC. Picker X-Ray Corporation. MULTIPLE CLASS (Classes 6 and 26). SN 263,502. Pub. 10–3–67. Filed 1–30–67.

840,711. H–212. Calgon Corporation. SN 264,142. Pub. 10–3–67. Filed 2–7–67.

840,712. LEMONAIRE. Walter N. Follmer, d.b.a. The Lemonaire Co. SN 264,400. Pub. 10–3–67. Filed 2–10–67.

840,713. PET-TOX. Geigy Chemical Corporation. SN 264,405. Pub. 10–3–67. Filed 2–10–67.

840,714. TOTAL-TOX. Geigy Chemical Corporation. SN 264,406. Pub. 10–3–67. Filed 2–10–67.

840,715. LOGOQUANT. Bee Chemical Company. SN 264,505. Pub. 10–3–57. Filed 2–13–67.

840,716. KLEERMOUNT. Carolina Biological Supply Company. SN 264,513. Pub. 10–3–67. Filed 2–13–67.

840,717. NUGGET. Nugget Distributors' Cooperative of America, Inc., d.b.a. Nugget Distributors of America. SN 265,016. Pub. 10–3–67. Filed 2–20–67.

840,718. TETRACARE. Tetra Kraft Werke. SN 273,010. Pub. 10–3–67. Filed 6–5–67.

840,719. CITROSTAB. Chas. Pfizer & Co., Inc. SN 276,618. Pub. 10–3–67. Filed 7–24–67.

840,720. CARBO-BRITE. Diamond Alkali Company. SN 277,001. Pub. 10–3–67. Filed 7–28–67.

Class 7 — Cordage

840,721. SAF-T-GRIP. Pennsylvania Sling Company. SN 247,401. Pub. 10–3–67. Filed 6–6–66.

840,722. MY-T-FINE. Twi-Ro-Pa-Mills Agency, Inc. SN 253,180. Pub. 10–3–67. Filed 8–25–66.

Class 8 — Smokers' Articles, Not Including Tobacco Products

840,723. THE SMOKE SIGNAL AND DESIGN. Howard Margolin and Raymond Roth, d.b.a. Eat 'N' Shop. MULTIPLE CLASS (Classes 8 and 17). SN 256,331. Pub. 10–3–67. Filed 10–13–66.

840,724. POISON PACK. Phyllis R. Curtis, d.b.a. Curtis Enterprises. SN 256,348. Pub. 10–3–67. Filed 10–13–66.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

840,725. STRIPES IN CONTRASTING COLORS (DESIGN). Federal Cartridge Corporation. SN 239,033. Pub. 10–3–67. Filed 2–17–66.

840,726. RED-LINE DUPLEX. Seminole Products Co., Inc. SN 257,893. Pub. 10–3–67. Filed 11–3–66.

840,727. INDIAN HEAD (DESIGN). Seminole Products Co., Inc. SN 257,894. Pub. 10–3–67. Filed 11–3–66.

Class 10 — Fertilizers

840,703. (See Class 6 for this trademark.)

840,728. NEW PLANT LIFE. Charles O. Finley and Company, Inc. SN 206,531. Pub. 10–3–67. Filed 11–19–64.

840,729. FLORAPRIDE. Tetra Kraft Werke. SN 273,009. Pub. 10–3–67. Filed 6–5–67.

Class 12 — Construction Materials

840,706. (See Class 6 for this trademark.)

840,730. PAPYROL. Francisco Goldberger Konstandt. SN 239,570. Pub. 10–3–67. Filed 2–25–66.

840,731. SLABSAVER. Kelley Manufacturing Company. SN 245,318. Pub. 10–3–67. Filed 5–10–66.

840,732. RIGIDWALL. Allied Chemical Corporation. SN 247,300. Pub. 10–3–67. Filed 6–6–66.

840,733. COMBO. Clark Aluminum Co. SN 248,213. Pub. 10–3–67. Filed 6–16–66.

840,734. JOHNSON. L. E. Johnson Products, Inc. SN 248,477. Pub. 10–3–67. Filed 6–20–66.

840,735. WIZARD. Western Auto Supply Company. SN 248,871. Pub. 10–3–67. Filed 6–23–66.

840,736. TARPOXY. Harris Paint Company, d.b.a. Harris Standard Paint Company. SN 253,436. Pub. 10–3–67. Filed 8–30–66.

840,737. OXILINE B. Harbison-Walker Refractories Company. SN 257,858. Pub. 10–3–67. Filed 11–3–66.

840,738. NUCON 60. Harbison-Walker Refractories Company. SN 257,859. Pub. 10–3–67. Filed 11–3–66.

840,739. DU-ALL-BASE. Oil & Gas Supply Company. SN 259,143. Pub. 10–3–67. Filed 11–21–66.

840,740. TERRACHROME. Reliance Floors Corporation. SN 259,161. Pub. 10–3–67. Filed 11–21–66.

840,741. METALLATION. Reynolds Metals Company. SN 259,963. Pub. 10–3–67. Filed 12–2–66.

840,742. DUPONT AND DESIGN. E. I. du Pont de Nemours and Company. SN 263,164. Pub. 10–3–67. Filed 1–24–67.

840,743. MISCELLANEOUS DESIGN. J. P. Barborak Mfg. Inc. SN 263,393. Pub. 10–3–67. Filed 1–26–67.

840,744. PANELCARVE. Sherrill Broudy, d.b.a. Forms & Surfaces. SN 264,510. Pub. 10–3–67. Filed 2–13–67.

840,745. CABINETPAK. Homewood Cabinet Top Company. SN 264,543. Pub. 10–3–67. Filed 2–13–67.

840,746. ARMOR-CLAD. International Foam Corporation. SN 269,603. Pub. 10–3–67. Filed 4–20–67.

840,747. FIBRE GRIP. Timber Engineering Company. SN 269,805. Pub. 10–3–67. Filed 4–21–67.

840,748. PORAL. Minnesota Mining and Manufacturing Company. SN 273,446. Pub. 10–3–67. Filed 6–9–67.

840,749. BISLIGPLY PHILIPPINE PRODUCT AND DESIGN. Bislig Bay Lumber Company, Inc. SN 274,302. Pub. 10–3–67. Filed 6–20–67.

840,750. CEDA'LINE. E. L. Bruce Co. (Incorporated), d.b.a. E. L. Bruce Co. SN 274,386. Pub. 10–3–67. Filed 6–21–67.

840,751. THE MOD AND DESIGN. Knox Homes Corporation. SN 275,983. Pub. 10–3–67. Filed 7–14–67.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

840,686. (See Class 2 for this trademark.)

840,752. H AND DESIGN. Henlopen Manufacturing Co., Inc. SN 234,027. Pub. 10–3–67. Filed 12–6–65.

840,753. ART/CAST. Art Cast, Inc. MULTIPLE CLASS (Classes 13 and 34). SN 243,512. Pub. 10–3–67. Filed 4–15–66.

840,754. JOHNSON. L. E. Johnson Products, Inc. SN 248,476. Pub. 10–3–67. Filed 6–20–66.

840,755. DICOA. Ductile Iron Company of America. SN 249,742. Pub. 10–3–67. Filed 7–7–66.

840,756. SUPER-TORQ. The Allen Manufacturing Company. SN 255,051. Pub. 10–3–67. Filed 9–26–66.

840,757. SPOT-RIVETS. Spotnails, Inc. SN 258,327. Pub. 10–3–67. Filed 11–9–66.

840,758. PERT. Forest Company, assignee of Forest City Products, Inc. SN 261,482. Pub. 10–3–67. Filed 12–27–66.

840,759. LOK-GARD. American Sun Petroleum Corporation. SN 261,787. Pub. 10–3–67. Filed 1–3–67.

840,760. "MYSTIC TOUCH." Craig Enterprises Incorporated. SN 261,813. Pub. 10–3–67. Filed 1–3–67.

840,761. LT. The Lamson & Sessions Co. SN 263,386. Pub. 10–3–67. Filed 1–26–67.

Class 14 — Metals and Metal Castings and Forgings

840,762. SMI AND DESIGN. Societa Metallurgica Italiana. SN 230,919. Pub. 10–3–67. Filed 10–21–65.

840,763. MBT AND DESIGN. Societa Metallurgica Italiana. SN 230,922. Pub. 10–3–67. Filed 10–21–65.

840,764. MBT AND DESIGN. Societa Metallurgica Italiana. SN 230,925. Pub. 10–3–67. Filed 10–21–65.

840,765. TO AND DESIGN. Societa Metallurgica Italiana. SN 230,928. Pub. 10–3–67. Filed 10–21–65.

840,766. L AND DESIGN. Seilon, Inc., assignee of Lockwood Grader Corporation. SN 236,103. Pub. 10–3–67. Filed 1–10–66.

Class 15 — Oils and Greases

840,704. (See Class 6 for this trademark.)

840,767. ICE-CHEK. Texaco Inc. SN 259,865. Pub. 10–3–67. Filed 12–1–66.

Class 16 — Protective and Decorative Coatings

840,706. (See Class 6 for this trademark.)

840,708. (See Class 6 for this trademark.)

840,768. METALLOGAL. Leo Meyer. SN 247,940. Pub. 10–3–67. Filed 6–13–66.

840,769. HI-PRO. The Sherwin-Williams Company. SN 252,034. Pub. 10–3–67. Filed 8–9–66.

840,770. REPEL-X. Harris Paint Company. SN 253,433. Pub. 10–3–67. Filed 8–30–66.

840,771. NYLOFLEX. Process Chemicals Corporation. SN 253,553. Pub. 10–3–67. Filed 8–31–66.

840,772. TALENS AND DESIGN. Talens & Son, Inc. SN 258,611. Pub. 10–3–67. Filed 11–14–66.

840,773. CABOT AND DESIGN. Cabot Corporation. SN 260,236. Pub. 10–3–67. Filed 12–7–66.

Class 17 — Tobacco Products

840,723. (See Class 8 for this trademark.)

840,774. 77 AND SHIELD DESIGN. H. E. Snyder Cigar Company. SN 249,185. Pub. 10–3–67. Filed 6–28–66.

840,775. PARTY AND DESIGN. Skandinavisk Tobakskompagni A/S. SN 250,185. Pub. 10–3–67. Filed 7–13–66.

840,776. GELBE ROSE AND DESIGN. Villiger Sohne GmbH. SN 255,246. Pub. 10–3–67. Filed 9–27–66.

Class 18 — Medicines and Pharmaceutical Preparations

840,703. (See Class 6 for this trademark.)

840,777. DUOGASTRONE. Biorex Laboratories Limited. SN 247,767. Pub. 10–3–67. Filed 6–10–66.

840,778. AVITANA. Parke, Davis & Company. SN 257,508. Pub. 10–3–67. Filed 10–28–66.

840,779. HEMOTRATE. Don Baxter, Inc. SN 257,760. Pub. 10–3–67. Filed 11–2–66.

840,780. BJR ORANGE. BJR Laboratories, Inc. SN 259,896. Pub. 10–3–67. Filed 12–1–66.

840,781. SULMET. American Cyanamid Company. SN 264,717. Pub. 10–3–67. Filed 2–15–67.

840,782. DEBENAL. Farbenfabriken Bayer Aktiengesellschaft. SN 274,197. Pub. 10–3–67. Filed 6–19–67.

840,783. KETALAR. Parke, Davis & Company. SN 276,388. Pub. 10–3–67. Filed 7–20–67.

840,784. FASEDEN. Chas. Pfizer & Co., Inc. SN 276,619. Pub. 10–3–67. Filed 7–24–67.

840,785. BEN-GAY. Chas. Pfizer & Co., Inc. SN 276,620. Pub. 10–3–67. Filed 7–24–67.

Class 19 — Vehicles

840,786. DEBONAIR. Mitsubishi Jukogyo Kabushiki Kaisha. SN 243,794. Pub. 10–3–67. Filed 4–19–66.

840,787. OSHKOSH. Oshkosh Truck Corporation, by change of name from Oshkosh Motor Truck, Inc. SN 244,518. Pub. 10–3–67. Filed 4–28–66.

840,788. CAMPSTAR AND DESIGN. H. Wenzel Tent & Duck Co. SN 256,025. Pub. 8–29–67. Filed 10–7–66.

840,789. WATER BONNET, INC. AND DESIGN. Water Bonnet, Inc. SN 257,425. Pub. 10–3–67. Filed 10–27–66.

840,790. "SAAPE." Trans-Dapt of California. MULTIPLE CLASS (Classes 19 and 23). SN 265,663. Pub. 10–3–67. Filed 2–28–67.

Class 20 — Linoleum and Oiled Cloth

840,791. CAPELLA. The Goodyear Tire & Rubber Company. SN 239,519. Pub. 10–3–67. Filed 2–24–66.

Class 21 — Electrical Apparatus, Machines, and Supplies

840,792. GENERAL CONTROLS. International Telephone and Telegraph Corporation. MULTIPLE CLASS (Classes 21 and 26). SN 235,676. Pub. 10–3–67. Filed 1–3–66.

840,793. GENERAL CONTROLS AND DESIGN. International Telephone and Telegraph Corporation. MULTIPLE CLASS (Classes 21 and 26). SN 237,706. Pub. 10–3–67. Filed 2–1–66.

840,794. SENTRILINE. Bird Electronic Corporation. SN 241,120. Pub. 10–3–67. Filed 3–16–66.

840,795. TV TROUBLE TRAPPER. Fedtro, Inc. SN 242,348. Pub. 10–3–67. Filed 3–31–66.

840,796. POLY-PLANAR. Electronic Research Associates, Inc. SN 246,462. Pub. 10–3–67. Filed 5–24–66.

840,797. TRIMTEX. Trimtex, Inc. SN 248,863. Pub. 8–22–67. Filed 6–23–66.

840,798. JFD. Stratford Retreat House. SN 250,096. Pub 10–3–67. Filed 7–12–66.

840,799. SNOW-PLOW. Stratford Retreat House. SN 252,481. Pub. 10–3–67. Filed 8–16–66.

840,800. S-M-O-O-T-H LINE. Stratford Retreat House. SN 252,483. Pub. 10–3–67. Filed 8–16–66.

840,801. NIGHT-WATCH. Universal Lamp Co., Inc. SN 252,697. Pub. 10–3–67. Filed 8–18–66.

840,802. WILL DEAN. Will Scientific, Inc. SN 252,777. Pub. 10–3–67. Filed 8–19–66.

840,803. STRATAKIT. Fisher Radio Corporation. SN 254,042. Pub. 10–3–67. Filed 9–8–66.

840,804. STRATAPACK. Fisher Radio Corporation. SN 254,043. Pub. 10–3–67. Filed 9–8–66.

840,805. TORQLINER. Cambridge Thermionic Corporation. SN 257,250. Pub. 10–3–67. Filed 10–26–66.

840,806. WIXLIFT. The Wickes Corporation. SN 258,739. Pub. 10–3–67. Filed 11–15–66.

840,807. NOCTURNE. Harman-Kardon Incorporated, assignee of Harman-Kardon, Incorporated. SN 258,810. Pub. 8–29–67. Filed 11–16–66.

840,808. NE AND DESIGN. Northern Electric Company. MULTIPLE CLASS (Classes 21, 26, 34, 39, and 40). SN 263,106. Pub. 10–3–67. Filed 1–23–67.

840,809. AIRMOBILE-VIDEO. Reeves Broadcasting Corporation. MULTIPLE CLASS (Classes 21, 26, and 36). SN 270,105. Pub. 10–3–67. Filed 4–27–67.

Class 22 — Games, Toys, and Sporting Goods

840,810. WOODIES. Kohner Bros., Inc. SN 213,684. Pub. 10–3–67. Filed 3–9–65.

840,811. WIN-A-CHECK. Glendinning Companies, Inc., by merger and change of name from Glendinning Enterprises, Inc. SN 231,641. Pub. 10–3–67. Filed 10–26–65.

840,812. REVOLV-O-TRAC. Joseph J. Megal. SN 237,864. Pub. 10–3–67. Filed 2–2–66.

840,813. 6 SHOOTER AND DESIGN. SW Industries, Inc. SN 240,204. Pub. 10–3–67. Filed 3–4–66.

840,814. TITAN Q AND DESIGN. Le Fiell Sport Products, Inc. SN 244,505. Pub. 10–3–67. Filed 4–28–66.

840,815. OCTAGON. Jerry J. Calhoun, Sr. SN 253,118. Pub. 10–3–67. Filed 8–25–66.

840,816. TIC-TAC-GLO. Millmark Products, Inc. SN 253,668. Pub. 10–3–67. Filed 9–1–66.

840,817. FUN CRAFT. Loral Corporation. SN 254,699. Pub. 10–3–67. Filed 9–19–66.

840,818. LAND MARK. Dri Mark Products, Inc. SN 255,425. Pub. 10–3–67. Filed 9–29–66.

840,819. C CLARK AND DESIGN. Charles F. Clark, Inc. SN 256,925. Pub. 10–3–67. Filed 10–21–66.

840,820. STEPPING STONES. Instructo Products Company. SN 257,279. Pub. 10–3–67. Filed 10–26–66.

840,821. BRUSH TEX. Avalon Manufacturing Corporation. SN 257,814. Pub. 10–3–67. Filed 11–3–66.

840,822. DAN BAILEY. Frederick von Schlegell, d.b.a. Outdoor Associates. SN 259,764. Pub. 10–3–67. Filed 11–30–66.

840,823. THE LIND CLIMBER AND DESIGN. Lind Climber Company. SN 260,752. Pub. 10–3–67. Filed 12–14–66.

840,824. PRO-LINE. SW Industries, Inc. SN 260,885. Pub. 10–3–67. Filed 12–15–66.

840,825. PRO-STAFF. SW Industries, Inc. SN 260,886. Pub. 10–3–67. Filed 12–15–66.

840,826. DESERT RATS. Buddy L Corporation. SN 271,104. Pub. 10–3–67. Filed 5–10–67.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

840,790. (See Class 19 for this trademark.)

840,827. JETCO AND DESIGN. James E. Thomas, Jr., d.b.a. J. E. Thomas Co. SN 234,485. Pub. 10–3–67. Filed 12–13–65.

840,828. FORMULA 62 ETC. AND DESIGN. Stress Relief Engineering Co. SN 237,758. Pub. 10–3–67. Filed 2–1–66.

840,829. KUHL IMPERIAL. Paul H. Kuhl, d.b.a. Kuhl Poultry Equipment Co. SN 241,478. Pub. 10–3–67. Filed 3–21–66.

840,830. BOTALAM. Botalam, SN 247,093. Pub. 10–3–67. Filed 6–2–66.

840,831. ECON-O-MITE. Aero-Motive Manufacturing Company. SN 247,866. Pub. 8–29–67. Filed 6–13–66.

840,832. ETM. E.T.M. Corporation. MULTIPLE CLASS (Classes 23 and 26). SN 248,603. Pub. 10–3–67. Filed 6–21–66.

840,833. METRO STACKMASTER. AB Bonnierforetagen. SN 251,589. Pub. 10–3–67. Filed 8–3–66.

840,834. RETRACT-O-VAC. Jet Line Products, Inc. SN 253,886. Pub. 10–3–67. Filed 9–6–66.

840,835. MICA-BOW. Piedmont Mill Supply Company, d.b.a. Kern Roll & Rubber Company. SN 253,982. Pub. 8–29–67. Filed 9–7–66.

840,836. BELOIT FLOATING ROLL AND DESIGN. Beloit Corporation. SN 254,431. Pub. 10–3–67. Filed 9–14–66.

840,837. POWRWHISK. Andis Clipper Co. SN 254,979. Pub. 10–3–67. Filed 9–23–66.

840,838. M & W/ACRE EATER. M & W Gear Co. Inc. SN 255,535. Pub. 10–3–67. Filed 9–30–66.

840,839. GROBTEX. Grob & Co. Limited. SN 257,619. Pub. 10–3–67. Filed 10–31–66.

840,840. BAR MAID. Commercial Capital Distributing Co. SN 270,534. Pub. 10–3–67. Filed 5–3–67.

Class 25 — Locks and Safes

840,841. SUPER DUTY. Falcon Lock Co. SN 266,025. Pub. 10–3–67. Filed 3–6–67.

Class 26 — Measuring and Scientific Appliances

840,710. (See Class 6 for this trademark.)

840,792. (See Class 21 for this trademark.)

840,793. (See Class 21 for this trademark.)

840,808. (See Class 21 for this trademark.)

840,809. (See Class 21 for this trademark.)

840,832. (See Class 23 for this trademark.)

840,842. DUO CONE. The Welch Scientific Company. SN 233,423. Pub. 10–3–67. Filed 11–26–65.

840,843. SCANAPRINT. General Aniline & Film Corporation. SN 236,810. Pub. 10–3–67. Filed 1–19–66.

840,844. EXCEL-O-READER ETC. AND DESIGN. Markus-Campbell Company. SN 237,576. Pub. 10–3–67. Filed 1–28–66.

840,845. DATATRACE. Consolidated Electrodynamics Corporation. SN 238,715. Pub. 10–3–67. Filed 2–14–66.

840,846. CYCLOGRAPH. The Budd Company. SN 239,218. Pub. 10–3–67. Filed 2–21–66.

840,847. MUNNS MEDICAL SUPPLY AND DESIGN. The Munns Medical Supply Company, Inc. MULTIPLE CLASS (Classes 26, 37, and 44). SN 239,296. Pub. 10–3–67. Filed 2–21–66.

840,848. SAFE-GAGE. Ammco Tools, Inc. SN 241,410. Pub. 10–3–67. Filed 3–21–66.

840,849. ADDOGRAPH. Eugene L. Milas, d.b.a. Lengene Typesman. SN 243,003. Pub. 10–3–67. Filed 4–8–66.

840,850. STOPLIGHT. Melandrea, Inc. SN 243,336. Pub. 10–3–67. Filed 4–13–66.

840,851. SOLIDPREP. Technicon Corporation, by merger and change of name from Technicon Instruments Corporation. SN 243,808. Pub. 10–3–67. Filed 4–19–66.

840,852. CADET AND DESIGN. Fairchild Camera and Instrument Corporation. SN 244,401. Pub. 10–3–67. Filed 4–27–66.

840,853. STRATA-SCOUT. Soiltest, Inc. SN 247,415. Pub. 10–3–67. Filed 6–6–66.

840,854. WHITE MAGIC. Da-Lite Screen Company, Inc. SN 250,138. Pub. 10–3–67. Filed 7–13–66.

840,855. LOGETOMETER. Logetronics Inc. SN 250,496. Pub. 10–3–67. Filed 7–18–66.

840,856. ULTRORAC. LKB-Produkter AB. SN 252,924. Pub. 10–3–67. Filed 8–18–66.

840,857. LINITEST. Quarzlampen Gesellschaft mit beschränkter Haftung. SN 253,050. Pub. 10–3–67. Filed 8–24–66.

840,858. SPECTRON. Asahi Optical Company, Ltd. SN 254,367. Pub. 10–3–67. Filed 9–13–66.

840,859. SATURN. A.I.R. Corporation. SN 256,800. Pub. 10–3–67. Filed 10–20–66.

840,860. OMNIPPON. Birns & Sawyer Cine Equipment Co., Inc. SN 257,454. Pub. 10–3–67. Filed 10–28–66.

840,861. BATESTER LOLLY POP AND DESIGN. Batesco, Inc. SN 257,577. Pub. 10–3–67. Filed 10–31–66.

840,862. ROBERTSON BUDGETEER. Robertson Photo-Mechanix, Inc. SN 257,724. Pub. 10–3–67. Filed 11–1–66.

840,863. RESOLON. Duncan Electronics, Inc. SN 257,774. Pub. 10–3–67. Filed 11–2–66.

840,864. RIGHT READING RULE AND DESIGN. Max W. Mawhinney, d.b.a. 3R% Calculator. SN 258,828. Pub. 10–3–67. Filed 11–16–66.

840,865. POLYFLO. Polyflo, Incorporated, assignee of Polyflo, Incorporated. SN 260,881. Pub. 10–3–67. Filed 12–15–66.

840,866. OPTEX. Optex, Inc., d.b.a. Southern Precision Instrument Co. SN 260,953. Pub. 10–3–67. Filed 12–16–66.

840,867. CENTRA-SET. Optex, Inc., d.b.a. Southern Precision Instrument Co. SN 260,954. Pub. 10–3–67. Filed 12–16–66.

840,868. SIKA AND DESIGN. Dr. Siebert & Kühn. SN 261,326. Pub. 10–3–67. Filed 12–22–66.

840,869. TACH-PAK. Airpax Electronics Incorporated. SN 261,439. Pub. 10–3–67. Filed 12–27–66.

840,870. TRU-TEMP. Mid-Continent Manufacturing Co. SN 261,505. Pub. 10–3–67. Filed 12–27–66.

840,871. TCG. McGraw-Edison Company. SN 261,744. Pub. 10–3–67. Filed 12–30–66.

840,872. ANDREW. Andrew Engineering Company. SN 262,993. Pub. 8–22–67. Filed 1–23–67.

840,873. RANGER. Grimes Instruments and Controls, Inc. SN 268,273. Pub. 10–3–67. Filed 4–4–67.

840,874. WEIGHT WATCHERS. Weight Watchers International, Inc. SN 273,332. Pub. 10–3–67. Filed 6–7–67.

840,875. CAPROMATIC. Ehrenreich Photo-Optical Industries, Inc. SN 276,384. Pub. 10–3–67. Filed 7–20–67.

Class 28 — Jewelry and Precious-Metal Ware

840,876. SPANISH PROVINCIAL. Towle Manufacturing Company. SN 263,301. Pub. 10–3–67. Filed 1–25–67.

840,877. WISP. Oneida Ltd. SN 264,439. Pub. 10–3–67. Filed 2–10–67.

840,878. EA. Waltham Watch Company. SN 265,669. Pub. 10–3–67. Filed 2–28–67.

840,879. R AND DESIGN. Rozinsky's Incorporated. SN 275,720. Pub. 10–3–67. Filed 7–11–67.

Class 30 — Crockery, Earthenware, and Porcelain

840,880. WESTBROOK. Fortunoff's Shopping Center, Inc. SN 272,266. Pub. 10–3–67. Filed 5–24–67.

Class 31 — Filters and Refrigerators

840,881. HOMEMAKER. Everpure, Inc. SN 241,332. Pub. 10–3–67. Filed 3–18–66.

840,882. WIZARD. Western Auto Supply Company. SN 253,383. Pub. 10–3–67. Filed 8–29–66.

Class 32 — Furniture and Upholstery

840,883. HEIRLOOM. William Intner Co., Inc. SN 211,651. Pub. 10–3–67. Filed 2–0–65.

840,884. DREAM GIRL. The Englander Company, Inc. SN 263,549. Pub. 10–3–67. Filed 1–30–67.

840,885. DREAM-BOY. The Englander Company, Inc. SN 263,551. Pub. 10–3–67. Filed 1–30–67.

840,886. GC GAMMON CABINETS AND DESIGN. W. H. Gammon Co. SN 273,276. Pub. 10–3–67. Filed 6–7–67.

Class 34 — Heating, Lighting, and Ventilating Apparatus

840,753. (See Class 13 for this trademark.)

840,808. (See Class 21 for this trademark.)

840,887. FIREFLY. Holiday Products, Inc. SN 258,541. Pub. 10–3–67. Filed 11–14–66.

840,888. COOKETTE. Ronson Corporation. SN 273,794. Pub. 10–3–67. Filed 6–13–67.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

840,889. RONTHOR. Ronthor Reiss Corporation. SN 252,685. Pub. 10–3–67. Filed 8–18–66.

840,890. FAT MAX. United States Rubber Company. SN 258,618. Pub. 10–3–67. Filed 11–14–66.

840,891. POWER PREMIUM. The Firestone Tire & Rubber Company. SN 261,726. Pub. 10–3–67. Filed 12–30–66.

Class 36 — Musical Instruments and Supplies

840,809. (See Class 21 for this trademark.)

840,892. CERTRON AND DESIGN. Certron Corporation. SN 245,809. Pub. 10–3–67. Filed 5–17–66.

840,893. SPECTRUMS. WMI Corporation. SN 256,487. Pub. 10–3–67. Filed 10–14–66.

Class 37 — Paper and Stationery

840,847. (See Class 26 for this trademark.)

840,894. REGAL PRINTS BY VANITY FAIR. Groveton Papers Company. SN 233,265. Pub. 10–3–67. Filed 11–24–65.

840,895. DUSTIKINS. Dustikins Products, Inc. SN 240,596. Pub. 10–3–67. Filed 3–10–66.

840,896. 100. Xerox Corporation. SN 246,005. Pub. 7–25–67. Filed 5–18–66.

840,897. ENVOY. The Parker Pen Company. SN 251,225. Pub. 10–3–67. Filed 7–28–66.

840,898. OLE. Sanford Ink Company. SN 253,686. Pub. 10–3–67. Filed 9–1–66.

840,899. NATIONAL ERASE-EASE BOND. National Blank Book Company, Inc., assignee of National Blank Book Company. SN 254,554. Pub. 10–3–67. Filed 9–15–66.

840,900. ERAS-CIL. National Pencil Company. SN 258,920. Pub. 10–3–67. Filed 11–17–66.

840,901. CARLTON. The Northwest Paper Company. SN 274,388. Pub. 10–3–67. Filed 6–21–67.

Class 38 — Prints and Publications

840,902. READY IN PEACE. John James McAniff. SN 236,276. Pub. 10–3–67. Filed 1–12–66.

840,903. INTERBOOK. Interbook California, Inc. SN 237,975. Pub. 10–3–67. Filed 2–3–66.

840,904. COMPUSTAT. Standard Statistics Co., Inc. SN 239,084. Pub. 10–3–67. Filed 2–17–66.

840,905. RAY HURST'S COLOUR WAY AND DESIGN. PAMS, Inc. SN 239,924. Pub. 10–3–67. Filed 3–1–66.

840,906. PHOTOKINA. Messe- und Ausstellungs-Gesellschaft m.b.H. Köln. SN 241,913. Pub. 10–3–67. Filed 3–25–66.

840,907. SCENICLAND, U.S.A. Standard Oil Company of California. SN 249,687. Pub. 10–3–67. Filed 7–6–66.

840,908. BOOK MARK. Jane E. Seltzer, d.b.a. American Cultural Society. SN 250,863. Pub. 10–3–67. Filed 7–22–66.

840,909. TIMBRE-TONE. Priscilla Gavel, d.b.a. Timbre-Tone. SN 255,199. Pub. 10–3–67. Filed 9–27–66.

840,910. DANDY DOG AND DESIGN. American Book Company. SN 255,509. Pub. 10–3–67. Filed 9–30–66.

840,911. INTERDOK. Interdok Corporation. SN 257,712. Pub. 10–3–67. Filed 11–1–66.

840,912. ANIMAL ZINGDOM. Norcross, Inc. SN 260,175. Pub. 10–3–67. Filed 12–6–66.

840,913. "SLIDE-A-SONG." Slide-A-Song Co. SN 263,959. Pub. 10–3–67. Filed 2–3–67.

840,914. CTI AND DESIGN. Christian Training Institute, Inc. SN 268,447. Pub. 10–3–67. Filed 4–6–67.

840,915. FAMILY PASSPORT TO SUCCESSFUL LIVING. Christian Training Institute, Inc. SN 268,448. Pub. 10–3–67. Filed 4–6–67.

840,916. NWES AND DESIGN. Christian Training Institute, Inc. SN 268,454. Pub. 10–3–67. Filed 4–6–67.

Class 39 — Clothing

840,808. (See Class 21 for this trademark.)

840,917. THI-FREE. De Luxe Girdlecraft Co., Inc. SN 248,443. Pub. 6–13–67. Filed 6–20–66.

840,918. DESIGNER EDITIONS ETC. AND DESIGN. Lester Pincus Shoe Corporation. SN 252,130. Pub. 10–3–67. Filed 8–10–66.

840,919. MISTER MINIT AND DESIGN. Merchandising International S.A. SN 253,228. Pub. 10–3–67. Filed 8–26–66.

840,920. BROOKS-EASE. Julius Garfinckel & Co., Incorporated. SN 265,819. Pub. 8–29–67. Filed 3–2–67.

840,921. ELEGANTE AND DESIGN. Industrial & Merchandising Services S.A. SN 268,600. Pub. 10–3–67. Filed 4–7–67.

Class 40 — Fancy Goods, Furnishings, and Notions

840,808. (See Class 21 for this trademark.)

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

840,922. MISCELLANEOUS DESIGN. Debron Carpets Limited. SN 247,678. Pub. 10–3–67. Filed 6–9–66.

840,923. PRM AND DESIGN. PRM S.p.A. SN 256,470. Pub. 10–3–67. Filed 10–14–66.

840,924. ARMOR GLASS. Cooley, Incorporated. SN 257,834. Pub. 3–21–67. Filed 11–3–66.

840,925. FOREST KING. Stamina Mills, Inc. SN 262,005. Pub. 10–3–67. Filed 1–5–67.

840,926. FORESTDALE. Stamina Mills, Inc. SN 262,006. Pub. 10–3–67. Filed 1–5–67.

840,927. WARMO. Stamina Mills, Inc. SN 262,007. Pub. 10–3–67. Filed 1–5–67.

Class 44 — Dental, Medical, and Surgical Appliances

840,847. (See Class 26 for this trademark.)

840,928. BIRD SPACE TECHNOLOGY AND DESIGN. Bird Space Technology, Inc. SN 236,046. Pub. 10–3–67. Filed 1–10–66.

840,929. MISS DEB. Kimberly-Clark Corporation. SN 239,419. Pub. 10–3–67. Filed 2–23–66.

840,930. CARDIO SENTINEL. Mennen-Greatbatch Electronics, Inc. SN 242,173. Pub. 10–3–67. Filed 3–30–66.

840,931. TELE SENTINEL. Mennen-Greatbatch Electronics, Inc. SN 242,174. Pub. 10–3–67. Filed 3–30–66.

840,932. ATP. Sonotone Corporation. SN 246,382. Pub. 10–3–67. Filed 5–23–66.

840,933. ACME AND DESIGN. Alfred E. Hamilton. SN 247,693. Pub. 10–3–67. Filed 6–9–66.

840,934. CODMAN. Codman & Shurtleff, Inc. SN 258,343. Pub. 10–3–67. Filed 11–10–66.

840,935. FILTRON. Minnesota Mining and Manufacturing Company. SN 273,237. Pub. 8–29–67. Filed 6–7–67.

Class 45 — Soft Drinks and Carbonated Waters

840,936. GOLD RIBBON. Golden Crown Citrus Corporation. SN 277,113. Pub. 10–3–67. Filed 7–31–67.

Class 46 — Foods and Ingredients of Foods

840,703. (See Class 6 for this trademark.)

840,937. DOG KISSES. Hartz Mountain Products Corp. SN 184,815. Pub. 6–14–66. Filed 1–17–64.

840,938. BLIMPIE BASE AND DESIGN. A. Baldec, Inc. SN 234,500. Pub. 10–3–67. Filed 12–13–65.

840,939. HOST FAVORITE ETC. AND DESIGN. North American Food Service Corporation. SN 237,514. Pub. 10–3–67. Filed 12–13–65.

840,940. VAN-LI. Dodge & Olcott, Inc. SN 241,244. Pub. 10–3–67. Filed 3–17–66.

840,941. DCF. Dairyland Food Laboratories, Inc. SN 244,576. Pub. 10–3–67. Filed 4–29–66.

840,942. FACILITY. National Dairy Products Corporation. SN 244,606. Pub. 10–3–67. Filed 4–29–66.

840,943. S. LUNDY'S SONS AND DESIGN. S. Lundy's Sons. SN 245,726. Pub. 10–3–67. Filed 5–16–66.

840,944. SYNDICAT DU GRUYERE DE COMTE ETC. AND DESIGN. Syndicat du Veritable Gruyere de Comte. SN 247,540. COLLECTIVE MARK. Pub. 10–3–67. Filed 6–7–66.

840,945. CALMA. Hag AG Bremen. SN 251,919. Pub. 10–3–67. Filed 8–8–66.

840,946. ZOOP. Beatrice Foods Co. SN 253,485. Pub. 10–3–67. Filed 8–31–66.

840,947. SINGAPORE SALAD. Beatrice Foods Co. SN 253,488. Pub. 10–3–67. Filed 8–31–66.

840,948. HALO. Halo-Star Corporation. SN 254,279. Pub. 10–3–67. Filed 9–12–66.

840,949. BORDELAISE. Tri-Valley Growers, d.b.a. Oberti Olive Co. SN 255,735. Pub. 10–3–67. Filed 10–4–66.

840,950. ELY'S CHICKEN CHIPS AND DESIGN. August G. Janke, d.b.a. Ely's Potato Chip Co. SN 258,908. Pub. 10–3–67. Filed 11–17–66.

840,951. FISH FLUFFIES. Abba-Fyrtornet AB. SN 259,291. Pub. 10–3–67. Filed 11–23–66.

840,952. MOTHER'S AND DESIGN. Mother's Cake & Cookie Co. SN 259,563. Pub. 10–3–67. Filed 11–28–66.

840,953. BIM BAM. Popped-Right Corn Company. SN 261,678. Pub. 10–3–67. Filed 12–29–66.

840,954. HOBO. Genest Midwest Inc. SN 262,863. Pub. 10–3–67. Filed 1–19–67.

840,955. CORN SKIS. The Quaker Oats Company. SN 263,339. Pub. 10–3–67. Filed 1–26–67.

840,956. PASSINI. Attilio Passini, assignee of Passini Cheese Company, Inc. SN 265,207. Pub. 10–3–67. Filed 2–21–67.

840,957. DANFOODS. The East Asiatic Company, Inc., d.b.a. Danfoods Co. and Danfoods Corporation. SN 271,406. Pub. 10–3–67. Filed 5–15–67.

840,958. PRIDE OF U·S·A AND DESIGN. R. D. Michie, d.b.a. R. D. Michie Co. SN 271,577. Pub. 10–3–67. Filed 5–16–67.

840,959. WHAMMY-STRIPES. Good Humor Corporation. SN 274,148. Pub. 10–3–67. Filed 6–19–67.

840,960. Y MINI-SHRIMP "THE YOUNG'STERS" AND DESIGN. Young's Market Company. SN 275,203. Pub. 10–3–67. Filed 7–3–67.

840,961. MAMMY AND DESIGN. W. B. Camp & Sons, Inc., d.b.a. W. B. Camp & Sons. SN 276,616. Pub. 10–3–67. Filed 7–24–67.

840,962. GERONIMO. Eckel Produce Company. SN 276,617. Pub. 10–3–67. Filed 7–24–67.

Class 47 — Wines

840,963. VERNAT. Vernat Inc. SN 253,935. Pub. 10–3–67. Filed 9–6–66.

840,964. PROTEGIMUS NOSTRAM QUALITATEM AND DESIGN. Monarch Wine Company, Inc., d.b.a. Monarch Wine Company. SN 260,442. Pub. 10–3–67. Filed 12–9–66.

Class 49 — Distilled Alcoholic Liquors

840,965. CATTO'S GOLD LABEL ETC. AND DESIGN. James Catto & Co. Limited. SN 241,028. Pub. 7–25–67. Filed S.R. 3–15–66; Am. P.R. 2–8–67.

840,966. SCOTCH BROOM. Forbes, Farquharson & Co. Ltd. SN 249,857. Pub. 10–3–67. Filed 7–8–66.

840,967. SALISBURY'S GOLD LABEL. H. Stenham Limited, d.b.a. Salisbury Blending Company. SN 254,810. Pub. 8–22–67. Filed 9–20–66.

840,968. ROSEWOOD. Old Boone Distillery Co., d.b.a. Rosewood Distillery Co. SN 261,510. Pub. 10–3–67. Filed 12–27–66.

840,969. J.T.S. J.T.S. Brown's Son Company. SN 262,265. Pub. 10–3–67. Filed 1–10–67.

840,970. THE VINTNERS OF EDEN ROC-ER AND DESIGN. E. & J. Gallo Winery, d.b.a. The Vintners of Eden Roc. SN 274,567. Pub. 10–3–67. Filed 6–23–67.

Class 50 — Merchandise Not Otherwise Classified

840,971. DICK JOHNSON MOTIPRASER AND DESIGN. Richard D. Johnson & Co. SN 246,179. Pub. 10–3–67. Filed 5–20–66.

840,972. WALLE-HAWK. Walle-Hawk Corporation. SN 262,898. Pub. 10–3–67. Filed 1–19–67.

840,973. JOE PRO. Eldon Industries, Inc., d.b.a. Danlee Company. SN 272,547. Pub. 10–3–67. Filed 5–29–67.

840,974. FUNGO FREDDY. Eldon Industries, Inc., d.b.a. Danlee Company. SN 272,552. Pub. 10–3–67. Filed 5–29–67.

840,975. LUCK NIKS. Eldon Industries, Inc., d.b.a. Danlee Company. SN 272,554. Pub. 10–3–67. Filed 5–29–67.

Class 51 — Cosmetics and Toilet Preparations

840,976. LEFT HAND. Bristol-Myers Company. SN 250,928. Pub. 10–3–67. Filed 7–25–66.

840,977. SECOND HAND. Bristol-Myers Company. SN 250,929. Pub. 10–3–67. Filed 7–25–66.

840,978. RIGHT HAND. Bristol-Myers Company. SN 250,930. Pub. 10–3–67. Filed 7–25–66.

840,979. COSSACK. F. W. Hampshire & Co. Limited. SN 252,558. Pub. 10–3–67. Filed 8–17–66.

840,980. ROMNEY. Chas. Pfizer & Co., Inc. SN 256,591. Pub. 10–3–67. Filed 10–17–66.

840,981. MOONLIT BLONDE. Clairol Incorporated. SN 258,067. Pub. 10–3–67. Filed 11–7–66.

840,982. RADIANTLY BLONDE. Clairol Incorporated. SN 262,312. Pub. 10–3–67. Filed 1–11–67.

840,983. LONDON ASSIGNMENT. E. C. De Witt & Co., Inc. MULTIPLE CLASS (Classes 51 and 52). SN 270,187. Pub. 10–3–67. Filed 4–26–67.

840,984. KILIMANJARO. E. C. De Witt & Co., Inc. MULTIPLE CLASS (Classes 51 and 52). SN 270,188. Pub. 10–3–67. Filed 4–26–67.

840,985. SEA WITCH. Unilever Limited. SN 272,548. Pub. 10–3–67. Filed 5–29–67.

840,986. EMBARGO. Fairfield Products, Inc. SN 272,550. Pub. 10–3–67. Filed 5–29–67.

840,987. MY ISLANDS. The Gillette Company. SN 276,282. Pub. 10–3–67. Filed 7–19–67.

Class 52 — Detergents and Soaps

840,983. (See Class 51 for this trademark.)

840,984. (See Class 51 for this trademark.)

840,988. BRUTE 4. J. C. Zobrist Company. SN 252,449. Pub. 11–22–66. Filed 8–16–66.

Service Marks

Class 100 — Miscellaneous

840,989. CNP AND DESIGN. Robert Z. Schreffler, d.b.a. Conservative National Party of the United States of America. SN 213,188. Pub. 10–3–67. Filed 3–1–65.

840,990. PETROLCLOR. Petroiclor Construction and Finance Corp. SN 224,327. Pub. 10–3–67. Filed 7–27–65.

840,991. MARRIOTT IN-FLITE SERVICES AND DESIGN. Marriott-Hot Shoppes, Inc. SN 228,057. Pub. 10–3–67. Filed 9–17–65.

840,992. "MOORE" BURGER ETC. AND DESIGN. Moore Burger, Incorporated. SN 245,217. Pub. 10–3–67. Filed 5–9–66.

840,993. SICKROOM SERVICE AND DESIGN. Accepted Formula Laboratories, Inc., d.b.a. Sickroom Service. MULTIPLE CLASS (Classes 100 and 101). SN 246,137. Pub. 10–3–67. Filed 5–20–66.

840,994. 'COPTER CLUB. Copter Club, Inc. SN 246,662. Pub. 10–3–67. Filed 5–26–66.

840,995. SMOKERS ANONYMOUS. Smokers Anonymous, Inc. SN 249,588. Pub. 10–3–67. Filed 7–5–66.

840,996. THE PROFESSIONAL COFFEE SHOPPE. Louis Constantino, d.b.a. Professional Coffee Shoppe. SN 251,898. Pub. 10–3–67. Filed 8–8–66.

840,997. DR. SIMS AND DESIGN. Illinois State Medical Society. SN 252,100. Pub. 10–3–67. Filed 8–10–66.

840,998. LOVE. Love Furniture, Inc. SN 252,112. Pub. 10–3–67. Filed 8–10–66.

840,999. ROYAL INNS OF AMERICA. Royal Inns of America, Inc. SN 256,007. Pub. 10–3–67. Filed 10–7–66.

841,000. WE FIX SUNDAY DINNER SEVEN DAYS A WEEK. Kentucky Fried Chicken Corporation. SN 257,635. Pub. 10–3–67. Filed 10–31–66.

841,001. NFL AND DESIGN. National Football League. SN 269,960. Pub. 10–3–67. Filed 4–25–67.

841,002. BAR MAID. Commercial Capital Distributing Co. SN 270,535. Pub. 10–3–67. Filed 5–3–67.

Class 101 — Advertising and Business

840,993. (See Class 100 for this trademark.)

841,003. TREE AND BUILDING (DESIGN). General Development Corporation. SN 228,676. Pub. 10–3–67. Filed 9–27–65.

841,004. KG AND DESIGN. K.G. Carpet Supply, Inc. SN 232,462. Pub. 10–3–67. Filed 11–10–65.

841,005. WESTEC. American Society for Metals and American Society of Tool and Manufacturing Engineers (joint venture). MULTIPLE CLASS (Classes 101 and 107). SN 232,760. Pub. 10–3–67. Filed 11–16–65.

841,006. INFLUENCE THE INFLUENCIBLES. Storz Broadcasting Co., Inc. SN 233,145. Pub. 10–3–67. Filed 11–22–65.

841,007. MEETING PLACE HOTELS. Ernest Clyde Smoot, Jr., d.b.a. Trendnews. SN 238,893. Pub. 10–3–67. Filed 2–15–66.

841,008. BEST 6 ETC. AND DESIGN. Vernon Appling, d.b.a. Best 6 Motel Association. SN 241,411. Pub. 10–3–67. Filed 3–21–66.

841,009. BPCS AND DESIGN. Ojibway Press, Inc. SN 244,018. Pub. 10–3–67. Filed 4–21–66.

841,010. AID AND DESIGN. Straus-Frank Company. SN 244,627. Pub. 10–3–67. Filed 4–29–66.

841,011. IMPERIAL PERSONNEL AND DESIGN. Management Counselors, Inc. SN 247,709. Pub. 10–3–67. Filed 6–9–66.

841,012. GRAND CENTRAL MARKETS. Grand Central Markets, Inc. SN 250,154. Pub. 10–3–67. Filed 7–13–66.

841,013. CAVANAUGH-GRAY. Cavanaugh-Gray & Co., Inc. SN 250,560. Pub. 10–3–67. Filed 7–19–66.

841,014. JOBCO. Jobco, Inc. SN 252,010. Pub. 10–3–67. Filed 8–9–66.

841,015. SILHOUETTE OF GIRL AND CART (DESIGN). Hughes Industries, Inc. SN 255,623. Pub. 10–3–67. Filed 10–3–66.

841,016. OMNIBUS MD. Lea Associates, Inc. SN 256,747. Pub. 10–3–67. Filed 10–19–66.

841,017. TOTAL-LIST. Multiple Realty, Inc. SN 257,067. Pub. 10–3–67. Filed 10–24–66.

841,018. PC AND DESIGN. The Personnel Corporation. SN 257,074. Pub. 10–3–67. Filed 10–24–66.

841,019. MISCELLANEOUS DESIGN. Applied Logic Corporation. SN 257,450. Pub. 10–3–67. Filed 10–28–66.

841,020. PRINT AND DESIGN. NPEA Exhibits, Inc. SN 258,201. Pub. 10–3–67. Filed 11–8–66.

841,021. THE VILLAGER. The Villager, Inc. SN 261,954. Pub. 10–3–67. Filed 1–4–67.

841,022. SAFECO AND DESIGN. Safeguard Business Systems Corporation, d.b.a. Safeco. SN 265,869. Pub. 10–3–67. Filed 3–3–67.

841,023. QUIP. Computer Usage Company, Inc. SN 267,792. Pub. 10–3–67. Filed 3–29–67.

Class 102 — Insurance and Financial

841,024. "INSTANT" CREDIT MANAGER AND DESIGN. R. D. Mangini, d.b.a. R. D. Mangini and Company. SN 250,985. Pub. 10–3–67. Filed 7–25–66.

841,025. F FIREMAN'S FUND AMERICAN LIFE INSURANCE COMPANY AND DESIGN. The Fund American Companies. SN 254,380. Pub. 10–3–67. Filed 9–13–66.

841,026. MEDALLION (DESIGN). The Fund American Companies. SN 254,382. Pub. 10–3–67. Filed 9–13–66.

841,027. READY TO SERVE AND DESIGN. Colonial Consumer Discount Company. SN 254,916. Pub. 10–3–67. Filed 9–22–66.

841,028. YOUCARE. Illinois Mutual Life and Casualty Company. SN 258,230. Pub. 10–3–67. Filed 11–8–66.

Class 103 — Construction and Repair

841,029. SUPERCUSSION. Supercussion Drills, Inc. SN 237,603. Pub. 10–3–67. Filed 1–28–66.

841,030. SCHOOL/CARE AND DESIGN. F. W. Means & Company. SN 251,445. Pub. 10–3–67. Filed 8–1–66.

841,031. L AND DESIGN. Liberty Petroleum Co., Inc. SN 255,805. Pub. 10–3–67. Filed 10–5–66.

841,032. UNI-ROOF AND DESIGN. Uni-Roof Corporation. SN 258,943. Pub. 10–3–67. Filed 11–17–66.

Class 104 — Communication

841,033. RECRUIT-A-GRAM. The Western Union Telegraph Company. SN 259,278. Pub. 10–3–67. Filed 11–22–66.

Class 105 — Transportation and Storage

841,034. MITEY MINI ETC. AND DESIGN. D.C. Transit System, Inc. SN 244,575. Pub. 10–3–67. Filed 4–29–66.

841,035. ALLIED 1 AMERICA'S NUMBER 1 MOVER AND DESIGN. Allied Van Lines, Inc. SN 250,438. Pub. 10–3–67. Filed 7–18–66.

841,036. MID AMERICAN A AND DESIGN. Mid-American Truck Lines, Inc. SN 250,760. Pub. 10–3–67. Filed 7–21–66.

841,037. NORTHWEST ORIENT. Northwest Airlines, Inc. SN 253,673. Pub. 10–3–67. Filed 9–1–66.

841,038. GOLDEN FAN JET. Continental Air Lines, Inc. SN 254,034. Pub. 10–3–67. Filed 9–8–66.

841,039. HERTZ AND DESIGN. Hertz System, Inc. SN 254,575. Pub. 10–3–67. Filed 9–16–66.

841,040. M AND DESIGN. Matson Navigation Company. SN 255,908. Pub. 10–3–67. Filed 10–6–66.

841,041. IONOSPHERE. Eastern Air Lines, Inc. SN 260,310. Pub. 10–3–67. Filed 12–8–66.

Class 107 — Education and Entertainment

841,005. (See Class 101 for this trademark.)

841,042. LADY CARLING OPEN. Carling Brewing Company Incorporated. SN 233,578. Pub. 10–3–67. Filed 11–30–65.

841,043. LAGUNA SECA. Sports Car Racing Association of the Monterey Peninsula, d.b.a. SCRAMP. SN 244,754. Pub. 10–3–67. Filed 5–2–66.

841,044. DALLAS COWBOYS. Dallas Cowboys Football Club, Inc. SN 250,218. Pub. 10–3–67. Filed 7–14–66.

841,045. PAUL REVERE AND THE RAIDERS. Tam Enterprises. SN 250,696. Pub. 10–3–67. Filed 7–20–66.

841,046. YOUR FATHER'S MUSTACHE. Your Father's Mustache International, Inc., by change of name from Warrenton Restaurant, Inc. SN 255,842. Pub. 10–3–67. Filed 10–5–66.

841,047. MAN AND TWO FANCIFUL BIRDS (DESIGN). Gulf Coast Broadcasting Company. SN 256,550. Pub. 10–3–67. Filed 10–17–66.

841,048. GIMLET AND DESIGN. Gulf Coast Broadcasting Company. SN 256,551. Pub. 10–3–67. Filed 10–17–66.

841,049. MAN (DESIGN). Gulf Coast Broadcasting Company. SN 256,553. Pub. 10–3–67. Filed 10–17–66.

841,050. SNOW JOB AND DESIGN. Gulf Coast Broadcasting Company. SN 256,554. Pub. 10–3–67. Filed 10–17–66.

841,051. CARDINALS. St. Louis National Baseball Club, Inc. SN 275,103. Pub. 10–3–67. Filed 7–3–67.

Certification Marks

Class A — Goods

841,052. GOLDEN GUERNSEY. Golden Guernsey, Inc. SN 266,033. Pub. 10–3–67. Filed 3–6–67.

Class B — Services

841,053. ARRC. Sports Car Club of America, Incorporated. SN 244,931. Pub. 10–3–67. Filed 5–4–66.

841,054. AMERICAN ROAD RACE OF CHAMPIONS. Sports Car Club of America, Incorporated. SN 244,932. Pub. 10–3–67. Filed 5–4–66.

841,055. TRANS-AMERICAN SEDAN CHAMPIONSHIP. Sports Car Club of America, Incorporated. SN 246,613. Pub. 10–3–67. Filed 5–25–66.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

841,056. Dodge Manufacturing Corporation, Mishawaka, Ind. SN 239,754. Filed P.R. 2–28–66; Am. S.R. 10–23–67.

SOLIDLUBE

For Bearings.
First use May 22, 1964.

841,057. National Air Vibrator Company, Houston, Tex. SN 243,701. Filed P.R. 4–18–66; Am. S.R. 10–6–67.

TIMED-IMPACT

For Vibrators of the Type Used for Removing Bulk Material From Bins.
First use at least as early as June 4, 1965.

841,058. Ramey Self Loaders, Inc., Roseburg, Oreg. SN 245,792. Filed P.R. 5–16–66; Am. S.R. 10–9–67.

RAMEY

For Power Unit To Be Mounted on Vehicles and Attachments Therefor—Namely, Log Truck Loading Tongs, Clam Shell Buckets, Pole Grapples, Telescoping Load Supporting Booms, and Load Balancing Outriggers.
First use April 1963.

Class 34 — Heating, Lighting, and Ventilating Apparatus

841,059. Combustion Engineering, Inc., Windsor, Conn. SN 230,361. Filed P.R. 10–18–65; Am. S.R. 10–12–67.

COMBINED CIRCULATION

For Vapor Generators and Hot Water Heaters.
First use August 1965.

841,060. Preferred Utilities Manufacturing Corporation, Danbury, Conn. SN 252,027. Filed P.R. 8–9–66; Am. S.R. 10–10–67.

INJECT-AIRE

For Packaged Combustion Systems, Each Including Prewired Control Apparatus, a Burner, a Combustion Chamber, and a Secondary Air Fan.
First use February 1965.

Class 38 — Prints and Publications

841,061. Gulf Publishing Company, Houston, Tex. SN 200,437. Filed P.R. 8–24–64; Am. S.R. 8–25–67.

HYDROCARBON PROCESSING

For Monthly Magazine Publication.
First use May 12, 1961.

Class 39 — Clothing

841,062. J. W. Carter Company, Nashville, Tenn. SN 250,637. Filed P.R. 7–20–66; Am. S.R. 10–20–67.

WESTER

For Men's and Children's Boots.
First use Mar. 15, 1966.

TRADEMARK REGISTRATIONS RENEWED

30,691. 1835 R. WALLACE. Cl. 28. 10–19–1897.
65,969. CARTER'S. Cl. 39. 11–5–07.
66,065. C.B. M.S.V. AND DESIGN. Cl. 14. 11–5–07.
66,066. COOKLEY K. Cl. 14. 11–5–07.
66,824. HOMESTEAD. Cl. 13. 12–31–07.
215,694. "NOBELT" AND DESIGN. Cl. 39. 7–20–26.
232,632. TRIANGULAR DESIGN. Cl. 28. 9–13–27.
233,861. REXTAB. Cl. 12. 10–11–27.
234,573. ITALIAN BALM. Cl. 51. 11–1–27.
234,622. BEACON. Cl. 15. 11–1–27.
234,707. CHRIS-CRAFT. Cl. 19. 11–1–27.
236,347. "CORSAIR." Cl. 39. 12–13–27.
236,793. LUCY LINCOLN TALKS. Cl. 38. 12–20–27.
237,026. "ROL-MAN" AND DESIGN. Cl. 23. 1–3–28.

237,090. "PRESTO-WHIP" AND DESIGN. Cl. 23. 1-3-28.
237,349. 808. Cl. 6. 1-10-28.
237,533. STICK-A-SOLES. Cl. 39. 1-10-28.
238,848. BELL MINE. Cl. 12. 2-14-28.
239,254. QUEEN ANNE. Cl. 51. 2-28-28.
239,383. OYSTER. Cl. 27. 3-6-28.
240,204. 833. Cl. 6. 3-20-28.
240,579. OLD KENTUCKY HOME. Cl. 2. 4-3-28.
240,788. ACMOLINE. Cl. 6. 4-10-28.
431,179. CHAMP. Cl. 46. 7-15-47.
431,807. AMOLIN. Cl. 51. 8-12-47.
432,602. HARFLEX. Cl. 6. 9-9-47.
432,998. AZTECA. Cl. 36. 9-23-47.
433,234. HEMASTHESIA. Cl. 18. 9-30-47.
433,238. ZALBEN. Cl. 18. 9-30-47.
433,250. LANOPLUS. Cl. 51. 9-30-47.
433,968. CROWNLINER AND DESIGN. Cl. 37. 11-4-47.
434,019. HEMSEPTOL. Cl. 18. 11-4-47.
434,062. FOLBESYN. Cl. 18. 11-4-47.
434,349. RANCHCRAFT. Cl. 39. 11-18-47.
434,382. K-R-S. Cl. 18. 11-18-47.
434,457. FILAXIS. Cl. 18. 11-18-47.
434,540. SQUARE B BRAND. Cl. 46. 11-25-47.
434,589. DEVILMINT. Cl. 46. 11-25-47.
434,653. PENCO. Cl. 6. 12-2-47.
434,659. HY-FLY. Cl. 6. 12-2-47.
434,660. HY-LINE. Cl. 6. 12-2-47.
435,073. PUROGENATED. Cl. 6. 12-9-47.
435,077. LED-O-SAN. Cl. 18. 12-9-47.
435,095. PENPHENE. Cl. 6. 12-9-47.
435,135. BEN-GAY. Cl. 18. 12-9-47.
435,223. AMER-MILL. Cl. 42. 12-16-47.
435,254. SNUDSY SUDS. Cl. 52. 12-16-47.
435,311. TOTARN. Cl. 42. 12-16-47.
435,314. TRAVALONS. Cl. 39. 12-16-47.
435,608. SOMNUS. Cl. 32. 1-6-48.
435,616. "RENOUVEAU." Cl. 52. 1-6-48.
435,627. BOS-O-TONE. Cl. 18. 1-6-48.
436,036. CARBUSOL. Cl. 52. 1-20-48.
436,047. TUBBS. Cl. 7. 1-20-48.
436,644. GOLD SEAL. Cl. 46. 2-17-48.
437,785. NO COMMENT DEPARTMENT. Cl. 38. 3-30-48.
437,825. GOODALL RUBBER CO., INC. AND DESIGN. Cl. 35. 3-30-48.
500,027. PARLODION. Cl. 6. 4-6-48.
500,028. PICTOL. Cl. 6. 4-6-48.
500,032. IOMAG. Cl. 6. 4-6-48.

TRADEMARK REGISTRATIONS CANCELED

Section 8

The following registrations issued Oct. 31, 1961

723,216. FRANK AND DESIGN. Cl. 1.
723,218. DN/100. Cl. 1.
723,223. UCC AND DESIGN. Cl. 1.
723,226. UGIKRAL. Cl. 1.
723,233. STARLETTS. Cl. 1.
723,234. BLACK DIAMOND AND DESIGN. Cl. 1.
723,249. SUPRA-PUTH. Cl. 7.
723,250. YAMA WOOD. Cl. 9.
723,254. EUGIENE. Cl. 18.
723,257. ENDAC. Cl. 18.
723,259. DIADUST. Cl. 18.
723,261. PORCULIN. Cl. 18.
723,262. BOVOLON. Cl. 18.
723,267. X-P-L. Cl. 18.
723,271. GEVRASE. Cl. 18.
723,273. FERIBIOT. Cl. 18.
723,275. NO BORT AND DESIGN. Cl. 19.
723,277. ROBERT E. LEE. Cl. 21.
723,278. DUO-TRON. Cl. 21.
723,280. YACHTSMAN. Cl. 22.
723,283. BOUND-FUL. Cl. 22.
723,287. BEAT THE TAXES AND DESIGN. Cl. 22.
723,288. BEAT THE TAXES. Cl. 22.
723,291. CAPRI. Cl. 22.
723,292. MADRID. Cl. 22.
723,294. HI-DENSITY. Cl. 23.
723,297. MOHAWK. Cl. 23.
723,299. FLYING DUTCHMAN. Cl. 23.
723,300. HYDROLATOR. Cl. 23.
723,301. DOUBLE DEMON HIGH-SPEED STEEL AND DESIGN. Cl. 23.
723,302. DOUBLE DEMON HIGH-SPEED STEEL AND DESIGN. Cl. 23.
723,312. HOLFAST. Cl. 35.
723,317. SOFTCOTE. Cl. 37.
723,318. GIFT-BOOKARD. Cl. 37.
723,324. ACTALYZER AND DESIGN. Cl. 38.
723,328. SOUTHERN AND DESIGN. Cl. 39.
723,332. UNIROVING. Cl. 43.
723,333. CROUPAIRE. Cl. 44.
723,334. REJUVENE. Cl. 44.
723,348. NEW & READY YOUNGURT AND DESIGN. Cl. 46.
723,351. BRUNCH LOAF. Cl. 46.
723,357. CLINITHIN. Cl. 46.
723,365. BUTCH. Cl. 50.
723,371. AIR DE FRANCE. Cl. 51.
723,373. IMAGIQUE. Cl. 51.
723,374. JR. Cl. 51.
723,375. JAC ROBAIRE. Cl. 51.
723,377. FREEZE 'N TWEEZE. Cl. 51.
723,378. KIWI (KEE WEE) FOOT SHOE FRESH-UP AND DESIGN. Cl. 51.
723,391. NEW BAGDAD. Cl. 100.
723,401. ALLEN'S. Cl. 103.
723,406. FLYING FISH. Cl. 105.
723,411. REPRESENTATION OF FOOTPRINT. Cl. 107.
723,413. TEEN-O-RAMA. Cl. 107.
723,415. THE U.S.S. ARIZONA MEMORIAL FOUNDATION AND DESIGN. Cl. 200.
723,423. PARTS AND DATA SYMBOL (DESIGN). Cl. 27.
723,425. KLIP-ON. Cl. 29.
723,427. FASHION FOAM. Cl. 42.

INDEX OF REGISTRANTS

DECEMBER 19, 1967

(Registered; Renewed; Canceled; Amended, Disclaimed, Corrected, etc.; New Certificates; 12c Publications.)

AB Bonnierforetagen, Stockholm, Sweden. 840,833, pub. 10-3-67. Cl. 23.
A.I.R. Corp., Oakland, Calif. 840,859, pub. 10-3-67. Cl. 26.
A/S Bergans Meis og Ryggsekk, Oslo, Norway. 840,695, pub. 10-3-67. Cl. 3.
Abba-Fyrtornet AB, Stockholm, Sweden. 840,951, pub. 10-3-67. Cl. 46.
Acacia Fraternity, Worcester, Mass., to Acacia Fraternity, Inc., Evanston, Ill. 232,632, ren. 12-19-67. Cl. 28.
Acacia Fraternity, Inc.: *See*—
Acacia Fraternity.
Accepted Formula Laboratories, Inc., d.b.a. Sickroom Service, Milwaukee, Wis. 840,993, pub. 10-3-67. Multiple Class (Classes 100 and 101).
Acme Chemical Co., Milwaukee, Wis. 240,788, ren. 12-19-67. Cl. 6.
Aero-Motive Mfg. Co., Kalamazoo, Mich. 840,831, pub. 8-29-67. Cl. 23.
Almcee Wholesale Corp., New York, N.Y. 840,688, pub. 10-3-67. Cl. 2.
Almcee Wholesale Corp., New York, N.Y. 840,699, pub. 10-3-67. Cl. 4.
Air Products and Chemicals Inc., Allentown, Pa., from Southern Oxygen Co., Bladensburg, Md. 723,328, canc. Cl. 39.
Airpax Electronic Inc., Cambridge, Md. 840,869, pub. 10-3-67. Cl. 26.
Air-Shields, Inc., Hatboro, Pa. 723,333, canc. Cl. 44.
Albert Air Conveyor Corp., Oakland, Calif. 723,294, canc. Cl. 23.
Allen Carpet Cleaning and Rug Weaving Co., Buffalo, N.Y. 723,401, canc. Cl. 103.
Allen Knitting Mills, Inc., New York, N.Y. 723,427, canc. Cl. 42.
Allen Mfg. Co., The, Hartford, Conn. 840,756, pub. 10-3-67. Cl. 13.
Allied Chemical Corp., New York, N.Y. 840,732, pub. 10-3-67. Cl. 12.
Allied Van Lines, Inc., Broadview, Ill. 841,035, pub. 10-3-67. Cl. 105.
American Associated Companies Inc., from Georgia Klip-On Products, Inc., Atlanta, Ga. 723,425, canc. Cl. 29.
American Book Co., New York, N.Y. 840,910, pub. 10-3-67. Cl. 38.
American Cultural Society: *See*—
Seltzer, Jane E.
American Cyanamid Co., Wayne, N.J. 434,062, ren. 12-19-67. Cl. 18.
American Cyanamid Co., Wayne, N.J. 435,073, ren. 12-19-67. Cl. 6.
American Cyanamid Co., Wayne, N.J. 435,077, ren. 12-19-67. Cl. 18.
American Cyanamid Co., New York, N.Y. 723,271, canc. Cl. 18.
American Cyanamid Co., Wayne, N.J. 840,781, pub. 10-3-67. Cl. 18.
American Home Products Corp.: *See*—
Fort Dodge Laboratories, Inc.
White & Hallock, Inc.
American Hospital Supply Corp., Evanston, Ill. 840,687, pub. 10-3-67. Cl. 2.
American Hydrolan Corp., Ballardvale, Mass. 840,705, pub. 10-3-67. Cl. 6.
American Lime & Stone Co., Bellefonte, Pa., to Warner Co., Philadelphia, Pa. 238,848, ren. 12-19-67. Cl. 12.
American Silk Mills, Inc., New York, N.Y. 435,223, ren. 12-19-67. Cl. 42.
American Silk Mills, Inc., New York, N.Y. 435,311, ren. 12-19-67. Cl. 42.
American Society for Metals, and American Society of Tool and Mfg. Engineers, Novelty, Ohio, and Detroit, Mich. 841,005, pub. 10-3-67. Multiple Class (Classes 101 and 107).
American Sun Petroleum Corp., Los Angeles, Calif. 840,759, pub. 10-3-67. Cl. 13.
Ammco Tools, Inc., North Chicago, Ill. 840,848, pub. 10-3-67. Cl. 26.
Andis Clipper Co., Racine, Wis. 840,837, pub. 10-3-67. Cl. 23.
Andrew Engineering Co., Minneapolis, Minn. 840,872, pub. 8-22-67. Cl. 26.
Applied Logic Corp., Princeton, N.J. 841,019, pub. 10-3-67. Cl. 101.
Appling, Vernon, d.b.a. Best 6 Motel Assn., Salinas, Calif. 841,008, pub. 10-3-67. Cl. 101.
Art Cast, Inc., Pomona, Calif. 840,753, pub. 10-3-67. Multiple Class (Classes 13 and 34).
Asahi Optical Co., Ltd., Tokyo, Japan. 840,858, pub. 10-3-67. Cl. 26.
Ashland Oil & Refining Co., Ashland, Ky. 840,704, pub. 10-3-67. Multiple Class (Classes 6 and 15).
Associated Products Co., The: *See*—
Peoples Drug Stores, Inc.
Avalon Mfg. Corp., Brooklyn, N.Y. 840,821, pub. 10-3-67. Cl. 22.
Avco Corp., Westboro, Mass. 840,696, pub. 10-3-67. Cl. 4.
Azteca Record Co.: *See*—
Pelaez Music Co.
BJR Laboratories, Inc., Shawnee Mission, Kans. 840,780, pub. 10-3-67. Cl. 18.
Baldec, A., Inc., Jersey City, N.J. 840,938, pub. 10-3-67. Cl. 46.
Baldwins, Ltd., Wilden Iron Works, Near Stourport, England, to Richard Thomas & Baldwins, Ltd., London, England. 66,065-6, ren. 12-19-67. Cl. 14.
Barborak, J. P., Mfg. Inc., Wheatland, Pa. 840,743, pub. 10-3-67. Cl. 12.
Batesco, Inc., Gary, Ind. 840,861, pub. 10-3-67. Cl. 26.
Baxter, Don, Inc., Glendale, Calif. 840,779, pub. 10-3-67. Cl. 18.
Beacon Oil Co., Boston, Mass., to Humble Oil & Refining Co., Houston, Tex. 234,622, ren. 12-19-67. Cl. 15.
Beacon Products Corp., Newton Highlands, Mass. 840,692, pub. 10-3-67. Cl. 2.
Beatrice Foods Co., Chicago, Ill. 840,946-7, pub. 10-3-67. Cl. 46.
Bee Chemical Co., Lansing, Ill. 840,715, pub. 10-3-67. Cl. 6.
Belknap Hardware & Mfg. Co., Louisville, Ky. 240,579, ren. 12-19-67. Cl. 2.
Bell & Gossett Co., Morton Grove, Ill. 723,300, canc. Cl. 23.
Beloit Corp., Beloit, Wis. 840,836, pub. 10-3-67. Cl. 23.
Bengue, Inc., Union City, N.J., to Chas. Pfizer & Co., Inc., New York, N.Y. 435,135, ren. 12-19-67. Cl. 18.
Best 6 Motel Association: *See*—
Appling, Vernon.
Biorex Laboratories, Ltd., London, England. 840,777, pub. 10-3-67. Cl. 18.
Bird Electronic Corp., Solon, Ohio. 840,794, pub. 10-3-67. Cl. 21.
Bird Space Technology, Inc., Palm Springs, Calif. 840,928, pub. 10-3-67. Cl. 44.
Birns & Sawyer Cine Equipment Co. Inc., Hollywood, Calif. 840,860, pub. 10-3-67. Cl. 26.
Bishop Industries, Inc.: *See*—
Lanolin Plus Cosmetics, Inc.
Bislig Bay Lumber Co., Inc., Makati, Rizal, Philippines. 840,749, pub. 10-3-67. Cl. 12.
Black Creek Charcoal Co.: *See*—
Hyman, Herbert A.
Botalam, Paris, France. 840,830, pub. 10-3-67. Cl. 23.
Boyle & Co., Los Angeles, to Towne, Paulsen & Co., Inc., Monrovia, Calif. 433,234, ren. 12-19-67. Cl. 18.
Boyle & Co., Los Angeles, to Towne, Paulsen & Co., Inc., Monrovia, Calif. 433,238, ren. 12-19-67. Cl. 18.
Boyle & Co., Los Angeles, to Towne, Paulsen & Co., Inc., Monrovia, Calif. 434,457, ren. 12-19-67. Cl. 18.
Bristol-Myers Co., New York, N.Y. 840,976-8, pub. 10-3-67. Cl. 51.
Broudy, Sherrill, d.b.a. Forms & Surfaces, Santa Barbara, Calif. 840,744, pub. 10-3-67. Cl. 12.
Brown's, J. T. S., Son Co., Cincinnati, Ohio. 840,969, pub. 10-3-67. Cl. 49.
Bruce, E. L., Co. (Inc.), Memphis, Tenn. 840,750, pub. 10-3-67. Cl. 12.
Budd Co., The, Philadelphia, Pa. 840,846, pub. 10-3-67. Cl. 26.
Buddy L Corp., East Moline, Ill. 840,826, pub. 10-3-67. Cl. 22.
Buffalo Evening News, to Buffalo Evening News, Buffalo, N.Y. 236,793, ren. 12-19-67. Cl. 38.
Cabot Corp., Boston, Mass. 840,773, pub. 10-3-67. Cl. 16.
Calderone Enterprises Corp., Hempstead, N.Y. 723,406, canc. Cl. 105.
Calgon Corp., Pittsburgh, Pa. 840,711, pub. 10-3-67. Cl. 6.
Calhoun, Jerry J., Sr., St. Petersburg, Fla. 840,815, pub. 10-3-67. Cl. 22.
Cambridge Thermionic Corp., Cambridge, Mass. 840,805, pub. 10-3-67. Cl. 21.
Camp & McInnes, Inc.: *See*—
Scott, Rufus W., Co.
Camp, W. B., & Sons: *See*—
Camp, W. B., & Sons, Inc.
Camp, W. B., & Sons, Inc., d.b.a. W. B. Camp & Sons, Bakersfield, Calif. 840,961, pub. 10-3-67. Cl. 46.
Campana Corp., Batavia, Ill., to Purex Corp., Ltd., Lakewood, Calif. 234,573, ren. 12-19-67. Cl. 51.
Carling Brewing Co., Inc., Cleveland, Ohio. 841,042, pub. 10-3-67. Cl. 107.
Carolina Biological Supply Co., Burlington, N.C. 840,716, pub. 10-3-67. Cl. 6.
Carter, J. W., Co., Nashville, Tenn. 841,062. Cl. 39.
Carter, William, Co., The, Highlandville, to The William Carter Co., Needham Heights, Mass. 65,969, ren. 12-19-67. Cl. 39.
Catto, James, & Co., Ltd., Aberdeen, Scotland. 840,965, pub. 7-25-67. Cl. 49.
Cavanaugh-Gray & Co., Inc., Jacksonville, Fla. 841,013, pub. 10-3-67. Cl. 101.
Certron Corp., Los Angeles, Calif. 840,892, pub. 10-3-67. Cl. 36.
Chris-Craft Industries, Inc.: *See*—
Smith, Chris, & Sons Boat Co.
Christian Training Institute, Inc., Indianapolis, Ind. 840,914-16. pub. 10-3-67. Cl. 38.
Ciba, Ltd., Basel, Switzerland. 723,273, canc. Cl. 18.
Clairol, Inc., New York, N.Y. 840,981-2, pub. 10-3-67. Cl. 51.
Clark Aluminum Co., Houston, Tex. 840,733, pub. 10-3-67. Cl. 12.

Clark, Charles F., Inc., Menominee, Mich. 840,819, pub. 10–3–67. Cl. 22.
Codman & Shurtleff, Inc., Boston, Mass. 840,934, pub. 10–3–67. Cl. 44.
Colgate-Palmolive Co., New York, N.Y., from Unexcelled Chemical Corp., Canaan, Conn. 723,254, canc. Cl. 18.
Colonial Consumer Discount Co., Charleroi, Pa. 841,027, pub. 10–3–67. Cl. 102.
Combustion Engineering, Inc., Windsor, Conn. 841,059. Cl. 34.
Commercial Capital Distributing Co., Fort Lauderdale, Fla. 840,840, pub. 10–3–67. Cl. 23.
Commercial Capital Distributing Co., Fort Lauderdale, Fla. 841,002, pub. 10–3–67. Cl. 100.
Computer Usage Co., Inc., Mount Kisco, N.Y. 841,023, pub. 10–3–67. Cl. 101.
Conservative National Party of the United States of America: *See*—
Schreffler, Robert Z.
Consolidated Electrodynamic Corp., Pasadena, Calif. 840,845, pub. 10–3–67. Cl. 26.
Constantino, Louis, d.b.a. Professional Coffee Shoppe, Washington, D.C. 840,996, pub. 10–3–67. Cl. 100.
Continental Air Lines, Inc., Los Angeles, Calif. 841,038, pub. 10–3–67. Cl. 105.
Cooley, Inc., Pawtucket, R.I. 840,924, pub. 3–21–67. Cl. 42.
Copter Club, Inc., New York, N.Y. 840,994, pub. 10–3–67. Cl. 100.
Cosan Chemical Corp., Clifton, N.J. 840,708, pub. 10–3–67. Multiple Class (Classes 6 and 16).
Cowan, Con, Co.: *See*—
Cowan, Con G.
Cowan, Con G., d.b.a. Con Cowan Co., to Market Confections, Inc., Los Angeles, Calif. 431,179, ren. 12–19–67. Cl. 46.
Craig Enterprises, Inc., Pinole, Calif. 840,760, pub. 10–3–67. Cl. 13.
Crown Zellerbach Corp., San Francisco, Calif. 433,968, ren. 12–19–67. Cl. 37.
Curtis Enterprises: *See*—
Curtis, Phyllis R.
Curtis, Helene, Industries, Inc., d.b.a. Helene Curtis Laboratories, Chicago, Ill. 723,257, canc. Cl. 18.
Curtis, Helene, Industries, Inc., d.b.a. Lentheric, Chicago, Ill. 723,371, canc. Cl. 51.
Curtis, Helene, Laboratories: *See*—
Curtis, Helene, Industries, Inc.
Curtis, Phyllis R., d.b.a. Curtis Enterprises, North Hollywood, Calif. 840,724, pub. 10–3–67. Cl. 8.
Cutter Laboratories, to Cutter Laboratories, Inc., Berkeley, Calif. 434,019, ren. 12–19–67. Cl. 18.
Cutter Laboratories, to Cutter Laboratories, Inc., Berkeley, Calif. 434,382, ren. 12–19–67. Cl. 18.
Cutter Laboratories, Inc.: *See*—
Cutter Laboratories.
D.C. Transit System, Inc., Washington, D.C. 841,034, pub. 10–3–67. Cl. 105.
Dairyland Food Laboratories, Inc., Waukesha, Wis. 840,941, pub. 10–3–67. Cl. 46.
Da-Lite Screen Co., Inc., Warsaw, Ind. 840,854, pub. 10–3–67. Cl. 26.
Dallas Cowboys Football Club, Inc., Dallas, Tex. 841,044, pub. 10–3–67. Cl. 107.
Danfoods Co.: *See*—
East Asiatic Co., Inc., The.
Danfoods Corp.: *See*—
East Asiatic Co., Inc., The.
Danlee Co.: *See*—
Eldon Industries, Inc.
Dayco Corp., Dayton, Ohio. 723,312, canc. Cl. 35.
Debron Carpets, Ltd., Kidderminster, England. 840,922, pub. 10–3–67. Cl. 42.
Dellene, Inc., Newark, N.J. 723,377, canc. Cl. 51.
De Luxe Girdlecraft Co., Inc., New York, N.Y. 840,917, pub. 6–13–67. Cl. 39.
DeWitt, E. C., & Co., Inc., Chicago, Ill. 840,983–4, pub. 10–3–67. Multiple Class (Classes 51 and 52).
Diamond Alkali Co., Cleveland, Ohio. 840,702, pub. 9–26–67. Cl. 5.
Diamond Alkali Co., Cleveland, Ohio. 840,720, pub. 10–3–67. Cl. 6.
DoAll Co., The, Des Plaines, Ill. 723,301–2, canc. Cl. 23.
Dr. Siebert & Huhn, Kassel, Germany. 840,868, pub. 10–3–67. Cl. 26.
Dodge Mfg. Corp., Mishawaka, Ind. 841,056. Cl. 23.
Dodge & Olcott, Inc., New York, N.Y. 840,940, pub. 10–3–67. Cl. 46.
Dri Mark Products, Inc., Mount Vernon, N.Y. 840,818, pub. 10–3–67. Cl. 22.
Ductile Iron Co. of America, Savannah, Ga. 840,755, pub. 10–3–67. Cl. 13.
Duffy-Mott Co., Inc., New York, N.Y. 436,644, ren. 12–19–67. Cl. 46.
Duncan Electronics, Inc., Costa Mesa, Calif. 840,863, pub. 10–3–67. Cl. 26.
Du Pont de Nemours, E. I., & Co.: *See*—
Grasselli Chemical Co., The.
Du Pont de Nemours, E. I., & Co., Wilmington, Del. 840,682, pub. 8–22–67. Cl. 1.
Du Pont de Nemours, E. I., & Co., Wilmington, Del. 840,742, pub. 10–3–67. Cl. 12.
Dustikins Products, Inc., Bronx, N.Y. 840,895, pub. 10–3–67. Cl. 37.
E.T.M. Corp., Monrovia, Calif. 840,832, pub. 10–3–67. Multiple Class (Classes 23 and 26).
East Asiatic Co., Inc., The, d.b.a. Danfoods Co., and Danfoods Corp., Los Angeles, Calif. 840,957, pub. 10–3–67. Cl. 46.
Eastern Air Lines, Inc., New York, N.Y. 841,041, pub. 10–3–67. Cl. 105.
Eat 'N' Shop: *See*—
Margolin, Howard, and Raymond Roth.
Ebauches S.A., Neuchatel, Switzerland. 723,423, canc. Cl. 27.
Eckel Produce Co., Salinas, Calif. 840,962, pub. 10–3–67. Cl. 46.
Eldon Industries, Inc., d.b.a. Danlee Co., Hawthorne, Calif. 840,973–5, pub. 10–3–67. Cl. 50.
Electronic Research Associates, Inc., Cedar Grove, N.J. 840,796, pub. 10–3–67. Cl. 21.
El-Tronics, Inc., Warren, Pa., from Nu-Lite Corp., Newark, N.J. 723,278, canc. Cl. 21.
Ely's Potato Chip Co.: *See*—
Janke, August G.
Englander Co., Inc., The, New York, N.Y. 840,884–5, pub. 10–3–67. Cl. 32.
Enrenreich Photo-Optical Industries, Inc., Garden City, N.Y. 840,875, pub. 10–3–67. Cl. 26.
Erickson & Frederick, San Fernando, Calif. 723,283, canc. Cl. 22.
Everpure, Inc., Oakbrook, Ill. 840,881, pub. 10–3–67. Cl. 31.
FMC Corp., Philadelphia, Pa. 840,681, pub. 10–3–67. Cl. 1.
Fabric Leather Corp., New Hyde Park, N.Y. 840,683, pub. 10–3–67. Cl. 1.
Fairchild Camera and Instrument Corp., Syosset, N.Y. 840,852, pub. 10–3–67. Cl. 26.
Fairfield Products, Inc., New York, N.Y. 840,986, pub. 10–3–67. Cl. 51.
Falcon Lock Co., South Gate, Calif. 840,841, pub. 10–3–67. Cl. 25.
Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany. 840,782, pub. 10–3–67. Cl. 18.
Faultless Nightwear Corp., (E. Rosenfeld & Co.), to The Nobelt Co., Baltimore, Md. 215,694, ren. 12–19–67. Cl. 39.
Federal Cartridge Corp., Minneapolis, Minn. 840,725, pub. 10–3–67. Cl. 9.
Fedtro, Inc., Rockville Centre, N.Y. 840,795, pub. 10–3–67. Cl. 21.
Ferro Corp., Cleveland, Ohio. 723,332, canc. Cl. 43.
Finley, Charles O., & Co., Inc., Chicago, Ill. 840,728, pub. 10–3–67. Cl. 10.
Firestone Tire & Rubber Co., The, Akron, Ohio. 840,891, pub. 10–3–67. Cl. 35.
Fisher Radio Corp., Long Island City, N.Y. 840,803–4, pub. 10–3–67. Cl. 21.
Flintkote Co., The, New York, N.Y. 233,861, ren. 12–19–67. Cl. 12.
Floral Development Corp., Holliston, Mass. 840,690, pub. 10–3–67. Cl. 2.
Follmer, Walter N., d.b.a. The Lemonaire Co., Beaumont, Tex. 840,712, pub. 10–3–67. Cl. 6.
Forbes, Farquharson & Co., Ltd., Perth, Scotland. 840,966, pub. 10–3–67. Cl. 49.
Forest City Products, Inc.: *See*—
Forest Co.
Forest Co., from Forest City Products, Inc., Cleveland, Ohio. 840,758, pub. 10–3–67. Cl. 13.
Forms & Surfaces: *See*—
Broudy, Sherrill.
Fort Dodge Laboratories, Inc., Fort Dodge, Iowa, to American Home Products Corp., New York, N.Y. 435,627, ren. 12–19–67. Cl. 18.
Fortunoff's Shopping Center, Inc., Westbury, N.Y. 840,880, pub. 10–3–67. Cl. 30.
Frank, J. P., Chemical & Plastic Corp., New York, N.Y. 723,216, canc. Cl. 1.
Fund American Companies, The, San Francisco, Calif. 841,025–6, pub. 10–3–67. Cl. 103.
Gallery of Gifts, Inc., New York, N.Y. 723,318, canc. Cl. 37.
Gallo, E. & J., Winery, d.b.a. The Vintners of Eden Roc, Modesto, Calif. 840,970, pub. 10–3–67. Cl. 49.
Gammon, W. H., Co., Lewiston, Maine. 840,886, pub. 10–3–67. Cl. 32.
Garfinckel, Julius, & Co., Inc., Washington, D.C. 840,920, pub. 8–29–67. Cl. 39.
Gavel, Priscilla, d.b.a. Timbre-Tone, Seekonk, Mass. 840,909, pub. 10–3–67. Cl. 38.
Geigy Chemical Corp., Ardsley, N.Y. 840,713–14, pub. 10–3–67. Cl. 6.
General Aniline & Film Corp., New York, N.Y. 840,843, pub. 10–3–67. Cl. 26.
General Development Corp., Miami, Fla. 841,003, pub. 10–3–67. Cl. 101.
Genest Midwest, Inc., Canton, Ohio. 840,954, pub. 10–3–67. Cl. 46.
Gillette Co., The, Boston, Mass. 840,987, pub. 10–3–67. Cl. 51.
Glendinning Co., Inc., from Glendinning Enterprises, Inc., Westport, Conn. 840,811, pub. 10–3–67. Cl. 22.
Glendinning Enterprises, Inc.: *See*—
Glendinning Co., Inc.
Gloria Game Co., Inc., San Pedro, Calif. 723,287–8, canc. Cl. 22.
Glossbrenner, George L., d.b.a. Actalyzer Investment Service, Indianapolis, Ind. 723,324, canc. Cl. 38.
Goebel, W., Porzellanfabrik Oeslau und Nilhelmsfeld, Bavaria, Germany. 723,365, canc. Cl. 50.
Golden Crown Citrus Corp., Evanston, Ill. 840,936, pub. 10–3–67. Cl. 45.
Golden Guernsey, Inc., Peterborough, N.H. 841,052, pub. 10–3–67. Cl. A.
Good Humor Corp., Englewood Cliffs, N.J. 840,959, pub. 10–3–67. Cl. 46.
Goodall Rubber Co.: *See*—
Goodall Rubber Co., Inc.
Goodall Rubber Co., Inc., to Goodall Rubber Co., Trenton, N.J. 437,825, ren. 12–19–67. Cl. 35.
Goodyear Tire & Rubber Co., The, Akron, Ohio. 840,791, pub. 10–3–67. Cl. 20.

Grand Central Markets, Inc., Stamford, Conn. 841,012, pub. 10–3–67. Cl. 101.
Grasselli Chemical Co., The, Cleveland, Ohio, to E. I. du Pont de Nemours & Co., Wilmington, Del. 237,349, ren. 12–19–67. Cl. 6.
Grasselli Chemical Co., The, to E. I. du Pont de Nemours & Co., Wilmington, Del. 240,204, ren. 12–19–67. Cl. 6.
Grimes Instruments and Controls, Inc., Montclair, N.J. 840,873, pub. 10–3–67. Cl. 26.
Grob & Co., Ltd., Horgen, Zurich, Switzerland. 840,839, pub. 10–3–67. Cl. 23.
Groveton Papers Co., Groveton, N.H. 840,894, pub. 10–3–67. Cl. 37.
Gulf Coast Broadcasting Co., Corpus Christi, Tex. 841,047–50, pub. 10–3–67. Cl. 107.
Gulf Publishing Co., Houston, Tex. 841,061. Cl. 38.
Hag Ag Bremen, Bremen, Germany. 840,945, pub. 10–3–67. Cl. 46.
Halo-Star Corp., Chicago, Ill. 840,948, pub. 10–3–67. Cl. 46.
Hamilton, Alfred E., Pittsburgh, Pa. 840,933, pub. 10–3–67. Cl. 44.
Hamilton Watch Co.: *See*—
Wallace, R., & Sons Mfg. Co.
Hampshire, F. W., & Co., Ltd., Derby, England. 840,979, pub. 10–3–67. Cl. 51.
Harbison-Walker Refractories Co., Pittsburgh, Pa. 840,737–8, pub. 10–3–67. Cl. 12.
Hardesty Chemical Co., Inc., New York, N.Y. to Wallace & Tiernan, Inc., East Orange, N.J. 432,602, ren. 12–19–67. Cl. 6.
Harman-Kardon, Inc., from Harman-Kardon, Inc., Plainview, N.Y. 840,807, pub. 8–29–67. Cl. 21.
Harris Paint Co., Tampa, Fla. 840,706, pub. 10–3–67. Multiple Class (Classes 6, 12, and 16).
Harris Paint Co., d.b.a. Harris Standard Paint Co., Tampa, Fla. 840,736, pub. 10–3–67. Cl. 12.
Harris Paint Co., Tampa, Fla. 840,770, pub. 10–3–67. Cl. 16.
Harris Standard Paint Co.: *See*—
Harris Paint Co.
Hartz Mountain Products Corp., New York, N.Y. 840,937, pub. 6–14–66. Cl. 46.
Heinr. Puth Kom. Ges., Blankenstein (Ruhr), Germany. 723,249, canc. Cl. 7.
Help, Inc., Chicago, Ill. 435,254, ren. 12–19–67. Cl. 52.
Henlopen Mfg. Co., Inc., Farmingdale, N.Y. 840,752, pub. 10–3–67. Cl. 13.
Herald Tribune Fresh Air Fund, New York, N.Y. 723,411, canc. Cl. 107.
Hertz System, Inc., New York, N.Y. 841,039, pub. 10–3–67. Cl. 105.
Holiday Products, Inc., Kansas City, Mo. 840,887, pub. 10–3–67. Cl. 34.
Homestead Valve Mfg. Co., Coraopolis, Pa. 66,824, ren. 12–19–67. Cl. 13.
Homewood Cabinet Top Co., Homewood, Ill. 840,745, pub. 10–3–67. Cl. 12.
Hughes Industries, Inc., Englewood, Colo. 841,015, pub. 10–3–67. Cl. 101.
Humble Oil & Refining Co.: *See*—
Beacon Oil Co.
Hyman, Herbert A., d.b.a. Black Creek Charcoal Co., Lexington, Miss. 723,233–4, canc. Cl. 1.
Illinois Mutual Life & Casualty Co., Peoria, Ill. 841,028, pub. 10–3–67. Cl. 102.
Illinois State Medical Society, Chicago, Ill. 840,997, pub. 10–3–67. Cl. 100.
Industrial & Merchandising Services S.A., Brussels, Belgium. 840,921, pub. 10–3–67. Cl. 39.
Instructo Products Co., Philadelphia, Pa. 840,820, pub. 10–3–67. Cl. 22.
Interbook California, Inc., Gardena, Calif. 840,903, pub. 10–3–67. Cl. 38.
Interdok Corp., White Plains, N.Y. 840,911, pub. 10–3–67. Cl. 38.
International Foam Corp., Chicago, Ill. 840,746, pub. 10–3–67. Cl. 12.
International Latex & Chemical Corp., Dover, Del. 840,707, pub. 10–3–67. Cl. 6.
International Paper Co., New York, N.Y. 840,691, pub. 10–3–67. Cl. 2.
International Telephone & Telegraph Corp., New York, N.Y. 840,792–3, pub. 10–3–67. Multiple Class (Classes 21 and 26).
Intner, William, Co., Inc., Glendale, N.Y. 840,883, pub. 10–3–67. Cl. 32.
Janke, August G., d.b.a. Ely's Potato Chip Co., Escanaba, Mich. 840,950, pub. 10–3–67. Cl. 46.
Jet Line Products, Inc., Matthews, N.C. 840,834, pub. 10–3–67. Cl. 23.
Jobco, Inc., Dallas, Tex. 841,014, pub. 10–3–67. Cl. 101.
Johnson, L. E., Products, Inc., Elkhart, Ind. 840,734, pub. 10–3–67. Cl. 12.
Johnson, L. E., Products, Inc., Elkhart, Ind. 840,754, pub. 10–3–67. Cl. 13.
Johnson, Richard D., & Co., Milwaukee, Wis. 840,971, pub. 10–3–67. Cl. 50.
Johnson, S. C., & Son, Inc., Racine, Wis. 840,700–1, pub. 10–3–67. Cl. 4.
K.G. Carpet Supply, Inc., Atlanta, Ga. 841,004, pub. 10–3–67. Cl. 101.
Kelley Mfg. Co., Houston, Tex. 840,731, pub. 10–3–67. Cl. 12.
Kentucky Fried Chicken Corp., Nashville, Tenn. 841,000, pub. 10–3–67. Cl. 100.
Kern Roll & Rubber Co.: *See*—
Piedmont Mill Supply Co.
Kimberly-Clark Corp., Neenah, Wis. 840,929, pub. 10–3–67. Cl. 44.
Kiwi Polish Co., Proprietary Ltd., The, Victoria, Australia. 723,378, canc. Cl. 51.
Knox Homes Corp., Lafayette, Ind. 840,751, pub. 10–3–67. Cl. 12.
Kohner Bros., Inc., New York, N.Y. 840,810, pub. 10–3–67. Cl. 22.
Konstandt, Francisco Goldberger, Lucerne, Switzerland. 840,730, pub. 10–3–67. Cl. 12.
Kuhl, Paul H., d.b.a. Kuhl Poultry Equipment Co., Flemington, N.J. 840,829, pub. 10–3–67. Cl. 23.
Kuhl Poultry Equipment Co.: *See*—
Kuhl, Paul H.
LKB-Produkter AB, Stockholm-Bromma, Sweden. 840,856, pub. 10–3–67. Cl. 26.
Lamson & Sessions Co., The, Cleveland, Ohio. 840,761, pub. 10–3–67. Cl. 13.
Lanolin Plus Cosmetics, Inc., Chicago, Ill., to Bishop Industries, Inc., Union, N.J. 433,250, ren. 12–19–67. Cl. 51.
Le Fiell Sport Products, Inc., Santa Fe Spring, Calif. 840,814, pub. 10–3–67. Cl. 22.
Lea Associates, Inc., Ambler, Pa. 841,016, pub. 10–3–67. Cl. 101.
Lemonaire Co., The: *See*—
Follmer, Walter N.
Les Parfums De Dana, Inc., New York, N.Y. 435,616, ren. 12–19–67. Cl. 52.
Liberty Petroleum Co., Inc., Mount Vernon, Ill. 841,031, pub. 10–3–67. Cl. 103.
Lind Climber Co., Evanston, Ill. 840,823, pub. 10–3–67. Cl. 22.
Lockwood Grader Corp.: *See*—
Sellon, Inc.
Logetronics Inc., Alexandria, Va. 840,855, pub. 10–3–67. Cl. 26.
Longarini, Richard E., Dana Point, Calif. 723,250, canc. Cl. 9.
Loral Corp., Bronx, N.Y. 840,817, pub. 10–3–67. Cl. 22.
Love Furniture, Inc., Tonawanda, N.Y. 840,998, pub. 10–3–67. Cl. 100.
Lundy's, S., Sons, Philadelphia, Pa. 840,943, pub. 10–3–67. Cl. 46.
M & W Gear Co., Inc., Gibson City, Ill. 840,838, pub. 10–3–67. Cl. 23.
Magnetic Cards of Calif., Inc., Santa Monica, Calif. 723,280, canc. Cl. 22.
Mallinckrodt Chemical Works, St. Louis, Mo. 500,027–8, ren. 12–19–67. Cl. 6.
Mallinckrodt Chemical Works, St. Louis, Mo. 500,032, ren. 12–19–67. Cl. 6.
Management Counselors, Inc., Chicago, Ill. 841,011, pub. 10–3–67. Cl. 101.
Manganese Steel Forge Co., Philadelphia, Pa. 237,026, ren. 12–19–67. Cl. 23.
Mangini, R. D., d.b.a. R. D. Mangini & Co., Chicago, Ill. 841,024, pub. 10–3–67. Cl. 102.
Mangini, R. D., & Co.: *See*—
Mangini, R. D.
Margolin, Howard, and Raymond Roth, d.b.a. Eat 'N' Shop, Eatontown, N.J. 840,723, pub. 10–3–67. Multiple Class (Classes 8 and 17).
Market Confections, Inc.: *See*—
Cowan, Con G.
Markus-Campbell Co., Chicago, Ill. 840,844, pub. 10–3–67. Cl. 26.
Mariott-Hot Shoppes, Inc., Washington, D.C. 840,991, pub. 10–3–67. Cl. 100.
Matson Navigation Co., San Francisco, Calif. 841,040, pub. 10–3–67. Cl. 105.
Mawhinney, Max W., d.b.a. 3R% Calculator, Heber City, Utah. 840,864, pub. 10–3–67. Cl. 26.
McAniff, John J., Newport, R.I. 840,902, pub. 10–3–67. Cl. 38.
McGraw-Edison Co., Elgin, Ill. 840,871, pub. 10–3–67. Cl. 26.
Means, F. W., & Co., Chicago, Ill. 841,030, pub. 10–3–67. Cl. 103.
Megal, Joseph J., Milwaukee, Wis. 840,812, pub. 10–3–67. Cl. 22.
Melandrea, Inc., New York, N.Y. 840,850, pub. 10–3–67. Cl. 26.
Mennen-Greatbatch Electronics, Inc., Clarence, N.Y. 840,930–1, pub. 10–3–67. Cl. 44.
Merchandising International S.A., Geneva, Switzerland. 840,919, pub. 10–3–67. Cl. 39.
Messe- und Ausstellungs-Gesellschaft m.b.H., Messeplatz, Cologne, Germany. 840 906, pub. 10–3–67. Cl. 38.
Meyer, Leo, Buhl, Baden, Germany. 840,768, pub. 10–3–67. Cl. 16.
Michie, R. D., d.b.a. R. D. Michie Co., Memphis, Tenn. 840,958, pub. 10–3–67. Cl. 46.
Michie, R. D., Co.: *See*—
Michie, R. D.
Mid-American Truck Lines, Inc., Kansas City, Mo. 841,036, pub. 10–3–67. Cl. 105.
Mid-Continent Mfg. Co., Columbus, Ohio. 840,870, pub. 10–3–67. Cl. 26.
Milas, Eugene L., d.b.a. Lengene Typesman, Buffalo, N.Y. 840,849, pub. 10–3–67. Cl. 26.
Millmark Products, Inc., Cincinnati, Ohio. 840,816, pub. 10–3–67. Cl. 22.
Minneapolis-Moline Co.: *See*—
Motec Industries, Inc.
Minnesota Mining & Mfg. Co., St. Paul, Minn. 840,748, pub. 10–3–67. Cl. 12.
Minnesota Mining & Mfg. Co., St. Paul, Minn. 840,935, pub. 8–29–67. Cl. 44.
Misleh, Ruby, Washington, D.C. 723,391, canc. Cl. 100.
Mitsubishi Jukogyo Kabushiki Kaisha, Tokyo, Japan. 840,786, pub. 10–3–67. Cl. 19.

Monarch Wine Co.: *See*—
Monarch Wine Co., Inc.
Monarch Wine Co., Inc., d.b.a. Monarch Wine Co., Brooklyn, N.Y. 840,964, pub. 10–3–67. Cl. 47.
Montres Rolex S.A. (Rolex Uhren AG) (Rolex Watch Co., Ltd.): *See*—
Wilsdorf, Hans.
Moore Burger, Inc., Austin, Tex. 840,992, pub. 10–3–67. Cl. 100.
Motec Industries, Inc., from Minneapolis-Moline Co., Hopkins, Minn. 723,297, canc. Cl. 23.
Motec Industries, Inc., from Minneapolis-Moline Co., Hopkins, Minn. 723,299, canc. Cl. 23.
Mother's Cake & Cookie Co., Oakland, Calif. 840,952, pub. 10–3–67. Cl. 46.
Multiple Realty, Inc., Decatur, Ga. 841,017, pub. 10–3–67. Cl. 101.
Munns Medical Supply Co., Inc., The, Topeka, Kans. 840,847, pub. 10–3–67. Multiple Class (Classes 26, 37, and 44).
NPEA Exhibits, Inc., Cincinnati, Ohio. 841,020, pub. 10–3–67. Cl. 101.
National Air Vibrator Co., Houston, Tex. 841,057. Cl. 23.
National Blank Book Co.: *See*—
National Blank Book Co., Inc.
National Blank Book Co., Inc., from National Blank Book Co., Holyoke, Mass. 840,899, pub. 10–3–67. Cl. 37.
National Can Corp., Chicago, Ill. 840,689, pub. 10–3–67. Cl. 2.
National Dairy Products Corp., Chicago, Ill. 840,942, pub. 10–3–67. Cl. 46.
National Football League, New York, N.Y. 841,001, pub. 10–3–67. Cl. 100.
National Lead Co., New York, N.Y. 840,679–80, pub. 10–3–67. Cl. 1.
National Pencil Co., Shelbyville, Tenn. 840,900, pub. 10–3–67. Cl. 37.
Nethercutt Laboratories, d.b.a. Jac Robaire Cosmetics, Hollywood, Calif. 723,373–5, canc. Cl. 51.
New Yorker Magazine, Inc., The, New York, N.Y. 437,785. ren. 12–19–67. Cl. 38.
Nobelt Co., The: *See*—
Faultless Nightwear Corp. (E. Rosenfeld & Co.).
Norcross, Inc., New York, N.Y. 840 912, pub. 10–3–67. Cl. 38.
North American Food Service Corp., Chicago, Ill. 840,939, pub. 10–3–67. Cl. 46.
Northern Electric Co., Chicago, Ill. 840,808, pub. 10–3–67. Multiple Class (Classes 21, 26, 34, 39, and 40).
Northwest Airlines, Inc., St. Paul, Minn. 841,037, pub. 10–3–67. Cl. 105.
Northwest Paper Co., The, Cloquet, Minn. 840,901, pub. 10–3–67. Cl. 37.
Norwich Pharmacal Co., The, Norwich, N.Y. 431,807, ren. 12–19–67. Cl. 51.
Nugget Distributors' Cooperative of America, Inc., d.b.a. Nugget Distributors of America, Stockton, Calif. 840,717, pub. 10–3–67. Cl. 6.
Nugget Distributors of America: *See*—
Nugget Distributors' Cooperative of America, Inc.
Nu-Lite Corp.: *See*—
El-Tronics, Inc.
Oberti Olive Co.: *See*—
Tri-Valley Growers.
Oil & Gas Supply Co., Houston, Tex. 840,739, pub. 10–3–67. Cl. 12.
Ojibway Press, Inc., Duluth, Minn. 841,009, pub. 10–3–67. Cl. 101.
Old Boone Distillery Co., d.b.a. Rosewood Distillery Co., Louisville, Ky. 840,968, pub. 10–3–67. Cl. 49.
Oneida Ltd., Oneida, N.Y. 840,877, pub. 10–3–67. Cl. 28.
Optex, Inc., d.b.a. Southern Precision Instrument Co., San Antonio, Tex. 840,866–7, pub. 10–3–67. Cl. 26.
Ortho Pharmaceutical Corp., Raritan, N.J. 723,259, canc. Cl. 18.
Oshkosh Motor Truck, Inc.: *See*—
Oshkosh Truck Corp.
Oshkosh Truck Corp., from Oshkosh Motor Truck, Inc., Oshkosh, Wis. 840,787, pub. 10–3–67. Cl. 19.
Outdoor Associates: *See*—
Schlegell, Frederick V.
PRM S.p.A., Milan, Italy. 840,923, pub. 10–3–67. Cl. 42.
Pams, Inc., Dallas, Tex. 840,905, pub. 10–3–67. Cl. 38.
Parke, Davis & Co., Detroit, Mich. 840,778, pub. 10–3–67. Cl. 18.
Parke, Davis & Co., Detroit, Mich. 840,783, pub. 10–3–67. Cl. 18.
Parker Pen Co., The, Janesville, Wis. 840,897, pub. 10–3–67. Cl. 37.
Passini, Attilio, from Passini Cheese Co., Inc., Plymouth, Wis. 840,956, pub. 10–3–67. Cl. 46.
Passini Cheese Co., Inc.: *See*—
Passini, Attilio.
Pelaez Music Co., Los Angeles, to Azteca Record Co., Burbank, Calif. 432,998, ren. 12–19–67. Cl. 36.
Penney, J. C., Co., New York, N.Y. 434,349, ren. 12–19–67. Cl. 39.
Pennsalt Chemicals Corp.: *See*—
Pennsylvania Salt Mfg. Co., The.
Pennsylvania Salt Mfg. Co., The, to Pennsalt Chemicals Corp., Philadelphia, Pa. 434,653, ren. 12–19–67. Cl. 6.
Pennsylvania Salt Mfg. Co., The, to Pennsalt Chemicals Corp., Philadelphia, Pa. 435,095, ren. 12–19–67. Cl. 6.
Pennsylvania Sling Co., Pittsburgh, Pa. 840,721, pub. 10–3–67. Cl. 7.
Peoples Drug Stores, Inc., to Peoples Drug Stores, Inc., d.b.a. The Associated Products Co., Washington, D.C. 239,254, ren. 12–19–67. Cl. 51.
Personnel Corp., The, Seattle, Wash. 841,018, pub. 10–3–67. Cl. 101.
Petrolclor Construction & Finance Corp., Panama City, Panama. 840,990, pub. 10–3–67. Cl. 100.
Pfizer, Chas., & Co., Inc.: *See*—
Bengue, Inc.
Pfizer, Chas., & Co., Inc., New York, N.Y. 840,709, pub. 10–3–67. Cl. 6.
Pfizer, Chas., & Co., Inc., New York, N.Y. 840,719, pub. 10–3–67. Cl. 6.
Pfizer, Chas., & Co., Inc., New York, N.Y. 840,784–5, pub. 10–3–67. Cl. 18.
Pfizer, Chas., & Co., Inc., New York, N.Y. 840,980, pub. 10–3–67. Cl. 51.
Phillips' Patents, Ltd., London, England. 237,533, ren. 12–19–67. Cl. 39.
Picker X-Ray Corp., White Plains, N.Y. 840,710, pub. 10–3–67. Cl. 26.
Piedmont Mill Supply Co., d.b.a. Kern Roll & Rubber Co., Salisbury, N.C. 840,835, pub. 8–29–67. Cl. 23.
Pincus, Lester, Shoe Corp., New York, N.Y. 840,918, pub. 10–3–67. Cl. 39.
Pittsburgh Plate Glass Co., Pittsburgh, Pa. 840,684, pub. 10–3–67. Cl. 1.
Polyflo, Inc., from Polyflo, Inc., San Rafael, Calif. 840,865, pub. 10–3–67. Cl. 26.
Popped-Right Corn Co., Marion, Ohio. 840,953, pub. 10–3–67. Cl. 46.
Practical Mfg. Co.: *See*—
Practical Products Co.
Practical Products Co., Minneapolis, Minn., to Practical Mfg. Co., New York, N.Y. 436,036, ren. 12–19–67. Cl. 52.
Precision Valve Corp., Yonkers, N.Y. 840,686, pub. 10–3–67. Multiple Class (Classes 2 and 13).
Preferred Utilities Mfg. Corp., Danbury, Conn. 841,060. Cl. 34.
Pride, Thomas, Mills, Inc., Atlanta, Ga. 840,694, pub. 10–3–67. Cl. 3.
Process Chemicals Corp., Chicago, Ill. 840,771, pub. 10–3–67. Cl. 16.
Professional Coffee Shoppe: *See*—
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Purex Corp., Ltd.: *See*—
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Quaker Oats Co., The, Chicago, Ill. 840,955, pub. 10–3–67. Cl. 46.
Quarzlampen Gesellschaft mit beschrankter Haftung, Hanan, Germany. 840,857, pub. 10–3–67. Cl. 26.
Ramey Self Loaders, Inc., Roseburg, Oreg. 841,058. Cl. 23.
Reed & Barton, Taunton, Mass. 840,697, pub. 10–3–67. Cl. 4.
Reeves Broadcasting Corp., New York, N.Y. 840,809, pub. 10–3–67. Multiple Class (Classes 21, 26, and 36).
Rejuvene Inc., Minneapolis, Minn. 723,334, canc. Cl. 44.
Reliance Floors Corp., New York, N.Y. 840,740, pub. 10–3–67. Cl. 12.
Reynolds Metals Co., Richmond, Va. 840,741, pub. 10–3–67. Cl. 12.
Rhodes, James H., & Co., Chicago, Ill. 840,698, pub. 10–3–67. Cl. 4.
Rhodes, William, Ltd., Leeds, England. 435,608, ren. 12–19–67. Cl. 32.
Robertson Photo-Mechanix, Inc., Des Plaines, Ill. 840,862, pub. 10–3–67. Cl. 26.
Ronson Corp., Woodbridge, N.J. 840,888, pub. 10–3–67. Cl. 34.
Ronthor Reiss Corp., New York, N.Y. 840,889, pub. 10–3–67. Cl. 35.
Rosewood Distillery Co.: *See*—
Old Boone Distillery Co.
Royal Inns of America, Inc., La Mesa, Calif. 840,999, pub. 10–3–67. Cl. 100.
Rozinsky's, Inc., Hartford, Conn. 840,879, pub. 10–3–67. Cl. 28.
SW Industries, Inc., Newton, Mass. 840,813, pub. 10–3–67. Cl. 22.
SW Industries, Inc., Newton, Mass. 840,824–5, pub. 10–3–67. Cl. 22.
Safeco: *See*—
Safeguard Business Systems Corp.
Safeguard Business Systems Corp., d.b.a. Safeco, Lansdale, Pa. 841,022, pub. 10–3–67. Cl. 101.
St. Joe Paper Co., Jacksonville, Fla. 840,693, pub. 10–3–67. Cl. 2.
St. Louis National Baseball Club, Inc., St. Louis, Mo. 841,051, pub. 10–3–67. Cl. 107.
Salerno-Megowen Biscuit Co., Chicago, Ill. 434,589, ren. 12—9–67. Cl. 46.
Salisbury Blending Co.: *See*—
Stenham, H., Ltd.
Samules, Charlotte, Associates, New York, N.Y. 723,413, canc. Cl. 107.
Sanford Ink Co., Bellwood, Ill. 840,898, pub. 10–3–67. Cl. 37.
Schreffler, Robert Z., d.b.a. Conservative National Party of The United States of America, Chester, Va. 840,989, pub. 10–3–67. Cl. 100.
Scientific Anglers, to Scientific Anglers, Inc., Midland, Mich. 434 659–60, ren. 12–19–67. Cl. 6.
Scientific Anglers, Inc.: *See*—
Scientific Anglers.
Scientific-Atlanta, Inc., Doraville, Ga. 840,685, pub. 10–3–67. Cl. 2.
Scott Paper Co., Philadelphia, Pa. 723,317, canc. Cl. 37.
Scott, Rufus W., Co., New York, N.Y., to Camp & McInnes, Inc., Reading, Pa. 236,347, ren. 12–19–67. Cl. 39.
Seamless Rubber Co., The, New Haven, Conn. 723,291–2, canc. Cl. 22.
Sears, Roebuck & Co.: *See*—
Shu-Stiles, Inc.

Sellon, Inc., Toledo, Ohio, from Lockwood Grader Corp., Gering, Nebr. 840,766, pub. 10–3–67. Cl. 14.
Seltzer, Jane E., d.b.a. American Cultural Society, Wilmington, Del. 840,908, pub. 10–3–67. Cl. 38.
Seminole Products Co., Inc., Glendora, N.J. 840,726–7, pub. 10–3–67. Cl. 9.
Sherwin-Williams Co., The, Cleveland, Ohio. 840,769, pub. 10–3–67. Cl. 16.
Shu-Stiles, Inc., St. Louis, Mo., to Sears, Roebuck & Co., Chicago, Ill. 435,314, ren. 12–19–67. Cl. 39.
Sickroom Service: *See*—
Accepted Formula Laboratories, Inc.
Sierracin Corp., The, Burbank, Calif. 723,275, canc. Cl. 19.
Skandinavisk Tobakskompagni A/S, Herlev, Denmark. 840,775, pub. 10–3–67. Cl. 17.
Slide-A-Song Co., Phoenix, Ariz. 840,913, pub. 10–3–67. Cl. 38.
Smith, Chris, & Sons Boat Co., Algonac, Mich., to Chris-Craft Industries, Inc., Pompano Beach, Fla. 234,707, ren. 12–19–67. Cl. 19.
Smokers Anonymous, Inc., Maynard, Mass. 840,995, pub. 10–3–67. Cl. 100.
Smoot, Ernest C., Jr., d.b.a. Trendnews, Richmond, Va. 841,007, pub. 10–3–67. Cl. 101.
Snyder, H. E., Cigar Co., Scranton, Pa. 840,774, pub. 10–3–67. Cl. 17.
Societa Metallurgica Italiana, Florence, Italy. 840,762–5, pub. 10–3–67. Cl. 14.
Societe d'Electro-Chimie, d'Electro-Metallurgie et des Acieries Electriques d'Ugine, Paris, France. 723,226, canc. Cl. 1.
Soiltest, Inc., Evanston, Ill. 840,853, pub. 10–3–67. Cl. 26.
Sonotone Corp., Elmsford, N.Y. 840,932, pub. 10–3–67. Cl. 44.
South Shore Packing Corp., The, Vermilion, Ohio. 434,540, ren. 12–19–67. Cl. 46.
Southern Precision Instrument Co.: *See*—
Optex, Inc.
Sports Car Club of America, Inc., Westport, Conn. 841,053–5, pub. 10–3–67. Cl. B.
Sports Car Racing Association of the Monterey Peninsula, Monterey, Calif. 841,043, pub. 10–3–67. Cl. 107.
Spotnails, Inc., Long Island City, N.Y. 840,757, pub. 10–3–67. Cl. 13.
Stamina Mills, Inc., New York, N.Y. 840,925–7, pub. 10–3–67. Cl. 42.
Standard Oil Co. of California, San Francisco, Calif. 840,907, pub. 10–3–67. Cl. 38.
Standard Statistics Co., Inc., New York, N.Y. 840,904, pub. 10–3–67. Cl. 38.
Stauffer Chemical Co., New York, N.Y. 840,703, pub. 10–3–67. Multiple Class (Classes 6, 10, 18, and 46).
Stenham, H., Ltd., d.b.a. Salisbury Blending Co., Covent Garden, London, England. 840,967, pub. 8–22–67. Cl. 49.
Sterling Drug, Inc., New York, N.Y. 723,261–2, canc. Cl. 18.
Storz Broadcasting Co., Inc., Kansas City, Mo. 841,006, pub. 10–3–67. Cl. 101.
Stratford Retreat House, White Plains, N.Y. 840,798–9, pub. 10–3–67. Cl. 21.
Straus-Frank Co., San Antonio, Tex. 841,010, pub. 10–3–67. Cl. 101.
Stress Relief Engineering Co., Costa Mesa, Calif. 840,828, pub. 10–3–67. Cl. 23.
Sunbeam Corp., Chicago, Ill. 723,277, canc. Cl. 21.
Supercussion Drills, Inc., San Antonio, Tex. 841,029, pub. 10–3–67. Cl. 103.
Syndicat du Veritable Gruyere de Comte, Poligny, Jura, France. 840,944, pub. 10–3–67. Cl. 46.
Talens & Son, Inc., Union, N.J. 840 772, pub. 10–3–67. Cl. 16.
Tam Enterprises, Beverly Hills, Calif. 841,045, pub. 10–3–67. Cl. 107.
Technicon Corp., from Technicon Instruments Corp., Ardsley, N.Y. 840 851, pub. 10–3–67. Cl. 26.
Technicon Instruments Corp.: *See*—
Technicon Corp.
Tetra Kraft Werke, Melle, Germany. 840,718, pub. 10–3–67. Cl. 6.
Tetra Kraft Werke, Melle, Germany. 840,729, pub. 10–3–67. Cl. 10.
Texaco Inc., New York, N.Y. 840,767, pub. 10–3–67. Cl. 15.
Thee-Kay Corp., d.b.a. Kathee's Sunlight Kitchens, San Gabriel, Calif. 723 351, canc. Cl. 46.
Thomas, J. E., Co.: *See*—
Thomas, James E., Jr.
Thomas, James E., Jr., d.b.a. J. E. Thomas Co., Memphis, Tenn. 840,827. pub. 10–3–67. Cl. 23.
Thomas, Richard, & Baldwins, Ltd.: *See*—
Baldwins, Ltd.
3R% Calculator: *See*—
Mawhinney, Max M.
Timber Engineering Co., Washington, D.C. 840,747, pub. 10–3–67. Cl. 12.
Timbre-Tone: *See*—
Gavel, Priscilla.
Towle Mfg. Co., Newburyport, Mass. 840,876, pub. 10–3–67. Cl. 28.
Towne, Paulsen, & Co., Inc.: *See*—
Boyle & Co.
Trans-Dapt of Calif., Long Beach, Calif. 840,790, pub. 10–3–67. Multiple Class (Classes 19 and 23).
Trendnews: *See*—
Smoot, Ernest C., Jr.
Trimtex, Inc., Williamsport, Pa. 840,797, pub. 8–22–67. Cl. 21.
Tri-Valley Growers, d.b.a. Oberti Olive Co., San Francisco, Calif. 840,949, pub. 10–3–67. Cl. 46.
Tubbs Cordage Co., San Francisco, Calif. 436,047, ren. 12–19–67. Cl. 7.
Twi-Ro-Pa-Mills Agency, Inc., New Orleans, La. 840,722, pub. 10–3–67. Cl. 7.
Typesman, Lengene: *See*—
Milas, Eugene L.
U.S.S. Arizona Memorial Foundation, Inc., The, Phoenix, Ariz. 723,415, canc. Cl. 200.
Unexcelled Chemical Corp.: *See*—
Colgate-Palmolive Co.
Unilever, Ltd., Port Sunlight, England. 840,985, pub. 10–3–67. Cl. 51.
Uni-Roof Corp., Marion, Ind. 841,032, pub. 10–3–67. Cl. 103.
U.S. Nutrition Products Co., Inc., Yonkers, N.Y. 723,348, canc. Cl. 46.
United States Rubber Co., New York, N.Y. 840,890, pub. 10–3–67. Cl. 35.
Universal Lamp Co., Inc., Chicago, Ill. 840,801, pub. 10–3–67. Cl. 21.
Urethane Corp. of Calif., San Francisco, Calif. 723,223, canc. Cl. 1.
Vernat, Inc., New York, N.Y. 840,963, pub. 10–3–67. Cl. 47.
Villager, Inc., The, Philadelphia, Pa. 841,021, pub. 10–3–67. Cl. 101.
Villiger Sohne G.m.b.H., Tiengen, Oberrhein, Germany. 840,776, pub. 10–3–67. Cl. 17.
Vintners of Eden Roc, The: *See*—
Gallo, E. & J., Winery.
Vitamin Council Inc., St. Paul, Minn. 723,357, canc. Cl. 46.
Von Schlegell, Frederick, d.b.a. Outdoor Associates, Los Angeles, Calif. 840,822, pub. 10–3–67. Cl. 22.
WMI Corp., Evanston, Ill. 840,893, pub. 10–3–67. Cl. 36.
Wallace, R., & Sons Mfg. Co., Wallingford, Conn., to Hamilton Watch Co., Lancaster, Pa. 30,691, ren. 12–19–67. Cl. 28.
Wallace & Tiernan, Inc.: *See*—
Hardesty Chemical Co., Inc.
Walle-Hawk Corp., Burlington, Vt. 840,972, pub. 10–3–67. Cl. 50.
Waltham Watch Co., Chicago, Ill. 840,878, pub. 10–3–67. Cl. 28.
Warner Co.: *See*—
American Lime & Stone Co.
Warrenton Restaurant, Inc.: *See*—
Your Father's Mustache International, Inc.
Water Bonnet, Inc., Orlando, Fla. 840,789, pub. 10–3–67. Cl. 19.
Weight Watchers International, Inc., Forest Hill, N.Y. 840,874, pub. 10–3–67. Cl. 26.
Welch Scientific Co., The, Skokie, Ill. 840,842, pub. 10–3–67. Cl. 26.
Wenzel, H., Tent & Duck Co., St. Louis, Mo. 723,218, canc. Cl. 1.
Wenzel, H., Tent & Duck Co., St. Louis, Mo. 840,788, pub. 8–29–67. Cl. 19.
Western Auto Supply Co., Kansas City, Mo. 840,735, pub. 10–3–67. Cl. 12.
Western Auto Supply Co., Kansas City, Mo. 840,882, pub. 10–3–67. Cl. 31.
Western Union Telegraph Co., The, New York, N.Y. 841,033, pub. 10–3–67. Cl. 104.
White & Hallock, Inc., Muskegon, Mich., to American Home Products Corp., New York, N.Y. 237,090, ren. 12–19–67. Cl. 23.
Whitehurst Distributing Co., Los Angeles, Calif. 723,267, canc. Cl. 18.
Wickes Corp., The, Saginaw, Mich. 840,806, pub. 10–3–67. Cl. 21.
Will Scientific, Inc., Rochester, N.Y. 840,802, pub. 10–3–67. Cl. 21.
Wilsdorf, Hans, Bienne, Switzerland, to Montres Rolex S.A. (Rolex Uhren AG) (Rolex Watch Co., Ltd.). 239,383, ren. 12–19–67. Cl. 27.
Xerox Corp., Rochester, N.Y. 840,896, pub. 7–25–67. Cl. 37.
Young's Market Co., Los Angeles, Calif. 840,960, pub. 10–3–67. Cl. 46.
Your Father's Mustache International, Inc., from Warrenton Restaurant, Inc., New Haven, Conn. 841,046, pub. 10–3–67. Cl. 107.
Zobrist, J. C., Co., Charleston, W. Va. 840,988, pub. 11–22–66. Cl. 52.

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U.S. DEPARTMENT OF COMMERCE
OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE
December 26, 1967 Volume 845 Number 4

PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of November 1967

Examiner affirmed	188
Examiner affirmed in part	36
Examiner reversed	50
Total	274

Search Room Hours

The move of the Public Search Room to Crystal Plaza is now underway and should be completed sometime in January.

Effective Jan. 2, 1968, the Public Search Room at Crystal Plaza will be open from 8 a.m. to 8 p.m. on workdays; it will not be open on Saturdays.

RICHARD A. WAHL,
Assistant Commissioner.

Nov. 30, 1967.

Disclaimer

3,196,620.—*Thore M. Elfving* and *Sven Thomas Elfving*, San Mateo, Calif. THERMOELECTRIC COOLING SYSTEM. Patent dated July 27, 1965. Disclaimer filed Sept. 29, 1967, by the assignee, *Thore M. Elfving*.

Hereby enters this disclaimer to claims 1, 2, 3, 7, 9, 10, 11, 13, 14, 15, 17, 18, 25, and 26 of said patent.

Abstracts

Abstracts appearing in the OFFICIAL GAZETTE, beginning January 2, 1968, in accordance with the notice dated September 25, 1967 (843 O.G. 747, October 17, 1967) may be distinguished from claims, published therein, by the fact that no number precedes the text of the abstract, whereas a bold number precedes each claim.

New First Action Procedure

Effective January 2, 1968, a new practice involving the use of a revised form for the first page of the first Office Action will be instituted. The use of this new form will introduce some new practices and procedures and will terminate the "Interview Practice Preliminary to Notice Under 35 U.S.C. 132" announced August 1, 1967, at 841 O.G. 1.

The heading of the revised form containing the address and application identification will have a completely revised format to facilitate future pre-action addressing by automatic typewriter.

Under the new procedure, the Examiner will signify on the revised form certain information including the period set for response, any attachments, and, in a "summary of action," the position taken on all claims.

The new procedure will also allow the Examiner, in the exercise of his professional judgment, to indicate that a discussion with applicant's representative may result in agreements whereby the application may be placed in condition for allowance and that the Examiner will telephone the representative within about two weeks. Under this practice the applicant's representative can be adequately prepared to conduct such a discussion. Any resulting amendment may be made either by the applicant's attorney or agent or by the Examiner in an Examiner's Amendment. It should be recognized that when extensive amendments are necessary it would be preferable if they were filed by the attorney or agent of record, thereby reducing the professional and clerical workload in the Patent Office and also providing the file wrapper with a better record, including applicant's arguments for allowability as required by Rule 111.

RICHARD A. WAHL,
Assistant Commissioner.

Dec. 11, 1967.

Change of Price—Official Gazette

Effective with the first issue in 1968, the subscription price of the above publication will be changed as follows:

Old Rate

$50.00 per year domestic
12.00 additional for foreign mailing
1.25 per single copy

New Rate

$67.00 per year domestic
15.00 additional for foreign mailing
1.50 per single copy

Back issues will not be furnished.

CARPER W. BUCKLEY,
Superintendent of Documents.

New Subscription

OFFICIAL GAZETTE—PATENTS ABSTRACTS SECTION

We have been requested by the U.S. Patent Office to place on sale, as a separate subscription item, the patent section of the OFFICIAL GAZETTE.

It will be issued weekly and the subscription price will be $27.00 domestic for a six month period, $7.00 additional for foreign mailing and $1.25 per single copy.

This trial subscription service is for a period of six months only, January through June 1968. Regardless of date of entry, the full subscription price will be charged with no back issues furnished.

CARPER W. BUCKLEY,
Superintendent of Documents.

New Applications Received During November 1967

Patents	7454
Designs	375
Plant Patents	4
Reissues	24
Total	7857

Issue—December 26, 1967

Patents	1233	No. 3,359,567 to No. 3,360,799, incl.
Designs	78	No. 209,654 to No. 209,731, incl.
Total	1311	

Manual of Classification

The July 1967 Reprint (incorporating Replacement Pages through #19) is in the process of being printed. The subscription price effective with this reprint has been changed as follows:

Old Rate

$8.50 domestic
2.00 additional for foreign mailing

New Rate

$11.00 domestic
3.00 additional for foreign mailing

Back issues will be furnished but single copies will not be sold.

Mail List Section will send renewal notices to the present subscribers for an additional $9.00 domestic and $2.00 additional for foreign mailing to be effective with Replacement Pages #20.

CARPER W. BUCKLEY,
Superintendent of Documents.

Adverse Decisions in Interferences

In the designated interferences involving the indicated claims of the following patents final decisions have been rendered that the respective patentees were not the first inventors with respect to the claims listed.

Patent No. 3,043,676, A. J. Lemin, N,N-DIALKENYL-α,α-DIPHENYL ACETAMIDES AS HERBICIDES, decided Aug. 31, 1967, Interference No. 94,524, claim 10.

Patent No. 3,055,006, A. W. Dreyfoos, Jr., R. V. Mazza, W. A. Radke, and A. A. Staley, HIGH DENSITY, ERASABLE OPTICAL IMAGE RECORDER, decided Aug. 9, 1967, Interference No. 94,031, claims 1, 2, 3, 9, 10 and 11.

Patent No. 3,055,066, A. W. Dreyfoos, Jr., R. V. Mazza, W. A. Radke, and A. A. Staley, HIGH DENSITY, ERASABLE OPTICAL IMAGE RECORDER, decided Aug. 15, 1967, Interference No. 94,724, claim 8.

Patent No. 3,138,754, C. E. Roessler, Jr., PRINTED CIRCUIT FORMULA CARD SYSTEMS AND THEIR COMPONENTS, decided Nov. 8, 1967, Interference No. 95,138, claims 5 and 6.

Patent No. 3,164,814, E. J. Hebert, Jr., MAGNETIC DEVICES, decided Nov. 13, 1967, Interference No. 94,928, claims 3, 4, 5, 6 and 9.

Patent No. 3,189,352, F. T. Scalera, ANTI-SKATE DEVICE, decided Sept. 15, 1967, Interference No. 95,811, claims 1, 3 and 8.

Patent No. 3,190,830, J. Rowland and W. N. N. Knight, TWO STAGE HYDROGENATION PROCESS, decided Aug. 31, 1967, Interference No. 95,180, claims 1, 2, 5, 6, 7 and 10.

Patent No. 3,191,008, W. G. Wadey, TABULATING CARD POSITION SENSING DEVICE, decided Oct. 26, 1967, Interference No. 95,658, claims 1 and 4.

Patent No. 3,207,598, C. E. Berthold, PROCESS FOR PREPARING CESIUM AND ALLOYS THEREOF, decided Oct. 18, 1967, Interference No. 95,782, claims 1, 4, 6, 8, 9, 10 and 11.

Patent No. 3,211,122, C. R. Barlow, POWER OPERATED HATCH COVER ASSEMBLY, decided Oct. 12, 1967, Interference No. 95,882, claims 1, 2, 4, 5, 6 and 7.

Patent No. 3,219,698, B. D. Halpern and J. Dickstein, POLYHALOXYLENOL QUATERNARY AMMONIUM SALTS, decided Oct. 13, 1967, Interference No. 95,524, claims 1 and 2.

Patent No. 3,243,681, A. C. Dannettell, TRANSISTORIZED SPEED CONTROL FOR INDUSTRIAL TRUCK, decided Oct. 19, 1967, Interference No. 95,647, claims 6, 9, 10, 11, 12 and 13.

Patent No. 3,252,516, K. Leutwyler, HYDRAULICALLY OPERATED WELL PACKER APPARATUS, decided Nov. 14, 1967, Interference No. 95,763, claim 12.

PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner

CONDITION OF PATENT APPLICATIONS AS OF OCTOBER 23, 1967

PATENT EXAMINING OPERATIONS AND GROUPS	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
CHEMICAL EXAMINING OPERATION—I. MARCUS, Director.		
GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—R. L. CAMPBELL, Manager. Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices.	6-3-64	5-31-62
GENERAL ORGANIC CHEMISTRY, GROUP 120—M. STERMAN, Manager. Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	8-26-64	7-23-62
HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING; GROUP 140—L. J. BERCOVITZ, Manager. Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping and Treating Processes.	2-3-65	5-14-62
COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—J. R. LIBERMAN, Manager. Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography.	8-7-64	6-28-62
SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Manager. Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Gas; Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	7-7-64	7-23-62
ELECTRICAL EXAMINING OPERATION—N. H. EVANS, Director.		
INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—E. J. SAX, Manager. Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous.	10-2-64	9-6-63
SECURITY, GROUP 220—S. BOYD, Manager. Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedoes, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	3-24-66	4-8-64
INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—M. L. LEVY, Manager. Communications; Multiplexing Techniques; Facsimile; Data Processing, Computation and Conversion; Storage Devices and Related Arts.	3-13-64	3-15-62
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—W. L. CARLSON, Manager. Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring.	3-9-64	3-5-62
PHYSICS, GROUP 280—R. L. EVANS, Manager. Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	2-3-65	6-24-63
DESIGNS, GROUP 290—S. BOYD, Manager. Industrial Arts; Household, Personal and Fine Arts.	5-9-66	10-23-65

Total number of pending applications (excluding Designs)	181, 451
Total number of Design applications pending	4, 108
Total number of applications awaiting action (excluding Designs)	130, 272
Total number of Design applications awaiting action	2, 069
Date of oldest new application awaiting action	March 9, 1964
Date of oldest amended application awaiting action	March 5, 1962

EXPIRATION OF PATENTS

The patents within the range of numbers indicated below expire during December 1967, except those which may have been extended under the provisions of the Veterans Patent Extension Act (64 Stat. 316 as amended by 66 Stat. 321) and those which may have expired earlier due to shortened terms under the provisions of Public Law 690. A list of Veterans' patents which have been extended appears in the *Annual Index of Patents—1965*.

Patents..... Numbers 2,532,276 to 2,536,015, inclusive
Plant Patents..... Numbers 996 to 1,000, inclusive

PATENT EXAMINING OPERATIONS AND GROUPS (Continued)

	Actual Filing Date of Oldest Case Awaiting Action	
	New	Amended
MECHANICAL EXAMINING OPERATION—F. H. BRONAUGH, Director.		
HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Manager. Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid Flexible and Special Receptacles and Packages.	1-28-66	10-16-64
MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—N. BERGER, Manager. Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders; Woodworking; Tools; Cutlery; Jacks; Fasteners.	8-12-65	3-18-63
AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, Manager. Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Toiletry; Printing; Typewriters; Stationery; Information Dissemination.	5-24-65	4-30-63
HEAT AND POWER ENGINEERING, GROUP 340—C. F. GAREAU, Manager. Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission.	3-9-66	4-19-65
FIXED CONSTRUCTIONS, SUPPORTS, AND HARDWARE, GROUP 350—T. J. HICKEY, Manager. Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports; Cabinet Structures.	2-23-66	8-12-63
TEXTILES, CLEANING AND FLUID HANDLING, GROUP 360—W. S. COLE, Manager. Fluid Handling, including Valves; Conduits; Filling Receptacles; Lubrication; Joint Packing; Bathroom Fixtures; Centrifugal Separators; Cleaning; Coating; Pressing; Agitating; Foods; Textiles; Apparel and Shoes and their Manufacture; Sewing Machines; Winding and Reeling.	10-4-65	11-8-62

DECISIONS IN PATENT AND TRADEMARK CASES

U.S. Court of Customs and Patent Appeals

STONECUTTER MILLS CORPORATION *v.* UNIVERSAL OVERALL COMPANY

UNIVERSAL OVERALL COMPANY *v.* STONECUTTER MILLS CORPORATION

Nos. 7774 and 7775. *Decided June 22, 1967*

[54 CCPA —; 379 F.2d 979; 154 USPQ 101]

1. TRADEMARK—CONFUSING SIMILARITY—PUBLICATION OF MARK—LANHAM ACT, SECTION 12(a).

"After initially refusing Universal's application on Stonecutter's Registration No. 422,633, the Trademark Examiner authorized publication of the application for opposition. Since section 12(a) of the Lanham Act only provides for publication when it appears that the applicant is entitled to the registration sought, it is thus apparent that the Examiner had concluded that there was no likelihood that confusion would result from Universal's use of the mark 'Stone Cutter' on the goods specified in the application."

2. SAME—OPPOSITION—CONFUSING SIMILARITY.

"Consideration of the record here relative to the use of the respective marks as well as the Stonecutter registration leads us to that same conclusion [that there was no likelihood of confusion]. It is true that the fact that Universal uses its mark as two words while the competing mark 'Stonecutter' is a single word is not in itself sufficient to avoid likelihood of confusion. However, the specific goods are also different and there is a history of long concurrent use of the marks by both parties without any evidence of actual confusion."

3. SAME—SAME—SAME—SAME.

"It has been observed too often to require citation of authority that the question of likelihood of confusion is one which must be determined on the facts of each particular case. Here, witnesses for both parties, intimately associated with the operation of the respective businesses, testified that they knew of no case of actual confusion being reported despite the parties having used the marks on goods widely available throughout the United States for a period of approximately forty years. It is true that evidence of actual confusion is not necessary to sustain a finding of likelihood of confusion. However, on the record before us we can reach no other conclusion than that neither the converters who purchase the bulk of Stonecutter's goods nor consumers who might purchase its fabrics in the regular channels would be likely to be confused or deceived by the use of 'Stone Cutter' on completed garments such as Universal's overalls, coveralls, shopcoats and dungarees."

4. SAME—GOODS—CONFUSING SIMILARITY—SAME DESCRIPTIVE PROPERTIES—LANHAM ACT.

"Stonecutter urges that wearing apparel and piece goods are goods of the same descriptive properties, citing several cases including *Vanity Fair Mills, Inc.* v. *Pedigree Fabrics, Inc.*, 34 CCPA 1043, 161 F.2d 226, 73 USPQ 438, and *Goodall-Sanford, Inc.* v. *J. M. Wood Mfg. Co., Inc.*, 100 USPQ 256 (Comr. 1954). However, those cases arose under the 1905 act which made whether the goods were 'of the same descriptive properties' a primary criterion in determining likelihood of confusion. That question is not controlling under the Lanham Act where the issue is solely whether the respective marks used on the goods of the parties would result in a likelihood of confusion."

5. SAME—RES JUDICATA—CANCELLATION AND OPPOSITION.

"It is also argued by Stonecutter that the doctrines of res judicata and equitable estoppel, based on Cancellation No. 6771, compel a decision in its favor here. The Board correctly overruled that contention, pointing out that the issue in the previous action was Stonecutter's right to maintain its present registration of 'Stonecutter' whereas the issue here is Universal's right to register 'Stone Cutter.' As observed by the Board, the Assistant Commissioner made only such determinations as were necessary to settle the cancellation question. None of those determinations is conclusive of the issue here."

APPEAL from the Patent Office. Opposition No. 40,441.

AFFIRMED.

Edward L. Merrigan (*Gadsby, Maguire, Hannah & Merrigan, Weil, Gotshal & Manges*, of counsel) for Stonecutter Mills Corporation.

Norman Lettvin, George A. Arkwright (*James F. Davis, Bair, Freeman & Molinare*, of counsel) for Universal Overall Company.

Before WORLEY, *Chief Judge*, and RICH, SMITH, and ALMOND, *Associate Judges*

WORLEY, *Chief Judge*, delivered the opinion of the court.

These are cross appeals from a decision of the Trademark Trial and Appeal Board, 145 USPQ 562, dismissing an opposition by Stonecutter Mills Corporation (Stonecutter) to an application filed December 13, 1954, by Universal Overall Company (Universal) to register "Stone Cutter" for overalls, coveralls, shopcoats and dungarees, alleging use of the mark since January 1926.

Registration was refused by the Examiner on Registration No. 422,633, issued August 6, 1946, to Stonecutter for the mark "Stonecutter" for piece goods of rayon, wool and/or cotton. Failing to convince the Examiner that the differences between the marks and the goods of the application and of Stonecutter's registration were sufficient to obviate likelihood of confusion, Universal petitioned to cancel the cited registration. That petition was denied in Cancellation No. 6771, the final decision being that of the Assistant Commissioner, 121 USPQ 605, petition for reconsideration denied, 122 USPQ 324.[1]

Universal then filed an amendment to convert the application to one for concurrent registration. The Examiner refused conversion on the ground that use of the marks by the parties in the same territory would be likely to cause confusion. Universal withdrew its request and reargued the merits of the application as originally filed. Subsequently the application was published for opposition, and Stonecutter then filed the notice of opposition resulting in the present proceedings.

The opposition is based on Stonecutter's assertion of (1) ownership of aforementioned Registration No. 422,633, (2) use of "Stonecutter Mills" as part of its trade name since organization in 1921 in the manufacture and sale of piece goods of rayon, wool, cotton and other manufactured fibers, and (3) use of "Stonecutter" as a trademark for such goods. Stonecutter also urges

> • • • the respective goods of opposer and applicant are so closely related in respect to use and purchaser-requirements and the channels of trade through which they move, that confusion in the trade is likely to arise by reason of concurrent use of their respective identical trademarks by opposer and applicant, to the damage of opposer.

The Board decided that Stonecutter's rights in the term "Stonecutter" are superior to those of Universal but found that Stonecutter is estopped by reason of laches and acquiescence from asserting likelihood of confusion or that it would be damaged by the registration sought by Universal.

Stonecutter's appeal is based on its dissatisfaction with the Board's dismissal of the opposition. Universal, although not dissatisfied with the Board's ultimate conclusion, cross appealed, advancing the contention that the opposition should also be dismissed for reasons other than that relied on by the Board.

[1] In taking that action, the Assistant Commissioner stated: "The record indicates, however, that there has been long concurrent use by the parties on specifically different goods without any evidence of confusion, and it may be that petitioner would, in a proper case, be entitled to concurrent registration, but that question is not here to be decided."

The record here includes testimony taken by the parties in Cancellation 6771. The parties also took additional testimony with that for Stonecutter being refused consideration by the Board on the ground that it was improper rebuttal testimony. Although Stonecutter has questioned the propriety of such refusal, the matter need not be considered since the disputed testimony is not such as would affect our decision here.

We are satisfied from the record that the Board did not err in dismissing the opposition. However, we predicate our conclusion on somewhat broader grounds than were relied on by the Board. It seems to us that the question of likelihood of confusion under section 2(d) of the Lanham Act is decisive. On that question, Universal points to the statement of the Assistant Commissioner in Cancellation 6771 regarding "long concurrent use" of the marks "on specifically different goods without any evidence of confusion." Stonecutter argues that the opposition must be sustained because the two marks applied to the goods of the parties "are likely to cause confusion, mistake and deception," paraphrasing the language of section 2(d).

[1] After initially refusing Universal's application on Stonecutter's Registration No. 422,633, the Trademark Examiner authorized publication of the application for opposition. Since section 12(a) of the Lanham Act only provides for publication when it appears that the applicant is entitled to the registration sought, it is thus apparent that the Examiner had concluded that there was no likelihood that confusion would result from Universal's use of the mark "Stone Cutter" on the goods specified in the application.

[2] Consideration of the record here relative to the use of the respective marks as well as the Stonecutter registration leads us to that same conclusion. It is true that the fact that Universal uses its mark as two words while the competing mark "Stonecutter" is a single word is not in itself sufficient to avoid likelihood of confusion. However, the specific goods are also different and there is a history of long concurrent use of the marks by both parties without any evidence of actual confusion.

Thus Universal has used "Stone Cutter" on finished work garments such as overalls since 1926. Although the designation of goods in the application is not limited to overalls, it is limited to work garments or garments closely related thereto.

Although Stonecutter has since at least about 1945 supplied users of its goods, on occasion, with tags to place on finished garments or articles to indicate that they are made from "Stonecutter" fabrics, the merchandise that it sells and controls is the fabric and not the finished articles. The principal purchasers of Stonecutter's fabrics are converters who process and supply them to manufacturers of finished articles sold to the public.

[3] It has been observed too often to require citation of authority that the question of likelihood of confusion is one which must be determined on the facts of each particular case. Here, witnesses for both parties, intimately associated with the operation of the respective businesses, testified that they knew of no case of actual confusion being reported despite the parties having used the marks on goods widely available throughout the United States for a period of approximately forty years. It is true that evidence of actual confusion

is not necessary to sustain a finding of likelihood of confusion. However, on the record before us we can reach no other conclusion than that neither the converters who purchase the bulk of Stonecutter's goods nor consumers who might purchase its fabrics in the regular channels would be likely to be confused or deceived by the use of "Stone Cutter" on completed garments such as Universal's overalls, coveralls, shopcoats and dungarees.[2] See *Smith* v. *Tobacco By-Products & Chemical Corp.*, 44 CCPA 880, 243 F.2d 188, 113 USPQ 339, and cases cited therein.

[4] Stonecutter urges that wearing apparel and piece goods are goods of the same descriptive properties, citing several cases including *Vanity Fair Mills, Inc.* v. *Pedigree Fabrics, Inc.*, 34 CCPA 1043, 161 F.2d 226, 73 USPQ 438, and *Goodall-Sanford, Inc.* v. *J. M. Wood Mfg. Co., Inc.*, 100 USPQ 256 (Comr. 1954). However, those cases arose under the 1905 act which made whether the goods were "of the same descriptive properties" a primary criterion in determining likelihood of confusion. That question is not controlling under the Lanham Act where the issue is solely whether the respective marks used on the goods of the parties would result in a likelihood of confusion.

[5] It is also argued by Stonecutter that the doctrines of res judicata and equitable estoppel, based on Cancellation No. 6771, compel a decision in its favor here. The Board correctly overruled that contention, pointing out that the issue in the previous action was Stonecutter's right to maintain its present registration of "Stonecutter" whereas the issue here is Universal's right to register "Stone Cutter." As observed by the Board, the Assistant Commissioner made only such determinations as were necessary to settle the cancellation question. None of those determinations is conclusive of the issue here.

In view of our conclusion that a likelihood of confusion will not result from the use of the competing marks, Universal must prevail. There is thus no occasion to discuss separately the matters raised by Universal's cross appeal.

The decision of the Board is affirmed.

AFFIRMED.

[2] Although Universal states in its brief in P.A. 7775 that it has also used the mark on "shorts, pants and jackets" and refers to the statement of goods as "overalls, coveralls, shopcoats and dungarees" as "abbreviated," the issue here is limited to the goods as set forth in said statement as is also our decision.

U.S. Court of Customs and Patent Appeals

HUNT FOODS AND INDUSTRIES, INC. *v.* THE GERSON STEWART CORPORATION

No. 7643. Decided October 20, 1966

[54 CCPA —; 367 F.d 431; 151 USPQ 350]

1. TRADEMARK—CONFUSING SIMILARITY—STRONG MARK IS FACTOR TO CONSIDER.
"Here we think the evidence shows that opposer possesses a strong trademark entitled to broad protection which is a factor to be considered in resolving the issue of likelihood of confusion."

2. SAME—GOODS—DIFFERENT GOODS NOT CONTROLLING—TRADEMARK ACT OF 1946.
"The fact that the goods are not of the same descriptive properties is also not *controlling* [in resolving the issue of likelihood of confusion] under the terms of the Trademark Act of 1946."

3. SAME—SAME—LIKELIHOOD OF CONFUSION DETERMINED BY GOODS IN APPLICATION.
"Nor are we concerned on the present record with appellee's argument below that the manner of sale and distribution or class of purchasers are different. These limitations are not reflected in the application for registration and applicant's stated desire is to expand his market to the general public. *Merritt Corp.* v. *Sterling Drug Inc.*, 47 CCPA 937, 277 F.2d 956, 125 USPQ 584. '[T]he likelihood of confusion must be determined on the basis of the "goods covered in appellant's applications." ' *California Stucco Products, Inc.* v. *Maas & Waldstein Co.*, 47 CCPA 732, 734, 272 F.2d 398, 399, 124 USPQ 75, 76."

4. SAME—CONFUSING SIMILARITY—"HUNT" FOR CLEANING COMPOUNDS AND CANNED FOOD PRODUCTS.
"Applicant seeks registration of the mark 'Hunt' for a 'General Purpose Cleaning Compound' [and is opposed by the registrant of the same mark for a long list of canned food products]. The evidence of record shows that such products are relatively inexpensive, and are intended for the general public just as opposer's products. The respective products often appear side by side in stores and frequently appear in the same advertisements of stores. Thus while the descriptive properties of the respective goods are different, we think the evidence of record establishes a *likelihood of confusion* among purchasers such as to preclude federal registration by appellee."

5. SAME—SAME—SURNAME CHARACTER OF MARK IRRELEVANT—SECTION 2(d).
"* * * under section 2(d) the issue of likelihood of confusion is not somehow changed or different here because opposer's mark is a surname."

6. SAME—SAME—THIRD-PARTY REGISTRATIONS.
"Third-party registrations are of some evidentiary value in determining the scope of protection (see Vandenburgh, supra, at 64–66) or the distinctiveness of a trademark. * * * However, as we stated in *In re Helene Curtis Industries, Inc.* * * * 'We will not assume any knowledge on the part of the purchasing public of mere registrations in the Patent Office and neither will we assume that marks are in continuing use, so as to have had any effect on the mind of the purchasing public, merely because they have been registered.' * * * Additionally, the nature of the products covered by the third-party registrations is a factor to be considered in determining the distinctiveness of the mark in relation to the issue of likelihood of confusion * * *."

7. SAME—SAME—SAME.
"Considering the evidence of record [dissimilar character of goods and no evidence on effect of the third-party registered marks on the mind of the purchasing public] we do not find the third-party registrations sufficient evidence to prove that appellant's marks are lacking in distinctiveness or entitled only to narrow protection in relation to the issue of likelihood of confusion."

8. SAME—OPPOSITION—DEFENSE OF "UNCLEAN HANDS."
In connection with appellee's argument that appellant-opposer has "unclean hands" in that the latter's registrations were procured by fraud and deceit since "the marks covered by these registrations were not used on certain of the goods set forth therein prior to the filing of these applications," and with reference to the holding of the Trademark Trial and Appeal Board that "this defense would not be considered in the absence of a counter claim for cancellation * * * and also that the record was 'inconclusive on the issue raised,' " *Held* that "We find no error in the Board's decision in this respect."

APPEAL from the Patent Office. Opposition No. 40,905.

REVERSED.

Von Maltitz, Derenberg, Kunin & Janssen (*Walter J. Derenberg, Louis Kunin, V. T. Giordano*, of counsel) for appellant.

William C. McCoy for appellee.

Before WORLEY, *Chief Judge*, and RICH, MARTIN, SMITH and ALMOND, JR., *Associate Judges*

SMITH, *J.*, delivered the opinion of the court.

The issue is whether the Trademark Trial and Appeal Board erred in finding that registration of applicant-appellee's mark would not "be likely, when applied to the goods of applicant, to cause confusion, or to cause mistake, or to deceive."[1] Section 2(d), Trademark Act

[1] Notice of Opposition No. 40,905, filed April 26, 1961.

of 1946, 15 U.S.C. 1052(d). Applicant sought to register "Hunt" for "General Purpose Cleaning Compounds." [2] Appellant-opposer is the owner of a plurality of registrations of marks consisting of "Hunt" and the possessive form thereof, "Hunt's," for a long list of canned food products.[3] The Board, with one member dissenting, dismissed the opposition stating in summary:

* * * And, all things considered, it is our opinion that canned foods and cleaning preparations are such distinctly different products that there is no reasonable likelihood of purchasers ascribing a common origin thereto were they to be sold under the name "Hunt" or "Hunt's."

This appeal appears before us in the following posture. Both parties submitted evidence in support of their respective positions. Appellant submitted the results of a consumer survey involving 502 housewives and appellee submitted four third-party registrations.[4] Appellee here

Reg. No.	Date	Trademark	Goods
256,502	May 21, 1929	Hunt Putty and design	Putty.
318,324	Oct. 23, 1934	Hunt's	Port wine.
531,394	Sept. 26, 1950	Hunt's and design	Shampoos and "bubble bath" soaps.
705,789	Oct. 18, 1960	Hunt	Photographic developers, chemicals and compounds.

submits the case on the record, no brief having been filed and absent any oral argument.

Appellant's arguments here, in summary, are as follows: Appellant's trademark Hunt's is a well known mark entitled to broad protection, the evidence of record showing advertising expenses since 1943 of more than 46 million dollars, and sales, since 1944, in excess of 1 billion dollars. As factors tending to establish a likelihood of confusion, appellant argues that the marks and the channels of trade are identical; that other well known trademarks have been used concurrently for food products and cleaners; that appellant is the prior user and registrant of Hunt's for a product used in cleaning; and that doubt should be resolved against the applicant. Appellee's defenses relating to surnames, registrations of third parties, and "unclean hands" are allegedly insufficient.

Appellant's case is well summarized in the opinion of the dissenting Board member:

While canned food products and a general purpose cleansing compound are clearly distinct, have different uses and are non-competitive, they do, nevertheless bear some relation to each other. General purpose cleansing compounds and canned food products are sold to the same purchasers, at the same time, in the same manner and in the same place. It has been shown that "Hunt's" food products and general purpose cleaners have sometimes been displayed closely together and that retailers have promoted such goods in a single advertisement. Thus, the parties' products are related as to their manner of promotion, distribution and purchase. Purchasers well familiar with "Hunt's" canned food products and desirous of purchasing a general purpose cleansing compound could be immediately confronted with a display of "Hunt" general purpose cleaner and would, in my judgment, reasonably and logically assume a connection or association between the two as to source or sponsorship. This is borne out by the testimony of housewives who indicated an awareness that certain manufacturers produced both food and detergent products.

The majority of the Board, however, were of the view that a "rather commonplace surname," "Hunt" was involved and the respective products were so "unrelated" and "distinctly different" that there was no reasonable likelihood of purchasers ascribing a common origin to the products, stating:

* * * opposer argues that confusion would be likely because its canned food products and cleaning preparations of the character sold by applicant are offered for sale in all types of supermarkets and groceries, but this factor is considered not to be of controlling importance herein since it is common knowledge that such stores sell an infinite variety of wholly unrelated products, as for example, toothpicks, clothing, hardware items, toilet articles, light bulbs, cigarettes, toys, soft drinks, and the like. * * *

The evidence of record shows, on appellant's behalf, several factors tending to establish a relationship between the respective products. As appellant's brief points out:

As is well known, and as the record shows, general purpose cleaners and related products are commonly sold to the general public in all types of supermarkets, groceries, etc. * * *

* * * * * * *

In many of such stores—particularly the smaller establishments—opposer's food products and cleaners, detergents, soaps, etc. are often stacked in the "same sections" or "back to back" * * * or in adjoining aisles * * *. Moreover, opposer's products frequently have been set up in numerous special displays—featuring its Hunt's trademark—next to the general purpose cleaners, detergents and soaps in many stores * * *.

* * * * * * *

The respective products are also likely to be displayed together under the parties' identical marks in the *same* advertisements of supermarkets and other retail food stores. * * *.

The respective products are thus related as to their manner of promotion, distribution, purchase and intended users. Moreover, the goods are all inexpensive kitchen or pantry items which are "not apt to be purchased with any degree of discrimination on the purchasers' part * * *.

* * * * * * *

Other famous food trademarks have, in fact, been used concurrently by their owners to identify food products and cleaners. * * *

The above statements are supported by evidence of record and were not contradicted by appellee. In addition, appellant submitted the results of a survey wherein, according to the majority of the Board, at least 70 of 502 housewives interviewed named a product of opposer's when asked to name any additional products made by the makers of "Hunt General Purpose Cleaning Compound." [5]

Opinion

Section 2(d) of the Trademark Act of 1946 does not set forth special rules regarding the registration of marks involving surnames in determining the issue of likelihood of confusion. See *Alfred Electronics* v. *Alford Mfg. Co.*, 51 CCPA 1533, 333 F.2d 912, 142 USPQ 168; *John W. Taylor Packing Co.* v. *Taylor Sales, Inc.*, 139 USPQ 59 (TTAB); *E. I. du Pont de Nemours & Co.* v. *National Sure-Fit Quilting Co.*, 137 USPQ 317 (TTAB). Cf. Section 2(e), Trademark Act of 1946, 15 U.S.C. 1052(e). [1] Here we think the evidence shows that opposer possesses a strong trademark entitled to broad protection which is a factor to be considered in resolving the issue of likelihood of confusion. See *Tiffany & Co.* v. *Tiffany Tile Corp.*, 52 CCPA 1396, 345 F.2d 214, 145 USPQ 483.

[2] The fact that the goods are not of the same descriptive properties is also not *controlling* under the terms of the Trademark Act

[2] Trademark application, filed August 3, 1960.

[3] Reg. No. 573,487, issued Apr. 21, 1953 to Hunt Foods, Inc.; Reg. No. 437,875, issued Mar. 30, 1948 to Hunt Brothers Packing Company; Reg. No. 426,367, issued Dec. 24, 1946 to Hunt Foods, Inc.; Reg. No. 420,951, issued May 7, 1946 to Hunt Brothers Packing Company; and Reg. 420,786, issued Apr. 30, 1946 to Hunt Brothers Packing Company.

[4] See the following table:

[5] The dissenting member of the Board States that "81 persons of the 502 interviewed clearly associated 'Hunt' general purpose cleaning compound with opposer or opposer's food products."

of 1946. *Elizabeth Kent Cosmetics* v. *G. B. Kent & Sons, Ltd.*, 50 CCPA 738, 309 F.2d 775, 135 USPQ 327. As stated in *Hollywood Water Heater Co.* v. *Hollymatic Corp.*, 47 CCPA 782, 784, 274 F.2d 679, 680, 124 USPQ 452, 453:

> • • • Section 2(d) of the Trademark Act of 1946 and the unquestioned weight of modern authority in this field does not require a finding of confusing similarity of goods as the basis for sustaining a trademark opposition but instead requires us to determine whether it is "likely" that the mark when applied to the goods of the applicant will cause confusion or mistake or deceive purchasers.

[3] Nor are we concerned on the present record with appellee's argument below that the manner of sale and distribution or class of purchasers are different. These limitations are not reflected in the application for registration and applicant's stated desire is to expand his market to the general public. *Merritt Corp.* v. *Sterling Drug Inc.*, 47 CCPA 937, 277 F.2d 956, 125 USPQ 584. "[T]he likelihood of confusion must be determined on the basis of the 'goods covered in appellant's applications.'" *California Stucco Products, Inc.* v. *Maas & Waldstein Co.*, 47 CCPA 732, 734, 272 F.2d 398, 399, 124 USPQ 75, 76.

[4] Applicant seeks registration of the mark "Hunt" for a "General Purpose Cleaning Compound." The evidence of record shows that such products are relatively inexpensive, and are intended for the general public just as opposer's products. The respective products often appear side by side in stores and frequently appear in the same advertisements of stores. Thus while the descriptive properties of the respective goods are different, we think the evidence of record establishes a *likelihood of confusion* among purchasers such as to preclude federal registration by appellee.

There remains for consideration certain defenses of appellee. Appellee offered four third-party registrations "for the purpose of indicating that the word 'Hunt' is in the nature of a surname, although registrable."[6] The thrust of this alleged defense is not clear. Appellee does not claim that "Hunt" is its surname. See Vandenburgh, Trademark Law & Procedure 78–82 (1959). [5] And, as stated earlier, under section 2(d) the issue of likelihood of confusion is not somehow changed or different here because opposer's mark is a surname.

[6] Third-party registrations are of some evidentiary value in determining the scope of protection (see Vandenburgh, supra, at 64–66) or the distinctiveness of a trademark. *Clinton Detergent Co.* v. *Procter & Gamble Co.*, 49 CCPA 1146, 302 F.2d 745, 133 USPQ 520. However, as we stated in *In re Helene Curtis Industries, Inc.*, 49 CCPA 1367, 1371, 305 F.2d 492, 494, 134 USPQ 501, 503:

> • • • We will not assume any knowledge on the part of the purchasing public of mere registrations in the Patent Office and neither will we assume that marks are in continuing use, so as to have had any effect on the mind of the purchasing public, merely because they have been registered. • • •

Additionally, the nature of the products covered by the third-party registrations is a factor to be considered in determining the distinctiveness of the mark in relation to the issue of likelihood of confusion, *Price-Pfister Brass Mfg. Co.* v. *Milwaukee Faucets, Inc.*, 50 CCPA 898, 311 F.d 817, 136 USPQ 215.

Considering the four registrations offered, one has been cancelled, and the remaining three cover putty, wine, and photographic chemicals, respectively. There is no evidence of record as to the effect, if

[6] See footnote 4, supra.

any, of the above marks on the mind of the purchasing public, *Helene Curtis Industries*, supra, and putty and photographic chemicals are dissimilar goods in relation to the goods under consideration here. See *Conde Nast Publications, Inc.* v. *American Greetings Corp.*, 51 CCPA 1176, 329 F.2d 1012, 141 USPQ 249.

[7] Considering the evidence of record we do not find the third-party registrations sufficient evidence to prove that appellant's marks are lacking in distinctiveness or entitled only to narrow protection in relation to the issue of likelihood of confusion. See *Price-Pfister Brass Mfg. Co.*, supra.

Appellee also argued below that appellant has "unclean hands" in that appellant's Registration Nos. 437,875, 420,786, and 420,951 allegedly were procured through "acts of fraud [and] deceit" in the Patent Office. Appellee contended that the marks covered by these registrations were not used on certain of the goods set forth therein prior to the filing of these applications.

[8] The Board held that this defense would not be considered in the absence of a counter claim for cancellation, *Contour Chair-Lounge Co.* v. *Englander Co.*, 51 CCPA 833, 324 F.2d 186, 139 USPQ 285, and also that the record was "inconclusive on the issue raised." We find no error in the Board's decision in this respect.

For the above reasons the decision of the Board must be reversed.

REVERSED.

WORLEY, *Chief Judge*, concurs in the result.

PATENT SUITS

Notices under 35 U.S.C. 290; Patent Act of 1952

2,610,181, K. J. Hayes, SERIES OF NITROFURAN COMPOUNDS COMPRISING THE AZOMETHINES OF 5-NITRO-2-ACYL FURANS WITH 1-AMINO-HYDANTOINS, **filed** Aug. 31, 1967, D.C., E.D.N.Y. (Brooklyn), Doc. 67C–853, *The Norwich Pharmacal Co.* v. *Ketchum Lab. Inc.*

2,625,683, Roth and Lombard, CRASH HELMET, **filed** Aug. 30, 1967, D.C., C.D. Calif. (Los Angeles), Doc. 67–1287–F, *Bell-Toptex, Inc.* v. *James E. Charlsen, individually and Judy Charlsen etc., et al.*

2,667,243, H. D. Fenske, CONVEYANCE CONSTRUCTION, **filed** Sept. 12, 1967, D.C., W.D. Pa. (Pittsburgh), Doc. 67–1094, *Armco Steel Corporation* v. *National-Steel Corporation.*

2,742,462, G. Gever, NEW N-(5-NITRO-2-FURFURYLIDENE)-3-AMINO-2-OXAZOLIDONES, **filed** Aug. 9, 1967, D.C., N.D. Ala. (Birmingham), Doc. 67–454, *The Norwich Pharmacal Company* v. *Walley Milling Company, Inc.*

2,761,441, J. Loecy, Jr., DIAMOND TOOL, **filed** Sept. 20, 1966, D.C., E.D. Mich. (Detroit), Doc. 29000, *Cleveland Industrial Tool Company, Inc.* v. *Wheel Trueing Tool Company.* Consent judgment for permanent injunction dismissing complaint and defendant's counterclaim without costs, Aug. 31, 1967.

2,778,637, G. H. Eash, ENDLESS MAGNETIC TAPE CARTRIDGE, **filed** Aug. 31, 1967, D.C. Kans. (Wichita), Doc. W–3392, *Ohio Citizens Trust Company and Telepro Industries, Inc.* v. *Lear Jet Corporation.* Ordered that claim 1 of the patent is invalid; plaintiffs' action dismissed on the merits.

2,919,042, J. V. Kieruff, TRAVELING SHIP-LOADING CRANE, **filed** Oct. 13, 1964, D.C., S.D.N.Y., Doc. 64–C–3117, *Kieruff Associates* v. *Luria Brothers & Co., Inc.* Stipulation and order of dismissal with prejudice, Sept. 14, 1967.

3,045,883, Andrews and Burke, ROLL DISPENSER, **filed** Sept. 13, 1967, D.C., E.D.N.Y. (Brooklyn), Doc. 67C–881, *Roll-O-Sheets, Inc.* v. *Perf-A-Wrap, Inc.*

3,085,042, C. B. Luginbuhl, PHYTOTOXICITY OF MANGANESE ETHYLENEBISDITHIOCARBAMATE REDUCED BY THE ADDITION OF ZINC AND CADMIUM IONS, **filed** Sept. 5, 1967, D.C., E.D. Pa. (Philadelphia), Doc. 43504, *E. I. du Pont de Nemours & Co.* v. *Rohm & Haas Co.*

3,104,799, D. J. Steidinger, ENVELOPE ASSEMBLY, **filed** Sept. 1, 1967, D.C., N.D. Ill. (Chicago), Doc. 67c1522, *Uarco Incorporated* v. *Moore Business Forms, Inc.*

3,136,248, J. R. Anderson, PROCESS AND APPARATUS FOR TEMPORARILY INDICATING CORRECTIONS IN TEXT OF PRINTED MATTER, **filed** Sept. 12, 1967, D.C., N.D. Ill. (Chicago), Doc. 67c1565, *La Salle Street Press, Inc.* v. *McCormick and Henderson, Inc.*

3,137,122, Dinerstein and Cummings, RESILIENT MEANS FOR DRIVING ESCAPE WHEEL, **filed** Feb. 3, 1966, D.C., N.D. Ill. (Chicago), Doc. 66c218, *Amphenol Corporation* v. *General Time Corporation.* Judgment—claims 1 to 5, inclusive, of the patent are invalid and void, defendant has not infringed any valid claim; the complaint is dismissed with prejudice, Sept. 8, 1967.

3,237,851, J. A. Le Blanc, Jr., MECHANICAL VACUUM PUMP, **filed** Mar. 29, 1966, D.C., N.D. Ill. (Chicago), Doc. 66c566, *Cenco Instruments Corporation* v. *Precision Scientific Company.* Consent order dismissing cause, Sept. 12, 1967.

D. 207,104, M. Tiarks, GAME APPARATUS TO TEST DEXTERITY, **filed** Sept. 11, 1967, D.C., N.D. Ill. (Chicago), Doc. 67c1556, *Patterson International Corp.* v. *Northwestern Corp.*

D. 208,350, M. H. Cheris, PLASTIC RUNNER, **filed** Sept. 14, 1967, D.C., N.D. Ill. (Chicago), Doc. 67c1578, *Tenex Corporation* v. *General Felt Industries, Inc. and Carlyle Vinyl Products.*

Erratum

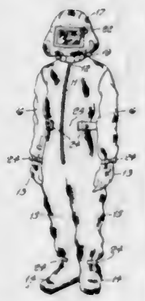
In the OFFICIAL GAZETTE, Mar. 3, 1964, vol. 800, page 16, column 2, line 2, under "Patent Suits," change "S.D.N.Y." to read *S.D. Calif.*

PATENTS

GRANTED DECEMBER 26, 1967

GENERAL AND MECHANICAL

3,359,567
PROTECTIVE SUIT
Caesar J. Zemme, New York, Benjamin S. De Fazio, Westbury, and Lionel I. Weinstock, Rockaway Park, N.Y., assignors to the United States of America as represented by the Secretary of the Navy
Filed Dec. 13, 1965, Ser. No. 513,910
4 Claims. (Cl. 2—2)



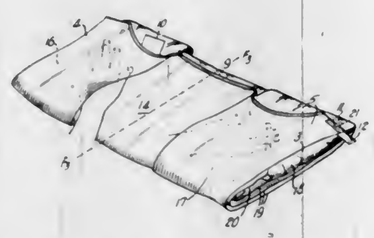
1. A lightweight protective suit completely encompassing the body to provide protection against radio-frequency waves and adapted to be worn under a variety of foul weather or other overgarments comprising:
a body portion made of a single layer of permeable conductive material;
said material having an open mesh adapted to permit substantially unrestricated ventilation therethrough;
said material formed of a non-metallic fiber metallized by affixing metal particles to the surface thereof;
a hood portion made of said material and adapted for releasable attachment to said body portion;
electrically conductive means separably connecting said hood portion and said body portion; and
wearer ingress and egress means in said suit;
said ingress and egress means electrically conductive when closed;
the open mesh of said material permitting unrestricted vision therethrough of the wearer.

3,359,568
HELMET FEEDPORT
Ewald Kothe, East Hartland, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Mar. 30, 1966, Ser. No. 538,863
7 Claims. (Cl. 2—6)



6. For a helmet adapted to encapsulate the head of the wearer so as to be pressurized, a combined feeding and purging means, including a casing having a projection extending from the inside to the outside of the helmet through an opening therein, and defining a through-passage permitting access internally of the helmet, means attached to said projection for securing said casing to said helmet, valve means including a valve element movable both angularly and axially relative to the external end of said through-passage and pivotally mounted to said casing, a shaft secured to said valve element extending into said helmet and rotatable therewith, a radially extending flexible seal member attached to the internal end of said shaft, said flexible seal being elongated and having a flat inner surface adapted to cover the internal end of said through-passage and sufficiently wide to extend over said internal end throughout the entire range of angular movement with respect to the adjacent opening of said valve element, and an aperture in said member located with respect to the angular movement such that it aligns with said through-passage when said valve element is spaced angularly from said through-passage.

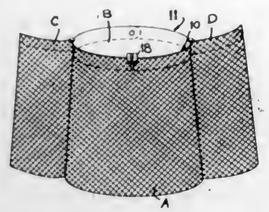
3,359,569
SURGICAL GOWN
Robert J. Rotanz, Somerset, George W. Scrivens, Edison, and Joseph F. Hanlon, Rocky Hill, N.J., assignors to Johnson & Johnson, a corporation of New Jersey
Filed Apr. 12, 1966, Ser. No. 542,091
16 Claims. (Cl. 2—114)



2. A folded surgical gown comprising a main sheet and sleeves integrally fastened thereto, said main sheet comprising a back portion and a front portion comprising left and right flaps, said left flap and said right flap of said front portion being folded outward and backward upon themselves, the bottom of said gown being folded backward and upward a plurality of times to form a plurality of underlying folds, whereby a folded surgical gown is provided in which a plurality of pockets are present on its outer face in which a person's hands may be inserted to lift said gown from a supporting surface and which are eliminated when the gown is opened.

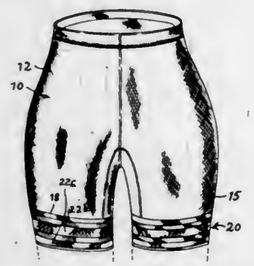
3,359,570
REVERSIBLE COSTUME ARMATURE
June M. Rodgers, 119—40 178th St., St. Albans, N.Y. 11434
Filed Oct. 23, 1965, Ser. No. 503,816
9 Claims. (Cl. 2—206)

1. An adjustable armature and an article of costume assembly, comprising a costume article having a main panel presenting a predetermined design and flaps presenting a different design on opposite sides thereof hingedly connected thereto, said flaps each having dimensions corresponding to one-half of said main panel whereby when the flaps are folded against the main panel they together present a design at variance with that on said panel, said armature having a main piece attached



to said panel and wings attached to said flaps, means hingedly connecting said wings to said main piece, means normally biasing said wings to cause said flaps to swing away from said panel, and releasable latch means to maintain said wings and said flaps folded against said main panel.

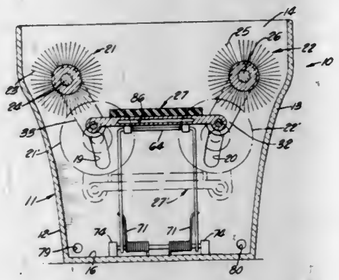
3,359,571
PANTY GARMENT WITH FRICTIONAL STOCKING SUPPORT
James F. Burke, Aurora, Ill., assignor to Sears, Roebuck and Co., Chicago, Ill., a corporation of New York
Filed July 11, 1966, Ser. No. 564,317
5 Claims. (Cl. 2—224)



1. A non-slip fabric band for attachment to a garment, comprising
(a) a plurality of first strips of longitudinally elastic textile material having a plurality of interwoven frictional filaments in closely spaced parallel relation exposed on only one surface of said strips and secured thereto by a plurality of spaced inextensible transverse filaments, for frictionally gripping an adjacent garment, and
(b) a second textile strip separating said first strips, said second strip also being longitudinally elastic and being of open-mesh character, and comprised of widely spaced elastic warp strands with transverse inextensible filaments inerwoven therewith constituting extensions of the transverse filaments in said first strips, which retain said frictional filaments in place.

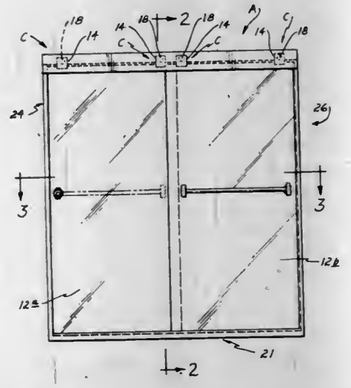
3,359,572
HYGIENIC APPARATUS
Roscoe W. Blackwell, 4526 E. Florence Ave., Bell, Calif. 90201
Filed Oct. 29, 1964, Ser. No. 407,487
1 Claim. (Cl. 4—1)

Hygienic apparatus comprising: a tub having side walls, end walls and bottom panel, at least one of said walls having a relatively small hole therethrough adjacent said bottom panel; a vertical guide plate in said tub adjacent each end wall thereof; a pair of symmetrical, downwardly converging arcuate slots in each of said plates; a pair of brushes having horizontal shafts extending between said plates in positions passing through corresponding slots, said shafts being held in rotatable, angular, laterally movable, and fixed axial positions; a pinion fixed to each end of each of said shafts; a pair of arcuate racks fixed to each of said guide plates in positions to mesh with said pinions, said rack having the same curvature as said slots; said guide plates having a construction to hold said pinions in mesh with said



racks; a treadle; a pair of identical linkages rotatable about a first axis on opposite ends of said treadle on one side thereof and surrounding one of said shafts, said shafts being rotatable through corresponding pairs of said linkages; an inverted U-shaped wire at opposite ends of said treadle; spring means fixed to said tub bottom panel in a position to urge said wires to push upwardly against said treadle; a resilient pad fixed to the upper surface of said treadle; a cover plate for each of said guide plates; a heel brush fixed to one of said cover plates; and four toe brushes fixed to the other of said cover plates.

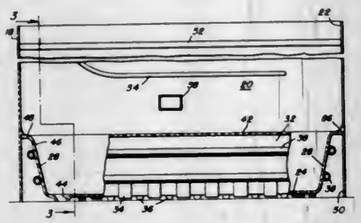
3,359,573
GLASS SHOWER ENCLOSURE DOOR
Ralph T. Casebolt, 500 High St., Oakland, Calif. 94601
Filed Nov. 12, 1964, Ser. No. 410,653
5 Claims. (Cl. 4—149)



1. In a shower door construction: an open frame provided with a top member, a bottom member, and a pair of spaced side members interconnecting said top and bottom members, each of the members having an inner periphery at the corresponding boundary of the opening of said frame and panel-receiving groove means at the

corresponding inner periphery; a pair of frameless panels of tempered glass, each panel having a width less than the distance between said side members and being provided with free top, bottom, and side edges; and means mounting each panel on said top member for vertical adjustment relative thereto and for movement in a plane substantially parallel to the plane of movement of the other panel with said top edge of the panel being disposed within the groove means of said top member and the bottom edge of the panel being disposed within the groove means of said bottom member, whereby each panel is coupled to the frame and can be moved from a first position closing a respective portion of the frame opening to a second position clearing the last mentioned portion, one side edge of each panel being disposed within the groove means of the adjacent side member and the side margin of the panel adjacent the opposite side edge thereof being in overlapping relationship to the corresponding margin of the other panel when the panels are in their first positions to effect substantially complete closing of said frame opening.

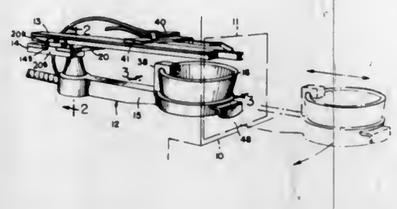
3,359,574
FIBERGLASS BATHTUB, ENCLOSURE AND OTHER HOUSEHOLD UTILITIES
Madison B. Stoneburner, 800 N. Garfield St., Arlington, Va. 22201
Filed Dec. 31, 1964, Ser. No. 422,720
3 Claims. (Cl. 4—173)



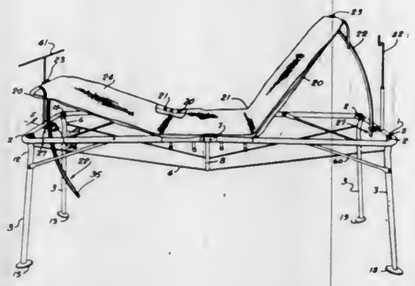
1. A bathtub constructed of fiberglass plastic and including a unitary bottom, end walls and a front and rear side wall, a vertically disposed front skirt in spaced relation to the front side wall and having the upper edge thereof unitary with the upper edge of the front side wall, said end walls and side walls being encircled on the exterior surface thereof with vertically spaced reinforcing tubes extending continuously circumferentially thereabout, said bottom wall including transversely extending reinforcing bands spaced longitudinally on the external surface thereof, said bands extending partially up along the side walls and joined with the circumferential tube encircling the side and end walls, and a plurality of longitudinally spaced, transversely extending flat sides, rod-like reinforcing supports on the external surface of the bottom wall, said rod-like reinforcing supports being disposed intermediate the straps, one end of each rod-like reinforcing support extending laterally outwardly of the front side wall and joined with the lower edge of the front skirt.

3,359,575
CUSPIDOR ASSEMBLY FOR DENTAL CONSOLE
Milton R. Nielsen, Wheaton, Ill., assignor to American Hospital Supply Corporation, Evanston, Ill., a corporation of Illinois
Filed Nov. 1, 1965, Ser. No. 505,910
8 Claims. (Cl. 4—263)

1. A cuspidor assembly comprising: a horizontal track adapted to be mounted within a dental console; a roller-equipped trolley moveable along said track between extended and retracted positions; a horizontally-elongated arm having a bowl-supporting recess at one end thereof; a cuspidor bowl supported in said recess; means pivotally connecting the opposite end of said arm to said trolley for pivotal movement of said arm about a vertical axis; a first conduit extending longitudinally through said arm and communicating with the bottom of said bowl for conveying fluids therefrom; a second conduit extending longitudinally through said arm for delivering rinse water to said bowl; a normally-closed valve communicating with said second conduit for preventing the flow of water to said bowl; and a valve lever operatively associated with said valve and engageable with said trolley when the same is in its extended position for opening said valve to permit the flow of rinse water to said bowl.

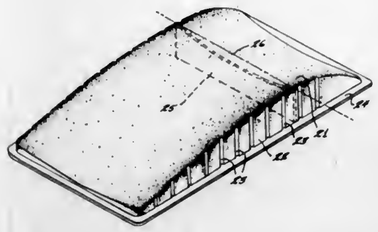


3,359,576
FIELD HOSPITAL BED
Benjamin D. Pile, 50—20 213th St., Bayside, N.Y. 11364
Filed July 7, 1966, Ser. No. 564,510
6 Claims. (Cl. 5—111)



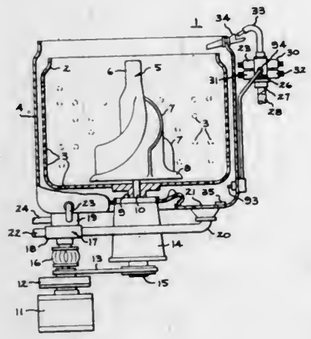
1. A collapsible support structure comprising:
(a) a rectangular, foldable, main frame;
(b) a downwardly opening sleeve disposed in each corner of said frame and affixed thereto, for receiving leg members;
(c) a leg member having an upper hollow portion slidably mounted in each said sleeve;
(d) a centrally located transverse support member extending between the sides of said main frame and carried by said frame; and
(e) elongated tension means having opposite end sections, each end section passing upwardly through the hollow upper portion of a leg member, through a sleeve, and terminally affixed to the upper end of said sleeve, said tension means further removably engaged by said transverse support, so that when said structure is in a supporting position said tension means transmits a counter-balancing force to said frame through said transverse support and said sleeves, and urging said legs into said sleeve.

3,359,577
BACK SUPPORT
Lee C. Rogers, 3147 California St. NE., Minneapolis, Minn. 55418
Filed May 19, 1966, Ser. No. 551,425
4 Claims. (Cl. 5—327)



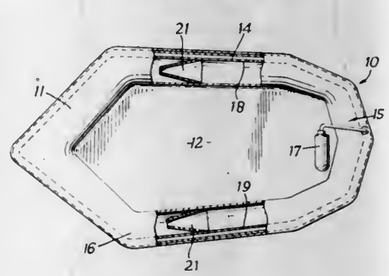
1. A back support device for use in engaging the back of a user when in a reclining position, said device including an elongate back support member, a supporting framework integrally formed with and depending from the peripheral portions of said back support member, said back support member and framework defining a convex-concavo structure, said back support member having an upper surface extending longitudinally from one end thereof progressively upwardly to a high portion and then being progressively curved downwardly in a longitudinal direction to the other end thereof, said one end defining a shoulder supporting portion and said high portion serving to engage and support the lumbar region of a user's back, said upper surface of the back support member being transversely concave throughout the length thereof, a bearing flange integrally formed with the lower edge of said framework and extending outwardly therefrom and a transverse supporting member integrally formed with said back support member and said framework and extending transversely of said back support member at said high portion.

3,359,578
WASHING CYCLE FOR PERMANENTLY PRESSED FABRICS
Everett D. Morey and David J. Duvall, Louisville, Ky., assignors to General Electric Company, a corporation of New York
Filed Dec. 1, 1966, Ser. No. 598,240
10 Claims. (Cl. 8—158)



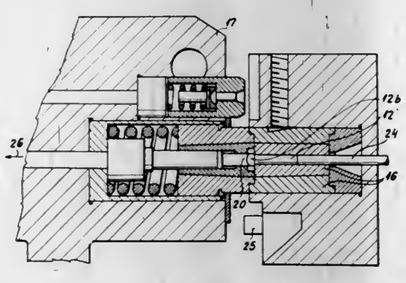
1. A method of washing fabrics having a thermoplastic characteristic in an automatic washing machine including the steps of agitating the fabrics in a wash fluid, extracting the wash fluid and then agitating the fabrics in a rinse fluid; wherein the wash extraction temperature is between about 90° F. and about 120° F. and the initial rinse temperature is between the wash extraction temperature and a temperature lower than said wash extraction temperature by an amount no more than about 20° F. to about 25° F., dependent upon the wash extraction temperature.

3,359,579
AUTOMATIC INFLATABLE DINGHIES
Brian R. A. Reffell, Middlesex, and Sidney Mitchell, Surrey, England, assignors to The Walter Kidde Company Limited, Middlesex, England, a British company
Filed Jan. 6, 1966, Ser. No. 519,175
Claims priority, application Great Britain, Jan. 11, 1965, 1,243/65
2 Claims. (Cl. 9—11)



1. An inflatable dinghy having sides and ends and comprising:
(a) a peripheral buoyancy tube extending around the dinghy,
(b) a continuous additional tube of relatively small diameter and capable of withstanding high gas pressure, the said additional tube being connected to the outer circumference of the buoyancy tube so that on being inflated, the said additional tube straightens out and unfolds the buoyancy tube, said additional tube having a pair of orifices connecting the said tubes, which said orifices are of substantially equal size and are located at the sides of the dinghy in the same transverse plane of said dinghy, and
(c) inflating means connected to the said additional tube midway between the said orifices.

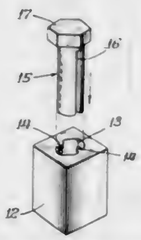
3,359,580
METHOD FOR PRODUCING SHAPED-HEAD SCREWS AND TOOL FOR CARRYING OUT THE METHOD
Miklós Osman, Antal Novak, István Csömör, Lajos Fernbach, and Ferenc Mezei, Budapest, Hungary, assignors to Csavaraugyar, Budapest, Hungary
Filed July 19, 1965, Ser. No. 473,044
1 Claim. (Cl. 10—2)



A tool with die and heading block for producing shaped-head screws in a single working step by means of upsetting and extrusion, having, in combination, a die holder

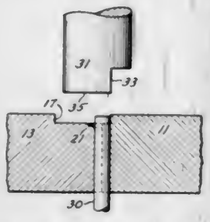
for supporting said heading block, a counterframe for supporting said die, and an upsetting mandrel arranged for sliding movements in said heading block, said mandrel in its home position enclosing with said heading block and said die a closed forming cavity, said heading block being arranged in said die holder for sliding movements in the direction of displacements of said upsetting mandrel and biased by a spring means against such displacements, said counterframe being provided with an ejecting stop arranged for abutting against and pushing back said heading block with respect to said upsetting mandrel in transversely displaced position of said die holder so as to cause a workpiece to be knocked out from said forming cavity by means of said upsetting mandrel.

3,359,581
KEY THREADING DEVICES
Joseph Senediak, 3523 S. Clinton Ave., Berwyn, Ill. 60402
Filed June 8, 1965, Ser. No. 462,225
5 Claims. (Cl. 10—10)



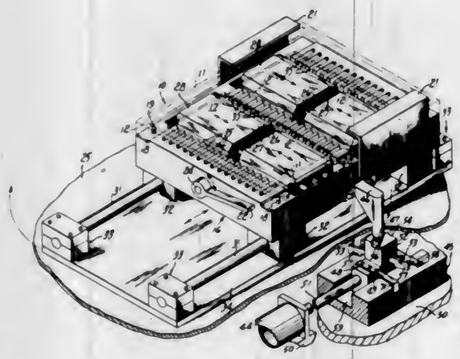
1. The method of producing threaded articles, which comprises disposing a first member within a second member coaxially therewith and with a snug fit therein, with one of said members having a series of thread cutting elements and the other member having a groove receiving said cutting elements, imparting relative rotation to said elements until said cutting elements again enter said groove, thereby cutting in said other member threads extending from one side of said groove, and separating said members by relative axial movement.

3,359,582
DIE ASSEMBLY FOR MAKING CHAMFER HEADED NAILS
Charles W. Powers, Baltimore, Md., assignor to Bethlehem Steel Corporation, a corporation of Delaware
Filed Nov. 22, 1965, Ser. No. 509,120
2 Claims. (Cl. 10—53)



1. A die assembly for making chamfer-headed nails from wire nail stock comprising:
   (a) a pair of gripper dies having abutting end surfaces and aligned top surfaces,
   (b) a groove in the abutting end surface of each die forming an orifice in the die assembly to grip the nail stock,
   (c) a fillet forming depression in the top surface of one of said dies,
   (d) a shoulder extending above the top surface of the other of said dies and tangent to the edge of the gripping orifice, and
   (e) a hammer die having an end surface parallel to the top surfaces of the gripper dies and a lateral surface aligned with the shoulder on said other of said gripping dies.

3,359,583
POSITIONING APPARATUS
Wilbur E. Strube, Maywood, N.J., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Aug. 19, 1965, Ser. No. 480,897
7 Claims. (Cl. 10—139)

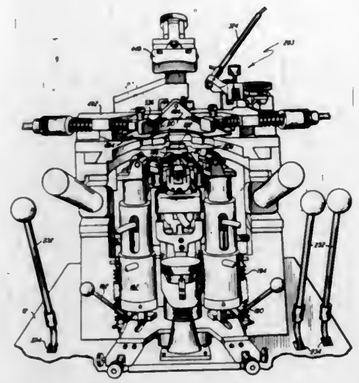


1. The method of positioning a frame having a plurality of parallel rows of holes with respect to a tapping apparatus comprising:
   feeding a frame into the nest of a tapping apparatus to tap alternate holes of a first plurality of holes arranged in at least one row,
   rotating the frame 180° to position the holes intermediate the originally tapped holes with respect to the tapping apparatus,
   rotating the frame 180° to its initial rotary position after the intermediate holes are tapped,
   moving the nested frame laterally with respect to the tapping apparatus to position a second plurality of holes arranged in at least one row for tapping, and
   rotating the frame 180° to position the holes intermediate the second plurality of tapped holes for a tapping operation.

3,359,584
TOE PULLING OVER AND LASTING MACHINE WITH VAMP GAUGE
Michael M. Becka, Cambridge, and Allen C. Harriman, Brockton, Mass., assignors to Jacob S. Kamborian, Newton, Mass.
Filed May 10, 1966, Ser. No. 549,026
14 Claims. (Cl. 12—10.5)

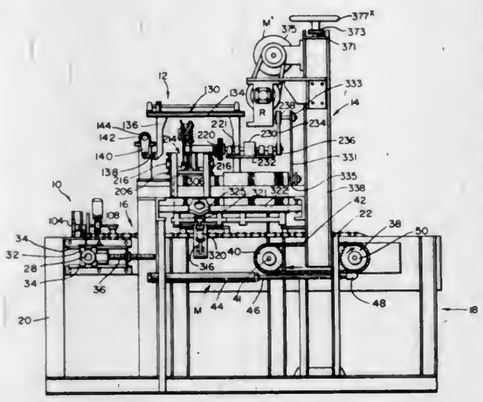
1. A lasting machine comprising: a support means for supporting bottom-down a shoe assembly that includes a last having an insole located on its bottom and an upper mounted thereon with the toe of the shoe assembly facing rearwardly and the heel of the shoe assembly facing forwardly; means for stretching the vamp of the upper about the forepart of the last preparatory to wiping the margin of the vamp against the insole; means for shifting

the vamp on the last to the proper wiping position with the topline of the stretched vamp intersecting a predetermined portion of the cone of the last; a gauge, located above the support adapted to point to said cone portion; and means mounting the gauge to the machine for adjustment in three discrete paths, the first path extending in



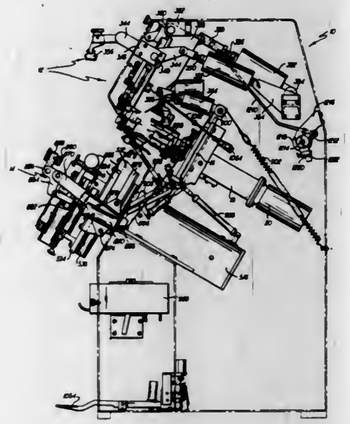
a forward and rearward direction that is adapted to lie lengthwise of the shoe assembly, the second path extending in a heightwise direction that is adapted to lie heightwise of the shoe assembly, and the third path extending upwardly and rearwardly in an upwardly concave arc that is adapted to lie substantially parallel to the curvature of the cone of the last.

3,359,585
METHOD AND APPARATUS FOR ATTACHING SHOE SOLES
Charles K. Woodman, Beverly, Mass., assignor to Compo Shoe Machinery Corporation, Waltham, Mass., a corporation of Delaware
Filed June 13, 1966, Ser. No. 557,175
59 Claims. (Cl. 12—142)



59. A method of applying an uncoated preformed outsole to the bottom of a lasted upper comprising depositing an uncoated outsole loosely on the bottom of the lasted upper, moving gauging means into engagement with the opposite ends of the lasted upper and the outsole to align the outsole longitudinally and transversely with respect to the bottom of the lasted upper in the exact position it is to have when attached thereto, picking up the gauged outsole from the bottom without changing its orientation with respect thereto, retracting the gauging means, applying adhesive to the outsole while lifted off the bottom, restoring the outsole to the gauged position without the aid of the gauging means, and then applying bottom-attaching pressure.

3,359,586
METHOD AND APPARATUS FOR CEMENT LASTING SHOES
Jacob S. Kamborian, 1380 Soldiers Field Road, Boston, Mass. 02135
Filed Feb. 18, 1966, Ser. No. 528,475
27 Claims. (Cl. 12—145)

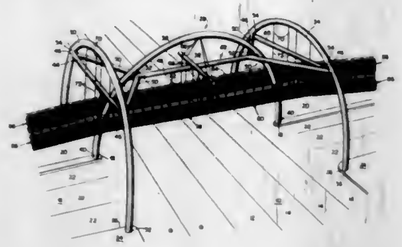


1. A method of lasting comprising: supporting bottom-down a shoe assembly that comprises a last having an insole located on its bottom and an upper mounted thereon with the margin of the upper extending downwardly of the insole; causing shank wipers to engage the shank portions of the upper margin and move in shank wiping strokes under the insole to wipe the shank portions of the upper margin against the insole; withdrawing the shank wipers from the shoe assembly; causing toe wiping means to engage the toe and forepart portions of the upper margin and move in a toe wiping stroke under the insole to wipe the toe and forepart portions of the upper margin against the insole, leaving unwiped the ball portions of the upper margin between the wiped shank portions and the wiped toe and forepart portions; and thereafter causing ball wipers to engage said ball portions of the upper margin and move in ball wiping strokes under the insole to wipe the ball portions of the upper margin against the insole.

3,359,587
SUSPENDED OVERPASS
William W. Pleasants, Santurce, Puerto Rico (Main St., Bethel, Del. 19931)
Filed May 17, 1966, Ser. No. 550,884
7 Claims. (Cl. 14—1)

1. In a structure for facilitating the movement of vehicles along intersecting major and minor thoroughfares, the combination comprising a rigid framework including a pair of upright, arched frame members respectively on opposite sides of the major thoroughfare and fully spanning the minor thoroughfare, the opposite end portions

of each of said members being supported upon and anchored to the ground without said thoroughfare, another upright, arched frame member, fully spanning said major thoroughfare and having opposite end portions supported upon and anchored to the ground between the lanes of traffic of said minor thoroughfare, and a system of auxiliary frame members interconnecting the several



arched frame members for mutually bracing the same against lateral movement, overpass means aligned with said minor thoroughfare, means fully and freely suspending said overpass means directly from said framework above the intersection of said thoroughfares, and ramp means from said overpass means to said minor thoroughfare providing approaches to and exits from said overpass means.

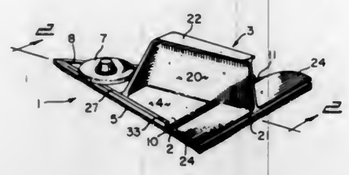
3,359,588
MASSAGE DEVICE
Paul Kobler, 81 Fenimore St., Lynbrook, N.Y. 11563
Filed Dec. 14, 1964, Ser. No. 417,964
6 Claims. (Cl. 15—110)



1. In a massaging device the combination of a resilient body having a lengthwise opening therein, a thin wall on the underside of the opening, a plurality of teeth with pointed ends projecting from the upper side, opposite said thin wall, said teeth arranged in a plurality of rows, whereby at least one row having teeth crossed by the teeth of the adjoining row of teeth, said teeth of the overlapping adjoining row inclined outwardly and crosswise over the side edge of the resilient body and inclined in the direction away from a middle line of said resilient body with at least the teeth of the adjoining inner row.

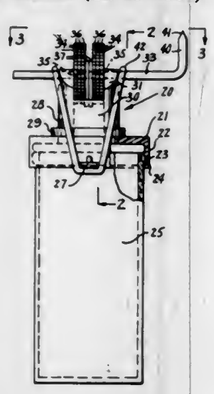
3,359,589
PAINTING DEVICE
Charles Gregg Moore, Wooster, Ohio, assignor to The Wooster Brush Company, Wooster, Ohio, a corporation of Ohio
Filed Feb. 25, 1965, Ser. No. 435,157
11 Claims. (Cl. 15—210)

1. A device for applying paint to a corner area comprising a body member having a leading end substantially in the shape of a point, the included angle of which is less than 90°, a paint applicator pad secured to one face of said body member, spacer means mounted on the opposite face of said body member for maintaining said paint applicator pad at a uniform distance from an adjacent surface as the leading end of said painting device is moved in the direction of said corner area, said spacer means including a main spacer wheel mounted on said opposite face of said body member adjacent said leading end, said main spacer wheel extending outwardly beyond the sides of said body member which intersect to form said one angle by a distance sufficient to provide the desired spacing between said paint applicator pad and the adjacent surface as aforesaid, said body member being of tri-



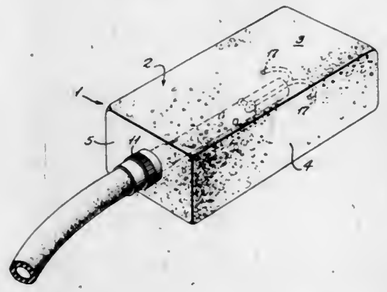
angular shape and said leading end being one of the angles of said triangular shaped body member, and a hand grip projecting upwardly from said other face of said body member, said hand grip including a central web portion and a transverse flange on said central web portion, said transverse flange overlying said main spacer wheel to provide a mounting bracket therefor.

3,359,590
PAINT STRIPING DEVICE
Florindo J. Perillo, 5940 E. 5th St., Tucson, Ariz. 85711
Filed Sept. 13, 1966, Ser. No. 579,050
8 Claims. (Cl. 15—560)



1. A striping device comprising:
a cap, for securement to a receptacle containing a pigment carrying flowable material, having a central opening therethrough, the cap including
a support, fixed to the cap, defining an open space overlying the central opening and having notches therein;
a striping wheel assembly including
an axle, seated in the notches, extending across the open space beyond the support on at least one side thereof a distance sufficient to provide a handle for grasping and removing the axle from the notches, said axle including a substantially straight first segment seated in the notches and a second segment, generally perpendicular to the first segment, having a point thereon acting as a guide for the striping device, said point being substantially coplanar with the lowermost portion of the striping wheel circumference when the device is in operative relation to an underlying surface;
a plurality of striping wheels, overlying the central space, having central openings receiving the axle;
at least one spacer, between selected adjacent wheels, having an opening receiving the axle; and
means releasably securing the striping wheel assembly in the notches.

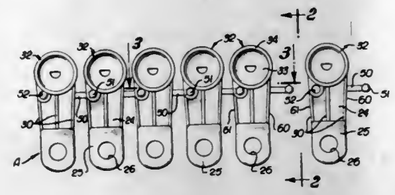
3,359,591
AUTOMOBILE CLEANING DEVICE
John W. McGuire, 251 E. Georgetown, Crystal Springs, Miss. 39059
Filed July 20, 1965, Ser. No. 473,363
2 Claims. (Cl. 15—567)



1. A cleaning device comprising a soft porous water-absorbent sponge-like body portion, an elongated bore formed in said body portion from one surface thereof and terminating withn said body portion, an elongated flexible conduit having an outside diameter substantially equal to the diameter of said bore disposed within and extending substantially the full length of said bore, said conduit being longer than the depth of said bore and having an open end disposed therein and its other end projecting outwardly therefrom, hose coupling means secured on said other end, a rigid hook member pivotally secured to the open end of said conduit, said hook member including a pair of slender reversely bent hook portions projecting radially outward from said open end and inclined in the direction of said other end and penetrating the side walls of said bore adjacent the terminal end thereof to prevent withdrawal of said conduit from within said bore, and means bonding said flexible fluid conduit to the internal surface of said bore throughout a major portion of the length thereof.

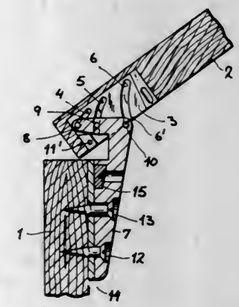
3,359,592
DRAPERY CARRIERS
Morris A. Saltz, 1083 S. Ogden Drive, Los Angeles, Calif. 90019
Filed June 24, 1965, Ser. No. 466,632
4 Claims. (Cl. 16—93)

1. In a device adapted to support drapery and the like from a traverse rod having a longitudinal access slot opening into a longitudinal channel of the rod which is substantially wider than the slot: a plurality of carriers, each carrier including an upper body having a shank of less width than the width of the slot and adapted to extend thereinto, said body having an outer portion secured to said shank and extending laterally of and in opposite direction beyond the shank to overlie the exterior of the rod on opposite sides of its slot, said body further having an inner portion secured to said shank in spaced relation to said outer portion and extending laterally of and in opposite directions beyond the shank to overlie the interior of the rod on opposite sides of its slot each carrier further including a leg depending from said outer portion of said upper body; flexible webs extending between the outer portions of adjacent carriers laterally of the sides thereof; each of said webs being secured at one end to



the outer portion of a leg of a carrier below said outer body portion and inner body portion and having a pin at its opposite end extending in an axial direction inwardly of said outer portion of said leg and disposed in a bore in the outer portion of the leg of an adjacent carrier opening through the outer portion of said leg to releasably retain said carriers in series with respect to each other said bore being located below said outer and inner body portions.

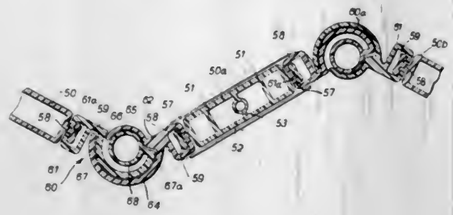
3,359,593
CONCEALED CABINET HINGE
Karl Lautenschläger, Jr., Wersau, Odenwald, Germany, assignor to Karl Lautenschläger K.G., Wersau, Odenwald, Germany
Filed Sept. 30, 1964, Ser. No. 400,659
14 Claims. (Cl. 16—164)



1. In a cabinet hinge for securing a door to a cabinet for swinging movement about an axis parallel to respective edges of the door and a frame receiving the door in a closed position thereof and formed by the cabinet, said hinge comprising a guide head mounted upon said door proximal to said edge thereof, a support mounted on said cabinet proximal to said edge thereof and having a shank engaging said head, said head having a surface lying in a plane perpendicular to the swinging axis of the door and to said edges formed with a pair of guide grooves spaced from said edges, and said shank having a pair of slide bodies projecting transversely to said surface and respectively received in said grooves for sliding displacement therein, the improvement wherein
(a) said surface is formed with a further guide groove opening at one end thereof in the direction of said shank and spaced from said edges further than the first-mentioned grooves; and

(b) a further slide body projecting from said shank transversely of said surface and received in said further groove for guiding said door upon door-closing movement thereof at least during the portion of said movement at which said door enters said frame but withdrawn from said further groove in an open position of the door.

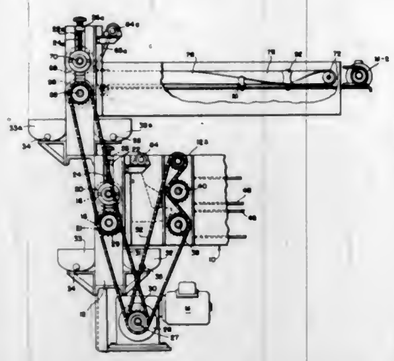
3,359,594
FOLDING CLOSURES
Beno Johannes Pastoor, 1170 Warden Ave., Scarborough, Ontario, Canada
Filed Apr. 2, 1965, Ser. No. 444,970
5 Claims. (Cl. 16—178)



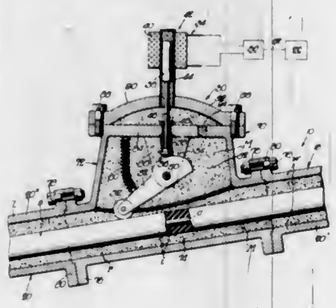
3. A hinge construction comprising first and second parts provided with fastening means to secure the part to a panel or the like, said first part being provided with a web supporting a radially spaced concentric arrangement of at least one partial cylindrical member and a complete cylindrical member supported by an inturned edge of the innermost of said partial cylindrical members, said inturned edge being located substantially opposite the supporting web with respect to the arrangement and in a plane common with the plane of the one side of the web, said second part being provided with a web supporting a radially spaced concentric arrangement of partial cylindrical members telescopically slidable in a longitudinal direction onto and into intermeshed relationship with the cylindrical members of the first part, the innermost partial cylindrical member of the second part being rotatable between the complete cylindrical member and the innermost partial cylindrical member of the first part, the axis of each arrangement lying in a plane common with one side of the panel to which it is to be secured wherein, when said hinge parts are assembled in folded position, the innermost partial cylindrical members of the second part is enclosed between the complete cylindrical member and the innermost partial cylindrical member of the first part and said common planes are immediately adjacent each other in parallel relationship.

3,359,595
ROLLER DEVICE FOR REMOVING THE MEAT FROM KING CRAB LEGS
Donald Victor Anderson, Port Orford, Oreg., and James G. Gillman, Hemet, Calif., assignors of thirty percent to Wayne Luders and ten percent to Paul D. Jackson
Continuation of application Ser. No. 545,214, Apr. 20, 1966, which is a continuation of application Ser. No. 465,290, June 21, 1965, which is a division of application Ser. No. 331,452, Dec. 18, 1963, now Patent No. 3,256,556, dated June 21, 1966, which is a continuation of application Ser. No. 97,090, Mar. 20, 1961. This application Dec. 27, 1966, Ser. No. 605,080
3 Claims. (Cl. 17—2)

1. A machine for removing the meat from king crab legs, comprising a pair of rollers adjacent to each other, disposed with their axes in substantially parallel coplanar relationship and the surfaces of said rollers cooperatively forming a feed nip at one side of the pair of rollers directly engageable with opposite sides of a king crab leg, each roller of said pair being at least substantially four inches in diameter and at least one roller of said pair having a facing of firm, yieldable resilient material for embracing a king crab leg sufficiently to feed it into the feed nip of said pair of rollers, and drive means connected to rotate the rollers of said pair in opposite directions such that the surfaces of the rollers of said pair in such feed nip are moving toward each other.



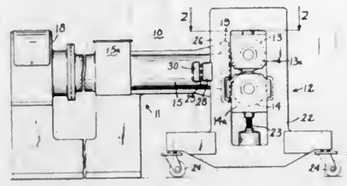
3,359,596
STOCK CATENARY CONTROL IN CONTINUOUS VULCANIZER
Alden W. Nelson, West Mystic, and Frank B. Johnson, Mystic, Conn., assignors to Crompton & Knowles Corporation, Worcester, Mass., a corporation of Massachusetts
Filed June 16, 1965, Ser. No. 464,396
12 Claims. (Cl. 18—6)



1. In a continuous vulcanizer installation, the combination with a reclining tubular chamber with a peripheral wall for confining a vulcanizing medium therein, a variable-speed feed for continuously moving through said chamber vulcanizable stock in catenary form which varies with the speed of said feed, and a sensing element mounted within said chamber for movement in following relation with stock therein on its rise and fall with variations in its catenary form, of an electrical device signalling variations in the catenary form of stock in said chamber whereby to control the speed of said feed for stock movement through said chamber with clearance from said wall thereof, said device having means to produce

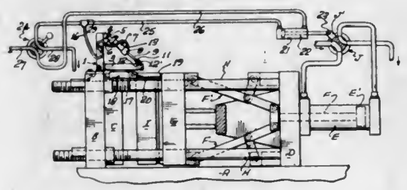
an operating voltage, including first and second cooperating elements inside and outside said chamber, respectively, of which said first element is guided in said chamber for movement therein, with said first and second elements reacting through said chamber wall to modify said voltage in response to movement of said first element, and said first element being moved by said sensing element.

3,359,597
EXTRUDER-ROLLER DIE
Herbert W. Bainton, Woodbridge, Conn., assignor to Farrel Corporation, Ansonia, Conn.
Filed July 26, 1966, Ser. No. 567,914
12 Claims. (Cl. 18—12)



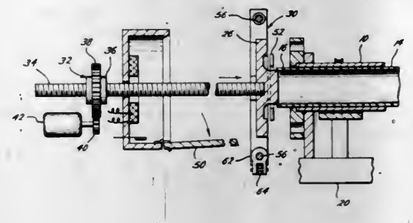
1. In an extruder-roller die including an extruder adapted to supply material in a plastic state to a pair of rolls for calendering, the rolls being rotatably mounted in a movable frame; means resiliently connecting the extruder to the frame, and means for sensing movement of the frame relative to the extruder.

3,359,598
SAFETY MEANS FOR HYDRAULIC PRESSES AND THE LIKE
Harry R. Bucy, 550 N. Brighton St., Burbank, Calif. 91506
Filed Apr. 13, 1965, Ser. No. 447,809
16 Claims. (Cl. 18—16)



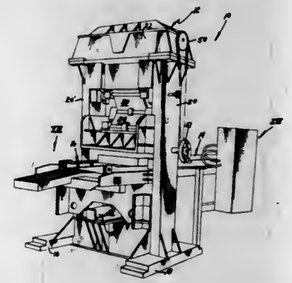
1. A safety means for preventing unintended closure of a mold in a fluid pressure actuated press mechanism of the type comprising a frame structure and fixed and movable platen means for supporting the halves of a mold or die associated with said frame structure fluid pressure means on the frame structure operative to move the movable platen means toward and away from the fixed platen means and control means for starting and stopping actuation of the fluid pressure means; said safety means being mounted on said press mechanism and comprising a bar of slightly less length than the distance between the opposed surfaces of said movable and fixed platen means when separated to the greatest extent and normally positioned endwise between the separated platen means, a supporting bracket on which said bar is mounted for movement between said normal position and another position out of the path of movement of the movable platen means toward the fixed platen means, and power means interconnected with the press mechanism control means and operatively connected to said bar effective automatically to move said bar to said other position as a prior incident only to intended movement of the movable platen means toward the fixed platen means.

3,359,599
LINER FLARING APPARATUS
Jim R. Martin and William H. Wehner, Jr., Houston, Tex., assignors to John L. Doré Co., Houston, Tex., a corporation of Texas
Filed May 6, 1964, Ser. No. 365,252
4 Claims. (Cl. 18—19)



1. A spring loaded flaring ear assembly for use with a conduit liner flaring device including:
a frame,
a guide attached to the frame,
a pair of slides slidably mounted on the guide,
a collar attached to the guide between the slides,
springs mounted on the guide yieldingly urging the slides apart and away from the collar,
a releasable stop mounted on the frame and engagable with the slides,
a semi-circular ear attached to each slide,
the ears being butted together when the springs are compressed and the stop engages the slides,
the ears being urged apart when the stop is released, and
stop releasing means.

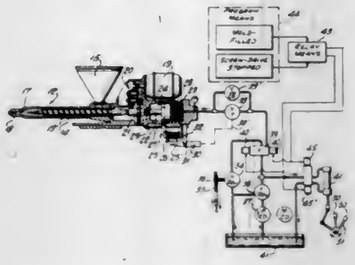
3,359,600
SHEET PREHEATING AND FORMING METHOD AND APPARATUS
Robert E. O'Brien and Edward C. Markowski, Grand Rapids, Mich., assignors Kirkhof Manufacturing Corporation, Grand Rapids, Mich., a corporation of Michigan
Filed July 22, 1965, Ser. No. 474,035
16 Claims. (Cl. 18—19)



1. Apparatus for treating thermoplastic web material, comprising: an elongated preheat oven having a web inlet on one end and a web outlet on the other end; said oven having a central zone and a pair of edge zones; heat

application means in said central zone to soften the main central portion of a web passing therethrough; air bleed edge cooling means directed along said edge zones to maintain the web edges cool and strong; and web advancing means in said edge zones to engage the cool web edges for controllably advancing the web.

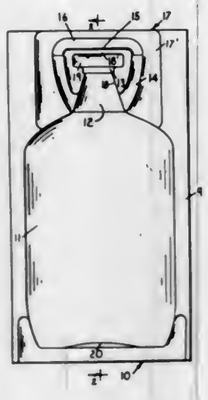
3,359,601
INJECTION-MOLDING MACHINE FOR PLASTICS
William Benjamin Evans, New Britain, Conn., assignor to The New Britain Machine Company, New Britain, Conn., a corporation of Connecticut
Filed Apr. 14, 1965, Ser. No. 448,205
14 Claims. (Cl. 18—30)



1. In a plastic injection-molding machine, mold-support means, plasticizing means including an elongated tubular chamber with material feed means at one end and a mold-injection nozzle at the other end, a plasticizing screw reciprocably supported within said chamber and having threads overlapping said material feed means when in retracted position, rotary-drive means for rotating said screw within said chamber to plasticize material introduced at said material feed means, said drive means driving said screw after completion of a mold injection, whereby said screw is displaced in a retracting direction as plasticized material is accumulated in the forward end of said chamber, hydraulic-feed means, including a piston and cylinder, for longitudinally advancing said screw from its retracted position to a forward position adjacent said nozzle, said hydraulic feed means including bleed means restricting expulsion of fluid and thus continuously axially forwardly loading said screw as long as said screw is retracting, said hydraulic-feed means including variable loading control means, and selectively variable means longitudinally continuously responsive to rearward displacement of said screw and continuously connected in load-varying control relation with said hydraulic-feed means, whereby quality of accumulated melt may be better controlled as the effective length of plasticizing screw changes during melt accumulation.

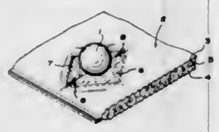
3,359,602
MOLDS FOR MANUFACTURING PLASTIC BOTTLES
Robert L. Bailey, Spokane, Wash., assignor to National Distillers & Chemical Corporation, New York, N.Y.
Original application Sept. 20, 1963, Ser. No. 310,221. Divided and this application Apr. 25, 1966, Ser. No. 544,772
2 Claims. (Cl. 18—35)

1. A mold for manufacturing hollow plastic containers having a solid integral handle thereon extending over the opening of the container, comprising a pair of complementary dies each having a planar parting surface with a container cavity having a body portion and a reduced neck portion recessed therein for molding substantially half of the container, a handle cavity extending completely over said reduced neck portion recessed into said parting surface adjacent to and in communication with said reduced neck portion of said container cavity on opposite sides of said neck portion, flash cavity means recessed into said parting surface and surrounding said handle cavity except where said handle cavity communicates with the neck portion of said container cavity, pinch-off surface means comprised of a relatively narrow ridge defining the boundary between said handle cavity and said flash cavity means with the upper surface of said ridge disposed in the plane of said parting surface whereby said complementary dies are adapted to compressively mold a solid handle when closed upon a



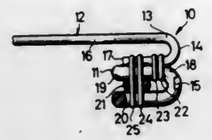
hollow parison of soft plastic material disposed therebetween while said pinch-off surface means restrict the flow of material from the handle cavity into said flash cavity means tending to force the plastic out of said handle cavity into said container cavity to prevent a depression or hollow from being blown into said handle cavity during blow molding of said container, said flash cavity means and said handle cavity being so dimensioned relative to the volume of the parison of soft plastic material so that said flash cavity means will be substantially filled without overflowing while said pinch-off surface means restrict the flow of material tending to force the plastic out of the handle cavity into said container cavity.

3,359,603
BUTTON FASTENER
Johan E. Tuvert, Kungsportsavenyen 22, Goteborg, Sweden
Filed Aug. 31, 1965, Ser. No. 483,999
5 Claims. (Cl. 24—90)



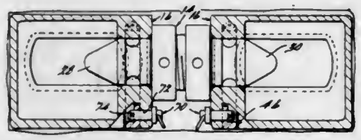
1. A fastener device for securing two juxtapositioned layers of material together comprising; at least one generally triangular segment of elastic material inset into each layer of material, each of said elastic segments having at least one free edge forming one side of a button hole, a button member, means generally centrally connecting said button member to the free edge of one of said elastic segments, said button being so shaped as to deform said segments and pass readily thereby when light pressure is applied normal to the plane of the layers, whereby said button member may be selectively passed through either or both of said button holes to secure the layers together.

3,359,604
SLIDING CLASP FASTENER
Friedrich Glindmeyer, Stolberg, Rhineland, Germany, assignor to William Prym-Werke K.G., Stolberg, Rhineland, Germany
Filed June 3, 1966, Ser. No. 555,085
Claims priority, application Germany, June 3, 1965, P 25,413
5 Claims. (Cl. 24—205.1)



1. A sliding clasp fastener comprising, in combination, stringers; substantially U-shaped connecting elements connected by sewing to respective stringers and having each a pair of superimposed limbs and a base connecting the limbs; coupling faces on the base of each U-shaped connecting element effective to permit releasable interengagement of the connecting elements of one stringer with those on the other stringer; and a fold in each stringer effective to cover the respective connecting elements and forming two layers in each stringer, one limb of each connecting element abutting against one of said layers, and said sewing comprising a stitch for each connecting element which stitch is adjacent a coupling face of the respective connecting element and engages only said one layer and that one of said superimposed limbs which abuts against said one layer.

3,359,605
CONTAINER COUPLER
Adrian F. Hulverson, Grosse Pointe Woods, and John M. Bailey, Mount Clemens, Mich., assignors to Fruehauf Corporation, Detroit, Mich., a corporation of Michigan
Filed Oct. 23, 1965, Ser. No. 503,811
1 Claim. (Cl. 24—211)



A coupler for shipping containers having circular coupler receiving apertures in the walls thereof said coupler comprising

a threaded cylindrical shank portion having generally conical nose portions at opposite ends thereof,

a pair of cylindrical bearing portions between the threaded portion of said coupler and said nose portions, respectively, the diameter of said bearing portions being complementary to the apertures in the walls of said container so as to be acceptable therein in load transfer relationship,

a pair of annular grooves in said bearing portions, respectively,

a pair of generally U-shaped locking members having bight portions and spaced leg portions, respectively, the spacing of the leg portions of said locking members being complementary to the diameter of the annular grooves in the bearing portions of said coupler so as to be receivable therein in axial load transfer relationship in opposite directions relative to the central axis of said coupler,

said locking members being receivable in locking member apertures in said containers, respectively, said locking member apertures extending normally to the coupler accepting apertures for the reception of said locking members in axial load transfer relationship relative to the central axis of said coupler,

a pair of collars threadably received on the shank portion of said coupler and advanceable against said containers, respectively, for taking up slack between the containers, couplers and locking members, and

means for securing said locking members in the locking member apertures in said containers.

3,359,606
CLASP FOR JEWELRY
Simon Geldwerth, 1434 57th St., Brooklyn, N.Y. 11219
Original application June 15, 1965, Ser. No. 464,002, now Patent No. 3,308,517, dated Mar. 14, 1967. Divided and this application Sept. 19, 1966, Ser. No. 593,622
10 Claims. (Cl. 24—230)



1. A catch for a clasp, comprising an elongated strip of spring metal folded along a plurality of spaced parallel transverse bending lines, a medial portion of the strip having parallel side margins and being doubled upon itself along one of said bending lines to provide upper and lower latching portions having a width substantially equal to the lowermost slot in the front wall means of a keeper, the upper latching portion being shorter than the lower latching portion, both end portions of the strip extending upwardly from a respective latching portion along respective ones of said bending lines in side-by-side parallel relationship to provide an actuating portion and an attaching portion, both said last-mentioned portions terminating in horizontal upper margins, the upper margin of the actuating portion being normally disposed above the upper margin of the attaching portion, said upper latching portion having inwardly directed marginal recesses adjacent the actuating portion for locking the catch in place, said actuating portion including a second portion of metal attached to the first mentioned actuating portion by a horizontal line of bending at the upper margin thereof, said second portion extending rearwardly in a horizontal direction.

3,359,607
RELEASABLE CATCH
Joseph R. Metz, Ridgefield, Conn., assignor to Norco, Inc., Ridgefield, Conn., a corporation of Connecticut
Filed Mar. 24, 1966, Ser. No. 537,052
11 Claims. (Cl. 24—239)

1. A heavy duty releasable catch comprising, in combination:

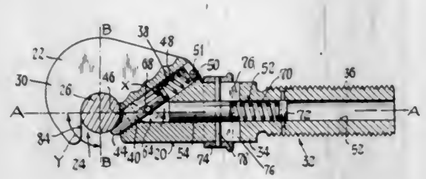
(a) a body having a hook formation including a downwardly open gap, a first guide channel which opens

into a gap of the hook, and a second guide channel communicating with said first guide channel,

(b) a locking bar movable longitudinally in said first guide channel between an advanced position enabling one end thereof to protrude into said hook gap to lock a cooperable member received therein and a retracted position wherein the end is withdrawn from the gap for freeing said member,

(c) yieldable means urging said locking bar to advanced position,

(d) a release bar slidable in said second guide channel between extended and retracted positions,



(e) an operable member slidably carried by said hook body on the exterior thereof, said operable member having means engageable with a force-applying instrumentality to effect its movement,

(f) means connecting said operable member and said locking bar for simultaneous movement,

(g) cooperable means connected with said bars, effecting a retraction of the locking bar in response to retracting movement of the release bar in a direction away from said first guide channel, and

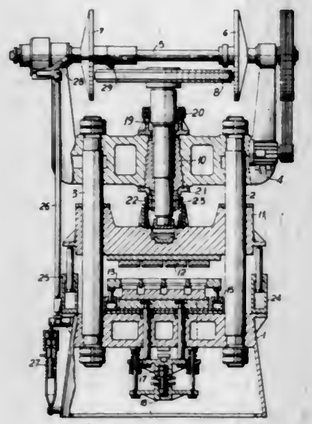
(h) means biasing said release bar to extended position.

3,359,608

FRICTION AND SCREW PRESS FOR THE MANUFACTURE OF CERAMIC ARTICLES

Ulrico Walchhütter, Via Abamonti 2, Milan, Italy

Filed Mar. 24, 1964, Ser. No. 354,223
Claims priority, application Italy, Mar. 27, 1963, 6,251/63, 6,252/63; Mar. 17, 1964, 5,961/64
13 Claims. (Cl. 25—45)



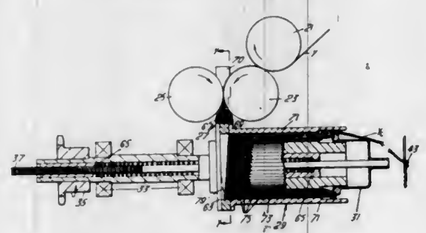
1. A tile press comprising, in combination, a base having an upper surface; a fixed traverse; support means supporting said fixed traverse in fixed position upwardly spaced from said upper surface of said base; a movable traverse located in the space between said upper surface and said fixed traverse and being guided on said support means for movement toward and away from said upper surface; a threaded bushing carried by said fixed traverse and having an axis substantially normal to said upper surface; a screw spindle extending through said bushing threadingly engaged therewith and having a lower end abutting against said movable traverse; friction drive means cooperating with said screw spindle to turn the latter in one and in the opposite direction about its axis to thereby move said spindle in axial direction so that said lower end of said spindle will exert during downward movement thereof a downward pressure on said movable traverse; hydraulic jack means carried by said base and cooperating with said movable traverse; means for controlling flow of pressure fluid into and out from said hydraulic jack means so as to impart an upward pressure smaller than the downward pressure produced by said spindle; upper mold means carried by said movable traverse; and lower mold means carried by said base.

3,359,609

PROCESS FOR CRIMPING THERMOPLASTIC FILAMENTARY MATERIAL

Kurt Iwnicki, Ponthir, and James Frederick Thomas, Newport, England, assignors to British Nylon Spinners Limited, Pontypool, Monmouthshire, England

Filed Sept. 14, 1964, Ser. No. 396,190
Claims priority, application Great Britain, Sept. 26, 1963, 37,848/63
6 Claims. (Cl. 28—72)



6. A process for crimping and treating undrawn thermoplastic filamentary material comprising the steps of

(a) continuously drawing a unit of said material to orient the molecules thereof;

(b) continuously forwarding said drawn material at a uniform rate to feed means for a stuffer-box crimper;

(c) crimping said drawn material in said crimper;

(d) forwarding said drawn crimped material out of said crimper in compacted form by the pressure exerted on it in said crimper;

(e) directing said material at least substantially tangentially into one end of an annular treating zone;

(f) advancing said material axially of said zone in a plurality of contiguous helical coils therealong whilst the crimp is set; and

(g) continuously withdrawing the material in unitary form from the last of said helical coils.

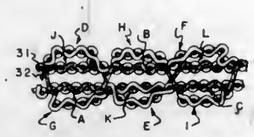
3,359,610

WOVEN FABRICS

Charles R. Faircloth, Abbeville, S.C., assignor to Deering Milliken Research Corporation, Spartanburg, S.C., a corporation of Delaware

Original application Dec. 17, 1963, Ser. No. 331,162, now Patent No. 3,240,656, dated Mar. 15, 1966. Divided and this application Oct. 11, 1965, Ser. No. 494,321
6 Claims. (Cl. 28—72)

1. A process for manufacturing a fabric of at least two plies comprising forming a fabric having at least two outer plies containing non-elastic yarns, attaching said plies together with a plurality of elastically developable yarns, said elastically developable yarns being interconnected alternately with the yarns of both of said outer plies at spaced locations to form segments of attachment of said elastically developable yarns and the yarns of said outer plies, said segments of attachment in adjacent yarns of both plies being in opposing relationship; subjecting



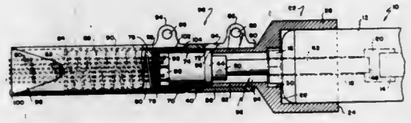
said fabric to conditions whereby the elastically developable yarns in both plies shrink to cause the yarns located in the segments of attachment of both plies to be pulled out of the plane of yarns of the same ply outside the segments of attachment, to provide puckered effects in both outer plies of said fabric, said shrunken yarns being located interiorly of said fabric.

3,359,611

ADAPTER FOR RECIPROCATING HAMMER

Thomas M. Kelley, 7403 Park Terrace Drive, Alexandria, Va. 22307

Filed Oct. 21, 1965, Ser. No. 500,441
15 Claims. (Cl. 29—81)



1. An adapter for providing a driving connection and an assemblage between a reciprocating hammer including a barrel with a reciprocating plunger therein and a needle scaling head including an elongated housing with a spring biased needle retainer and needles therein, said adapter comprising:

a socket member slidably and snugly received on the end of the barrel of said hammer;

a hollow stem carried by said socket member; and

an actuator having a piston member thereon received within said needle retainer in said needle scaling head;

said actuator also having an extended shank thereon received within said hollow stem and extending into the barrel of said hammer in a position to be struck by said reciprocating plunger;

said elongated housing of said needle scaling head being rigidly connected to said stem on said socket member whereby the reciprocating movement of said plunger in said barrel is transmitted to said piston member and said piston member impels said needles in said retainer outwardly of said elongated housing into contact with a surface to be scaled.

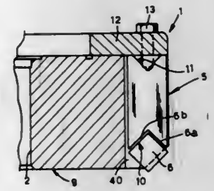
3,359,612

MILLING HEAD WITH REVERSIBLE TIP CUTTERS

Livio Mina, Fino Mornasco, Italy, assignor to U.S.A.P. Utensileria Speciale Alta Precisione, Fino Mornasco, Italy

Filed May 10, 1967, Ser. No. 637,520
Claims priority, application Italy, May 14, 1966, 11,599/66
3 Claims. (Cl. 29—105)

1. In a reversible-tip milling head comprising a circular body formed with a circumferential series of slots, an elongated stop block in each of the slots formed at one end with a seat matching a relevant part of the contour of a reversible tip for said head, and clamp means associated with each of said slots for clamping in the latter their respective stop blocks and tips, the improvement comprising each of said stop blocks being reversible with



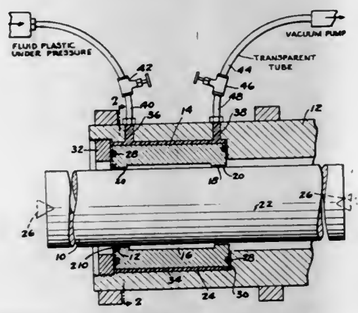
respect to its slot and having formed at its opposed end a further seat differing from the first mentioned seat thereby to operatively accommodate in its reversed position in the slot a tip correspondingly differing from the first mentioned tip.

3,359,613

HYDROSTATIC BEARING AND METHOD OF MAKING SAME

John K. Rye, Beverly Hills, Mich., assignor to F. Jos. Lamb Company, Inc., Detroit, Mich., a corporation of Michigan

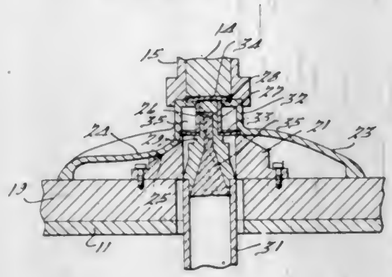
Filed May 27, 1965, Ser. No. 459,208
14 Claims. (Cl. 29—149.5)



1. The method of forming a hydrostatic bearing assembly adapted for supporting a movable member for highly accurate movement with respect to a bearing surface of a support member, said assembly including a bearing pad on one of said members having a fluid pocket in one face thereof which is peripherally surrounded by a bearing surface juxtaposed and closely conforming in contour to a bearing surface of the other member, said method comprising the steps of forming a recess in one of said members which is adapted to receive the bearing pad with a relatively loose fit, inserting the bearing pad within said recess and assembling the movable member with the support member so that the bearing surface on the bearing pad is accurately aligned and in bearing contact with the bearing surface on said other member, filling the portion of the recess not occupied by the bearing pad with a resinous material which when set is adapted to rigidly bond the bearing pad to said one member and locate the bearing pad in rigidly fixed position on said one member in alignment and bearing contact with the bearing surface on the other member, causing said resin to set, and thereafter forming a clearance gap of uniform width between the bearing surfaces of the bearing pad and said other member such that when oil under pressure is directed into said fluid pocket it is permitted to drain there-

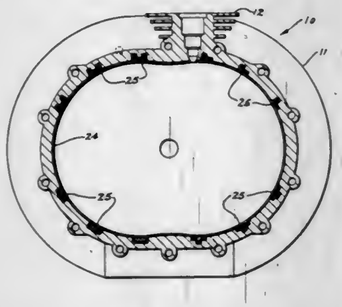
from through said clearance gap and thereby provide a uniform film of oil between said last two mentioned bearing surfaces.

3,359,614
METHOD OF MAKING OIL-IMPREGNATED WICKING MATERIAL FOR BEARINGS
Martin L. Abel, 14141 Balfour, Oak Park, Mich. 48237
Application Apr. 2, 1965, Ser. No. 445,084, which is a division of application Ser. No. 269,576, Apr. 1, 1963, now Patent No. 3,226,801, dated Jan. 4, 1966. Divided and this application Oct. 15, 1965, Ser. No. 521,469
5 Claims. (Cl. 29—149.5)



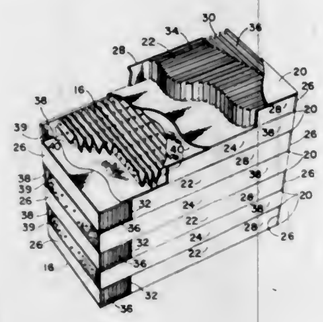
1. A method of making oil-impregnated wicking material for lubricating bearings, which includes the steps of, shredding an oil-retaining fibrous material comprising small fibers mated together in a manner to break down the material substantially to the fibers from which the material was formed, and mixing a bearing oil with said shredded fibers to form an oil-impregnated wicking material which can be injected into bearing wells, the weight of the bearing oil in said oil-impregnated wicking material being several times the weight of said shredded fibers.

3,359,615
METHOD OF MAKING A DIE CAST CYLINDER FOR INTERNAL COMBUSTION ENGINES
Alfred F. Bauer, Toledo, Ohio, assignor to National Lead Company, New York, N.Y., a corporation of New Jersey
Filed Mar. 6, 1963, Ser. No. 263,313
6 Claims. (Cl. 29—156.4)



1. The method of making a reinforced light metal cylinder for an internal combustion engine which includes depositing a coating of a metal having a higher melting point than the light metal on a core piece, applying reinforcing elements over said coating on at least those areas where high stress occurs during engine operation, depositing additional coating material over at least portions of said reinforcing elements to retain their position with respect to said core piece, introducing the core piece with the coating and reinforcing elements thereon into a die casting die, casting light metal around said core and reinforcing elements under die casting pressures to embed said reinforcing elements and to unite the light metal with the exposed surface of said coating, and stripping said casting from said core whereby said coating and reinforcing elements remain with said casting and said core can be returned for subsequent casting cycles.

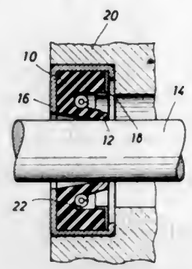
3,359,616
METHOD OF CONSTRUCTING A PLATE TYPE HEAT EXCHANGER
Alan G. Butt, La Crosse, Wis., assignor to The Trane Company, La Crosse, Wis., a corporation of Wisconsin
Filed June 28, 1965, Ser. No. 467,623
13 Claims. (Cl. 29—157.3)



1. In the construction of a brazed plate type heat exchanger having first and second passageways disposed on opposite sides of a common wall for exchanging heat therethrough between first and second heat exchanger fluids flowing in said first and second passageways therethrough respectively, wherein only the first of said first and second passageways contains a heat transfer packing extending from said common wall to the opposite wall of said first passageway, the method of establishing a highly thermal conducting union between said packing and said common wall comprising the steps of: providing within said second passageway a spacer member extending from said common wall in spacing relation to the opposite wall of said second passageway; providing a brazing alloy between said packing and said common wall; heating said exchanger to a temperature sufficiently high to allow brazing alloy to flow between said packing and said common wall; supporting said common wall inwardly of the margins thereof in contiguous relation with said packing during the heating step via forces exerted by said spacer member; cooling said exchanger thereby solidifying said brazing alloy in bonding relation with said common wall and said packing; collapsing said spacer member and withdrawing said member from said second passageway.

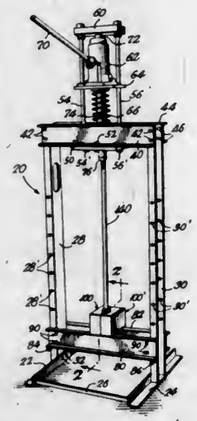
3,359,617
METHOD OF MAKING AN ANNULAR SPRING
Hermann Baumler, Burscheid, Cologne, Germany, assignor to Goetzewerke Friedrich Goetze Aktiengesellschaft, Dusseldorf, Germany
Filed May 13, 1965, Ser. No. 455,390
3 Claims. (Cl. 29—173)

1. The method of producing a spring ring comprising the steps of: stressing a length of spirally wound wire in an axial direction with a predetermined stress which is equivalent to the stress which the ring has when positioned in use, cutting said length of wire when stressed in an axial direction to a predetermined length which is



equal to the circumferential length which the spring ring will have when in use, and joining the ends of said length of wire which is cut to form said ring.

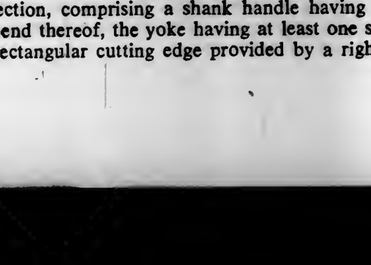
3,359,618
AXLE BEARING TOOL FOR USE WITH A PRESS
John B. Murphy, P.O. Box 1023, Concord, N.C. 28025
Filed Dec. 10, 1965, Ser. No. 512,902
10 Claims. (Cl. 29—200)



1. An axle bearing tool for use with a press comprising body means including first and second portions of substantially similar construction and each being formed of a strong rigid material, each of said body portions including spaced opposite end walls each of which defines an outwardly facing substantially flat surface, said end walls being interconnected with one another by side wall portions, said side wall portions defining an open side area in each of said body portions, each of said opposite end walls including a recessed portion formed in the central part of the side edge thereof at said open side area for receiving a shaft.

3,359,619
APPARATUS FOR ASSEMBLING HYPODERMIC NEEDLES AND BARRELS
John R. B. Walkden, Toledo, Ohio, assigor to Owens-Illinois, Inc., a corporation of Ohio
Filed Sept. 29, 1965, Ser. No. 491,268
20 Claims. (Cl. 29—208)

1. In an apparatus for assembling hypodermic needles and glass barrels, the combination comprising
a turret,
means for continuously rotating said turret,
a plurality of chucks mounted on said turret,
each said chuck being mounted for vertical movement on said turret in a direction generally parallel to the axis of rotation of said turret,
each said chuck having means thereon for gripping a barrel,
a plurality of needle holding chucks mounted on said turret for rotation with said turret and in overlying relation to said barrel holding chucks,
means for opening and closing said needle chucks as the turret rotates,
guide means individual to each said needle chuck for guiding a needle to said needle chuck,
said guide means being rotatable with said needle chuck,
means at a station along the path of movement of said guide means for feeding needles successively to successive guide means,

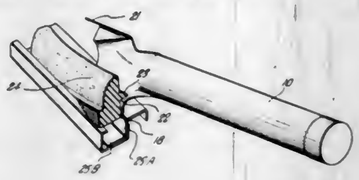


adhesive applying means at a point along the path of said needles,
means for moving said barrel holding chuck upwardly and downwardly as the turret rotates to move a barrel into position where the needle that is held above said barrel by the needle holding chuck is inserted in said barrel,
and means for operating said needle holding chuck and said barrel holding chuck such that a needle is inserted and gripped in each needle holding chuck, adhesive is applied to said needle in said needle holding chuck, and a barrel is moved upwardly toward said needle in said needle holding chuck,
and said needle holding chuck is opened and the barrel holding chuck with the needle attached is thereafter lowered to move said assembled needle and barrel downwardly and thereby move the needle out of the needle holding chuck,
and means for removing an assembled needle and barrel from the apparatus.

3,359,620
WEATHERSTRIP REMOVING TOOL
Travis L. Hunter, 5002 Persimmon Ave., Temple City, Calif. 91780
Filed Oct. 4, 1965, Ser. No. 492,407
5 Claims. (Cl. 29—235)

4. A tool for removing a molded resilient packing material bonded to a channel substantially rectangular in cross-section, comprising a shank handle having a yoke at one end thereof, the yoke having at least one substantially rectangular cutting edge provided by a right angle

blade having two surfaces meeting at substantially a right angle, one of these surfaces joining the yoke at an angle sufficient to form a trough wherein an edge of the channel may slidably fit during operative axial movement of the tool along the longitudinal axis of the channel, the longitudinal axis of the trough positioned at an acute angle with the longitudinal axis of the handle, the other



surface of the blade terminating in a sharp point for initial insertion of said point between an edge of the channel and said packing whereby a twisting movement of said handle inserts said right angle blade in a receiving right angle of said channel between said channel and said packing for axial movement therein to cut through the bond between the packing and channel.

3,359,621
METHOD OF MAKING A DEVICE FOR MONITORING SHUT-DOWN NUCLEAR REACTORS
Frank B. Quinlan, Richland, Wash., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Sept. 17, 1965, Ser. No. 488,291
3 Claims. (Cl. 29—419)

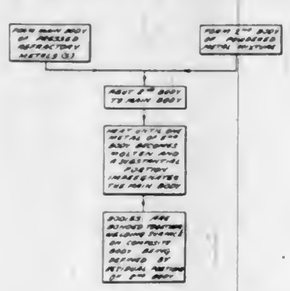


1. A method of preparing a safing wire for use in safeguarding a nuclear reactor to detect surreptitious use thereof, comprising providing a tube of a high melting metal, pulling one or more strands of a relatively low melting metal, one or more strands of a target metal which will become radioactive in the event of a neutron chain reaction, and one or more thin strands of a different metal through said tube, said last strands being of a sufficient thinness so that they are inherently kinkable, while allowing said last-mentioned strands to kink within the tube, and rotary swaging the tube to compact the assembly.

3,359,622
PROCESS FOR MAKING COMPOSITE POROUS ELEMENTS
Rene Meyer and Pierre Potet, Grenoble, France, assignors to Societe des Poudres Metalliques et des Alliages Speciaux Ugine-Carbone, Paris, France, a corporation of France
No Drawing. Filed Feb. 6, 1963, Ser. No. 256,544
10 Claims. (Cl. 29—420.5)

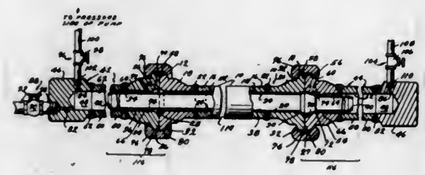
1. A process for making a composite porous element having at least two distinct layers of different porosity adhered together, each of said layers composed of metallic grains and a binder and the granulometry of the grains in each of said layers being in different ranges, the grains in all of said layers having a substantially common range of sintering temperature, said process comprising:
(1) preparing a first paste of metallic grains of a specified granulometry range and a fugitive binder,
(2) preparing a second paste of metallic grains of a specified granulometry range differing from said first range and a fugitive binder,
(3) spreading said first paste into a first self-supporting layer capable of being mechanically deformed,
(4) disposing said second paste upon said first layer to form a second self-supporting layer capable of being mechanically deformed distinct from said first layer,
(5) simultaneously fabricating said first and second layers at substantially ambient temperature without interpenetration of metallic grains to adhere said layers to form said composite element, and
(6) heating said composite element at a temperature in said sintering temperature range to form a composite body having discrete zones of differing porosities corresponding to the initial layers of differing granulometry.

3,359,623
METHOD FOR MAKING REFRACTORY METAL CONTACTS HAVING INTEGRAL WELDING SURFACES THEREON
Childress B. Gwyn, Jr., Export, Pa., assignor to Talon, Inc., Meadville, Pa., a corporation of Pennsylvania
Filed May 13, 1965, Ser. No. 455,439
5 Claims. (Cl. 29—420.5)



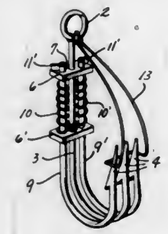
1. A method for making a refractory powder metal electrical contact having an integral welding surface thereon, which comprises:
(a) providing a pressed, refractory metal body constituted of:
(1) a refractory material selected from the group consisting of tungsten, molybdenum, mixtures of tungsten and molybdenum, binary alloys of tungsten and molybdenum, tungsten carbide, molybdenum carbide, and mixtures of such materials, and
(2) a non-refractory material selected from the group consisting of silver, copper, silver-copper mixtures and silver-cadmium mixtures in an amount of up to 60% by weight of the refractory metal body;
(b) disposing a powder metal body in abutting relation to said pressed, refractory metal body, the powder metal body being constituted of a mixture of:
(1) a first metal selected from the group consisting of silver, copper and mixtures thereof, in an amount of from 5–95% by weight of said mixture, and
(2) a second metal selected from the group consisting of iron, nickel and nickel-copper alloys, in an amount of from 5–95% by weight of said mixture;
(c) heating the abutting bodies at temperatures of from 1700° to 2500° F. for a period of from 10 minutes to 24 hours to impregnate at least a portion of the first metal constituent of said powder metal body into the refractory metal body and simultaneously bond said bodies to one another, at least a portion of said first metal remaining at an exterior surface of the composite contact thus provided to define a welding surface thereon.

3,359,624
PIPE LINING METHOD
Donald V. Cours, John K. McGee, and Harold L. Lafferty, Houston, Tex., assignors to Gray Tool Company, Houston, Tex., a corporation of Texas
Filed Nov. 29, 1965, Ser. No. 510,274
7 Claims. (Cl. 29—421)



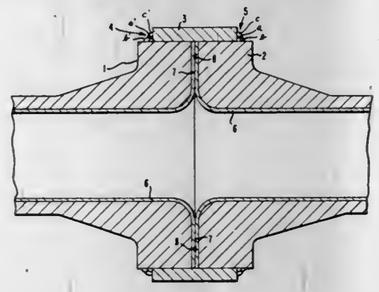
1. A method for lining a pipe having a throughbore surrounded by an inner peripheral surface comprising: disposing a liner in the throughbore, said liner having opposite end portions protruding from each end of the pipe sufficiently to provide for axial contraction of the liner during radial expansion of the liner having a throughbore and having an outer peripheral surface initially smaller diameter than said pipe inner peripheral surface; enclosing each liner protruding end portion with a fixture, forming a circumferential seal between the outer peripheral surface of the liner at each liner protruding end portion and each fixture; disposing a fluid into said liner throughbore; pressurizing said fluid while venting the annulus defined between the outer peripheral surface of said liner, the inner peripheral surface of said pipe and between said circumferential seals, the pressurization being sufficient to eliminate said annulus by plastically expanding said liner outer peripheral surface radially and contracting said liner axially into intimate contact with the inner peripheral surface of said pipe throughout the length of the pipe.

3,359,625
METHOD OF MAKING A FISHING DEVICE
Michael Rossnan, 11724 Lovejoy St., Silver Spring, Md. 20902
Filed Aug. 18, 1965, Ser. No. 480,683
1 Claim. (Cl. 29—436)



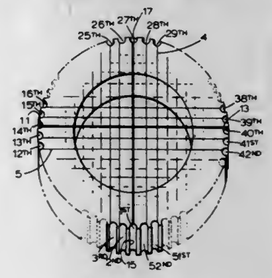
The method of making a fishing device, comprising attaching by welding two plates to the shank portion of a hook having a line attaching terminal, a shank portion and a bite and a barb portion, slidingly mounting for oscillation in said plates the shank portion of a hook, whose upper end is provided with a slot, affixing a coiled spring on the shank portion of the oscillatory hook as the shank portion is being projected through the lower plate, and anchoring the upper terminal of the spring in the lower end of the slot, projecting the slotted end of the hook through the upper plate, welding a metal wedge in the said slot with one end projecting far enough to abut the upper end of the shank of the main carrying hook, and anchoring the lower end of the spring to the shank portion of the main carrying hook adjacent to the lower plate.

3,359,626
PROCESS FOR JOINING GLASS-LINED METAL CONDUITS
Joseph Robert Auld, Wilmington, Richard B. Brown, Newark, Del., and Thomas T. Gniewek, Jr., Pittsburg, Calif., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Apr. 21, 1965, Ser. No. 449,835
4 Claims. (Cl. 29—471.1)



1. A process for joining glass-lined metal conduits, said conduits having a continuous internal glass coating and flanged ends, which comprises aligning the flanges of said conduits in abutting relationship, positioning and welding a retaining sleeve around the flanged rims, said welding being conducted at a temperature such that no portion of said glass-coated surface is heated above about 400° F., thereby securing the glass-lined metal conduits together.

3,359,627
METHOD OF BALANCING LEAKAGE REACTANCE IN RESOLVERS
John F. Emerson, Hackensack, and Charles W. Lang, Clifton, N.J., assignors to General Precision Inc., Little Falls, N.J., a corporation of Delaware
Filed Mar. 1, 1965, Ser. No. 435,888
1 Claim. (Cl. 29—593)



A method of balancing leakage reactance in an instrument having magnetically permeable stator and rotor wound components with slots angularly spaced about the

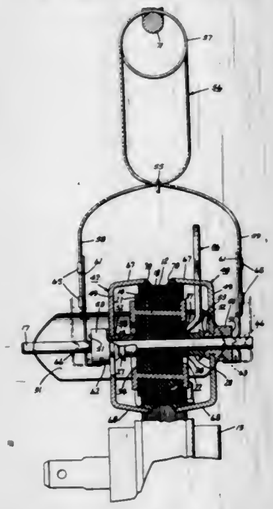
axes of said wound components and each having at least two windings disposed in the slots of said rotor and stator angularly displaced from each other by ninety degrees, comprising the steps of applying an AC voltage across one of the stator windings, rotating the rotor until the output from each of the rotor windings approaches a null point, selecting slots in said wound components in the vicinity of the null points of the one winding producing the smaller output voltage so that the addition of magnetically permeable material will increase the leakage reactance of one of the rotor windings which has less leakage reactance than the other of said rotor windings, and mounting magnetically permeable pins in the selected slots by fixing the pins to the sides of the selected slots without bridging across said slots.

3,359,628

METHOD OF PRODUCING MACHINES HAVING PROPER FREEDOM OF REVOLUTION FOR ROTATABLE ASSEMBLIES THEREIN

William A. Rutledge and Edward E. Kiningham, Fort Wayne, Ind., assignors to General Electric Company, a corporation of New York

Filed Oct. 22, 1965, Ser. No. 500,875
6 Claims. (Cl. 29—596)



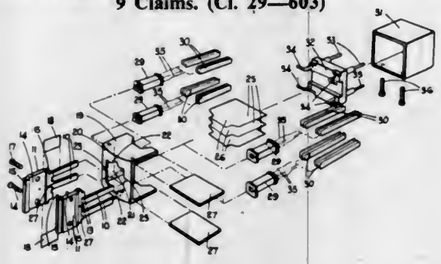
3. A method of manufacturing an electric motor including a stationary assembly including a stator core, a rotatable assembly having a magnetic core secured to revolve with a shaft, and a thrust transmitting means located on either side of the core, and a pair of journal bearing means each formed with a bore rotatably supporting the assemblies for relative rotative, the method comprising the steps of: fastening the assemblies in a fixed relation, with an air gap of predetermined dimensions being fixedly formed between the cores, and with one thrust transmitting means facing away from either side face of the core of the rotatable assembly in spaced relation therewith at a first preselected axial position relative to core; sliding the journal bearing means onto associated shaft journals and biasing the journal bearing means into engagement with the associated thrust transmitting means; pivotally supporting each journal bearing means for angular movement in two separate directions, as the journal bearing means in turn support the combined weight of the stationary and rotatable assemblies whereby the combined weight of said assemblies causes the journal bearing means bores to pivot into alignment with the associated journal of the shaft; securing each of said journal bearing means and said stationary assembly together as both of said journal bearing means are being biased toward the associated thrust transmitting means while carrying the combined weight of said assemblies and as said preselected axial positions of said thrust transmitting means are being maintained at said preselected axial positions; releasing said stationary and rotatable assemblies for relative rotation; and changing at least one of said thrust transmitting means from the first to a second preselected axial position located nearer said magnetic core of the rotatable assembly than the first to provide the desired total end play for the rotatable assembly in the motor.

3,359,629

METHOD OF MAKING TAPE-HEADS

Hubert Colin Smith, Norton, Stourbridge, England, assignor to BSR Limited, Stafford, England, a British company

Filed Nov. 16, 1964, Ser. No. 411,402
9 Claims. (Cl. 29—603)



9. The method of manufacture of a tape-head having at least two electro-magnets comprising performing in the order claimed, the steps of; providing two groups of pole elements and two fixture plates, each pole element comprising a metal strip and each fixture plate being of flat rectangular form having recesses in one longitudinal edge, bending one end of each pole face element at right angles to form a pole face lug, rigidly fixing the one set of ends of the pole elements of each group to a fixture plate, by securing said pole face lugs in said recesses in the fixture plate so that each pole element extends in a plane which is substantially parallel to the plane of its associated fixture plate, machining one face of each fixture plate to provide accurately flat surfaces, providing a set of gap spacer elements, forming a subassembly by assembling together the two fixture plates and attached pole elements with the gap spacer elements interposed between the fixture plates and the machined flat surfaces of the fixture plates in engagement, providing a housing member of U shape, the base of the U being of outwardly convex form to constitute the front face of the tape-head and having an opening therein, attaching the said sub-assembly to the housing member so that the pole elements are located within the housing member and the fixture plates are located outside the front face of the housing member, with edge portions of the fixture plates engaging in said opening, providing a screening plate assembly of at least one screening plate, assembling said screening plate assembly into the housing member to lie in between the pairs of pole elements with the front edges of the screening assembly engaging through said opening in the front face of the housing member, rigidly holding together the combination of housing member, said sub-assembly and screening plate assembly, and machining away the material of the fixture plates and screening assembly projecting from the front face of the housing member to leave exposed pole faces at the ends of the pole elements flush with the front face of the housing member, providing bobbins having windings thereon, inserting one bobbin

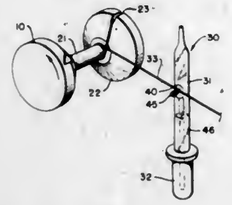
over each pole element within the housing member, providing laminations for each bobbin, inserting laminations within the bobbins to lie on opposite sides of each pole element within a bobbin, bending the projecting ends of the laminations inwards towards one another and interengaging same to form the complete cores of the separate electromagnets, providing a container having an open mouth, a base, and a plastics moulding having terminal connections located in said base, and inserting said housing member into said container through said open mouth and connecting the windings on the bobbins to said terminal connections.

3,359,630

COIL WINDING MACHINE AND METHOD

Jack L. Metz, Des Plaines, Ill., assignor to Teletype Corporation, Skokie, Ill., a corporation of Delaware

Filed Sept. 9, 1965, Ser. No. 486,117
12 Claims. (Cl. 29—605)



1. A method of forming center-tapped coils including the steps of:
applying an adhesive activating substance to a strand which is coated with a dormant adhesive;
simultaneously guiding the strand in a distributive pattern;
coiling a length of the strand onto a bobbin in spiral layers while the adhesive is activated so that adjacent turns of the coil will bond one to the other;
winding at least a portion of a turn onto a center-tap flange which is formed from a material to which the adhesive on the strand will not adhere to form a center tap;
coiling a second length of the strand onto the bobbin while the adhesive is activated, and
removing the coil thus formed without disturbing the turns of the coil to which the center tap is connected by slipping the center-tap off of the center tap flange.

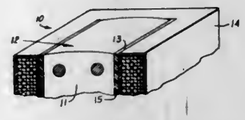
5. A coil winding machine for winding center-tapped coils on flangeless bobbins including:
a flangeless bobbin about which a wire is to be coiled;
means for guiding a wire onto the bobbin;
means for moving the guiding means and the bobbin with respect to each other so that the wire is coiled onto the bobbin in evenly spaced turns;
means integral with the guiding means for making the surface of the wire adhesive as it leaves the guiding means so that adjacent turns of wire on the bobbin will adhere to one another and so that all of the turns of wire which comprise a completed coil will be joined into a unitary structure; and
a center-tap flange for engaging and supporting the wire as a center tap is made and as the remainder of the coil is formed, said flange being formed of a material to which the adhesive on the wire will not adhere so that when the coil is completed the center tap can be slipped off the flange without disturbing the turns of wire to which the center-tap is connected;
said guiding means being movable into a position adjacent the center-tap flange so that the flange will engage the wire and so that the center tap will be wound onto the flange.

3,359,631

METHOD OF MAKING ELECTRICAL MEMBERS

Walter N. Larsen, Roger C. Purdy, and David G. Schwenkel, Erie, Pa., assignors to General Electric Company, a corporation of New York

Filed June 14, 1965, Ser. No. 463,675
12 Claims. (Cl. 29—606)



5. The method of making an electrical member for a dynamoelectric machine which comprises:
(a) providing a coil having a central opening therethrough and a pole piece therefor having a core portion adapted to be disposed within said central opening;
(b) positioning the core portion of said pole piece within said coil opening so that said core portion is substantially centrally located therein and with a space established between the walls of said coil opening and the sides of said core portion;
(c) applying a resinous material to one end of said assembly forming a temporary coating which adheres lightly and may be readily stripped off, said resinous material providing a seal for that end of the space between the coil and the pole piece;
(d) filling the space between the coil and the pole piece from the end opposite that on which the protective coating is formed with a liquid resinous bonding composition;
(e) removing the temporary protective coating;
(f) and curing the resinous bonding composition.

3,359,632

METHOD OF MAKING A THERMISTOR

John G. Froemel, Verona, and Meyer Sapoff, West Orange, N.J., assignors to Victory Engineering Corporation, Springfield, N.J., a corporation of New Jersey

No Drawing. Filed Feb. 10, 1965, Ser. No. 431,695
14 Claims. (Cl. 29—620)

1. A method of making an electrical resistance element which comprises in combination the steps of providing a metal oxide material in the form of at least three distinct size-range fractions differing from each other in size by the order of 0.5 micron, the largest of said three size-range fractions having an average particle diameter not exceeding about 1.5 microns, forming a fluid dispersion of said metal oxide material in a liquid, high-hydroxyl binder vehicle, depositing said fluid dispersion on a flat surface, leveling said deposited dispersion with a doctor-blade, drying said leveled dispersion, and firing the dried dispersion at a temperature at least equal to the sintering temperature of said metal oxide material.

3,359,633

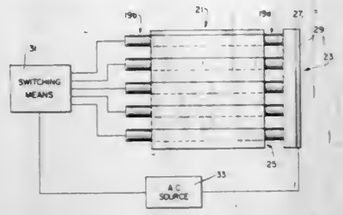
METHOD OF MAKING MINIATURIZED ELECTROLUMINESCENT LAMP

James F. Motson, 798 Welsh Road, Huntingdon Valley, Pa. 19006

Original application Oct. 10, 1962, Ser. No. 229,619, now Patent No. 3,218,497, dated Nov. 16, 1965. Divided and this application June 28, 1965, Ser. No. 467,333
4 Claims. (Cl. 29—624)

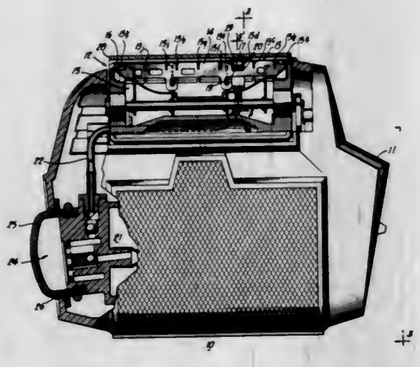
1. A method of fabricating a multilayer conductor for a miniaturized electroluminescent lamp comprising the steps of:

(a) forming a plurality of grooved non-electrical-conducting elements, each of which has a base lying perpendicular to any grooves therein;
(b) placing said elements in a holder means with the bases of the respective elements overlying at least one groove of an adjacent element to form tunnel-like structures;
(c) encasing said holder and said elements in uncured epoxy resin making certain that each of said tunnel-like structures is filled with uncured epoxy resin;



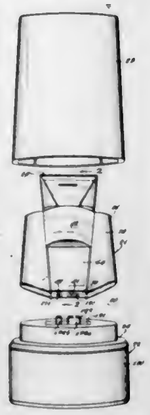
(d) inserting an electrical conducting means into each of said tunnel-like structures, which is filled with uncured epoxy resin, sufficiently far to have the ends of said electrical conductors extending from either end of said tunnel-like structures;
(e) subjecting said encased holder and said elements to sufficient heat to harden the epoxy resin encasement, thereby providing a laminated group of grooved non-electrical-conducting elements encased as an integral group with conductors extending therefrom to act as non-transparent conductors of an electroluminescent lamp.

3,359,634
ELECTRIC DRY SHAVER
William P. Beck, Westchester, Ill., assignor to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed July 19, 1965, Ser. No. 473,126
4 Claims. (Cl. 30—41)



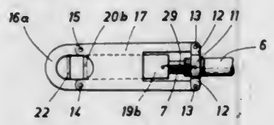
1. In an electric shaver, the combination of a pair of relatively movable cutting members including a skin-engaging member having a plurality of hair receiving perforations, and reservoir means defined in part by said skin-engaging member for maintaining a supply of friction-reducing substance against said skin engaging member over an area encompassing a substantial number of perforations at a pressure substantially equal to atmospheric pressure whereby said friction-reducing substance is gradually applied onto the skin surface through said perforations in said skin-engaging member by capillary action.

3,359,635
ELECTRICALLY OPERATED DRY SHAVER
Ivar Jepson, Sister Bay, Wis., and Leon M. Roszyk, Berwyn, and Daniel C. Stahly, Villa Park, Ill., assignors to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed Jan. 5, 1965, Ser. No. 423,464
10 Claims. (Cl. 30—43.92)



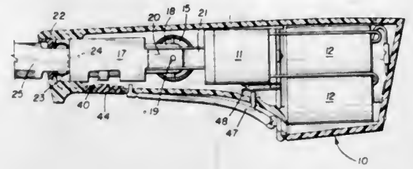
1. An electric dry shaver of the type having a movable cutter comprising a casing, an electric motor mounted within said casing for driving said cutter, electrical means for energizing said motor including a terminal board mounted at one end of said casing in a plane disposed generally parallel to the plane of the other end of said casing, said board supporting a pair of rigid terminals accessible from outside said casing, and a rotary switch for controlling the connection between said motor and said electrical means, said switch being pivoted to said board.

3,359,636
CUTTING IMPLEMENTS FOR CABLES
Felix Sonnberger, Kettengasse 22–44, Wurzburg, Germany
Filed Aug. 6, 1965, Ser. No. 477,775
Claims priority, application Germany, Aug. 8, 1964, S 92,545
4 Claims. (Cl. 30—180)



1. In a cable cutting implement, the combination of a hydraulic displacement pump, a pair of coacting handles provided on said pump for actuating the same, a hydraulic cylinder combined as a unit with said pump and including a slidable piston which is projectable outwardly from said cylinder when the pump is actuated by said handles, a tool holding head comprising a first holder member mounted on said hydraulic cylinder and extending axially outwardly therefrom beyond said piston, a second holder member connected to the outer end of the first holder member and coacting therewith to provide a normally closed aperture for receiving a cable to be cut, a movable cutter blade slidably guided in said first holder member and operatively connected to said piston, and a stationary cutter blade mounted in a seat formed in said second holder member for coaction with said movable blade, said movable and stationary blades having opposing aligned cutting edges adapted to come together in a plane intersecting said cable receiving aperture when the movable blade is slid toward the stationary blade by said piston.

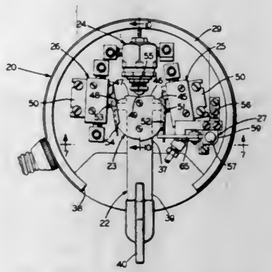
3,359,637
POWER OPERATED SINGLE BLADE KNIFE
John M. Hansen, Racine, Wis., assignor to Scovill Manufacturing Company, Waterbury, Conn., a corporation of Connecticut
Filed Oct. 25, 1966, Ser. No. 589,274
8 Claims. (Cl. 30—272)



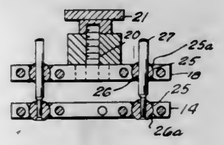
1. A power operated knife comprising
(a) a housing,
(b) an electrically powered motor in the housing,
(c) a cage adjacent the forward end of the housing,
(d) a blade carrier reciprocably mounted in the cage, the carrier having a blade tang receiving space extending longitudinally of the carrier and a laterally extending aperture,
(c) a blade having a tang provided with a laterally extending aperture in register with the carrier aperture when the tang has been inserted in the carrier a predetermined distance,
(f) a spring metal blade retainer having a pair of arms adapted to engage opposite sides of the carrier, a cross piece connecting the arms spaced from the carrier, and inwardly directed tang engaging member on one of said arms for entering the apertures in the carrier and blade tang and retaining the tang in the carrier,
(g) blade release means in the housing movable into contact with said retainer cross piece for moving said blade retainer relatively to the carrier and disengaging the inwardly directed member from the apertures in the carrier and tang to release the blade and
(h) means between the motor and carrier imparting reciprocatory movement to the carrier.

3,359,638
DENTAL FOOT CONTROL CONSTRUCTION
John A. Maurer, Kenneth R. Lappin, and Dean H. Buchtel, Canton, Ohio, assignors to The Weber Dental Manufacturing Company, Canton, Ohio, a corporation of Ohio
Filed Dec. 9, 1964, Ser. No. 417,070
11 Claims. (Cl. 32—28)

2. Dental foot control construction of the type for remotely controlling the drive operation of a dental handpiece having air and water coolant spray devices thereon, including a base, an operating arm, means mounting the operating arm on the base selectively pivotal between a normal non-actuating position and at least first and second actuating positions, drive control means mounted on the base selectively movable between a normal non-operating and an operating position operably connected to the dental handpiece when in the operating position, air coolant control means mounted on the base selectively movable between a normal non-operating and an operating position operably connected to the dental handpiece air coolant spray device for providing an air coolant spray from said spray device when in operating position, water coolant control means mounted on the base selectively movable between a normal non-operating and on operating position operably connected to the dental handpiece water coolant spray device for providing water coolant from said spray device when in operating position, actuating means operably connected to the operating arm constructed and arranged free of moving any of said control means from normal non-operating position when said operating arm is in the normal non-actuating position, said actuating means being constructed and arranged for moving the drive and air coolant control means to operating positions and being free of moving the water coolant control means from normal non-operating position when said operating arm is pivoted to first actuating position, and said actuating means being constructed and arranged for moving said drive and air coolant and water coolant control means to operating positions when said operating arm is pivoted to second actuating position, the means mounting the operating arm on the base including pivot means mounting said operating arm selectively pivotal from a normal neutral position in one direction to said first actuating position and in the opposite direction to said second actuating position, and means resiliently urging said operating arm into neutral position between said first and second actuating positions.



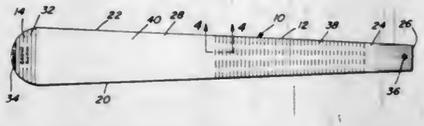
3,359,639
DENTAL ARTICULATORS AND CLUTCH FABRICATION
Niles F. Guichet, 320 Olympia Place, Anaheim, Calif. 92805
Filed Aug. 10, 1964, Ser. No. 389,240
6 Claims. (Cl. 32—32)



1. A dental articulator having first and second cast supporting members adapted to support an upper and a lower dental cast of a patient's teeth by an upper and lower dental cast supports attached to each of said members, at least one of said cast supports comprising a first plate removably attached to one of said members, first and second sockets having concave walls in said plate at each end thereof, bearings in each of said sockets and mating with said concave walls, first and second rods extending through bores in said bearings, means to lock said bearings in said sockets, means to lock said rods in

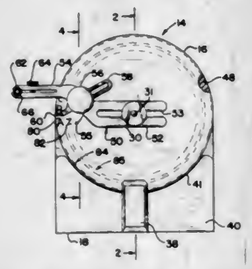
said bearings; a second plate having similarly disposed sockets and bearings, said rods also extending into the bearings of said second plate, means to lock said bearings in said second plate; and means to removably attach a dental cast to said second plate.

3,359,640
SHOE FIT INDICATING DEVICE
William A. Kirkland, % Kirk's Shoe Store, Algona, Iowa 50511
Filed June 6, 1966, Ser. No. 555,377
8 Claims. (Cl. 33—3)



1. A shoe fit indicating device for determining the compatibility of the length of a shoe to the length of the foot of a wearer of the shoe after the shoe has been in use whereby it can be visually determined whether the shoe is of a length in relation to the length of the wearer's foot so that it can safely be continued to be worn or should be replaced by a shoe of a longer length; said device comprising an elongated member including a sole portion adapted to be inserted into a shoe and positioned to overlie the innersole and extend from the toe portion to the heel portion of a shoe in abutting engagement with said portions of the shoe, said device including a heel portion adapted to be moved from a coplanar position relative to the sole portion at the heel abutting end thereof into an angular upstanding position relative thereto, and plural transversely disposed hinge means spaced longitudinally of said member connecting the sole portion and the heel portion for movement of said heel portion into said upstanding position at any one of said hinge means, and said sole portion having means provided on its upper face, on which a wearer's foot is adapted to be placed after the sole portion has been removed from a shoe, said means giving a visual indication of whether the shoe is too short for the wearer's foot.

3,359,641
LETTERING DEVICE
Jerry K. Gregston, 3609 Brentwood, Odessa, Tex. 79760
Filed Apr. 4, 1967, Ser. No. 628,392
7 Claims. (Cl. 33—23)



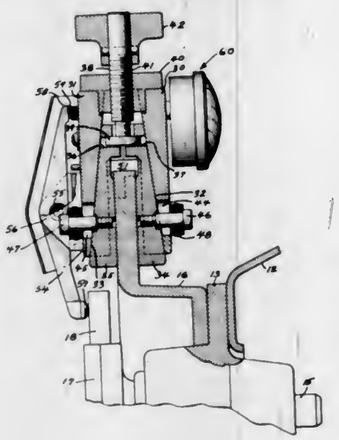
1. A lettering device having a pen guide staff; a writing means, a guide pen, and a journaled means associated with said pen guide staff; a member having indicia formed thereon, the improvement comprising:

said member having indicia thereon including a rotatable member having a centrally located bearing means that is adapted to cooperate with said journaled means of said pen guide staff to thereby enable said guide pen to trace said indicia;

said journaled means being received by said centrally located bearing means, with said writing means spaced apart from said member to thereby permit said guide pen to trace said indicia; whereby:

rotation of said rotatable member selectively positions said indicia adjacent said guide pen to thereby enable predetermined indicia to be reproduced at a point spaced apart from said indicia.

3,359,642
GAGE FOR INDICATING PARALLELISM OR NON-PARALLELISM OF ELEMENTS OF A DISC BRAKE
Paul J. Jessen, Kenosha, and William A. Tigges, Racine, Wis., assignors to American Motors Corporation, Kenosha, Wis., a corporation of Maryland
Filed Mar. 14, 1966, Ser. No. 533,916
6 Claims. (Cl. 33—181)



1. A gage for indicating the parallelism or non-parallelism of a rotative disc with reference to the mounting surface of a stationary support for the disc, comprising:

(a) a body with a chamber having oppositely disposed converging side walls;

(b) opposed clamp plates each having an inclined wall coacting with a chamber side wall;

(c) means carried on the body for actuating the clamp plates toward each other into engagement with the opposite faces of the disc;

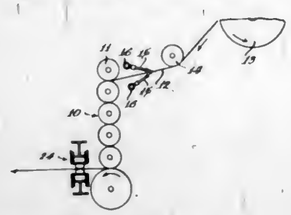
(d) arms pivotally mounted on the body and spaced from each other and having their lower ends engageable with the mounting surface of the disc support at spaced locations thereon;

(e) indicating means carried on the body and responsive to the movement of the upper ends of the arms for reflecting the positions of the lower ends of the arms with reference to the positions of the clamp plates.

3,359,643
PRODUCTION OF PAPER
John C. Leibelt and Leslie F. Newby, Jr., Wisconsin Rapids, Wis.; said Newby assignor to Consolidated Papers, Inc., Wisconsin Rapids, Wis., a corporation of Wisconsin
Filed Mar. 22, 1965, Ser. No. 441,579
9 Claims. (Cl. 34—25)

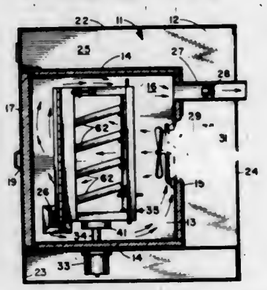
1. In a papermaking process wherein a newly formed, forwardly moving, heat dried web is subjected to densification between metallic calendering rolls while retaining

heat in varying degree transversely of the web, and wherein heat is transferred from said web to said rolls resulting in variable expansion longitudinally of said rolls, the improvement which comprises thermally treating selected areas on at least one face of said heated web by blowing gas thereagainst in heat exchange relationship correlated to said expansion whereby to minimize expan-



sion variation prior to calendering thereof, by blowing relatively cool air against a portion of the web which is at a relatively higher temperature than other portions of the web and by blowing relatively warm air against a portion of the web which is at a relatively lower temperature than other portions of the web whereby to minimize the effects of said heat variations longitudinally of said rolls.

3,359,644
ROTARY FOOD DEHYDRATING APPARATUS WITH TILTABLE TRAY MEANS
Milton S. Goldman, 1101 Graydon Ave., Norfolk, Va. 23507
Continuation of application Ser. No. 568,427, July 28, 1966. This application Feb. 10, 1967, Ser. No. 615,246
10 Claims. (Cl. 34—58)



1. Apparatus for the dehydration of materials, comprising:

(A) a chamber;

(B) means for producing a flow of air through said chamber;

(C) a heat source disposed within said chamber;

(D) means for directing a flow of heated air away from said heat source;

(E) a rack device situated within said chamber in the path of said flow of heated air, said rack device including

(a) a lower frame section,

(b) a plurality of parallelly disposed standards connected to said lower frame section and projecting upwardly therefrom,

(c) means connected to at least one of said standards for partially supporting a tray charged with materials to be dehydrated,

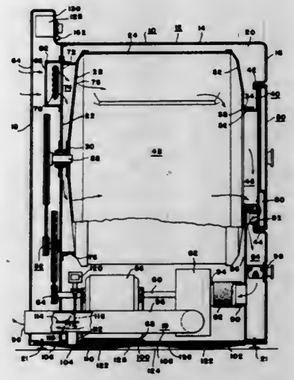
(d) means for further partially supporting a tray charged with materials to be dehydrated interconnected with at least one of the other of said standards for limited vertical movement with respect thereto, said means connected to said one standard for partially supporting a tray and said means for further partially supporting a tray interconnected with said other standard for limited vertical movement with respect thereto cooperating to completely support a tray,

(e) means for maintaining at a plurality of preselected points within the range of limited vertical movement thereof said means for partially supporting a tray interconnected with said other of said standards, as well as

(f) means movably connected to one of said standards for restraining lateral movement of a tray placed on said rack device; and

(F) means for rotating said rack device about a vertical axis passing substantially centrally therethrough.

3,359,645
DRYER WITH GROUND PROXIMATE AIR CUSHION DEVICE
Charles C. Whistler, Jr., Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Aug. 23, 1965, Ser. No. 481,685
3 Claims. (Cl. 34—45)



1. A domestic dryer comprising, a rotatable drum, means including a heater means and a blower for circulating heated air through said rotatable drum, an outer cabinet enclosing said rotatable drum, a base framework on said outer cabinet, depending members on said base framework for locating said cabinet stationarily on a floor, a low-pressure air caster depending from said base framework and having a plenum forming member located in closed spaced relationship with the floor, passageway means for directing air from said blower into said air caster means, damper means for controlling air flow through said passageway means, electrical circuit means including means for controlling the energization of said heater and said blower, and means for de-energizing said heater means when air is directed through said passageway means into said air caster.

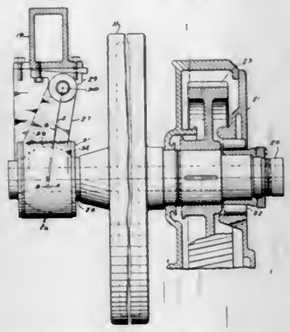
3,359,646
HEAT COMPENSATING DRYER BEARING
Edward D. Beachler, Beloit, Wis., assignor to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin
Filed Oct. 24, 1965, Ser. No. 504,865
2 Claims. (Cl. 34—121)

1. In an apparatus for drying fibrous web,

a drying cylinder about which a web is partially wrapped and heated,

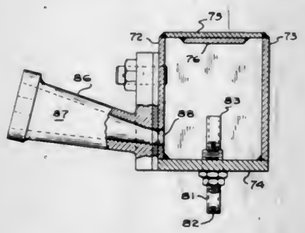
a frame,

shaft members extending from opposite ends of the cylinder,
means for passing steam axially through said cylinder, the steam causing axial expansion of the cylinder and also imposing an axial load on the cylinder as it passes therethrough,
a fixed axial thrust bearing mounting one of said shaft members,
a self-aligning bearing mounted on the other of said members,
an elongated swingable arm connected at one end to said self-aligning bearing, and



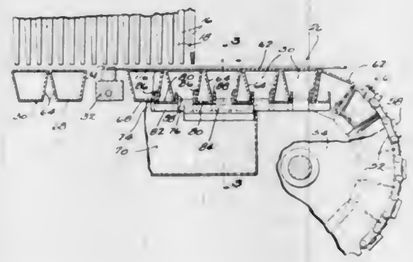
a pivot pin pivotally mounting the other end of said swingable arm to said frame,
said pivot pin being spaced radially of said self-aligning bearing and having an axis of rotation extending transversely of the aligned axes of said shaft members and said bearings,
said axis of said pivot pin and the transverse axis of said self-aligning bearing being axially offset from one another in a direction along the axis of said cylinder for providing an included angle of less than 90° between the longitudinal axis of said swingable arm and the axes of said cylinder shaft members thereby to intensify the resistance to the axial thrust imposed on said shaft members when the steam load is transmitted to the swingable arm.

3,359,647
ROTARY DRUM DRIER WITH IMPROVED CONDENSATE WITHDRAWAL MEANS
Joseph B. Webb, Neenah, Wis., assignor to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware
Filed Jan. 5, 1966, Ser. No. 518,923
4 Claims. (Cl. 34—124)



1. A hollow drier drum having journals for rotatably mounting the drum, a steam supply connection for directing steam into the drum, a manifold in said drum and lying adjacent to the inner surface of the drum, a plurality of water condensate removal tubes extending into and carried by said manifold and terminating closely adjacent to the inner drum surface, a condensate removal connection, and piping for connecting said condensate removal connection and said manifold and including an arcuate pipe extending adjacent the inner drum surface and circumferentially of the drum and terminating in said manifold at a place closer to the inner drum surface than the inner ends of said tubes so as to prevent blockage by condensate of said tubes.

3,359,648
DRYER WITH VACUUM BAR SHEET FEEDER
William F. Overly, Neenah, and John W. Frost, Appleton, Wis., assignors to Overly's Inc., Neenah, Wis., a corporation of Wisconsin
Filed Apr. 5, 1965, Ser. No. 445,356
12 Claims. (Cl. 34—160)

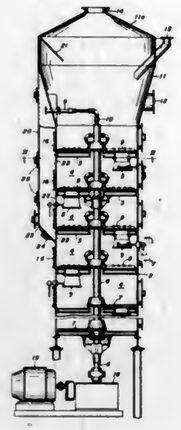


1. In a dryer for sheet stock, the combination with a drying device including means for directing a drying gas upon sheets to be dried, of a conveyor having a run extending substantially rectilinearly and in close proximity beneath said device, said conveyor comprising a series of separate rigid hollow bars having foraminous sheet-supporting top surfaces which are closely adjacent and substantially in a common plane in said run, and means for evacuating said bars as they traverse said run whereby to hold sheets to said foraminous top surfaces.

3,359,649
APPARATUS FOR THE HEATING OF BULK MATERIAL AND RECOVERY OF VAPORIZABLE PRODUCT THEREFROM
Arthur F. Saxon, Aspinwall Borough, Pa., assignor to Blaw-Knox Company, Pittsburgh, Pa., a corporation of Delaware
Filed Feb. 24, 1966, Ser. No. 529,838
8 Claims. (Cl. 34—173)

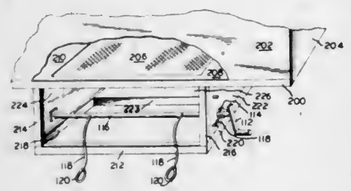
1. In an apparatus for heating bulk materials and removing vaporizable components therefrom wherein there is a shell in the form of a hollow column, the interior of which is divided into a series of compartments arranged one above another, means for agitating material in each compartment and transferring it to the one beneath, means for heating the material in said compartments, and a dome with outwardly flaring walls forming the top of the column above the uppermost compartment and which is of larger diameter than the column itself, the dome having an inlet for bulk material to be heated and an outlet for vapors, the invention comprising:
(a) a vapor duct extending vertically alongside the column and contiguous thereto, said duct having a closed bottom and having its upper end opening into the outwardly-flaring walls of the said dome above the uppermost compartment,

(b) the duct extending downwardly from the dome past several of the uppermost compartments,



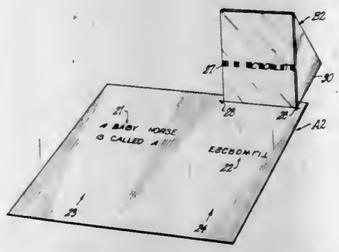
(c) each compartment along which the duct extends except the top one having a port in the wall thereof opening through the shell into said duct.

3,359,650
PEANUT DRYER CONNECTOR
John D. Mitchell and William R. Hall, Woodville, N.C., assignors to Harrington Manufacturing Company, Lewiston, N.C., a corporation of North Carolina
Filed Aug. 19, 1965, Ser. No. 481,127
5 Claims. (Cl. 34—214)



1. A transportable drying system for peanuts and other crops which comprises:
(a) a main plenum chamber,
(b) said main plenum chamber having an inlet for introducing air under pressure,
(c) said main plenum chamber also having a plurality of plenum outlets for air,
(d) at least one mobile drying bin positioned adjacent to at least one of said plenum outlets, each said drying bin having a floor that is at least partially perforated,
(e) each drying bin having a generally tubular air passageway that is permanently located entirely beneath the perforated bottom of the drying bin,
(f) the top of said tubular air passageway being in open communication with said perforated floor,
(g) the front end of said tubular air passageway forming a first opening that is substantially perpendicular to the plane of said perforated floor,
(h) the sides and back end of said tubular air passageway being closed,
(i) at least a portion of the bottom of said tubular air passageway forming a second opening that is substantially parallel to the plane of said perforated floor,
(j) at least one flexible duct that is adapted to conduct air from said plenum chamber to a drying bin, each flexible duct having its upstream end connected to a plenum outlet.
(k) the downstream end of each flexible duct being attached to the inlet end of a connector means,
(l) the outlet end of said connector means being connected to the said first opening and said second opening of said tubular air passageway, and
(m) mechanical lifting means located below said drying bin which permits lifting and positioning of said connector means with respect to said tubular air passageway.

3,359,651
METHOD AND APPARATUS FOR TEACHING
George L. Mair, 6320 Van Nuys Blvd., Van Nuys, Calif. 91401
Filed July 16, 1965, Ser. No. 472,531
1 Claim. (Cl. 35—9)



Teaching apparatus comprising, in combination: a question-answer display sheet having a question and a disguised answer imprinted thereon in associated relation, said answer being composed of answer-spelling letters and unintelligible coding letters intermingled therewith; and an uncoding device operable on said answer to render it legible, said answer being displayed with the letters thereof inverted, and said uncoding device comprising a mirror having a line of reflecting areas positioned for reflecting the letters of the answer back to an observer and having intervening non-reflecting areas for obscuring the coding letters of said answer.

3,359,652
PIPELINE NETWORK SIMULATOR
Lionel Ernest Prosser and Carey John Saunders, Harlow, England, assignors to The British Hydromechanics Research Association
Filed June 3, 1965, Ser. No. 461,112
Claims priority, application Great Britain, June 4, 1964, 23,170/64
10 Claims. (Cl. 35—10)

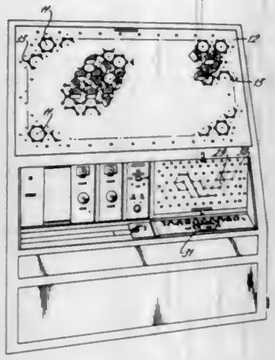
1. An analogue for simulating the flow of fluid in an interconnected network, comprising in combination
a framework formed to provide a plurality of independent pockets, each pocket constructed to provide a plurality of valve attachment openings suitably disposed to permit interconnection between pockets by analogue elements;
pipe analogue elements including
gate valve means providing an adjustable fluid flow restriction for simulating fluid flow characteristics of a pipe being simulated thereby; and
attachment means disposed for cooperation with said attachment openings to interconnect a pair

of said pockets via said associated fluid flow restriction;

demand analogue elements including

gate valve means for providing an adjustable fluid flow restriction simulating demand characteristics; and

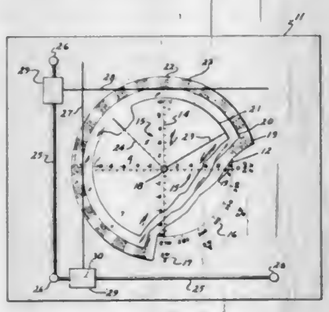
attachment means for cooperation with one of said attachment openings to allow controlled pressure leakage relative to the associated pocket via said associated fluid flow restriction;



a source providing a pressure differential and connectable to at least one of said pockets; and

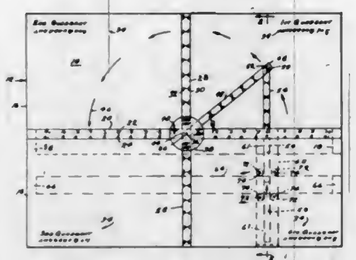
means connectable for measuring pressure existing within said pockets.

3,359,653
TRIGONOMETRIC TEACHING DEVICE
Louis R. Redfern, Chicopee, Mass., assignor to Tecnifax Corporation, Holyoke, Mass., a corporation of Massachusetts
Filed Sept. 8, 1965, Ser. No. 485,823
3 Claims. (Cl. 35—34)



1. Projection trigonometric teaching device for use with overhead projectors comprising an opaque base, a transparent circular portion within said base, said transparent circular portion having angular calibrations disposed adjacent its circumference and a coordinate grid system with mutually perpendicular axes, a first rotatable transparent overlay having at least one opaque portion providing a radial coordinate to locate on said grid system a point by polar coordinates, a second rotatable transparent overlay having opaqued sectors equally spaced about its circumference to mask and unmask said angular calibrations for selective projection thereof, when said second overlay is rotated, and rectangular coordinate locating means slidably mounted on said base in mutually perpendicular relation for locating a given point on said grid system.

3,359,654
APPARATUS FOR DEMONSTRATING THE VARIATION OF THE TRIGONOMETRIC FUNCTIONS IN A TWO DIMENSIONAL SYSTEM
James M. Boyte, Star Rte., Carthage, N.C. 28327
Filed Nov. 22, 1965, Ser. No. 509,125
10 Claims. (Cl. 35—34)

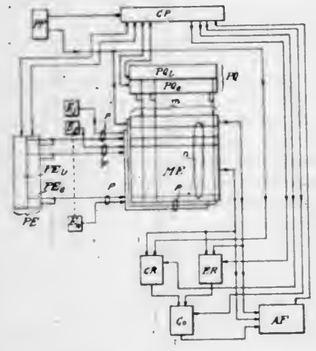


1. A trigonometric function teaching machine comprising: a back board; means defining a X-axis indicating strip and a Y-axis indicating strip on said back board, said X-axis strip and Y-axis strip intersecting centrally of said back board to define an origin; a hypotenuse indicating bar pivotally supported adjacent one end thereof by said back board at said origin and in front of the back board for movement in a plane parallel to said back board; a rail mounted on the rear of said back board and extending horizontally therealong; a vertically elongated carriage; means mounting said carriage on said rail for reciprocal rectilinear movement in a horizontal direction along the rail and guided by the rail; means defining an opposite side indicator on said carriage; means defining an opening through said back board into which said opposite side indicator can be drawn to expose at least a portion thereof to view from the front of said back board; and means pivotally securing the opposite end of said hypotenuse indicating bar from said one end, to said opposite side indicator; thereby defining a reference triangle between said hypotenuse indicating bar, said opposite side indicator and said X-axis strip; said hypotenuse during rotation thereof being adapted to draw an increasing and decreasing portion of said opposite side indication into said opening for view from the front of said back board.

3,359,655
TEACHING-AID DEVICE
Michel Audebert, Paris, France, assignor to Laboratoires d'Electronique et de Physique Appliquees, Paris, France
Filed Apr. 19, 1965, Ser. No. 449,215
Claims priority, application France, Apr. 22, 1964, 971,873
9 Claims. (Cl. 35—48)

1. An electric teaching device comprising in combination a teacher desk, a plurality of pupil desks, a plurality of registers and a result reading unit, said teacher desk being provided with a multi-position manual answer selecting means, said means allowing the teacher to select an answer from a plurality of proposed answers to a question put to the pupils, each said pupil desk being provided with a multi-position manually operated answer selecting means, one said register being a question register of the step-by-step shifting type having one input and a plurality of outputs whereof only one output may be energized for each incoming signal, a pupil register of the step-by-

step shifting type having one input and a plurality of outputs whereof only one output can be energized for each input signal, a central memory unit formed of a plurality of memory cells among which those necessary for recording the answers of every pupil to the same question comprise a corresponding "section" of cells and those necessary for recording the answers of a single pupil to a plurality of questions comprise a group of cells, said central memory unit is of the matrix type comprising columns and lines and in which said equality detector is connected by means of the programming unit to each of the memory cells of one section of the central memory unit in a first mode of operation called checking routine during which the answers of the pupils are read, and is connected by means of the programming unit to each of the memory cells of one group of the central memory unit in a second mode of operation called general questioning routine during which the answers of the corresponding pupil are



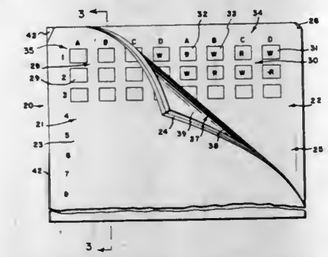
read, each section of memory cells being a column, each group of memory cells being a line of said memory unit, means connecting each cell to one of the outputs of the question register and to the output of a pupil register and to the answer selector switches, an equality detector for comparing each pupil answer with the answer of the teacher and for supplying an indication of identity therebetween, means for connecting said equality detector through said pupil registers and said question registers to the memory unit and to the answer selector switch at the teacher desk, means for comparing and valuing the pupil answer with the teacher answer and for supplying as a function of this comparison a weighted indication of the value of the pupil answer, means for connecting said comparing and evaluating means through the question register and the pupil registers to the cell group which receives the answers of the teacher on the one hand and the cell groups that receive the pupil answers on the other hand, a programming means for sequentially controlling the various stages of transfer and conversion of the data, means connecting said programming means to the multiplicity of said memory units, registers, and the equality detector.

3,359,656
ANSWER SHEET INDICATING CORRECTNESS AND RECORDING ERRORS
John W. Seekins, Tewksbury, Mass., assignor to Courier-Citizen Company, Lowell, Mass., a corporation of Massachusetts
Filed Jan. 13, 1966, Ser. No. 520,504
4 Claims. (Cl. 35—48)

1. A multiple choice, machine scorable, response sheet assembly, providing instant recognition of correct or wrong choices, said sheet comprising

two superposed sheets, adhered to each other around the marginal edges thereof to form an integral, unitary two ply, sealed envelope, said envelope having two exterior planar faces and two interior planar faces;

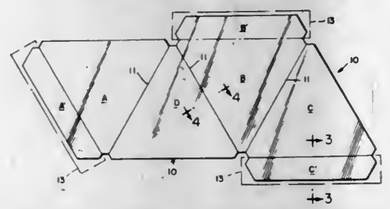
a predetermined pattern of marking spaces on one said exterior face, said spaces being arranged for inscription by an examinee to indicate the choice of a correct response;



an identical pattern of sharp-edged symbols, each formed by a relatively thick layer of transparent, ink-underlying one of said spaces and being in a plane like material on one said interior face, each symbol spaced from the plane of said face, some said symbols representing a correct choice and other said symbols representing an incorrect choice; and

an opaque transfer coating on one said interior face, said coating preventing see-through and permanently transferring any pressure marks made in the spaces on said exterior face onto the other said interior face.

3,359,657
GEOMETRIC STRUCTURE AND METHOD OF FORMING THE SAME
Donald D. Hedberg, 802 Reba Place, Evanston, Ill. 60202
Filed Jan. 15, 1966, Ser. No. 520,779
11 Claims. (Cl. 35—72)

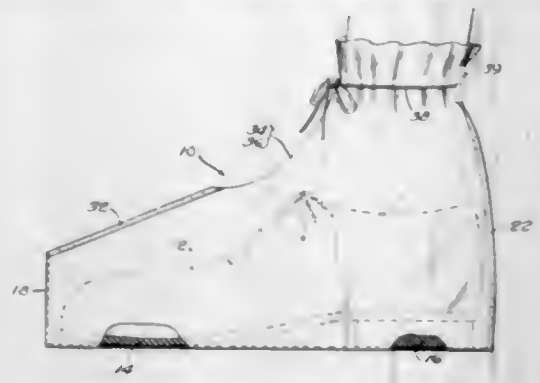


1. A blank for forming a geometric model, comprising a laminated sheet of plastic having the shape of a geometric solid in lay-flat condition, said sheet having a first layer of relatively rigid plastic and a second layer of relatively flexible and stretchable plastic secured to said first sheet, said first layer being scored along its exposed surface to define lines of structural weakness capable of fracturing when said sheet is folded into the shape of a geometric solid, and said second layer being capable of stretching over and about the fracture lines of said first layer to provide a smooth outer covering for said model when said sheet is folded.

3,359,658
CONDUCTIVE COVERING FOR SHOES
Russell W. Price, Newton, Mass., assignor to Harold Zimmon, Belmont, Calif.
Continuation of application Ser. No. 761,555, Sept. 17, 1958. This application May 23, 1966, Ser. No. 584,027
5 Claims. (Cl. 36—7.1)

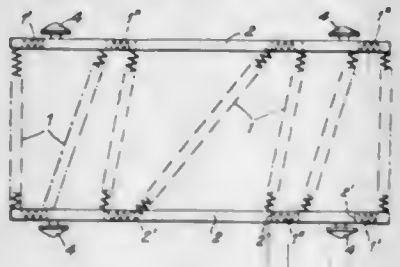
1. A disposable shoe cover shaped and constructed to fit over and entirely enclose the shoe of the wearer formed of thin, flexible material to conform to the shape of said

shoe and of the lower leg of the wearer, said cover in flattened condition prior to installation over said shoe comprising two substantially flat, parallel, congruent halves, each said half generally shaped in the outline of a shoe as viewed in side elevation and having a straight elongated bottom edge, an upstanding back edge at the rear of said bottom edge, a short upstanding toe at the front of said bottom edge, a backward-upward slanting instep edge and a top edge, said cover being open at said top edges to pro-



vide an ankle opening for insertion of said shoe, said halves joined along said bottom and toe edges, and means attached to said cover for securing said cover in place over said shoe and a portion of the lower leg of said wearer, at least a portion of said cover having an external, electrically conductive area positioned to ground to the floor when in position over the shoe of the wearer and means for electrically connecting said area to the leg of said wearer.

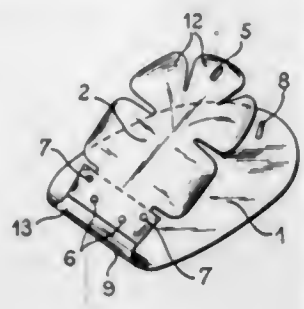
3,359,659
DETACHABLE ANTISLIPPING DEVICE FOR SHOES
Felix Smolnik, Rheineck, Switzerland, assignor to Bonova Etablissement, Balzers, Liechtenstein
Filed Feb. 24, 1967, Ser. No. 618,491
4 Claims. (Cl. 36—7.6)



1. A detachable antislipping device for shoes including helical springs as antislipping means, characterized in that said springs are bent in zig-zag to one side and the other and the spring ends as well as the points of bend are locked in position on two framelike side members, the latter comprising closure means including retaining straps that are stretchable over the fore and aft parts of the shoes, the framelike side members comprising downward projections and on both ends upstanding lugs having outwardly disposed studs that form part of the closure means, the helical springs that are bent in zig-zag fashion along a plurality of their windings on their ends as well as on their knee points being cast in said side-member-lugs, and in which the helical springs extend in different transverse directions with respect to each other.

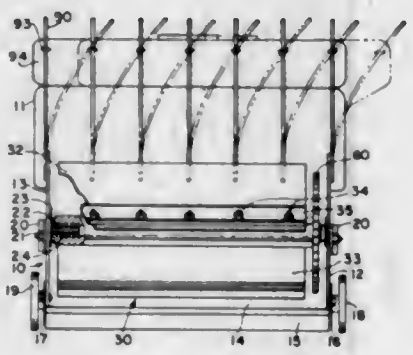
3,359,660
HEEL CONSTRUCTION
Marcel Nadaud, 130 Blvd. de la Republique, Saint Cloud, Seine-et-Oise, France
Filed Aug. 4, 1965, Ser. No. 477,178
3 Claims. (Cl. 36—37)

1. A resilient heel support for use in combination with a shoe having a heel and an inner sole, said heel support comprising in combination a semi-rigid upper plate supported on a flexing spring leaf positionable on said inner sole, said upper plate having an upper surface, a lower surface, a forward edge and a rearward edge, said spring leaf being concave toward the upper plate lower surface and including a plurality of side wings extending toward said upper plate lower surface, said spring leaf being secured to said upper plate by securement of the front



edge thereof to the forward edge of said upper plate, the outer edges of said side wings freely resting in actual contact against the lower surface of said upper plate whereby when pressure is applied downwardly against the upper surface of said upper plate, said side wings will slide outwardly relative to said upper plate in actual contact therewith to create a constant counter-pressure over a wide range of applied pressures.

3,359,661
POWERED IMPLEMENT
Ralph W. Speiser, William C. Lindquist, and Herbert F. Horner, Jr., Minneapolis, Minn., assignors to Toro Manufacturing Corporation, Minneapolis, Minn., a corporation of Minnesota
Filed June 30, 1964, Ser. No. 379,237
41 Claims. (Cl. 37—43)

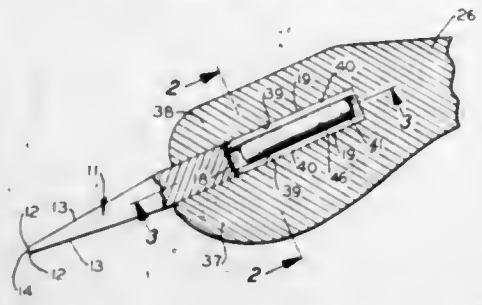


19. A snow plow comprising:
an upstanding rear wall means generally transverse of the normal direction of travel,
impeller means mounted forwardly of said wall means for rotation about a horizontal transverse axis for throwing snow rearwardly and upwardly along a front face of said wall means,
a plurality of generally vertically disposed horizontally spaced vanes defining with said rear wall means a plurality of forwardly open chute means,
said chute means being in close relationship with the impeller means and directly receiving snow into the chute means and discharging snow therefrom upwardly from substantially the entire forward vertical length of the open chute means,
and means for varying the snow directing attitude of said vanes.

3,359,662
RESILIENT RETAINER FOR EXCAVATING TEETH FUSED TO TOOTH HOLDER

Gerald A. Petersen, Sunnyvale, Calif., assignor of one-half to Anita E. Petersen, Saratoga, Calif.

Filed May 17, 1965, Ser. No. 456,353
10 Claims. (Cl. 37—142)

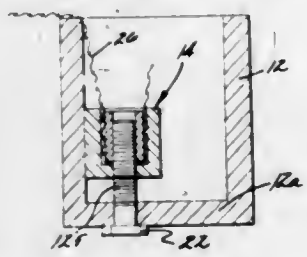


1. In combination in an earth digging tool, a tooth formed of a hard piece of material and having a distal portion and a proximal portion, a toothholder formed with a recess shaped to receive at least a part of said proximal portion, said proximal portion and said holder having walls in close proximity to each other, and a resilient insert fused as by vulcanizing to one of said walls and compressed between said walls to physically restrain withdrawal of said tooth from said holder, the wall to which said insert is fused being formed with a groove, said insert fused within said groove, the initial uncompressed shape of said insert being thicker than the depth of said groove and narrower than the width of said groove, the area of said insert fused to the wall of said groove being not greater than the area of contact of said insert in its uncompressed condition with said wall.

3,359,663
STENCIL SCREEN FRAME

James A. Black, 13700 Sparta NW., Kent City, Mich. 49330

Filed Feb. 23, 1967, Ser. No. 617,886
1 Claim. (Cl. 38—102.91)



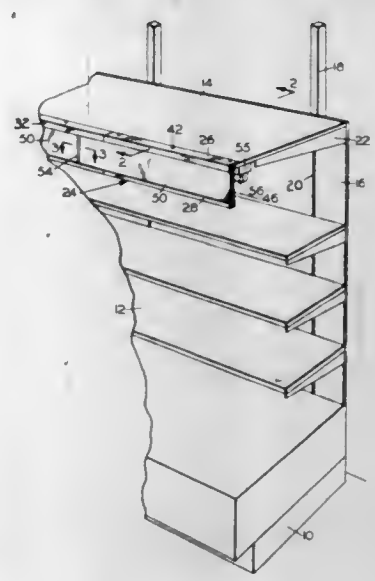
A stencil screen frame assembly comprising: rigid peripheral support means configurated to form a central open area including peripheral surface means defining a plane of screen support and a peripheral channel opening toward said surface; screen periphery clamping means in said peripheral channel comprising closely interfitting elongated bars and elongated channels secured together by removable fasteners for positively clamping the screen therebetween whether or not the screen is under tension; and threaded members extending between said peripheral channel and said clamping means in a manner to forcefully shift said clamping means away from said plane to apply controlled tension to the screen.

3,359,664
VALANCE CONSTRUCTION

Edwin J. Bell, 1935 Portland St., Klamath Falls, Oreg. 97601

Filed June 14, 1965, Ser. No. 463,636
12 Claims. (Cl. 40—10)

1. A valance construction comprising a strip-like upper frame member, a strip-like lower frame member, a backing member slidably connected longitudinally to said upper and lower frame members and serving to connect said

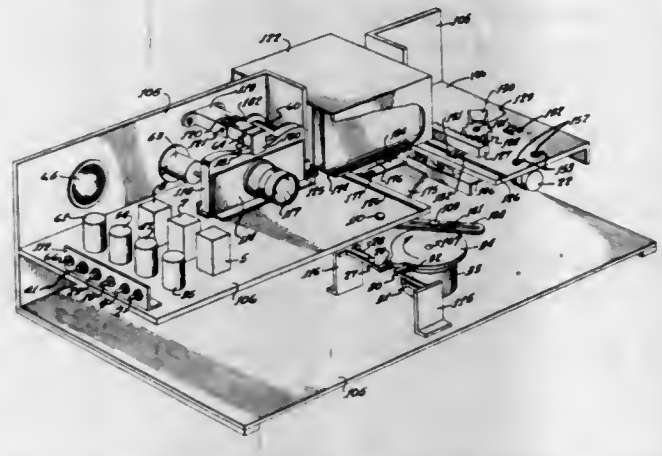


members together in spaced relation, a face panel slidably connected to said upper and lower frame members, and means for securing said valance to a supporting member.

3,359,665
COMBINATION SOUND AND SLIDE PROJECTOR

Martin E. Gerry, 13452 Winthrope St., Santa Ana, Calif. 92705

Filed Apr. 20, 1965, Ser. No. 449,501
12 Claims. (Cl. 40—28.1)



1. In an apparatus for optically projecting visual information and recording and reproducing sound from a sound track, the combination of a sound track and slide cartridge, comprising:

a cartridge case which comprises a window for retaining a slide and a pair of spools whose flanges are coplanar with each other and coplanar with the said window; and

a sound track means retained by said pair of spools; and

recesses which retain said pair of spools; and

grooves in said window for aligning the said slide parallel to said window aperture; and

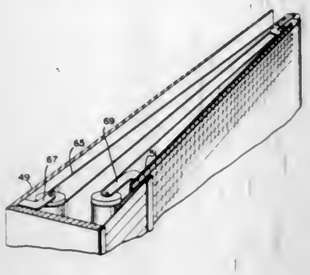
a panel, inserted in grooves orthogonal to the slide aligning grooves, for retaining the said slide in the said window; and

a cover for said cartridge case with two apertures on the same axes as the axes of the said spools and with cover fastening holes at its periphery for mechanically securing cover with pins to inserts which inserts are integral parts of the said cartridge case; and

keyways at each axis of each of said pair of spools for insertion of keyed drive shafts; and

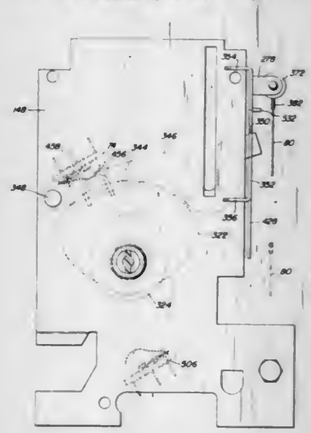
a holding means, at each of said pair of spools.

3,359,666
WORK CONTROL AND SCHEDULING DEVICE
William A. Steward, Somerset Calif. 95684
Filed July 29, 1965, Ser. No. 475,773
3 Claims. (Cl. 40—32)



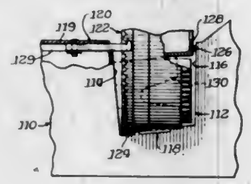
1. A work control and scheduling device comprising in combination:
(a) a frame;
(b) a hard surfaced backing member slidably mounted in front of said frame;
(c) first and second rollers mounted on one end of said backing member;
(d) a third roller mounted on said backing member at the opposite end thereof;
(e) a fourth roller mounted on said frame, said roller being independent of said backing member and
(f) an endless, flexible transparent writing surface trained over the first, fourth, second and third rollers successively, and passing in front of said backing member between said second and third rollers, said writing surface being substantially more than twice the width of the scheduling device, whereby tension on the flexible writing surface can be adjusted by sliding the backing member relative to the frame.

3,359,667
SLIDE TRAY AND SLIDE ACTUATOR FOR A PROJECTING APPARATUS
John A. Baring, Golden, Colo., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Aug. 16, 1965, Ser. No. 479,827
4 Claims. (Cl. 40—79)



1. The combination of a slide projector tray and a slide actuator for a slide projector which comprises a slide projector tray comprising a ring forming a front face of the tray, a disc forming a back face of the tray, the outer circumference of the disc being of a substantially smaller diameter than the ring, a hub extending from the disc through the central opening formed by the inner wall of the ring, a series of radially positioned spaced-apart spacer plates extending between the ring and the disc to form a tray that is of a frusto-conical shaped configuration, each of the inner surface portions of each of the radially positioned spaced-apart spacer plates extending outwardly from a frusto-conical plane at a location that is spaced outwardly of the hub to a frusto-conical plane that extends between the outer surface of the disk and a surface that is adjacent the outer surface of the ring to accommodate the insertion of slides successively between the series of slide plates so that the inserted slides will be in close physical juxtapositioned contact with one another adjacent their hub contacting end, said slide actuator comprising a rotatable magnetic slide lifting means operably connected to contact a magnetic clip on the end of the slide to lift the slide through a slotted-out portion formed in a rotatable tray lid covering the outer rim portion of the tray and to return the slide attached thereto through the slotted out portion of the lid of the tray and between two adjacent spaced-apart spacer plates by the force of gravity into its hub contacting position.

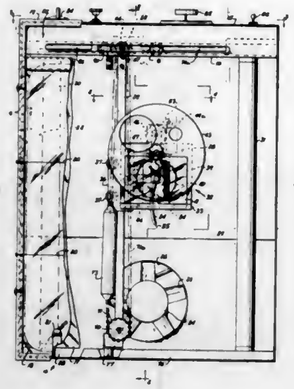
3,359,668
SLIDE PROJECTOR SUPPORT FOR ROTARY SLIDE TRAY
Frank C. Badalich, Chicago, Ill., assignor to Bell & Howell Company, Chicago, Ill., a corporation of Illinois
Filed Nov. 29, 1965, Ser. No. 510,268
7 Claims. (Cl. 40—79)



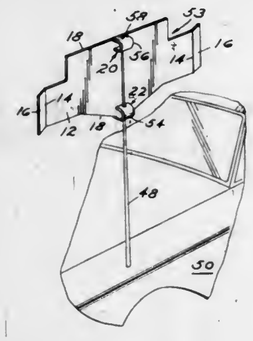
1. In a slide projector usable alternatively with rotary or straight slide trays, and having a housing and a substantially vertically-sided open top tray receiving groove defining a portion of said housing into which said trays are positionable through the top of said groove, the improvement comprising:
a pair of rotary tray support members;
means mounting each of said support members for adjustment into and out of tray supporting position near the top and to one side of said tray receiving groove for supporting a rotary tray placed in said groove; and
at least one of said support member mounting means and a support member carried thereby, being movable to a storage position wherein a straight tray is movable substantially vertically into and out of said groove past said support members when said members are in said storage position.

3,359,669
FILM VIEWING DEVICE
Albert M. Masters, 412 Robinson Ave., Pen Argyl, Pa. 18072
Filed June 22, 1965, Ser. No. 466,009
15 Claims. (Cl. 40—106.1)

1. A film viewing device comprising a cabinet having a translucent face on which a film can be positioned for viewing, spot illuminating means mounted in said cabinet, said spot illuminating means being moveable within the cabinet to cast a spot of light on any area of a film positioned on said translucent face without shifting the position of the film and general illuminating means mounted in said cabinet a spaced distance behind said translucent face in position to cast light generally uniformly on said translucent face.

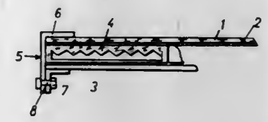


3,359,670
ADVERTISING DEVICE
Chester F. Pyc, Detroit, and Edward H. Davis, Dearborn, Mich. (both of 33 Eliot St., Detroit, Mich. 48201)
Filed June 29, 1966, Ser. No. 561,465
14 Claims. (Cl. 40—129)



1. An article of manufacture for use as a spinner at the upper end of an upright element such as a radio antenna on an automotive vehicle comprising a body formed of a bendable self-supporting sheet material having means thereon for causing the spinner to rotate when wind impinges against it, said body having adjacent a pair of opposite edges a pair of bendable tabs for mounting the spinner for rotation on said antenna, said tabs projecting laterally outwardly from said edges of the body, one of the said tabs being bent so that at least a portion thereof extends in a plane generally perpendicular to the plane of said body and having an opening in said portion, the other tab being bent inwardly toward the plane of the body in the manner of a loop with the free end of the tab removably interconnected with said body, said last-mentioned tab having an opening therein which is axially aligned with the opening in the other tab, said openings being adapted to receive an antenna therethrough, the portion of the looped tab aligned axially with the opening therein being adapted to serve as a bearing portion for the end of the antenna.

3,359,671
SIGNBOARD, MORE PARTICULARLY TRAFFIC SIGN
Erich-Arthur Nier, and Richard Ernst Nier, both of Am Erlenhang, Bleidenstadt, Taunus, Germany, and Hans E. Gubela, 80 Hohne, Wuppertal-Barmen, Germany
Filed Apr. 25, 1963, Ser. No. 275,631
Claims priority, application Germany, May 2, 1962, G 34,868
3 Claims. (Cl. 40—135)

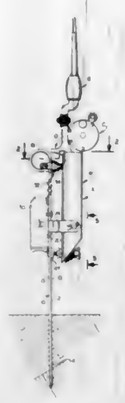


1. A reflecting signboard for reflecting light incident thereon including, in combination, a plurality of individual and rectangularly shaped reflector units arranged in side by side relationship, said units being unconnected and being positioned in juxtaposition to form a substantially continuous reflective surface, each of said reflector units having a front transparent sheet with a plurality of triple reflector surfaces on the rear side thereof, each of said reflector units also including air and water tight backing means for hermetically sealing said reflector surfaces from the atmosphere, a transparent cover member and a back member, said reflector units being sandwiched between said members with the front sheet of each unit being in juxtaposition to said cover member, a frame about the edges of said members and holding the members together with the units sandwiched therebetween, and means defining indicia in front of said reflector surfaces and in juxtaposition to the face of the cover member; whereby signs of various sizes may be formed by selecting a plurality of units to form the sign of the desired size, selecting members of said size, sandwiching the units between the members, and affixing said frame about said members to hold the sandwiched assembly together.

3,359,672
FISHING ROD HOLDER AND BITE SIGNAL
Charles E. Schwartz and John V. Hawn, both of R.F.D. 3, Mott, N. Dak. 58646
Filed June 4, 1965, Ser. No. 461,273
1 Claim. (Cl. 43—17)

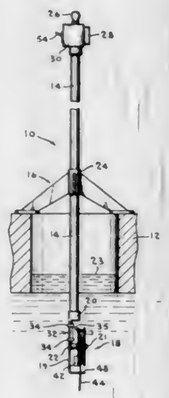
In a fishing rod holder and bite signal, the combination of:
an elongated ground piercing stake,
said stake including a circular enclosed hand hold at one end,
a tubular rod holder pivotally mounted on said stake intermediate its ends for rocking movement about an axis normal thereto,
signal means including a push button carried by said stake and cooperable with said rod holder to produce an audible signal when said rod holder is pivoted about its axis,
said rod holder having a notch therein adapted to cradle the trigger grip of a fishing rod,
said rod holder having a scarfed lower end thereby forming an extension having outer and inner surfaces, spring means including a bolt member secured to said stake normal thereto and extending through an

opening in said extension of said rod holder and normal to said rod holder, means threadedly secured to said bolt and abutting the outer surface of said extension for adjustably limiting pivotal movement of said rod holder in one direction, a compression



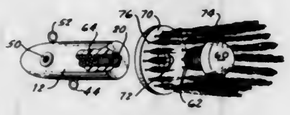
spring member surrounding said bolt in abutting engagement with the inner surface of said extension for yieldingly limiting pivotal movement of said rod holder in the opposite direction, and a finger engageable nut threadedly secured to the end of said bolt.

3,359,673
ICE FISHING TIP-UP WITH LIGHT AND BUZZER
Benjamin C. Roemer, Manitowish Waters, Wis. 54545
Filed Aug. 6, 1965, Ser. No. 477,790
11 Claims. (Cl. 43—17)



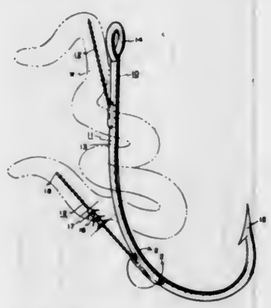
1. An ice fishing tip-up comprising:
supporting means;
rotatable fishing reel means supported by said supporting means;
signal means connected to said supporting means and adapted to be electrically actuated to give a signal to a person tending the tip-up;
a magnet connected to said reel means for rotation therewith;
magnetically responsive switch means electrically connected to said signal means to actuate the same upon actuation of said switch means;
said switch means being supported by said supporting means and being so located that said magnet will move, upon rotation of said reel means, from a position at which it is incapable of actuating said switch means to a position at which it is sufficiently close to actuate said switch means; and
a source of electric power to actuate said signal means upon actuation of said switch means.

3,359,674
ADJUSTABLE FISHING LURE
Mathew A. Strumor, 27 Glenbrook Drive, New Rochelle, N.Y. 10801
Filed July 13, 1965, Ser. No. 471,597
4 Claims. (Cl. 43—42.06)



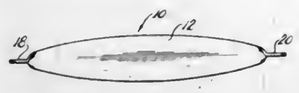
1. A fishing lure comprising a plurality of cylindrical sections of synthetic plastic material, having adjacent ends provided with cooperating axially extending externally threaded studs and axially extending internally threaded cavities so that said sections are detachably threadedly secured to each other with said studs extending at least partially into said cavities, a plurality of removable shot weights further filling at least one of said cavities for adjustably controlling the attitude in which said lure rides, hook means pivotally attached to at least one of said sections, two of said sections having ends remote from said adjacent ends being substantially hemispherically shaped, a disc having a central aperture therethrough disposed between two of said adjacent ends with said one of said studs extending through said aperture, said disc having a larger diameter than the diameter of any of said cylinders.

3,359,675
AUXILIARY BARBED SPUR FISH HOOK
Howard L. Call, 455 24th St., Ogden, Utah 84401
Filed Mar. 29, 1965, Ser. No. 443,551
1 Claim. (Cl. 43—44.8)



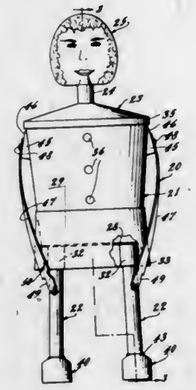
A fish hook including, in combination, a fish-retrieving, fish-hook member having a hook-configured shank terminating in an eye at one extremity and a barbed point at the remaining extremity; and a bait-mounting, continuously barbed, elongate spur means secured at one extremity to said hook-configured shank at a region on the outside longitudinal periphery of said shank and remote from said barbed point, said elongate spur means projecting away from said barbed point and having a transverse cross-section substantially smaller than the transverse cross-section of said shank.

3,359,676
FISH LINE SINKER
Jesse R. Crossan, 345 Highland Ave., Wadsworth, Ohio 44281
Filed Sept. 8, 1965, Ser. No. 485,725
3 Claims. (Cl. 43—44.97)



1. A fish line sinker comprising, a thin elongated body portion having generally pointed ends, each said end for a short distance relative to the length of said body being in the form of a spiral, said body intermediate its spiral portions being thin and having parallel flat surfaces, the tips of the spiralled ends having substantially flat sides in a plane normal to the flat surfaces of the body, the spiral portion of said ends being spiralled in opposite directions to each other, each tip of the body being provided with a hole adapted to receive a fish line whereby the sinker is mounted thereon.

3,359,677
COMBINATION BEACH BUCKET AND DOLL
Lamar H. Hepler, Wyncote, Pa. (400 Krewson Terrace, Willow Grove, Pa. 19090)
Filed Apr. 13, 1965, Ser. No. 447,742
2 Claims. (Cl. 46—11)



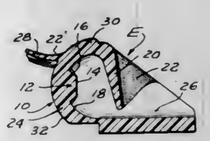
1. A combination doll and bucket comprising a receptacle adapted to simulate a doll torso, a pair of leg-connectors depending from the underside of said receptacle, a pair of simulated doll legs detachably connected to said leg connectors and depending from said receptacle for sustaining the latter in elevated relation over a supporting surface, a removable cover on said receptacle simulating the shoulders of a doll, a cover handle simulating a doll neck and upstanding centrally from said cover, a shovel detachably mounted on said cover handle, said shovel being decorated to represent a doll head, a pair of arms each having one end pivotally connected to one side of said receptacle, and detachable arm-connection means on the outer ends of said arms for connecting the latter together to provide a bail.

3,359,678
FLYING SAUCER
Edward E. Headrick, La Canada, Calif., assignor to Wham-O Manufacturing Company, San Gabriel, Calif., a corporation of California
Filed Nov. 1, 1965, Ser. No. 505,864
3 Claims. (Cl. 46—74)



1. An aerodynamic toy comprising:
a circular central portion having a center surrounded by a substantially flat circular surface area whose boundary is defined by a predetermined radius;
a rim circumscribing the circular central portion;
a surface of curvature extending from said boundary and curving downwardly to a point of juncture with said rim to form an upper convex surface and a lower concave surface of the toy; and
air flow spoiling means located on the convex surface of curvature and extending substantially from said boundary to the point of juncture at the rim, said spoiling means comprising a plurality of concentric circular raised ribs being concentric about said center.

3,359,679
UNITARY RELECTION DOLL EYE WITH INTEGRAL DARK BACKGROUND
Harvey W. Samo, Maplewood, N.J., assignor to Margon Corporation, Newark, N.J., a corporation of New Jersey
Filed Apr. 7, 1965, Ser. No. 446,204
4 Claims. (Cl. 46—165)

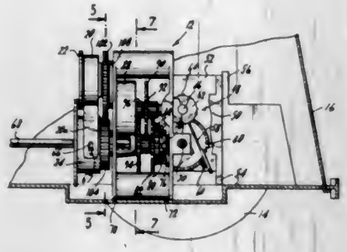


1. A doll eye comprising an eye member made out of a unitary body of transparent plastic material and comprising the following component parts: an eyeshell, the said eyeshell being frontally formed with a lens comprising a pupil portion shaped to transmit incident light and an iris portion surrounding the pupil portion shaped to reflect incident light, the said eyeshell being rearwardly formed with an infolded portion positioned in spaced relation behind the lens pupil and iris portions, the said infolded portion being exteriorly coated with a dark color pigment providing thereby a dark background for the lens pupil and iris portions.

3,359,680
SPRING MOTOR POWERED TOY
Kenneth W. Lindsay, Great Neck, N.Y., assignor to Ideal Toy Corporation, Hollis, N.Y., a corporation of New York
Filed Aug. 13, 1965, Ser. No. 479,391
5 Claims. (Cl. 46—206)

1. A spring motor powered toy comprising a spring motor including a pair of rotatably mounted drums respectively serving as a storage drum and as a winding drum for a spring, a spring secured at one end to said storage drum and normally coiled thereabout, said spring being connected at its opposite free end to said winding

drum such that rotation of said winding drum is effective to transfer said spring thereto, said winding drum having a first starting position of rotation and being effective after rotation through a predetermined number of turns to a second ending position of rotation thereof to complete the transfer of said spring thereto, intermeshing gears rotated in unison with said winding drum for limiting further rotation of said winding drum at said first position of rotation from rotation in a direction unwinding said spring completely from said winding drum and at said second position of rotation from further rotation in a direction unwinding said spring completely from said storage drum, said gears respectively having a mismatched tooth and groove means thereon which are located relative to each other to jam with each other at said first and second positions of rotation of said winding drum for preventing further winding drum rotation in that same direction of rotation which resulted in said jamming of said mismatched tooth and groove means, and a governor operatively connected to said winding drum to brake the spring play-out rotation thereof during transfer of said spring from said winding drum to said storage drum.

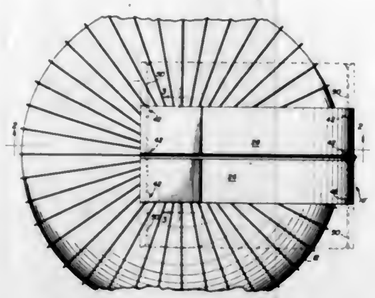


3,359,681
COMPOSITION AND METHOD FOR STIMULATING FLOW OF PINE GUM
Ralph W. Clements, Lake City, Fla., assignor to the United States of America as represented by the Secretary of Agriculture
No Drawing. Filed Aug. 9, 1966, Ser. No. 571,181
5 Claims. (Cl. 47—10)

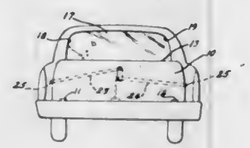
4. A method of stimulating and prolonging the flow of oleoresins and gums from prepared wounds on the trunk of a living coniferous tree, comprising applying to said wounds a composition, in the form of a semi-viscid paste, comprising an intimate mixture of a surfactant-containing nonphytotoxic mineral oil, an ammonium chloride emulsifier, a plasmolytic agent selected from the group consisting of (a) a 60%, by weight, aqueous solution of sulfuric acid, (b) 2,4-dichlorophenoxyacetic acid, and (c) 2,4,5-trichlorophenoxyacetic acid, silica gel and kaolin.

3,359,682
SHUTTER CONSTRUCTION FOR OBSERVATORY DOME
William T. Clark, P.O. Box 885, Jackson, Miss. 39205
Filed Apr. 6, 1966, Ser. No. 540,668
9 Claims. (Cl. 49—40)

1. A shutter construction for a generally hemispherical observatory dome and the like having a shutter aperture therein, said shutter construction comprising first and second shutter members, means mounting said shutter members to said dome for lateral movement toward and away from each other for covering and uncovering the shutter aperture in the dome, said shutter mounting means comprising first and second shutter support assemblies including bearing means secured to the dome adjacent the shutter aperture and shaft means secured to said shutters and slidably carried by said bearing means whereby said shutters are supported for relatively friction free linear travel by said shutter mounting means.



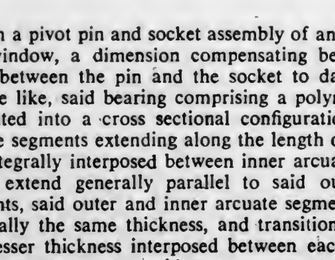
3,359,683
LATCH RELEASE
Thomas J. McKey, Grosse Pointe, Mich., assignor to American Motors Corporation, Kenosha, Wis., a corporation of Maryland
Filed Jan. 24, 1966, Ser. No. 522,602
5 Claims. (Cl. 49—72)



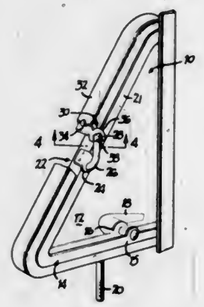
3. For use with a vehicle door having inner and outer panels and a window retractible into the door between the panels; a lever rotatively mounted on the inner panel for controlling opening and closing of the door; a blocking mechanism for immobilizing the lever until the window is fully retracted into the door and including upper and lower brackets mounted on the inner panel; a blocker rod reciprocably carried by the brackets; one of the brackets having an elongated slot therein; a leg on the blocker rod projecting laterally therefrom through the slot, the lower edge of the window engaging the leg for lowering the blocker rod until its upper end is clear of the lever, thereby permitting rotation of the lever to effect opening of the door; spring means on the lower bracket and engaging the blocker rod to urge the rod in a direction to block the lever.

3,359,684
ACTUATOR WITH FIXED PIVOT
David V. Tinder, Detroit, Mich., assignor, by mesne assignments, to Dura Corporation, Oak Park, Mich., a corporation of New York, a wholly-owned subsidiary of Walter Kidde & Company, Inc.
Filed Aug. 2, 1965, Ser. No. 476,524
8 Claims. (Cl. 49—349)

1. An actuator arrangement for moving an actuable device between spaced positions comprising first and second relatively rotatable output means, rotatable actuator means selectively operable to oppositely rotate the output means relative to one another about a common axis, said rotatable actuator means having relatively rotatable members relatively rotatable about a common axis, the common axes of said rotatable actuator means and said rotatable members being coaxial, pivotal means connecting the output means to the actuable device, fixed pivotal support means for the actuator means on said first rotatable output means and spaced radially from said common axis, and movable pivotal support means for the actuator means on said second rotatable output means and spaced radially from said common axis and enabling pivotal movement of the actuator means about the fixed pivotal support means as the actuable device is moved between the spaced positions.

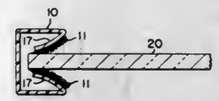


3,359,685
DIMENSION COMPENSATING BEARING FOR AN AUTOMOBILE VENT WINDOW
Loran M. Hodgen, Elkhart, Ind., assignor to Excel Corporation, Elkhart, Ind., a corporation of Indiana
Filed July 6, 1965, Ser. No. 469,595
3 Claims. (Cl. 49—391)



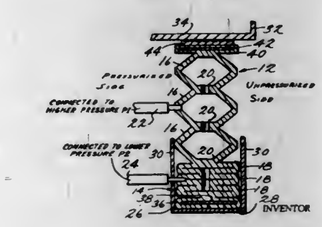
1. In a pivot pin and socket assembly of an automobile vent window, a dimension compensating bearing interposed between the pin and the socket to damp rattling and the like, said bearing comprising a polymeric sleeve fabricated into a cross sectional configuration of outer arcuate segments extending along the length of the sleeve and integrally interposed between inner arcuate segments which extend generally parallel to said outer arcuate segments, said outer and inner arcuate segments being of essentially the same thickness, and transitional segments of a lesser thickness interposed between each outer and inner arcuate segment, said outer arcuate segments being displaced inwardly and said inner arcuate segments being displaced outwardly to frictionally retain the pin, socket and bearing assembly in rattle-free pivotable relation.

3,359,686
WINDOW GLASS CHANNEL
Karl Q. Kondolf, Penfield, N.Y., assignor to The Schlegel Manufacturing Company, Rochester, N.Y., a corporation of New York
Filed June 11, 1965, Ser. No. 463,219
5 Claims. (Cl. 49—441)



1. A window glass guide comprising:
(a) a relatively long and narrow woven fabric backing strip;
(b) a pile row woven into said fabric strip along at least one marginal edge thereof, said pile row extending from a first face of said fabric strip;
(c) a resilient lamina comprising polypropylene fused to a second face of said fabric strip opposite said first face, said lamina filling the interstices of said fabric strip and being thick enough to make said strip self supporting and resilient;
(d) said strip being formed into a U-shaped cross section to provide a relatively long channel for said window glass; and
(e) said pile-bearing marginal edge portion of said strip being bent into said channel at an acute angle to the adjacent side wall of said channel and resiliently disposed in said channel with said pile extending toward the opposite side of said channel and adapted for engaging a window glass.

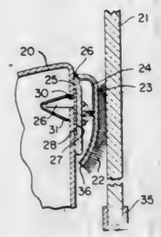
3,359,687
EXPANSIBLE SEAL
William B. Wallace, Dighton, Mass., assignor to Haveg Industries, Inc., Wilmington, Del., a corporation of Delaware
Filed Aug. 17, 1964, Ser. No. 389,964
7 Claims. (Cl. 49—477)



1. An expansible seal comprising: means defining a fluid-tight expansible primary compartment; means defining a fluid-tight expansible secondary compartment adjacent and substantially coextensive with said primary compartment; each compartment being defined by a plurality of walls, one wall of said walls being shared between said compartments; other walls of said plurality of walls comprising corrugated walls extending from each lateral edge of said one shared wall; said corrugated walls constituting the sidewalls of each of said compartments; said corrugated sidewalls having a predisposition toward a retracted, collapsed condition whereby said compartments are predisposed toward a collapsed condition; port means communicating separately with each compartment whereby each compartment is individually inflatable by admission

of pressurized fluid to the respective compartments through the respective port means; said compartments being defined by a plurality of walls essentially composed of fabric reinforced elastomeric material cured in a retracted condition as respects said corrugated sidewalls; each compartment comprising a plurality of generally flattened tubular, interconnected inflatable cells, and the fabric reinforcement including at least one layer substantially completely surrounding each cell and at least one layer substantially completely surrounding both of said compartments.

3,359,688
WINDOW GLASS ENGAGING DEVICE
Karl Q. Kondolf, Penfield, N.Y., assignor to The Schlegel Manufacturing Company, Rochester, N.Y., a corporation of New York
Filed June 11, 1965, Ser. No. 463,218
4 Claims. (Cl. 49—490)



1. A device for mounting on a fixed member to engage a relatively movable window glass adjacent said member, said device comprising:

(a) a relatively long and narrow material having a dense pile extending outward from one face thereof;

(b) a lamina of resilient and long-flex-life thermoplastic resin secured to the back face of said material opposite said pile to form an integral, resilient strip;

(c) said strip being curved in lateral cross section to dispose said pile in an outwardly convex relation to said window glass;

(d) means communicating with one longitudinal edge of said strip for securing said strip to said member in spaced relation from said member and adjacent said window glass with said pile disposed to engage said window glass, and with the opposite longitudinal edge of said strip free for movement;

(e) said lamina being thick enough and strong enough to support said strip resiliently in mounted position to allow resilient deformation of said strip by said window glass and repeated return of said strip from a deformed position to a normally assumed position; and

(f) said free edge of said strip in mounted position being normally disposed near a fixed surface of said member for engaging said fixed surface upon deformation of said strip to brace said strip resiliently against further deformation.

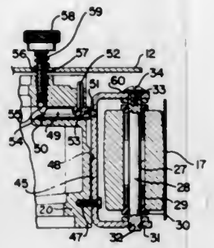
3,359,689
TRACKING MEANS FOR BELT SANDER
George W. McCarty, Towson, and George R. Blevins, Baltimore, Md., assignors to The Black and Decker Manufacturing Company, Towson, Md., a corporation of Maryland
Filed Apr. 22, 1965, Ser. No. 449,983
9 Claims. (Cl. 51—170)

1. In an abrading tool having a housing, an endless belt within the housing, power-operated means to drive the belt, and guiding pulley means for the belt; the improvement in belt tracking means, which comprises:

(a) means including an inherently resilient bracket member for supporting the guiding pulley means within the belt;

(b) said bracket member including a base which is disposed transversely of the belt and which is substantially parallel to the axis of said guiding pulley means and spaced means supporting opposite sides of the guiding pulley means;

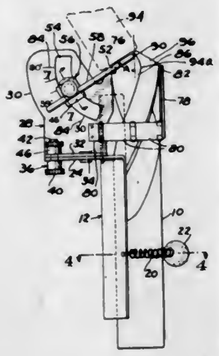
(c) said base of said bracket member having an end portion rigidly fixed to the housing and further having a remaining portion cantilevered therefrom;



(d) said inherently resilient bracket member being effective to urge the remaining portion of said base of said bracket member in a direction towards the housing and substantially about said secured end portion; and

(e) adjustable means in opposition to said inherent resiliency for deflecting said base of said bracket member away from the housing and substantially about said secured end portion, thereby relatively moving said spaced supporting means and alining the axis of the guiding pulley means with respect to the belt.

3,359,690
TOOL SHARPENING GUIDE
Stanford G. McClellan, 19445 Oakfield, Detroit, Mich. 48235
Filed Oct. 19, 1965, Ser. No. 497,990
18 Claims. (Cl. 51—219)



1. A gage for sharpening a fluted tool such as a drill, tap, reamer or the like comprising a support body adapted to be manually manipulated and having means thereon for retaining the tool for both rotative and axial adjustment, said body having a gage supporting member thereon, said gage supporting member having a guide tip fixed thereon and being shiftable on the body in a plane perpendicular to the axis of the tool shank in a direction toward and away from the tool to enable interengagement of said guide tip with the longitudinally extending edge of a flute on the tool adjacent the cutting end thereof, a gage element on said gage supporting member, said gage element having a longitudinally extending straight edge aligned with said guide tip, said gage element being pivotally adjustable relative to said body in a plane parallel to the axis of the tool shank about said guide tip as a center and also about an axis passing through the guide tip and parallel to the axis of the tool shank whereby the gage element is adapted to be adjusted on said body so that its longitudinal edge extends into a flute of the tool adjacent the cutting end thereof and in engagement with a portion of the flute to establish a line of demarcation defining the cutting edge of the tool to be sharpened.

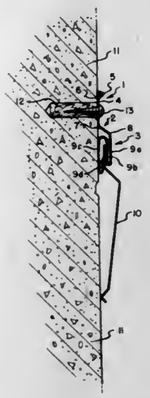
3,359,691
RELEASABLY MOUNTED CEILING PANEL IN A TELEPHONE BOOTH
Percival H. Sherron, Jamaica, N.Y. (% Sherron Metallic Corp., 1201 Flushing Ave., Brooklyn, N.Y. 11237)
Original application July 1, 1963, Ser. No. 291,913, now Patent No. 3,231,943, dated Feb. 1, 1966. Divided and this application Aug. 6, 1965, Ser. No. 477,726
3 Claims. (Cl. 52—22)



3. In a telephone booth, a ceiling structure forming a chamber in the upper end of the booth for housing electrical equipment, wiring and lighting means for the telephone booth comprising a horizontally extending ceiling mounted above the booth, means defining an opening in said ceiling, said opening defining means including a ring projecting downwardly from said ceiling, a ceiling panel enclosing said opening, means for releasably mounting said ceiling panel on said ring including a locking device movable between a locking position for holding said ceiling panel in its mounted position on said ring and a releasing position for freeing said ceiling panel for complete removal from said ring, said means for mounting said ceiling panel on said ring comprising a plurality of circumferentially spaced mounting tabs extending horizontally from said ring, and a plurality of circumferentially spaced mounting lugs on said ceiling panel, said tabs and said lugs being constructed and arranged so that the lugs are positionable on said tabs for supporting said ceiling panel on said ring, said locking device including means cooperable with said lugs for positively blocking the same against rotational movement in either direction in said locking position, means accessible from the interior of the booth for actuating said means cooperable with said lugs into and out of said blocking position thereof.

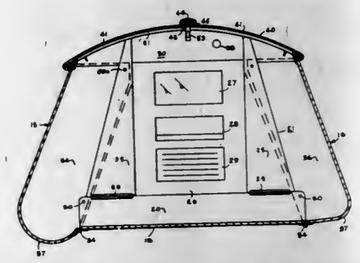
3,359,692
WALL-FACE MOUNTED FLASHING RECEIVER
Anthony F. Dzwonkas, Westmoreland, N.Y., assignor to Revere Copper and Brass Incorporated, Rome, N.Y., a corporation of Maryland
Filed June 30, 1965, Ser. No. 468,531
2 Claims. (Cl. 52—60)

1. A wall-face mountable receiver for metal flashing which comprises a receiver portion, a mounting portion and a connecting portion interconnecting the receiver and mounting portions, all of said portions being composed of form-sustaining sheet metal, the receiver portion consisting essentially of convolute folds including an innermost and an outermost fold adapted to receive a terminal edge of a sheet metal flashing therebetween, the mounting portion consisting essentially of a flat mounting surface disposed substantially in the plane of the innermost convolution of



the receiver portion furthest removed from the connecting portion when the mounting portion is secured to a wall face, the connecting portion of the receiver interconnecting the flat mounting portion and the outermost convolution of the receiver portion with a sharp fold line at the junction of the connecting portion and the flat mounting portion.

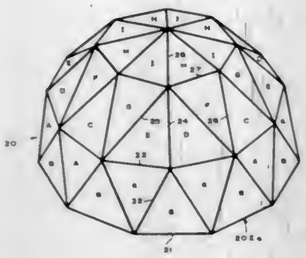
3,359,693
PORTABLE CAMPING UNIT
Charles A. Mitas, 414 N. 11th Ave., Beech Grove, Ind. 46107
Filed Jan. 21, 1966, Ser. No. 522,107
8 Claims. (Cl. 52—64)



1. A collapsible car-top camper having six basic surfaces comprising: a base, a roof, two opposed endwalls and two opposed sidewalls, all of said surfaces being formed from a substantially rigid material; each of said endwalls comprising a main rectangular panel with an open end and a closed end hinged on said base and flanked on two opposed edges by a pair of flanges; each of said sidewalls being hinged to said base and having an arcuate roof support with end portions extending to substantially the length of said base; a pair of roofed sections hinged at one edge on the open end of each of said endwalls with means on their opposite edges for securing them together; said sidewalls and said endwalls being in partial overlapping relationship with each other and in abutment with said roof when erected, said endwalls when

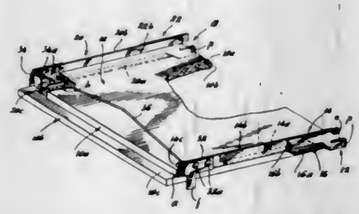
collapsed having their open ends overlapping each other to fully cover said base, said roof sections and said sidewalls lying within the confines of said collapsed endwalls.

3,359,694
DOMICAL BUILDING STRUCTURE
Walter R. Hein, 25433 Benson Road, Kent, Wash. 98031
Filed Aug. 16, 1965, Ser. No. 479,852
7 Claims. (Cl. 52—81)



1. A domical structure having a plurality of vertices occupying points on the surface of an imaginary spheroid having its zenith at the apex of the domical structure, said spheroid having at least seven generally azimuthal rows of polyhedral vertices on its surface arranged symmetrically relative to its equator, consecutive of said rows commencing at said zenith including all of said plurality of vertices of the domical structure, about half of said rows lying in the 90° of latitude centered on said equator and each such central row having the same number of vertices, the polyhedral vertices in each said row each being encompassed by a respective polyhedral angle for the row, the sum of all of such polyhedral angles of the spheroid being 720 degrees less than the product of 360 degrees times the sum of the polyhedral vertices of said spheroid, and means interconnecting said plurality of vertices.

3,359,695
ACCESS TILE WITH HINGE LEAVES
Joseph F. Gazerro, 23 Hickory Drive, Westport, Conn. 06880
Filed Oct. 14, 1964, Ser. No. 403,705
10 Claims. (Cl. 52—127)



1. An access tile and hinge assembly for use in a ceiling comprising, a support frame including a plurality of spaced bars and a plurality of ceiling or wall tiles supported between said bars, said access tile being stepped along two opposite edges with its upper portion narrower in one direction than the distance between two adjacent bars and with its lower portion wider than the distance between said two adjacent bars and adapted to abut against the lower surface of said bars when it is in closed position, the other two edges of the access tile being slotted with longitudinal slots, a pair of hinges on opposite sides of the access tile, each hinge comprising, a first leaf having a flange received in one of said slots and a portion normal to the flange extending along a portion of the edge of the access tile in the slot of which the flange of said first hinge leaf is inserted, and a second leaf pivotally attached to the first leaf at one end and comprising, a flange received in a slot in the edge of the laterally adjoining tile and a portion normal to the flange extending along a portion of the edge of the tile in the slot of which the flange of said second hinge leaf is inserted, and slide means carried by the first hinge leaves which are movable to extend the first leaves above said bars, to support and lock the access panel in closed position when the access tile is in the plane of the ceiling.

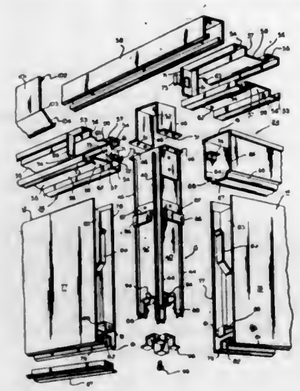
3,359,696
CEILING CONSTRUCTION
William T. Snaith, Weston, Conn., assignor to Johns-Manville Corporation, New York, N.Y., a corporation of New York
Filed May 19, 1965, Ser. No. 457,063
14 Claims. (Cl. 52—314)



1. In a ceiling construction
(a) a pair of parallel elongated support means,
(b) horizontally extending flanges on the support means at the lowermost portions thereof and having exposed faces facing downwardly,
(c) a panel between the pair of support means and having an exposed face facing downwardly,
(d) the exposed face of the panel having a plurality of grooves therein extending parallel to the support means,
(e) both edge portions of the panel adjacent the support means having a recess in the underside thereof substantially parallel to the support means and extending from one end of the panel to the opposite end,
(f) the bottom of each recess resting on the adjacent flange of the adjacent support means,
(g) the side wall of each recess being spaced from the edge of the adjacent flange a distance substantially equal to the width of at least one of the grooves, thereby forming a groove-simulating recess portion and
(h) the depth of the recesses being substantially equal to the thickness of the support flanges, whereby the said groove-simulating recess portions and the exposed faces of the flanges provide, in visual effect, a grooved pattern complementary to that of the exposed face of the panel.

3,359,697
SUSPENDED CEILINGS
Gean D. Smith, Oak Lawn, Ill., and Willard W. Thompson, Milton, Mass., assignors to Luminous Ceilings, Inc., Chicago, Ill., a corporation of Illinois
Filed Mar. 5, 1964, Ser. No. 349,627
11 Claims. (Cl. 52—506)

6. In a corner post and baffle construction for a suspended ceiling, said corner post having said baffles extending therefrom at right angles with respect to each other, each of said baffles having spaced sides and secured to said corner post, said corner post comprising an elongated hollow walled member of rectangular cross-section, said walled member having flanges extending therefrom embraced by the spaced sides of said baffles, a web connecting the spaced sides of each of said baffles near each end thereof, a securing clip supported by said web, with cooperating securing means disposed between the flanges of said hollow member and engageable with said



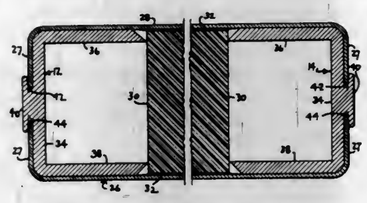
securing clip, and means for locking said baffle to said corner post comprising a locking member secured to said hollow member and mounted for swiveling movement with respect thereto, a lower locking member disposed on the web of said baffle, and a locking element secured to the lower end of said swivelable member in locking engagement with said lower locking member on the web of said baffle.

3,359,698
METAL CLAD REFRACTORY SHAPES
John L. Cummings, Sr., Horizon House, 31 Island Way, Clearwater, Fla. 33515
Filed May 20, 1965, Ser. No. 457,294
1 Claim. (Cl. 52—599)



A metal clad refractory shape comprising a substantially brick shaped body of a basic refractory material molded to a shape having end faces and side faces and having a chamfered area at opposite edges at substantially the center of the small ends of the brick with the beveled faces of the chamfered area extending at an angle from the end faces of the brick upward toward and to the longitudinal center of the side faces of the brick, U-shaped metal casings enveloping the side faces of said shape having the legs of the casings juxtaposed with space between the edges and having portions of the edges of the legs overlying the chamfered areas, said overlying portions being depressed into intimate contact with the entire surface of the chamfered area of said body underlying said portions to interlock said casing and body.

3,359,699
EDGE LOCK FOR METAL PANELS
Frank A. Jackson, Kokomo, Ind., assignor to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 26, 1965, Ser. No. 458,933
2 Claims. (Cl. 52—619)



2. A panel assembly comprising a rectangular frame of unitary panel framing members having an elongated body portion with a longitudinally extending flange integrally formed thereon, said elongated body portion being a substantially U-shaped channel having a web and a pair of flanges, said integral flange being T-shaped and extending from said web generally outwardly of the edge of said frame in a direction opposite to that of said pair of flanges of said channel, said T-shaped flange consisting of a first portion extending outwardly of the body portion and a second portion extending transversely of the body portion and defining with said body portion a pair of longitudinally extending, opposed grooves that are spaced from and open towards opposite sides of said frame, said first and second portions of said flange and the portions of the grooves defined thereby being spaced substantially back from the flanges of said channel such that said grooves and said T-shaped flange are located along the central longitudinal portion of the edge of said frame, insulating core material disposed within said frame, a pair of substantially flat panel members disposed on opposite sides of said frame, said pair of panel members each having an edge flange directed towards one of said grooves and closely received and secured therein by opposed walls thereof, said edge flanges being approximately the same thickness as the distance between opposed walls of said grooves whereby the marginal edge of each of said panels is concealed along the edge of the panel assembly and the panel edge flanges are locked by the T-shaped flange against movement perpendicular to the edge of said panel framing members, and an adhesive layer between said panel members and said core material bonding said frame, core material and panel members in assembled relation.

3,359,700
SEALING MEANS FOR EXTERIOR PANEL WALL STRUCTURES
Herbert L. Birum, Jr., Pleasant Valley, Titusville, N.J. 08560
Filed Nov. 26, 1965, Ser. No. 509,704
6 Claims. (Cl. 52—628)

1. An exterior panel wall assembly for buildings and the like being comprised of
a plurality of exterior panel wall members;
a plurality of elongated batten strips framing the marginal edges of said panel members and engaging said panel wall members for rigidly positioning and supporting said members;
selected ones of said batten strips having the edges of adjacent ends being spaced a sufficient distance apart to allow for expansion and contraction of said batten strips;

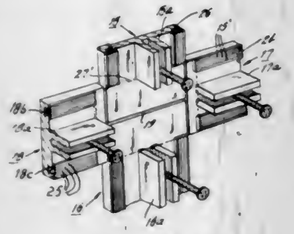
fastening means positioned between said batten panel members and the building for securing said batten strips to the building;

each of said batten strips having a central projection extending the length of each strip and projecting toward said fastening means;

resilient sealing means;

a portion of the central projection of the batten strips having edges adjacent one another being removed to present a substantially flat surface for seating a portion of said sealing means;

said sealing means being comprised of first and second substantially flat rectangular shaped resilient sheets capable of changing its thickness under application of pressure thereto;

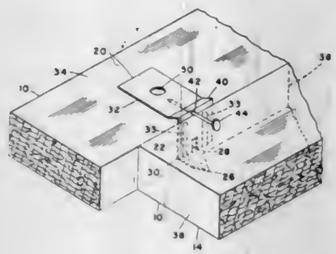


a third substantially flat rectangular shaped sheet of material having dimensions substantially identical to the dimensions of said first and second resilient sheets being sandwiched between said first and second sheets and being secured to said first and second sheets by suitable adhesive means;

said third sheet being substantially incapable of being stretched to prevent stretching of said first and second resilient sheets;

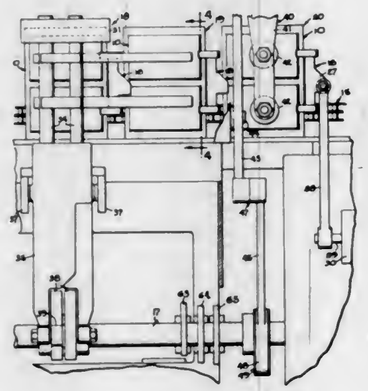
said sealing means being positioned between batten strips having adjacent edges to the margin of said panel members so as to be compressed therebetween to provide a water-tight seal at such locations while preventing deformation of said first and second resilient sheets.

3,359,701
ROOF-FORMING PLANK CLIP
Joseph W. Schneller, Williamsville, N.Y., assignor to National Gypsum Company, Buffalo, N.Y., a corporation of Delaware
Filed May 17, 1965, Ser. No. 456,130
5 Claims. (Cl. 52—712)



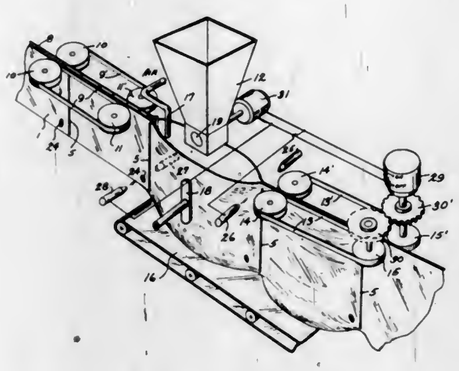
1. A roof-forming plank clip consisting of a single sheet of metal formed to comprise essentially a central vertical web for disposition between the edges of a pair of adjacent planks, means extending from a lower portion of said central vertical web for impaling each of the two edges of said two adjacent planks, and a top flange and an associated connecting portion extending from a relatively upper portion of said central vertical web, said top flange extending in a direction parallel to one of said impaling means and spaced therefrom a distance equal to the depth at which said plank edge is preferably impaled, said top flange and connecting portion having a combined length greater than said impaling means, whereby said top flange provides controlled means for positioning said clip relative to said plank edges, said central web extending upwardly above the general plane of said top flange, said connecting portion being downwardly inclined and connecting the upper edge of said central web to said top flange.

3,359,702
APPARATUS FOR DETECTING AND REJECTING IMPROPERLY FILLED PACKAGES
Carl J. Beert, Wilbur G. Ludwig, and Lloyd J. Nalley, Rockford, Ill., assignors to Bartelt Engineering Company, Inc., Rockford, Ill., a corporation of Delaware
Filed Oct. 6, 1965, Ser. No. 493,351
8 Claims. (Cl. 53—53)



3. In a packaging machine, the combination of, a conveyor for supporting a succession of flexible bags in edge-to-edge relation and advancing the bags edgewise and step by step along a predetermined path successively through closing, detection and transfer stations, a sealing device at said closing station comprising opposed relatively movable sealing elements disposed on opposite sides of said path, at least one of said elements being movable toward and away from said path to clamp a portion of each bag between said elements and thereby close the bag, a pair of opposed detecting elements on opposite sides of said path at said detection station, said detecting elements being supported on said sealing elements for similar relative movement into engagement with the opposite sides of each bag in the detection station when a following bag is in said sealing station, means actuated in response to movement of said detecting elements closer together than a preselected minimum distance to produce signals indicating the presence of underfilled bags in said detection station, a transfer device for picking off each bag at said transfer station, carrying the bag away from said conveyor and normally releasing the bag at a discharge point spaced from said conveyor, and means operable in response to said signals to effect the release of underfilled bags by said transfer device between said transfer station and said discharge point thereby separating the underfilled bags from the remainder of the bags as an incident to the transfer from said conveyor.

3,359,703
APPARATUS FOR MAKING AND FILLING A SERIES OF BAGS
Dirk Quaadgras, Doorn, Netherlands, assignor to Stamicarbon N.V., Heerlen, Netherlands
Filed July 18, 1963, Ser. No. 295,917
Claims priority, application Netherlands, July 19, 1962, 28—1,183
8 Claims. (Cl. 53—59)



1. Apparatus for making and filling a series of bags of the type formed from a strip of material folded lengthwise and divided into a number of compartments by transverse seams comprising a first set of cooperating conveyor means engageable with the top of the strip on opposite sides thereof, a second set of cooperating conveyor means engageable with the top of the strip on opposite sides thereof in spaced relation to said first set of conveyor means, a filling device disposed between said first and second sets of conveyor means for depositing material into successive compartments moved thereunder by said conveyor means, means for intermittently driving said conveyor means in a cycle of operation to bring each successive compartment under said filling device and open the same for filling by said filling device wherein said second set of conveyor means, which is disposed downstream with respect to the direction of travel of the strip, is stopped and started moving again earlier than said first set of conveyor means whereby the upper edges of the compartment under said filling device are first pushed to be moved apart prior to filling and then pulled to be moved together after filling and means providing support for successive filled compartments.

3,359,704
APPARATUS FOR PACKAGING PHONOGRAPH RECORDS
Alan Phillipson, Basil Harry Royston Spiller, Robin Smith, and Harry Cheesman, London, England, assignors to Decca Limited, London, England, a British company
Filed July 26, 1965, Ser. No. 474,659
Claims priority, application Great Britain, Aug. 4, 1964, 31,591/64
13 Claims. (Cl. 53—59)

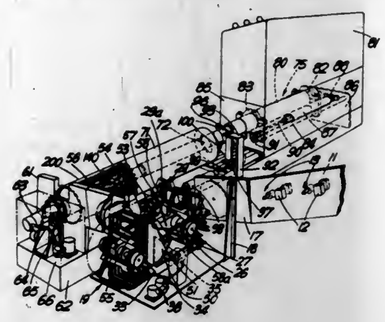
13. In a blank phonograph disk loading machine, the combination comprising:

a cylinder having an open first end and a partially closed second end;

a first ram extending through said second end;

a second ram operative to force disks successively into said first end against the force of said first ram;

a feed system providing disks successively to a position in front of said control second ram; and

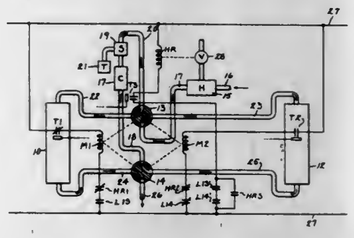


control means responsive to the passage of a disk through said feed system and operating said second ram thereafter.

3,359,705
OXYGEN PERMEABLE MEMBRANES
Joseph T. Mullhaupt, Tonawanda, N.Y., assignor to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Oct. 27, 1966, Ser. No. 589,848
7 Claims. (Cl. 55—16)

1. In the process for separating oxygen from air in which air at elevated temperature is brought into pressure contact with one surface of a thin metallic membrane while maintaining a substantially lower pressure on the converse side of the said membrane, whereby oxygen selectively permeates through the said membrane, the improvement which comprises employing as the metal permeation membrane a thin film of an alloy consisting of at least 80 atom-percent silver and not greater than 99.8 atom-percent silver with at least one other transition metal having from 8 to 10 inclusive electrons in the outermost occupied *d* shell thereof.

3,359,706
ADSORPTION GAS TREATING METHOD AND APPARATUS
Harry E. Zankey, Pittsburgh, Pa., assignor to McGraw-Edison Company, Milwaukee, Wis., a corporation of Delaware
Filed May 28, 1964, Ser. No. 370,831
5 Claims. (Cl. 55—20)



1. In a continuous gas drying system, having first and second adsorption chambers, heater means coupled to the input of said system, cooler-condenser means, valve means having one position for respectively coupling the input and output of said first adsorption chamber to said

heater means and to said cooler-condenser means and for respectively coupling the input and output of said second adsorption chamber to said cooler-condenser means and the output of said system, so that said first chamber is being reactivated and said second chamber is drying the system gas, said valve means having an alternate position for reversing the couplings of said adsorption chambers so that the drying and reactivation operations of said chambers are shifted, heater control means, first thermoresponsive means coupled to said heater control means and the input of the cooler-condenser means and being operable to deactivate said heater control means when the temperature at the input of said cooler-condenser means reaches a predetermined value, second thermoresponsive means in said first adsorption chamber and operatively connected to the valve means for shifting said valve means to their alternate positions when the temperature within said first adsorption chamber falls below a predetermined value and third thermoresponsive means disposed within said second adsorption chamber and operatively connected to the valve means for shifting said valve means to their one position when the temperature within said second adsorption chamber falls below a predetermined value, said heater control means being operable to prevent the shifting of said valve means when said heater is in operation, and means for actuating said heater control means upon the shifting of said valve means.

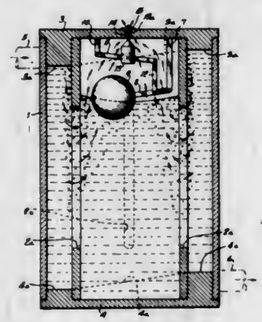
3,359,707
METHOD AND APPARATUS FOR REMOVING CO_2 AND MOISTURE FROM STALE AIR
Olivier Auguste Louis Jean, 39 Route de Malagnou, Geneva, Switzerland
Filed Jan. 21, 1964, Ser. No. 339,268
22 Claims. (Cl. 55—33)



18. In a process for purification of air, especially stale air, passing the air to be purified through a container having a metal coating, an electrode within said container and an adsorbent about said electrode capable of taking up the impurities such as carbon dioxide and water vapours and comprising a zeolite molecular sieve comprising double silicate of aluminum and sodium, subjecting said molecular sieve to the action of an electric field of high frequency including passing current between said electrode and coating thereby to regenerate said molecular sieve.

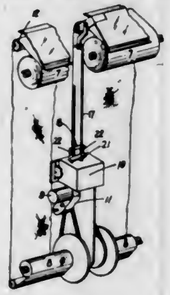
3,359,708
GAS AND LIQUID SEPARATING APPARATUS
Ronald B. Barber, Cheshire, Conn., assignor to Neptune Meter Company, Wallingford, Conn., a corporation of New Jersey
Filed July 15, 1966, Ser. No. 565,582
7 Claims. (Cl. 55—170)

1. Apparatus for separating gas and liquid, comprising:
(a) inner and outer, vertically extending, concentric cylinders;
(b) means closing the ends of the cylinders and cooperating with the cylinders to define between them a chamber of annular cross-section;
(c) means defining a tangentially extending inlet for fluid at one end of said chamber;
(d) means for defining a tangentially extending outlet for liquid at the other end of said chamber;
(e) said inlet and said outlet cooperating to direct liquid entering the inlet along a helical path through the chamber and adjacent said outer cylinder;
(f) said inner cylinder having spaced apertures to permit the passage of fluid therethrough and into the interior to establish a liquid level therein, said spaced apertures being slots extending vertically substantially from the bottom of said inner cylinder to a point just below the predetermined liquid level established by the below-mentioned valve and float;



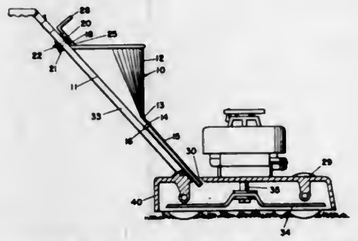
(g) means in said end closing means defining an upwardly opening outlet port for gas at the top of the inner cylinder;
(h) a valve controlling the flow through said gas outlet;
(i) a float in said inner cylinder and operated in response to the liquid level therein; and
(j) means operatively connecting the float to the valve for closing the valve when the liquid rises above a predetermined level.

3,359,709
RUN-OUT SWITCH ARRANGEMENT FOR SIDE-BY-SIDE ROLL-TYPE FILTER
Alan E. Revell, Louisville, Ky., assignor to American Air Filter Company, Inc., Louisville, Ky., a corporation of Delaware
Filed Apr. 25, 1966, Ser. No. 551,827
3 Claims. (Cl. 55—354)



1. A filter assembly comprising: a pair of side-by-side filter housings each including a filter medium supply section, a fluid treating section, a filter medium take-up section, and a supply of filter medium supported in roll form upon a mandrel in said supply section; common power operated means to move said filter medium simultaneously from said rolls in said supply sections in both of said housings through the respective fluid treating sections to their respective take-up sections, a single unitary common "on-off" control switch disposed between said side-by-side housings and connected to said power operated means; each of said housings including a run-out plate pivotally mounted to said housing to movably engage against said filter medium in said supply section; and switch actuating linkage for each of said housings, each of said switch actuating linkages being connected at one end to said run-out plate and extending between said side-by-side housings to communicate with said common "on-off" control switch to actuate said control switch to "off" position when said supply roll of either of said housings has a preselected quantity of medium remaining thereon.

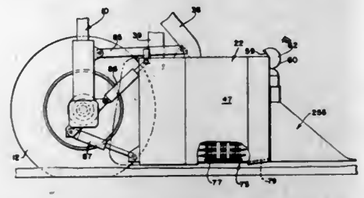
3,359,710
COMBINATION MOWER AND DISPENSER
Carl W. Anderson, 6170 Meridian Drive, Erie, Pa. 16509
Filed Feb. 8, 1965, Ser. No. 430,909
4 Claims. (Cl. 56—25.4)



1. In combination, a rotary mower and a fertilizer dispensing device,
said mower having a housing,
a handle attached to said housing,
a rotary blade supported in said housing and its tip rotatable in a circular path,
means on said housing to rotate said blade in a plane generally parallel to the ground,
said housing having a top and a skirt extending downwardly around the outside of said path of said blade tip,
said skirt extending downwardly below said path,
a discharge opening in one side of said skirt adjacent said path,
a hopper,
said hopper having a rear side resting on and being attached to said handle,
and a feeder tube attached at its upper end to the lower part of said hopper,
said feeder tube extending downwardly and terminating at its lower end above said path of said blade and toward the center of said blade therefrom.

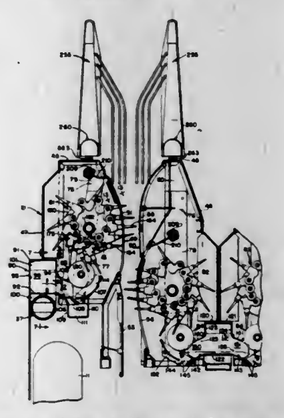
3,359,711
COTTON PICKER
Arthur L. Hubbard, Des Moines, Iowa, assignor to Deere & Company, Moline, Ill., a corporation of Delaware
Filed Feb. 12, 1965, Ser. No. 432,090
17 Claims. (Cl. 56—44)

1. A cotton picker comprising: a main supporting frame; a picker housing having floor structure including front and rear laterally disposed portions with the forward portion normally inclined upwardly from the rear portion and upright side structure extending upwardly from the floor structure and including front, rear and side wall structures; an upright picking drum supported in the housing and including a plurality of vertically spaced and laterally extending picking spindles adapted to move in a continuous orbit as the drum rotates, the orbit normally lying in a substantially laterally disposed plane; a forward upright gatherer projecting forwardly of the housing and supported thereon to float vertically



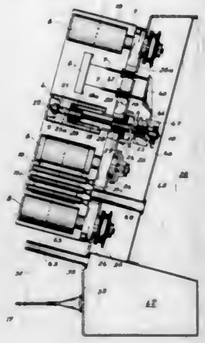
and having a lower edge portion in close proximity to the ground; and means supporting the housing on the frame to tilt the housing forwardly whereby the forward portion of the floor is substantially level and the orbital planes of the spindles are inclined so that the forward sweep portion of each orbit is substantially lower than its counterpart rear sweep portion.

3,359,712
COTTON PICKER
Arthur L. Hubbard, Des Moines, Iowa, assignor to Deere & Company, Moline, Ill., a corporation of Delaware
Filed Feb. 12, 1965, Ser. No. 432,105
32 Claims. (Cl. 56—44)



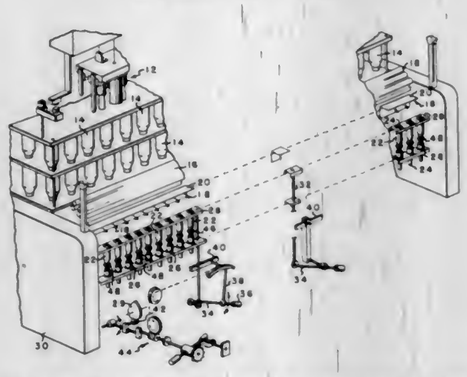
1. A cotton receiving and conveying structure adapted for use on a cotton harvester utilizing an upright rotatable doffing drum for removing and dispatching cotton from harvesting mechanism of the harvester, said structure comprising: an upright cotton compartment mounted on the harvester adjacent a side of the doffing drum and having an upright material receiving opening in its side for passing cotton from the doffing drum into and transversely of the compartment, the compartment having an air inlet port at the base thereof in a longitudinal offset relation from the material receiving opening and a discharge outlet at its top, the port and outlet being effective to direct air upwardly through the compartment and to one side of the opening; a first panel means extending from the compartment and from one edge of the opening to the adjacent side of the doffing drum for peeling material therefrom; and a second panel means extending from the opposite edge of the opening initially in a spaced relation from the first panel means and from thence around and in a spaced relation from the periphery of the drum and terminating at an upright edge disposed spacedly from and on the opposite side of the drum.

3,359,713
DRAFTING MECHANISM FOR SPINNING MACHINES
Johann Jacob Keyser, Grabenallee 16, Aarau, Switzerland
Filed Jan. 10, 1966, Ser. No. 519,497
Claims priority, application Germany, Jan. 15, 1965, K 55,017
14 Claims. (Cl. 57—36)



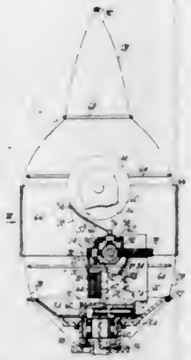
1. In combination with a spinning machine frame means: a plurality of drafting mechanisms, each of said drafting mechanisms including a plurality of pairs of roller means for respectively passing slubbing therebetween and drafting the same, the pairs of roller means of each drafting mechanism pertaining to the respective drafting mechanism only, and shaft means respectively having one end thereof only journalled in said machine frame means, said shaft means respectively rotatably supporting said roller means so that one end face of said roller means faces said machine frame means while the other end faces of said roller means faces away from said machine frame means.

3,359,714
YARN WASTE CLEANER
Grady H. Sanders, Spartanburg, S.C., assignor to Deering Milliken Research Corporation, Spartanburg, S.C., a corporation of Delaware
Filed May 27, 1965, Ser. No. 459,409
12 Claims. (Cl. 57—56)



1. A textile processing apparatus comprising a frame, means rotatably mounting a plurality of spindles on said frame, a bobbin on each of said spindles, means supplying yarn to said bobbins, a collar member snugly telescoping said spindle, said collar member having a first portion and a second portion with a downwardly tapering diameter, whereby upon stopping said textile processing apparatus and wrapping a few wraps of yarn on said first portion and upon restarting said textile processing apparatus to rotate said spindle, said yarn wrapped on said first portion slides down on said tapered second portion and is cleaned therefrom by the centrifugal force exerted thereon by the rotation of said spindle.

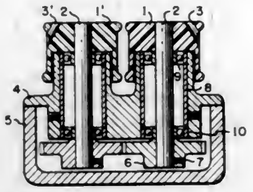
3,359,715
TWISTING MACHINE
John K. P. Mackie, Belfast, Northern Ireland, assignor to James Mackie & Sons Limited, Belfast, Northern Ireland
Filed Sept. 8, 1964, Ser. No. 394,851
Claims priority, application Great Britain, Sept. 11, 1963, 35,885/63
7 Claims. (Cl. 57—58.65)



1. A two-for-one yarn twisting machine comprising driven yarn feeding means, a traverse mechanism which lays the yarn in cross wind on a conical package, and compensating means to vary the length of the yarn path between the let-off point of the driven yarn feeding means and the point where the yarn is laid on the package, said let-off point of the feeding means being fixed and located in a plane perpendicular to the package axis approximately midway between the ends of the package, and the traverse mechanism including a yarn guide movable longitudinally of and parallel to the longitudinal axis of the package which arrangement would normally produce "arc variation," said compensating means including a cam so designed that the path length variation introduced during each traverse cycle compensates substantially for the path length change occasioned by said "arc variation" and for at least some degree of variation in the rate of yarn take-up package, the compensating means including a guide arm positioned to engage the yarn between the let-off point of the yarn feeding means and the laying point on the package and which is moved in accordance with the shape of the cam so as appropriately to cause the yarn path to approach more or less closely to the direct path between the let-off point and the laying point.

3,359,716
METHOD AND APPARATUS TO EQUALIZE TENSION IN TWO OR MORE STRANDS
Norman E. Klein, Spartanburg, S.C., assignor to Deering Milliken Research Corporation, Spartanburg, S.C., a corporation of Delaware
Filed Feb. 23, 1965, Ser. No. 434,465
12 Claims. (Cl. 57—106)

10. Apparatus for plying yarn or cord comprising: a plurality of surfaces of revolution, means supplying a strand to each of surfaces in a direction substantially parallel to the axis of rotation of said surface of revolution, mechanical torque transmission means interconnecting said surfaces of revolution to cause, when one of said surfaces of revolution is rotated in one direction due to unbalanced strand tensions, the other of said surfaces



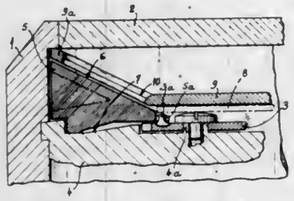
of revolution to rotate in the opposite direction to redistribute said unbalanced strand tensions and means plying said strands together.

3,359,717
FIBROUS BLENDS AND METHOD OF MANUFACTURE
Alfred Marzocchi, Cumberland, and James J. Dillon, Providence, R.I., assignors to Owens-Corning Fiberglas Corporation, a corporation of Delaware
No Drawing. Filed Jan. 7, 1965, Ser. No. 424,134
14 Claims. (Cl. 57—140)

1. A cardable blend including staple inorganic fibers of a length too short to be carded,
glass fibers of at least about ½ inch length and having diameters in the range from about .00008 inch to about .00018 inch,
and said fibers being intimately blended together in association with one another.

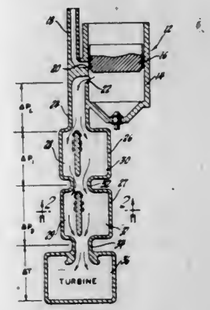
10. In a method of forming strands from staple asbestos fibers,
the steps of
preparing an aqueous slurry from the staple asbestos fibers of a length too short to card per se,
adding to the slurry so produced a quantity of glass fibers having diameters in the range from about .00008 inch to about .00018 inch, and at least ½ inch long,
adding a friction agent comprising colloidal silica to said aqueous asbestos fiber slurry,
admixing to form a uniform aqeuous blend with the two types of fibers,
forming the blended fibers into a loose mat,
removing water,
and carding the mat into yarn for spinning.

3,359,718
TIMEPIECE DATE RING
Ulrich Nydegger, Bienne, Switzerland, assignor to Enicar S.A., a firm of Switzerland
Filed Jan. 19, 1966, Ser. No. 521,713
Claims priority, application Switzerland, Feb. 2, 1965, 1,411/65
4 Claims. (Cl. 58—58)



1. A timepiece comprising a glass, a recessed dial including a peripheral portion constituted as a surface of revolution sloping outwardly and upwardly towards the glass, means supporting the glass and dial in operative association, a ring having an upper face constituted as a surface of revolution of a shape corresponding to the first said surface, indicating markings being provided on the said upper face of said ring, means by which the said ring is rotatably mounted behind said peripheral portion of said dial, a window being provided in the said peripheral portion of the said dial in the vicinity of the 12 o'clock region thereof and through which the said markings on the ring are visible.

3,359,719
FREE PISTON-PULSED TURBINE ENGINE
Roy S. Cataldo, Birmingham, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Jan. 14, 1966, Ser. No. 520,697
5 Claims. (Cl. 60—13)



1. A pulse forming transmission line between a gas producing unit of the type having a combustion chamber with a controlled exhaust orifice that opens and closes at predetermined points in its cycle of operations, said exhaust orifice opening at substantially peak chamber exhaust pressure so that the combustion products are discharged periodically at high temperature and under peak chamber pressure producing successive pulses of gases, and a gas driven machine, said line comprising, in combination, an inertia means tuned to provide rapidly deteriorating pressure drops thereacross when excited by a stepped change in mass flow, said pressure drop being equal and opposite to the force producing the stepped change in mass flow, a plurality of acoustical elements in a series flow relationship with said inertia means, each of said elements consisting of a storage means and an inertia means in a parallel flow relationship tuned to produce a sinusoidal pressure differential thereacross having complete cycles of oscillation for each of said pulses, said acoustical elements having such frequencies and amplitudes that the additive pressures of the elements together with the chamber pressure and the inertia pressure drop at any time during the pulse produces a substantially constant pressure drop across said machine and a stepped substantially constant mass flow through said transmission line and machine.

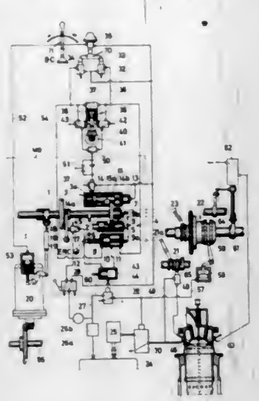
3,359,720
MANEUVERING MECHANISM FOR REVERSIBLE INTERNAL COMBUSTION ENGINES
Eric Georg Fridolf Brelén, Goteborg, Sweden, assignor to Aktiebolaget Gotaverken, Goteborg, Sweden, a corporation of Sweden
Filed May 20, 1966, Ser. No. 551,716
Claims priority, application Sweden, June 9, 1965, 7,541/65
7 Claims. (Cl. 60—16)

1. In a pressure medium impulse operated maneuvering mechanism for an internal combustion engine including a first circuit to start and, when necessary, reverse

the engine as well as a second circuit for determining the fuel supply thereto

a maneuvering shaft adapted to be turned in relation to the magnitude of the fuel supply

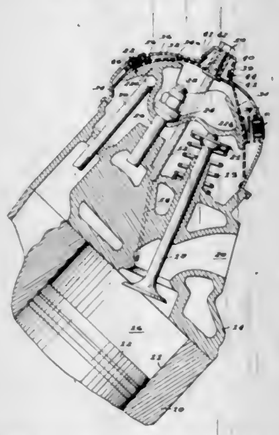
a disc fixed on said shaft having first and second notches in its periphery



a catching member in the first (reversing) circuit adapted to cooperate with the first notch in the disc and containing an axially displaceable slide having two recesses spaced by an intermediate portion and

a blocking member in the second (fuel supply determining) circuit adapted to cooperate with the second notch in the disc and containing an axially displaceable slide having one recess.

3,359,721
PUMP MEANS IN AN INTERNAL COMBUSTION ENGINE
Robert McIlroy, Dearborn, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Jan. 24, 1966, Ser. No. 522,429
10 Claims. (Cl. 60—30)



1. An internal combustion engine which comprises

a combustion chamber valve mounted in an engine head member,

rocker arm means imparting operating motion to said valve,

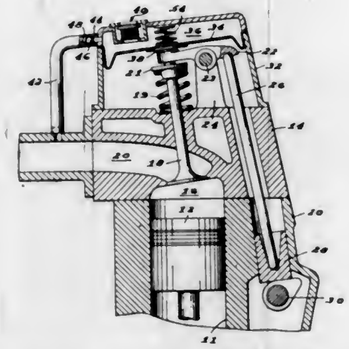
cover means mounted on said head member,

diaphragm means forming pump chambers with said cover means adjacent each end of the rocker arm means, said diaphragm means having reciprocating motion imparted thereto by said rocker arm means,

inlet means to each pump chamber and

outlet means from each pump chamber.

3,359,722
PUMP MEANS IN AN INTERNAL COMBUSTION ENGINE
Thomas M. Sebestyen, Ann Arbor, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Jan. 24, 1966, Ser. No. 522,432
15 Claims. (Cl. 60—30)



1. An internal combustion engine which comprises

a combustion chamber valve mounted in an engine head member,

operating means imparting operating motion to said valve,

cover means mounted on said head member,

diaphragm means forming a pump chamber with said cover means, said diaphragm means having reciprocating motion imparted thereto by said operating means,

inlet means to said pump chamber, and

outlet means from said pump chamber.

13. An internal combustion engine which comprises

a combustion chamber valve,

operating means imparting operating motion to said valve, a cover for said operating means, said cover having an opening therein,

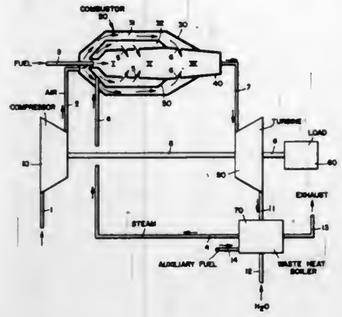
pump chamber means actuated by said operating means, said pump chamber means being mounted in said opening in said cover,

inlet means admitting air to the pump chamber means and

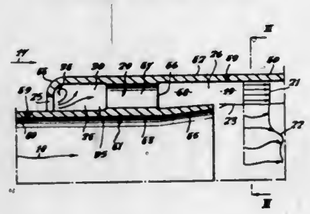
outlet means removing air from the pump chamber means.

3,359,723
METHOD OF COMBUSTING A RESIDUAL FUEL UTILIZING A TWO-STAGE AIR INJECTION TECHNIQUE AND AN INTERMEDIATE STEAM INJECTION STEP
George R. Bohensky, Parsippany, Walter A. Herbst, Union, Wesley D. Niles, Roselle Park, and Charles W. Siegmund, Morris Plains, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware
Filed Oct. 29, 1965, Ser. No. 505,606
5 Claims. (Cl. 60—39.05)

1. Improved process for the operation of a gas turbine engine which comprises introducing a residual fuel boiling above about 50° F. and having an ash content to 1500 parts per million of fuel, a vanadium content of 2 to 400 parts per million of fuel, and a sulfur concentration in the range from about 0.5 to 5% by weight, and less than about 5% excess air into a primary zone of a combustor and combusting the same to produce combustion products, passing about 3 to 20 pounds of steam per pound of fuel about said primary zone and mixing said combustion products with said steam in a secondary zone, then adding about 25 to 35 pounds of additional air per pound of fuel to said combustion products and said steam in a tertiary zone, and thereafter driving a turbine with the gaseous mixture.



3,359,724
COOLING MEANS IN COMBUSTORS FOR GAS TURBINE ENGINES
Stephen Downing Barnwell and John Francis Palmer, Bristol, England, assignors to Bristol Siddeley Engines Limited, Filton, Bristol, England, a British company
Filed Mar. 9, 1966, Ser. No. 532,993
Claims priority, application Great Britain, Aug. 3, 1965, 33,073/65
3 Claims. (Cl. 60—39.65)



1. In a gas turbine engine a combustion chamber comprising:

(a) a cylindrical wall for separating a hot fluid flow along the interior of the chamber from an air flow of lower temperature and higher pressure along the exterior of the chamber;

(b) the wall including an upstream section and a downstream section;

(c) the odwnstream section being dimensioned for an upstream end portion thereof to overlap a downstream end portion of the upstream section and said overlapping portions defining between them a flow passage between the exterior and the interior of the wall;

(d) the upstream extremity of the downstream section and the exterior of the upstream section forming between them at least one inlet opening leading to the flow passage and lying in a plane at least partially facing the direction of said air flow;

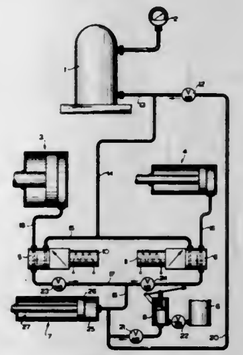
(e) the downstream extremity of the upstream section and the interior of the downstream section forming between them an annular outlet opening positioned to direct flow from the passage to form a film between the interior of the downstream section and the hot flow adjacent thereto;

(f) the outlet opening being dimensioned to have an effective flow area not less than that of the inlet opening;

(g) the flow passage being dimensioned to define downstream of said inlet opening a sudden enlargement of the flow area to create turbulence in the flow and thereby to reduce the mean velocity of the flow without a significant rise in static pressure; and

(h) the flow passage being further dimensioned to include between said sudden enlargement and said outlet opening a portion of substantially uniform flow area to assist in settling said turbulence and in forming a uniform flow.

3,359,725
HYDRAULIC DRIVE FOR MACHINES
Anton Maier, Kircheim-Teck, Lindorf, Germany
Filed Sept. 8, 1965, Ser. No. 485,813
Claims priority, application Germany, Oct. 31, 1964, M 62,955; Dec. 18, 1964, M 63,554
10 Claims. (Cl. 60—51)

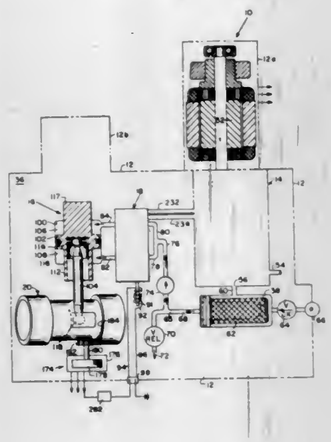


1. A hydraulic drive for machine tools, comprising a pressure storage tank for operating fluid; at least one hydraulic unit arranged to receive operating fluid from said tank in the course of an operating cycle; control means for controlling the operative cycle of the machine tool; and a pressure generator for returning operating fluid into said tank, compressing means for receiving from said hydraulic unit operating fluid used during an operating cycle and means for returning such fluid into said tank whereby the operating fluid used during a preceding cycle can be so returned into said tank prior to start of the next-following operating cycle, said means for receiving operating fluid from said hydraulic unit comprising a cylinder and said means for returning operating fluid into said tank comprising a piston which is free within said cylinder.

3,359,726
VARIABLE VOLUME, VARIABLE PRESSURE HYDRAULIC POWER SUPPLY
Douglas F. Gourlay, Closter, and Harold J. Straut, Wayne, N.J., assignors to General Precision Inc., Little Falls, N.J., a corporation of Delaware
Filed Nov. 1, 1966, Ser. No. 591,182
9 Claims. (Cl. 60—52)

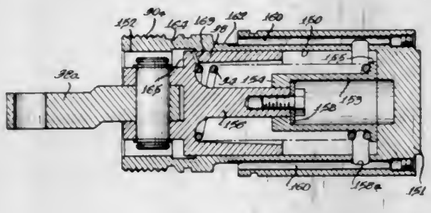
1. In a closed-loop hydraulic actuator system having, hydraulic actuator and pump means for supplying hydraulic fluid to said actuator, including variable volume-variable pressure pump element for varying the operating

pressure and volume flow of hydraulic fluid to said actuator, flow-control means interposed between said pump element and said actuator for controlling fluid leaving said pump element and entering said actuator, and load sensing means operably receiving information from said flow-control means as to the power demands of said actuator and thereby directing the information to said pump element for producing a variable discharge pressure-variable volume hydraulic power supply to said actuator closely matching the power demands of said actuator, the improvement therein, wherein said variable volume-variable pressure pump element includes, reciprocating pump piston for pumping hydraulic fluid through the



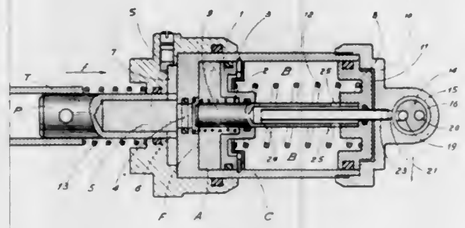
actuator system, sleeve means concentric to and enveloping said piston and having a fluid inlet passage directing hydraulic fluid to said piston, and said load sensing means includes, means for exerting a first axial force against said sleeve proportionally to the load demands of said actuator for adjustably moving said sleeve and thereby the fluid inlet passage axially relative to said pump piston to change the effective stroke of said pump piston for changing the operating pressure and volume flow said piston pumps at each reciprocating cycle, whereby the flow of the hydraulic fluid to said actuator changes depending on the actuator load demand.

3,359,727
HYDROSTATIC TRANSMISSION
Melvin M. Hann, Ottawa, and Craig E. Callies, Peru, Ill., assignors to Sundstrand Corporation, a corporation of Illinois
Filed Apr. 6, 1966, Ser. No. 540,663
16 Claims. (Cl. 60—53)



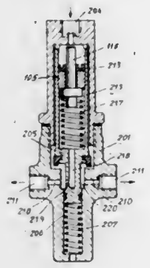
1. In a hydrostatic transmission for a vehicle,
(a) a pump adapted to be driven by a prime mover,
(b) a motor connectible to drive the vehicle,
(c) conduits connecting the pump outlet to the motor inlet and connecting the motor outlet to the pump inlet,
(d) means for varying the displacement of the pump from neutral to a maximum value to bring the transmission from standstill up to speed,
(e) a fluid operable device for actuating the displacement varying means,
(f) means providing a source of control fluid under pressure,
(g) a displacement control valve controlling flow of control fluid from the source to the fluid operable means,
(g–1) including a valve member movable from a first position exhausting the fluid operable device, to a second position supplying fluid to the device,
(h) manually operable means connected to effect movement of the valve member,
(i) means for limiting a pressure or flow characteristic of control fluid delivered to the fluid operable device on initial movement of the valve member from the first position toward the second position to limit starting acceleration to a rate sufficiently low to prevent abrupt starts, and
(j) means responsive to movement of the manually operable means after initial movement in a manner to move the valve member from the first position toward the second position for disabling the limiting means.

3,359,728
HYDROPNEUMATIC CONTROL DEVICE
Edouard Torossian, Bolleystr. 50, Zurich, Switzerland
Filed Jan. 7, 1966, Ser. No. 529,902
Claims priority, application Switzerland, Jan. 8, 1965, 259/65
5 Claims. (Cl. 60—54.5)



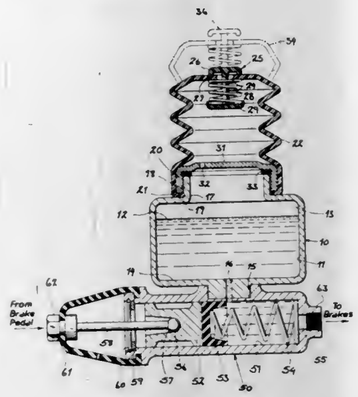
1. An aerohydraulic pressure control device for attachment to a vise which first closes and then locks the jaws of the vise comprising:
(a) a cylinder having a cup shaped head;
(b) a spring-urged piston in said cylinder which normally bears in a forward direction against said head by the force of said spring;
(c) said piston having an axially mounted plunger and a movable wall portion which is in stepped conformation adapted to the cup shape of said cylinder head and which divides the cylinder into a first chamber in advance of said wall defining an expansible reservoir for hydraulic fluid confined between the piston wall and cylinder head and a second chamber behind said wall for compressed air adapted to drive said piston wall forward;
(d) an end closure for the end of said cylinder which is remote from the cylinder head, said end closure defining a longitudinal chamber arranged as a central continuation of the cylinder with the axis of the chamber being perpendicular to the axis of the cylinder, said end closure being further fitted with inlet openings for compressed air which feed either into the second chamber or into the space behind the piston in said cylinder;
(e) a control valve mounted in said longitudinal chamber which is movable either in closing alignment with the inlet into said second chamber or in closing alignment with the inlet into said space behind the piston in said cylinder, said control valve being formed with annular grooves;
(f) a longitudinal bore forming an air passageway in said valve member which communicates with said second chamber, the forward wall of said valve member opening the air inlet to admit compressed air into said second chamber; and,
(g) a pre-tensioned spring attached to said control valve which urges said control valve against closing of the air inlet to thereby maintain a predetermined air pressure into said second chamber whereby the forward pressing movement of said piston is assured by the hydraulic liquid pressure until the jaws are locked.

3,359,729
PRESSURE LIMITING DEVICES FOR HYDRAULIC BRAKES
Michel Guettier, Billancourt, France, assignor to Regie Nationale des Usines Renault, Billancourt, Hauts-de-Seine, France
Filed Jan. 23, 1967, Ser. No. 611,123
Claims priority, application France, Jan. 31, 1966, 47,785, Patent 89,552
2 Claims. (Cl. 60—54.5)



1. A pressure limiter for hydraulic brakes comprising a valve mechanism inserted between a master cylinder and rear wheel brake cylinders, said valve mechanism comprising a cylindrical casing having an inlet and an outlet, a cylindrical valve member and valve seat within said cylinder defining a first chamber between said valve and said inlet and a second chamber between said valve and said outlet, said valve in its open position allowing communication between said chambers, means biasing said valve open, said valve being closed by fluid pressures from the master cylinder exceeding a predetermined pressure which may be variable in the function of the load on the rear axle, an elastically deformable pressure responsive element of nonlinear characteristics connected between said input and the body of fluid which is isolated in said second chamber and said rear wheel brake cylinders by the closure of said valve, said element comprising a piston mounted in said valve member and subject to the feed pressure, spring biasing means having a diameter greater than said piston and biasing said piston against said feed pressure, whereby fluid pressures exceeding that required to close said valve are transmitted to the rear brake cylinders partly only in response to the deflection characteristics of said pressure responsive element.

3,359,730
FLUID-RESERVOIR ASSEMBLY
Hans Schanz, Frankfurt am Main, Germany, assignor to Alfred-Teves, Maschinen- und Armaturenfabrik KG., Frankfurt am Main, Germany, a firm of Germany
Filed Oct. 4, 1965, Ser. No. 492,798
3 Claims. (Cl. 60—54.6)

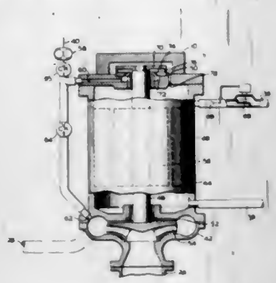


1. In a hydraulic brake system, in combination, a master brake cylinder adapted to supply a brake fluid to at least one wheel-brake cylinder; and a brake-fluid-reservoir assembly connectable with said master brake cylinder, said master brake cylinder being adapted to cause fluctuations in the level of brake fluid within said assembly, said assembly comprising a liquid-storage receptacle formed with a neck and containing said brake fluid, an elastically deformable bellows surrounding said neck and mounted externally on said receptacle while communicating therewith through said neck and defining an axially expandable and contractable gas compartment, a cap mounted on said neck for partitioning said compartment from said receptacle and provided with an aperture of relatively small cross-section relatively to that of the neck for communicating between said compartment and said receptacle, and normally closed valve means mounted on an end of said bellows remote from said receptacle and shiftable toward and away from said cap upon contraction and expansion of said bellows for preventing passage of air to and from said compartment upon fluctuation of the brake-fluid level in said receptacle within a predetermined range, said valve means including a valve member engageable with said cap upon contraction of said bellows in response to a fall of the brake-fluid level outside said range to connect said compartment with the ambient atmosphere and permit re-expansion of said bellows.

3,359,731
POWER PLANT INCLUDING FLUID MEANS FOR SUPPORTING ROTATING SHAFT IN A BEARING
James H. Anderson, 1615 Hillock Lane, York, Pa. 17403
Filed Oct. 13, 1966, Ser. No. 612,742
11 Claims. (Cl. 60—64)

1. In a fluid system, a power assembly for operation in intimate contact with the fluid therein without contamination comprising:
a rotating electrical machine assembly including rotor

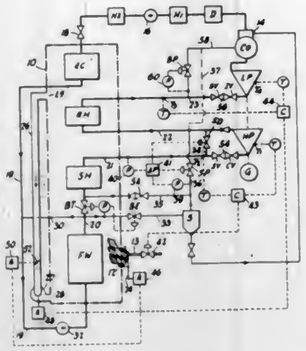
and stator windings enclosed by an essentially pressure-tight housing, a shaft through said housing and disposed to rotate said rotor, annular bearings mounted in said housing supporting said shaft, said bearings having a frusto-conical inner surface thereto, said bearings being disposed around said shaft in such a manner that a frusto-conical space is formed therebetween, a minor diameter of said frusto-conical surface being such that said shaft may be supported free from mechanical contact with said bearing;
means to drive said shaft;



means to supply fluid compatible with said first-mentioned fluid to the annular space at the major diameter end of said frusto-conical surfaces for passage between said shaft and said bearing under a pressure sufficient to support said shaft in a static condition free from mechanical contact with said bearings, said shaft being fully supported free from mechanical contact with said bearings when rotating by a fluid pressure field generated therearound;
and means including conduits communicative with said housing to supply and exhaust the vapor phase of a fluid compatible with said first- and second-mentioned fluids to and from said housing to purge liquid collecting therein therefrom.

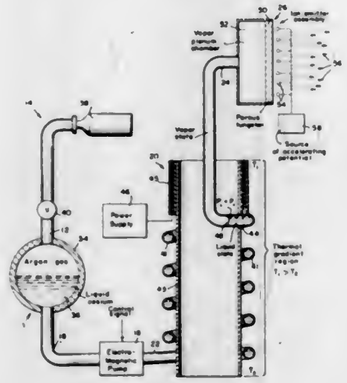
3,359,732
METHOD AND APPARATUS FOR STARTING A STEAM GENERATING POWER PLANT
Wolfram G. Schuetzenduebel, Avon, Conn., and William J. Deane, Hackensack, N.J., assignors to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware
Filed July 21, 1966, Ser. No. 566,999
13 Claims. (Cl. 60—105)

1. The method of hot restarting a steam generating power plant, in which the temperature of the steam entering the turbine must closely approach the temperature of critical parts of the turbine, said steam power plant including a steam boiler and furnace having a radiant heat absorbing section including furnace tubes and a convection heat absorbing section, including a superheater and a reheater, and further including a steam turbine having a high pressure stage and a low pressure stage, with said reheater being operationally interconnected intermediate said high and said low pressure stages, the steps comprising: establishing a total flow of working fluid through said furnace tubes of a rate sufficient for cooling said tubes to prevent heat damage; applying heat to said flow by means of a stream of combustion gases and producing a mixture of water and steam flow; the improvement comprising in combination the steps of:
(a) flowing a first part of said separated steam through said superheater and through said high pressure turbine stage;
(b) flowing a second part through said superheater and through said reheater;
(c) adjusting the temperature of the steam passing to said high pressure stage to match the temperature



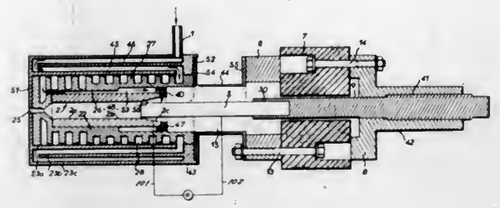
of critical turbine parts by altering the heat input to said total flow.

3,359,733
ION ENGINE
Stuart G. Forbes, Palos Verdes Estates, Calif., assignor to TRW Inc., Redondo Beach, Calif., a corporation of Ohio
Filed Oct. 11, 1965, Ser. No. 494,772
7 Claims. (Cl. 60—202)



6. An ion engine comprising:
a chamber having a wall of metal permeable to a metal to be ionized,
a source for providing said metal to be ionized in liquid form,
means interconnecting said chamber and said source to define a flow path for said liquid metal,
means for applying a predetermined pressure to said liquid metal to control flow of said metal along said path,
means for establishing a temperature gradient region along a portion of said path to vaporize said liquid metal to form a liquid vapor interface and to maintain pressure equilibrium across said interface, and
means for establishing an electric field in the region of said wall to accelerate ions leaving said wall.

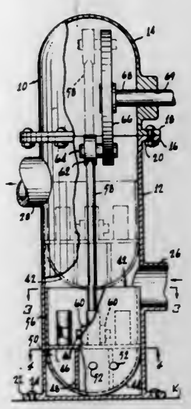
3,359,734
ELECTROTHERMAL PROPULSION UNIT OF THE ELECTRIC ARC TYPE
Franck Guillaume Michel Ferrie, Cachan, Robert Emile Marchand-Revers, Paris, and Christian Pierre Jean Marion, vert Saint-Denis, France, assignors to Societe Nationale d'Etude et de Construction de Moteurs d'Aviation, Paris, France, a company of France
Filed Nov. 15, 1965, Ser. No. 507,883
Claims priority, application France, Nov. 19, 1964, 995,610
13 Claims. (Cl. 60—203)



1. An electrothermal propulsion unit of the electric arc type, comprising a hollow first electrode having a nozzle at one end thereof, a second electrode having a portion situated within and extending in spaced relationship to the other end of said first electrode to define an arc chamber therebetween, means for applying a potential difference between said electrodes to strike an arc therebetween, a heat exchange block surrounding said first electrode and in contact with its outer peripheral surfaces adjacent said one end thereof, a plurality of heat exchange grooves formed in the outer peripheral surface of said block, said first electrode and said block defining a passage at said one end of said first electrode, and an annular, enlarged, intermediate chamber at said other end of said first electrode, said chamber connecting said passage and said arc chamber, means for supplying a propellant through said grooves from which it then passes into said passage, and then through said intermediate chamber into said arc chamber where it is heated and ejected from said nozzle.

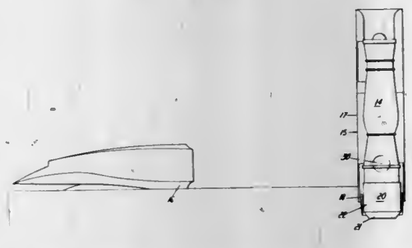
3,359,735
SHIP PROPULSION DEVICE
Joseph T. Yeager, Sr., 37 Stevenson Ave., Trenton, N.J. 08619
Filed July 27, 1966, Ser. No. 568,202
10 Claims. (Cl. 60—221)

1. A marine propulsion device comprising, in combination with a boat hull, and with water intake and discharge ducts having an inlet and outlet, respectively, opening through said hull below the water line thereof:
(1) an outer casing mounted in said hull in communication with the inlet end of the discharge duct and the outlet end of the intake duct;
(2) a piston reciprocable in said casing and dividing the same into an intake chamber communicating with the intake duct and a discharge chamber communicating with the discharge duct, said piston being formed with a head including a plate extending across said casing in slidable engagement at its periphery therewith, said head further including a plurality of spill tubes extending from said plate into the discharge chamber and forming at least in part passages extending through and providing constant communication between opposite ends of the piston, whereby when the piston is operated in one direction water entering the casing through the intake duct will be trapped in the intake chamber and will flow through the passages into the discharge chamber to be retained by said plate, said passages being so formed that when the piston is operated in the opposite direction water will be forced by the piston from the discharge chamber into the discharge duct; and



(3) means connected to the piston for reciprocating the same.

3,359,736
JET PROPULSION POWER PLANT FOR AIRCRAFT
Addison Charles Maguire, Alvaston, Derby, England, assignor to Rolls-Royce Limited, Derby, England, a British company
Filed Nov. 15, 1965, Ser. No. 507,934
Claims priority, application Great Britain, Nov. 27, 1964, 48,434/64
8 Claims. (Cl. 60—228)

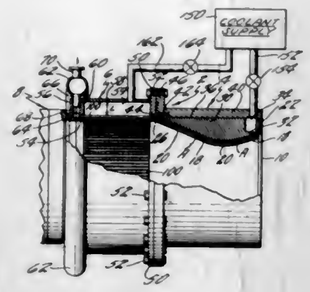


1. A jet propulsion power plant for aircraft adapted for subsonic and supersonic flight, said power plant having an intake duct and a propulsion unit which is rotatable relative to said intake duct between forward propulsion and direct vertical thrust positions, the propulsion unit being provided with a jet pipe and means for forming the downstream end of said jet pipe into a jet nozzle, means for varying the configuration of said jet nozzle between a convergent and a convergent-divergent form.

3,359,737
COMBUSTION INSTABILITY REDUCTION DEVICE
George D. Lewis, North Palm Beach, Fla., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Jan. 26, 1965, Ser. No. 428,110
7 Claims. (Cl. 60—265)

1. In combination, a combustion chamber, means for forming combustion products in said chamber, means for directing a flow of combustion products from said com-

bustion chamber, said combustion chamber having a substantially cylindrical wall, said cylindrical wall being formed of a plurality of tubes being placed closely together and having side-to-side engagement, said wall having openings therein, said openings being formed between adjacent tubes, each pair of adjacent tubes being fixed together along its length except where an opening appears, a resonant chamber located around said combustion chamber.



3,359,738

METHOD OF REDUCING SEEPAGE LOSS FROM CONTAINED BODIES OF WATER

Jack N. Dybalski, Chicago, and Charles W. Jonaitis, Kankakee, Ill., assignors to Armour and Company, Chicago, Ill., a corporation of Delaware

No Drawing. Filed Oct. 22, 1965, Ser. No. 502,505
10 Claims. (Cl. 61—1)

1. In the storage and utilization of water where a containing base material underlying a contained body of water is subject to seepage loss characterized by the steps of:
(a) agitating the base material underlying the body of water and removing portions thereof;
(b) distributing said removed portions of said material in said body of water to form a suspension therein of particles of said material over the remaining portion of said base material;
(c) contacting said suspended particles of material with the dispersed bituminous phase of an aqueous cationic bituminous emulsion to at least partially coat said particles with said bituminous phase and
(d) allowing said coated particles to redeposit on the remaining portion of said base material beneath said body of water to form thereover a new containing surface layer of reduced permeability.

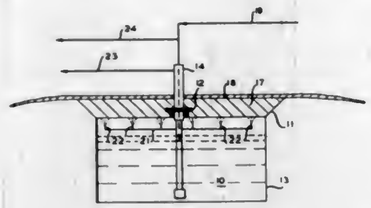
3,359,739

EARTHEN RESERVOIR WITH FROZEN ROOF COVERING AND METHOD OF FORMING THE SAME

George F. L. Bishop, Woods Cross, Utah, assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Oct. 11, 1963, Ser. No. 315,607
5 Claims. (Cl. 61—.5)

1. The method of preparing an earthen reservoir for the storage of volatile liquids in a geographical area subject to seasonal freezing atmospheric temperatures which comprises the steps of excavating a cavity in the earth's surface; placing a pre-stressed concrete beam across the top of the cavity; installing a discharge pump in said cavity so as to be supported by said beam; installing a conduit for introducing liquid to the cavity through said beam; installing a conduit for venting vapor from the cavity through the beam; filling the cavity with water to the bottom of said beam; subjecting the surface of the water to freezing atmospheric temperature so as to freeze a crust of ice on the surface of the water; adding water to the top of the ice crust; subjecting the added water to freezing atmospheric temperature to form an ice crust about 2 to 3 feet in thickness; covering the top of the ice crust with a layer of insulation; pumping the water from the cavity; adding volatile liquid to the wet cavity; and venting vapor from the cavity.



3,359,740

DOCK FENDER SYSTEMS

Graham Hugh Cochrane, London, England, assignor to Taylor Woodrow International Limited, London, England, a British company

Filed Feb. 21, 1966, Ser. No. 529,077
Claims priority, application Great Britain, Feb. 26, 1965, 8,519/65
10 Claims. (Cl. 61—46)



1. A dock fender construction having a face against which berthing impact may occur, said construction comprising a row of a plurality of piles embedded in the water bed at spaced points; transverse beam means interconnecting said piles at their upper parts and being stressed by force acting in a direction forwardly toward said face of said construction; and means at the opposite ends of the beam means for reacting against the aforesaid stressing force.

3,359,741

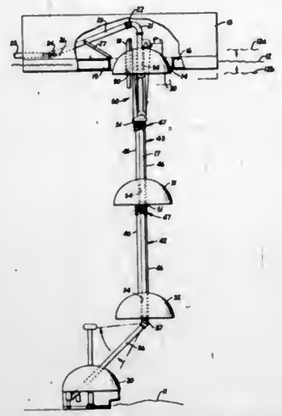
DEEP WATER SUPPORT SYSTEM

Arthur J. Nelson, Santa Barbara, Calif. (1998 Broadway, San Francisco, Calif. 94109)

Filed Mar. 11, 1966, Ser. No. 533,627
14 Claims. (Cl. 61—46)

1. In an elongated array of objects disposed substantially vertically in a body of liquid, an improved support system comprising:
(a) a substantially vertically disposed elongated tension transmitting structure secured in supporting relationship to the objects of said array;
(b) at least one intermediate pontoon means secured to said tension transmitting structure intermediate the end portions thereof to support, at least partially, the load of said array disposed therebelow, said pontoon means having:
(1) a chamber of selectively variable buoyancy;
(2) buoyancy monitoring means to sense the degree of buoyancy of said chamber; and,
(3) buoyancy control means to vary the buoyancy of said chamber responsive to said buoyancy monitoring means to maintain said intermediate pontoon means in a condition supporting the portion of said array therebelow to a predetermined partial degree;

(c) stabilizing pontoon means secured to the upper end portion of said tension transmitting structure to support, at least in part, the composite load of said array unsupported by said intermediate pontoon means.



3,359,742

METHOD AND APPARATUS FOR SECURING ANCHORAGE IN LOOSE AND COMPACT GROUND

Charles Ernst Blatter, Zurich, Switzerland, assignor to Swissboring Schweizerische Tiefbohr- u. Bodenforschung, A.G., Zurich, Switzerland, a corporation of Switzerland

Continuation of application Ser. No. 294,280, July 11, 1963. This application Sept. 13, 1966, Ser. No. 589,175
Claims priority, application Switzerland, July 30, 1962, 9,101/62
7 Claims. (Cl. 61—53.58)



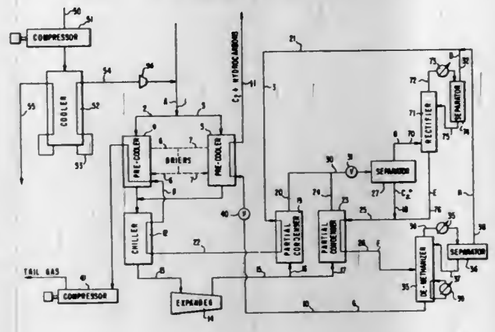
1. A method of securing elongated tubular shaft means having at least one radial aperture intermediate its ends in a bore hole in the ground having a diameter greater than the outside diameter of the tubular shaft means, comprising the steps of injecting into the space between the outer surface of said shaft means and the inner surface of said bore hole a first flowable and hardenable material, adapted to fracture in its hardened condition at a predetermined pressure, to substantially fill said space; permitting said material to harden so as to form a mantel of hardened material about said shaft means; subsequently injecting through said tubular shaft means and said aperture therein additional hardenable material at a pressure at least equal to said predetermined pressure to fracture said mantel of hardened material and to cause said additional material to pass through the fractures into the ground surrounding said mantel while filling said fractures; and permitting said additional material to harden in said fractures and about said mantel of hardenable material.

3,359,743

LOW TEMPERATURE PROCESS FOR THE RECOVERY OF ETHANE FROM A STRIPPED NATURAL GAS STREAM

Robert N. Di Napoli, North Bellmore, N.Y., assignor to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia

Filed Apr. 29, 1966, Ser. No. 546,398
21 Claims. (Cl. 62—28)



1. A method for recovering a major portion of the C_2+ hydrocarbons content of a lean natural gas stream without substantial condensation of methane, the C_2+ hydrocarbon content being about 3.5% of the feed, comprising
(a) providing a lean natural gas feed at a pressure in excess of about 450 p.s.i.a.,
(b) pre-cooling the lean natural gas feed to a temperature on the order of from −75° to −110° F.,
(c) initially expanding the lean natural gas feed to cool the lean natural gas feed to a temperature in the range of from −90° to −125° F. and to reduce the pressure of the lean natural gas feed to above about 400 p.s.i.a.,
(d) cooling said expanded lean natural gas feed by indirect heat exchange with tail gas and the liquid C_2+ hydrocarbons condensate stream and by further expansion of said expanded lean natural gas feed to form a tail gas and a liquid condensate rich in C_2+ hydrocarbons containing the major portion of the C_2+ hydrocarbons in the feed,
(e) separating said liquid C_2+ condensate from said tail gas,
(f) rectifying said tail gas for the recovery of additional C_2+ hydrocarbons,
(g) heat exchanging the liquid C_2+ condensate from steps (e) and (f) and said tail gas with said expanded lean natural gas feed in step (d), and
(h) recovering the C_2+ hydrocarbons as a product.

3,359,744

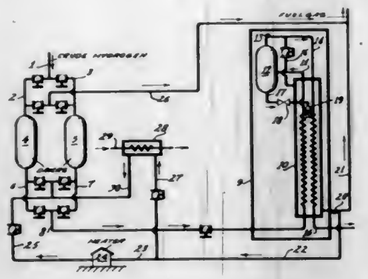
HYDROGEN PURIFICATION SYSTEM WITH SEPARATED VAPOR AND LIQUID MIXED TO PROVIDE A HEAT EXCHANGE MEDIUM

Carl A. Bolez, Allentown, and John A. Pryor, Emmaus, Pa., assignors to Air Products and Chemicals, Inc., Philadelphia, Pa., a corporation of Delaware

Filed June 16, 1965, Ser. No. 464,446
7 Claims. (Cl. 62—36)

1. A hydrogen purification system for separating gaseous hydrocarbons from a crude hydrogen stream comprising: heat exchanger having first, second and third passages in heat exchange relationship, means for intro-

ducing said crude hydrogen stream into said first heat exchanger passage for cooling said crude hydrogen stream and condensing the major portion of said hydrocarbons phase separator means connected to said first heat exchanger passage for separating said condensed hydrocarbons from the resulting hydrogen enriched gaseous stream, passage means for injecting said condensed hydrocarbons into said second heat exchanger passage, expansion means in said last recited passage means for expanding said condensed hydrocarbons to a lower temperature before injection thereof into said second heat exchanger passage wherein said low temperature condensed hydrocarbons are vaporized in cooling said crude



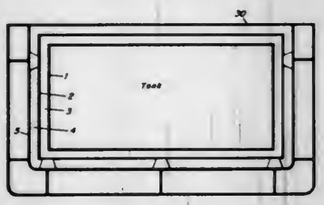
stream in said first heat exchanger passage, passage means for passing the major portion of said enriched hydrogen stream from said separator through said third heat exchanger passage to warm said enriched hydrogen stream, passage means for withdrawing warmed enriched hydrogen as a product stream, and by-pass passage means for passing a minor portion of said enriched hydrogen stream from said separator through said second heat exchanger passage for reducing the partial pressure and lowering the temperature of the hydrocarbons in said second passage thereby producing greater hydrocarbon condensation from the crude hydrogen stream in the first heat exchanger passage and higher product hydrogen purity.

3,359,745

SYSTEM FOR PROTECTING NON-CRYOGENIC MATERIAL FROM LOW TEMPERATURES AND CONTROLLING LIQUEFIED GAS BOIL-OFF RATE

Norman K. Basile, Bronx, and Donald R. Yearwood, Brooklyn, N.Y., assignors to John J. McMullen, Montclair, N.J.

Filed Apr. 19, 1966, Ser. No. 543,664
5 Claims. (Cl. 62—45)



1. An arrangement for storing liquefied gas comprising a free standing liquefied gas storage tank, a non-cryogenic structure surrounding said tank and spaced therefrom to form a void space between said tank and structure, a system for controlling atmospheric conditions within the void space comprising a supply duct and a return duct spaced from each other and arranged within the void space, a fan and a heat exchanger coupled in series from the return duct to the supply duct in order to circulate and change the temperature of the gas within the void space, and further comprising first valve means connected to the fan output to deliver to the atmosphere the gas moving through the fan, and second valve means coupled to the supply duct for delivering thereto a supply of gas which is different from the gas initially within the void space.

3,359,746

METHOD OF PRESERVING FROZEN MATERIAL

Ernest D. Razum, Box 104, Van Voorhis, Pa. 15366, and Gilfert M. Mihalich, 112 5th St., Monessen, Pa. 15062

No Drawing. Filed Aug. 23, 1965, Ser. No. 481,956
3 Claims. (Cl. 62—100)

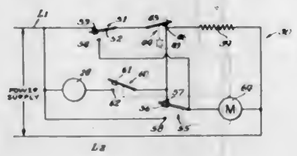
3. A method of storing and preserving forage comprising freezing said forage, depositing said frozen forage in a container having gas-impermeable flexible walls, applying a vacuum of below about 4 mm. Hg to said container whereby said flexible walls collapse against said frozen forage, and continually maintaining a vacuum in said container to maintain said frozen forage in the frozen state.

3,359,747

ICE CUBE MAKER CONTROL

William J. Linstromberg, Evansville, Ind., assignor to Whirlpool Corporation, a corporation of Delaware

Original application June 24, 1965, Ser. No. 477,060, now Patent No. 3,276,225. Divided and this application June 15, 1966, Ser. No. 557,674
15 Claims. (Cl. 62—135)



15. In an ice maker having a mold, means for delivering water to said mold, means for refrigerating water in said mold to form an ice body therein, means for sensing the temperature of the mold, and means for ejecting the formed ice body from the mold, control means for automatically seriatim operating said ejecting means and water delivering means, comprising mechanism arranged to cycle through a plurality of steps, said mechanism including means for operating said ejecting means when the temperature sensed by said sensing means reaches a preselected low temperature to initiate a first one of said plurality of steps, and for operating said water delivering means to refill said mold during a subsequent one of said plurality of steps only in the event that the temperature sensed by said sensing means is at least a preselected high temperature.

3,359,748

SLUSH CO_2 CONTROL

Jack J. Booth, P.O. Box 10872, Dallas, Tex. 75207

Filed Mar. 25, 1966, Ser. No. 537,406
4 Claims. (Cl. 62—136)

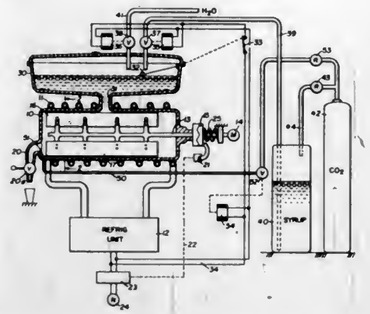
2. In the production of a slush beverage, the combination which comprises:

(a) a freezing chamber maintained at atmospheric pressure for receiving a liquid therein,

(b) agitation means for continuously developing agitating forces in said chamber to clear the walls of said chamber of crystals developed from said liquid,

(c) a dispensing spout leading from said chamber,

(d) means for introducing carbonation gas into said chamber in a region of said spout for initial movement of said gas away from said spout by said agitation means, said means maintaining at least the portion of material in said chamber adjacent to said dispensing spout substantially saturated with carbonation gas,



(e) means for starting and stopping heat removal of said chamber in response to high and low torque levels on said agitation means, and

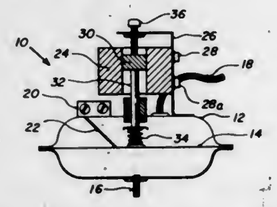
(f) control means for starting and stopping flow of carbonation gas concurrently with heat removal.

3,359,749

DIFFERENTIAL CONTROL DEVICE

Leland L. Howland, Minneapolis, and Harold E. McClure, Wayzata, Minn., assignors to Thermo King Corporation, Minneapolis, Minn., a corporation of Delaware

Filed June 17, 1965, Ser. No. 464,630
4 Claims. (Cl. 62—140)



1. A control device, comprising a controlling member, a diaphragm which is subject to movement relative to said controlling member, means for imposing separate forces on opposite sides of said diaphragm, resilient means coacting with said diaphragm in opposition to one of said forces, and a motor means which is energized with the increase of said one of said forces and cooperating with said diaphragm in opposition to the increase of said one force.

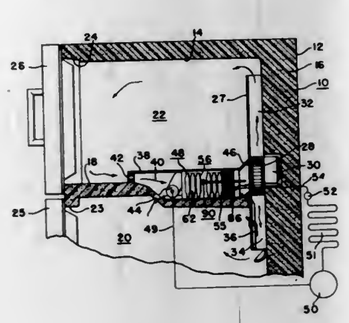
3,359,750

REFRIGERATOR WITH DEFROST WHEN NECESSARY SYSTEM

Robert S. Hanson, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Dec. 2, 1965, Ser. No. 511,098
13 Claims. (Cl. 62—156)

1. A frost-proof refrigerator comprising insulating means forming a below-freezing compartment and an above-freezing compartment, enclosure means forming an evaporator compartment separated from said freezing compartments including an inlet opening and an outlet opening, means for circulating air from said below and above-freezing compartments through said inlet of said evaporator compartment thence through the outlet of said evaporator compartment, said fluid circulating means including a recirculating fan having its inlet in communication with the outlet of said evaporator compartment, a helically coiled integral fin and tube evaporator member located in said evaporator compartment between the inlet and outlet ends thereof, said helically coiled evaporator member including a first plurality of passes located in close spaced relationship with one surface of said evaporator enclosure means and a second plurality of passes located in close spaced relationship with another surface of said evaporator enclosure means, a plurality of return bend portions for joining said first and second



plurality of passes and locating said passes apart from one another to form a relatively open air passageway therebetween, said plurality of passes each including a plurality of integral fins thereon directed interiorly of said evaporator member into said air passageway to partially intersect the passage of air between said inlet and said outlet of said evaporator compartment, said passageway through said helically coiled member communicating directly with the inlet end of said evaporator compartment for receiving return air from said above and below-freezing compartments, and means within said evaporator compartment for directing a predetermined portion of the return air from said above and below-freezing compartments interiorly of said helically coiled integral fin and tube evaporator member through the sides thereof for improving the pattern of frost deposition on said evaporator member during the operation of the refrigerator.

3,359,751

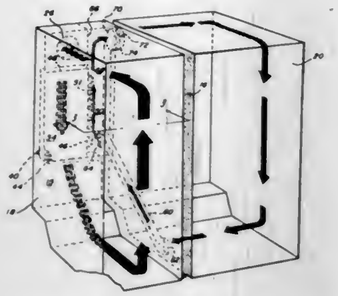
TWO TEMPERATURE REFRIGERATOR

Frank L. Stevens, Galesberg, Ill., assignor to Admiral Corporation, Chicago, Ill., a corporation of Delaware

Filed Oct. 14, 1966, Ser. No. 586,730
8 Claims. (Cl. 62—186)

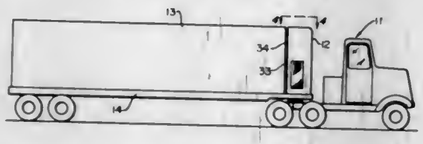
1. A refrigerator comprising: an insulated cabinet; an insulated vertical wall dividing said cabinet into a below freezing compartment and an above freezing compartment, each of said compartments having an access opening thereto and movable doors for opening and closing said access openings; a refrigeration system, including an evaporator vertically mounted on a rear wall of said below freezing compartment; said evaporator including a serpentine like refrigerant conduit having "U" shaped end loops, and a vertical evaporator partition positioned perpendicular to said rear wall dividing said evaporator into a first evaporator passage comprising a major portion of said refrigerant conduit and a second evaporator pass-

age comprising said end loops; means forming an air passage in said vertical wall having an inlet communicating with said above freezing compartment and an outlet adjacent said evaporator in said below freezing compartment; and fan means for only circulating air in said below freezing compartment through said first evaporator passage and only circulating air from said above freezing compartment through said air passage, through said second evaporator passage, and back to said above freezing compartment.



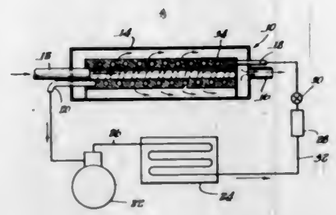
2. The combination as set forth in claim 1 including additionally: a duct extending from one end of said second evaporator passage to an opening through and defined by said vertical dividing wall; said air passage formed in said vertical dividing wall having its inlet adjacent the bottom of said above freezing compartment and its outlet adjacent the remaining end of said second evaporator passage; and wherein said fan means comprise a first fan mounted in said below freezing compartment for moving air therein, and a second fan mounted in said opening for moving air from said above freezing compartment through said passage in the vertical wall, through said second evaporator passage, and through said duct, thereby returning it to said above freezing compartment, and means controlling operation of said fans responsive to the respective temperatures of said compartments.

3,359,752
REFRIGERATED CONTAINERIZED CARGO TRANSPORT SYSTEM AND CONTAINER THEREFOR
Lester L. Westling, 37 Hillwood Place, and Alfred B. Sabin, 826 Walavista Ave., both of Oakland, Calif. 94610
Filed Sept. 3, 1965, Ser. No. 484,802
9 Claims. (Cl. 62—239)



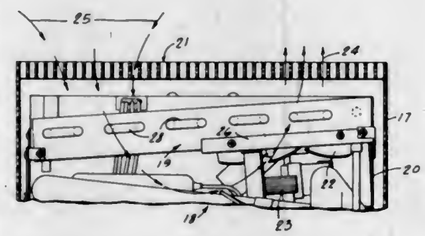
4. An intermodal refrigerated cargo transport system of the type adapted to transport cargo containers by at least two different modes selected from highway, rail or sea transport, comprising carrier means for removably mounting and carrying said containers by the selected mode of transportation, air conditioning means permanently mounted on said selected carrier means, means for receiving said containers on said carrier means; and means for detachably coupling said cargo containers to the air conditioning means on the selected carriers whereby the interior of said containers is placed in communication with the air conditioning means of a respective carrier to condition the air within the container while the container is mounted in said carrier means for transport, said cargo container includes means for directing the air flowing within the same whereby the cargo within the container is enveloped by the air flowing therethrough.

3,359,753
AIR DRYER
Martin Fiedler, Wooddale, and Guru B. Singh, Cicero, Ill., assignors to Arrow Tools, Inc., Chicago, Ill., a corporation of Illinois
Filed Feb. 16, 1966, Ser. No. 527,975
5 Claims. (Cl. 62—317)



1. An air dryer comprising a casing defining first chamber means, a tubular wall of a permeable sintered metal mounted in said first chamber means, second chamber means within said tubular wall of sintered metal, a cooling coil embedded in said tubular wall of sintered metal, a first fluid conduit means connected to said second chamber means and extending through said first chamber means, a second fluid conduit means connected to said first chamber means, said wall of permeable sintered metal enabling a stream of fluid to flow between said first and second conduit means through said tubular wall, a third conduit means connected to one end of said cooling coil, a fourth fluid conduit means connected to an opposite end of said cooling coil, and a fluid chamber means in said cooling coil to enable a coolant to flow from said third fluid conduit means to said fourth conduit means to cool said wall of sintered metal and the fluid flowing through said wall, said first fluid conduit means extending into said second chamber means and being engaged by an inner surface of said tubular wall of sintered metal.

3,359,754
REFRIGERATED BEVERAGE DISPENSING MACHINE
Richard T. Cornelius, Minneapolis, Minn., assignor to The Cornelius Company, Anoka, Minn., a corporation of Minnesota
Filed July 13, 1966, Ser. No. 564,834
3 Claims. (Cl. 62—389)



1. A machine for dispensing refrigerated beverages comprising in combination:

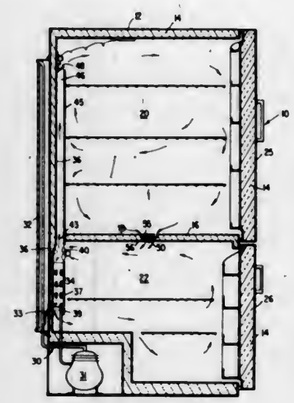
(a) a cabinet having front, lateral, rear and top sides, all but one of which are imperforate to cooling air movement;

(b) beverage dispensing means at least partially disposed in said cabinet;

(c) mechanical refrigeration means disposed within said cabinet in heat-transfer relation to said beverage dispensing means; and

(d) air transfer means utilizing a single aperture area in said one of said sides of said cabinet for admitting and expelling air for cooling said refrigeration means.

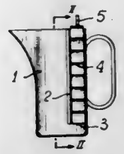
3,359,755
REFRIGERATOR CABINET
Raymond J. Creech, Tyler, Tex., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed May 2, 1966, Ser. No. 546,931
4 Claims. (Cl. 62—441)



1. In a two compartment refrigerating apparatus, the combination of cabinet means forming an insulated chamber, said cabinet means including a partition separating said chamber into individual first and second refrigerating compartments, and doors permitting access to each of said first and second compartments; refrigeration means including an evaporator arranged in said insulated chamber; means for circulating cold air from said evaporator to said compartments, said cold air circulating means including a passage communicating said first compartment with said second compartment; and means adapted to prevent the pressure surge created in one of said compartments by closure of the door thereto from forcing open the door of the other of said compartments, said pressure surge preventing means including a valve arranged to close said passage in response to said pressure surge.

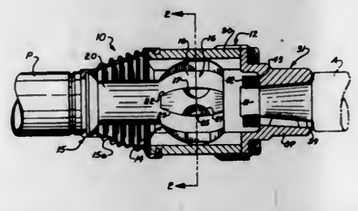
3,359,756
JUG WITH AN INCORPORATED SYSTEM OF REFRIGERATION
Marcel Mirguet, 10 Rue de la Chaumiere, Bry sur Marne, Seine-et-Marne, France
Filed Dec. 13, 1965, Ser. No. 513,272
Claims priority, application France, Dec. 23, 1964, 999,771, Patent 1,427,187
5 Claims. (Cl. 62—457)

1. Apparatus comprising (a) a receptacle adapted for the storing and dispensing of a beverage, (b) a container adapted to be filled with water and comprising (1) elements determining the formation of individual ice bodies when the container is filled with water and refrigerated and permitting the unimpeded release of said ice bodies into the beverage when the container is in the receptacle and (2) means cooperating with the receptacle for the insertion, securing and removal of the container in and from



the receptacle whereby fresh ice bodies can be supplied to the beverage.

3,359,757
UNIVERSAL JOINT
Frank H. Adams, 18711 S. Woodland Ave., Cleveland, Ohio 44120
Filed Sept. 10, 1965, Ser. No. 486,350
3 Claims. (Cl. 64—8)

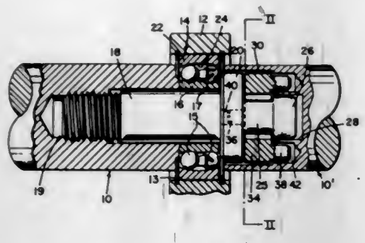


1. In a universal joint, a first member adapted for rotation about an axis, a second member adapted for rotation about an axis, said first member surrounding said second member and including axially extending grooves therein forming opposed planar abutment surfaces extending generally radially of its axis of rotation, abutment means providing opposed abutment surfaces on said second member and extending generally radially of its axis of rotation, said means including a semicylindrical bearing surface in engagement with a portion of said second member, the abutment surfaces on said second member being disposed between the abutment surfaces on said first member and being in slidable engagement therewith respectively, means for supporting said abutment means on said second member for rotation about an axis normal to the axis of rotation of said second member, said supporting means including rib members extending axially along said second member and radially into said grooves, each of said rib members having a spherically curved outer radial surface in bearing engagement with an outer radial surface of said grooves and each of said rib members including semicylindrical recesses therein for receiving said semicylindrical bearing surfaces of said abutment means whereby said members may slide axially with respect to each other and rotate at uniform angular velocities in either direction of rotation.

3,359,758
ROLLER AND COUPLING ASSEMBLY
Edmund Hamel, Romanshorn, Thurgau, Switzerland, assignor to Hamel Projektierungs- und Verwaltungs A.G., a corporation of Switzerland
Filed Dec. 13, 1965, Ser. No. 513,342
Claims priority, application Germany, Dec. 11, 1964, H 54,556
8 Claims. (Cl. 64—10)

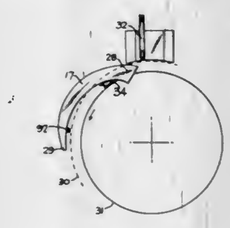
1. A roller assembly comprising an elongated roller axially subdivided into a plurality of adjoining sections, each pair of adjoining sections being provided with cou-

pling means detachably interconnecting their extremities with freedom of limited relative axial shifting and angular displacement in a common axial plane, one of said extremities being provided with bearing means, said coupling means including a carrier member disposed alongside the respective bearing means and provided with axially oppositely extending first and second projections



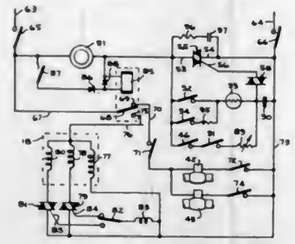
engaging with radial play in respective bores of the interconnected extremities of the associated pair of adjoining sections, and support means in the region of each junction receiving the respective bearing means, one of said extremities being provided with a retaining plate for said bearing means interposed between the latter and said carrier member, one set of said bores being formed on said retaining plate.

3,359,759
CONTROL OF YARN IN CIRCULAR KNITTING MACHINES
Denis Albert Edward Mattingly, London, and Reginald Selby Gilchrist, Welwyn Garden City, England, assignors to The Klinger Manufacturing Company Limited, London, England
Filed July 7, 1966, Ser. No. 563,445
10 Claims. (Cl. 66—125)



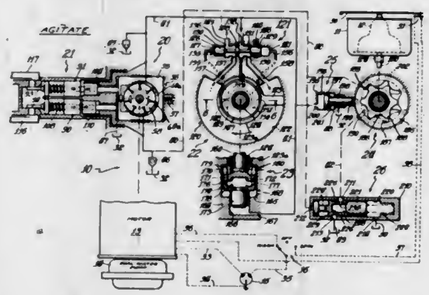
9. In a circular knitting machine, the combination comprising a needle cylinder equipped with needles forming a needle circle, means for feeding yarn for knitting part way only around the needle circle leaving a float of yarn extending from the termination of such knitting to the point of recommencement of knitting, means creating an uprising localized air stream to raise the float of yarn above the needles including a nozzle having an elongated mouth extending above and across the needle circle and partly round it at a position in advance of a secondary station, cam means associated with the secondary station for raising the needles on which knitting has occurred part way round the needle circle to cause such needles to receive yarn delivered from the mouth of the nozzle and for lowering the needles after receiving such yarn, a source of suction, and means connecting such source to said nozzle to draw said yarn float into the mouth of the nozzle.

3,359,760
CONTROL FOR AUTOMATIC WASHER
Daniel N. Toma, Louisville, Ky., assignor to General Electric Company, a corporation of New York
Filed Nov. 21, 1966, Ser. No. 595,709
14 Claims. (Cl. 68—12)



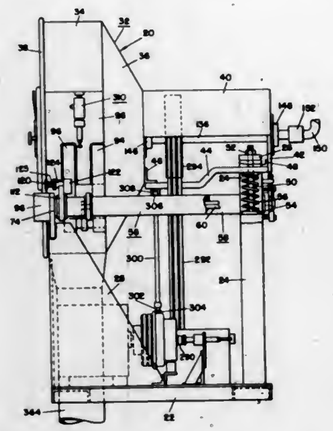
1. In a washing machine adapted to perform a fabric cleaning cycle including the steps of washing, rinsing and vitiated fluid extracting:
(a) sequence control means including a variable speed timer motor for controlling the operation of the machine;
(b) a circuit for connecting said timer motor to a source of electrical energy comprising in combination, a bidirectional current conducting semiconductor normally exhibiting a high impedance between two terminals thereof connected in series with said timer motor and exhibiting a low impedance therebetween in response to the application of a signal having an amplitude greater than a predetermined magnitude to a third terminal thereof, and triggering means selectively operable to apply signals to said third terminal that are characterized by an amplitude of at least said predetermined magnitudes.

3,359,761
HYDRAULIC TRANSMISSION
Herbert N. Underwood, Chicago, Ill., Yunus E. Moochhala, Bombay, India, and John Tuzson, Evanston, Ill., assignors to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed Dec. 13, 1965, Ser. No. 538,434
10 Claims. (Cl. 68—23)



1. In a hydraulic transmission having first and second selectively operable output members, a reversible fluid pump, said pump having at least one pump cavity and including means actuable to vary the displacement of said cavity to thereby vary the displacement of said pump, said pump connected to supply fluid pressure to a first fluid circuit to rotate said first output member when said pump is rotated in one direction and to supply fluid pressure to a second fluid circuit to oscillate said second output member when said pump is rotated in the opposite direction, said first fluid circuit including a rotary fluid motor connected to said first output member, said second fluid circuit including an oscillating fluid motor, a fluid pressure actuated clutch in said second fluid circuit, and said clutch being operative to drivingly connect said oscillating fluid motor to said second output member when fluid pressure is supplied to said second fluid circuit.

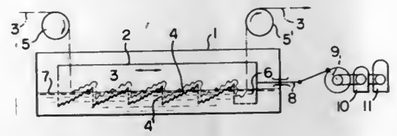
3,359,762
DRIVE FOR A WASHING MACHINE
Frank C. Lornitzo, Pawtucket, R.I., assignor to Ametek, Inc., New York, N.Y., a corporation of Delaware
Original application Oct. 8, 1963, Ser. No. 317,865, now Patent No. 3,296,839, dated Jan. 10, 1967. Divided and this application Aug. 18, 1966, Ser. No. 590,115
9 Claims. (Cl. 68—24)



1. A washing machine comprising a base, a basket above said base, a rotatable shaft secured to and extending horizontally from said basket, means rotatably supporting said shaft and basket, said supporting means being resiliently supported on said base to permit vertical vibration of said basket and shaft with respect to said base, a driven pulley mounted on said shaft, a drive pulley beneath said driven pulley, means drivingly connecting said drive pulley and said driven pulley, means rotatably supporting said drive pulley on said base while permitting vertical movement thereof relative to said base including a pair of spaced parallel arms, said arms being pivotally mounted on the base for rotation about a horizontal axis which is parallel to the axis of rotation of said drive pulley, a shaft rotatably mounted between said arms, and the drive pulley being mounted on said shaft, a rigid vertical rod connecting said drive pulley to said driven pulley to move said drive pulley vertically to follow vertical vibrational movement of said driven pulley, said rod being pivotally connected at its bottom end to one of the arms of the drive pulley supporting means and being pivotally connected at its top end to the means supporting the basket and the basket shaft, and means for rotating said drive pulley.

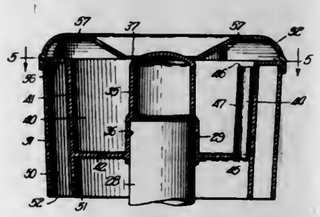
3,359,763
APPARATUS FOR CONTINUOUS TREATMENT OF FABRICS
Senzo Koshino, Fukui-shi, Japan, assignor to Fukui Seiren Kako Kabushiki Kaisha, Fukui-shi, Fukui-ken, Japan
Filed Nov. 24, 1965, Ser. No. 509,566
5 Claims. (Cl. 68—155)

1. An apparatus for continuously treating fabrics which comprises an outer tank containing a treating liquid to be used for the treatment of fabrics, an inner tank slidably supported within said outer tank for movement along a horizontal path, said inner tank having a perforated bottom plate including a succession of corrugations which are partially submerged in the treating liquid in the



outer tank, means for reciprocating said inner tank within the outer tank linearly along said horizontal path and means for feeding a fabric to said inner tank for passage along the bottom plate thereof and for taking up the fabric from said inner tank.

3,359,764
REMOVABLE ACCESSORY DEVICE FOR WASHING MACHINE AGITATORS
Stewart W. Faust, 802 S. 14th Ave. W., Newton, Iowa 50208
Filed June 30, 1960, Ser. No. 39,871
7 Claims. (Cl. 68—207)

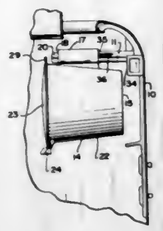


1. In a clothes washing machine, the combination comprising a receptacle for containing fluids at a predetermined normal level; an agitator in said receptacle oscillatable about a vertical axis; a member removably mounted on said agitator to receive fluids from said receptacle including a compartment defined by wall members, an access opening to said compartment, one of said wall members defining opening means for discharging fluids from said compartment downwardly into said receptacle, means for maintaining a fluid level in said compartment and allowing discharge of additives into the receptacle only after the fluid level in said compartment attains a certain height, and means radially outwardly of said compartment for introducing fluids from said receptacle into said compartment during oscillation of said agitator, said last named means directly connected to said device and removable therewith from said agitator and including at least one ingress opening to said compartment and at least one scoop member extending downwardly at an incline to below the normal fluid level in said receptacle to raise said fluid from said receptacle upwardly through said ingress opening and into said compartment during oscillatory movement of said agitator.

3,359,765
FLUENT MATERIAL DISPENSER
James A. Tichenor and Charles R. Mischke, St. Joseph, Mich., assignors to Whirlpool Corporation, a corporation of Delaware
Filed Apr. 29, 1966, Ser. No. 546,393
17 Claims. (Cl. 68—207)

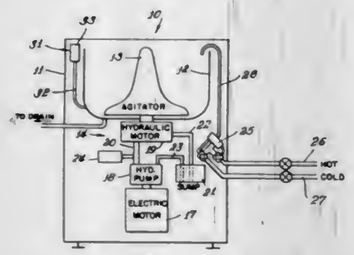
1. A dispenser for automatically discharging fluent material into a rotatable vessel subjected to varying speeds of rotation, comprising: an inwardly extending mounting

bracket on said vessel; a container for said fluent material having socket means with open front and rear ends and receiving said bracket for mounting the container on said vessel in operating position for rearward movement on the bracket under the forces of said rotation, said bracket



extending forwardly beyond said socket front end and said container having a discharge opening to permit flow of said material therethrough when said vessel is at rest; a normally closed displaceable closure for said opening; and means on said bracket engaging said closure for displacing the same on said rearward movement.

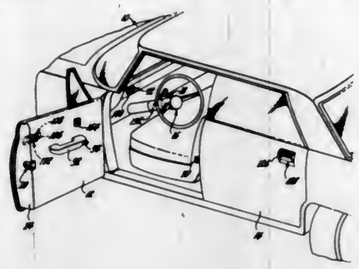
3,359,766
AUTOMATIC FLUID LEVEL DEVICE
Ronald H. Haas, Lansing, Mich., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed Dec. 19, 1966, Ser. No. 602,694
10 Claims. (Cl. 68—207)



7. A washing machine including: a container for materials to be washed; agitation means in said container; a fluid drive system connected to said agitation means including a source of fluid pressure, the fluid pressure in said drive system increasing as the torque required to drive said agitation means increases; means associated with said drive system for sensing said fluid pressure; means for introducing an additional amount of liquid into said container in response to said fluid pressure.

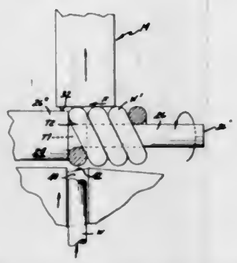
3,359,767
VEHICLE BODY DOOR LATCH AND LOCKING SYSTEM
Alfonsas Arlauskas, Livonia, and Bernt E. Meland, Royal Oak, Mich., and Barthold F. Meyer, Tecumseh, Ontario, Canada, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Nov. 22, 1965, Ser. No. 508,896
4 Claims. (Cl. 70—264)

1. In a vehicle body including a door movable between open and closed positions, a power-operated door latch and locking system comprising: latch means movable between latched and unlatched positions, movable detent means engageable with said latch means to hold said latch means in the latched position thereof, power-operated means operatively connected to said detent means and adapted upon energization to move said detent means out of engagement with said latch means, a source of power, and circuit means for controlling energization of said power-operated means, said circuit means including inside operating means for selectively connecting said power-operated means with said source, outside operating means for selectively connecting said power-operated means



with said source, locking means for selectively preventing connection of said power-operated means with said source by said outside operating means, and means responsive to a predetermined operating condition of the vehicle body for permitting connection of said power-operated means to said source by said inside operating means only during the existence of such predetermined operating condition.

3,359,768
WIRE COILING
Stephen A. Platt, 1100 Fulton St., Grand Haven, Mich. 49417
Filed June 23, 1965, Ser. No. 466,373
11 Claims. (Cl. 72—142)

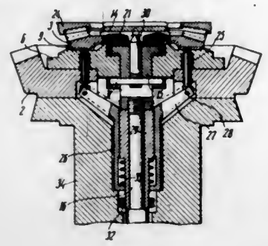


1. A method of winding wire into a helical coil by the use of a spinning mandrel and two mandrel straddling, driven, revolving work rolls, comprising the steps of: spinning the mandrel, positively feeding the wire around the periphery of one of said revolving work rolls to said spinning mandrel, and coiling said wire around said mandrel with frictional engagement thereof by the second revolving work roll while retaining said coil free from a cinched condition on said mandrel.

3,359,769
BEVEL GEAR GENERATOR
Vladimir Andreevich Kotov, Nickolai Alexeevich Shljapin, and Igor Ivanovich Kirichinsky, Moscow, U.S.S.R., assignors to Nauchno-Issledovatelsky Institute Tekhnologii avtomobilnoi promyshlennosti, Moscow, U.S.S.R.
Filed Oct. 14, 1964, Ser. No. 403,850
1 Claim. (Cl. 72—200)

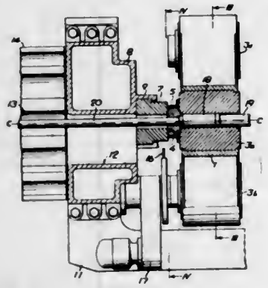
A bevel gear generator, comprising: a synchronizer with two intermeshed bevel gear wheels; a faceplate with an arbor for a bevel gear blank, said faceplate being fastened to one of the gear wheels of said synchronizer; a pressure tool secured to the other gear wheel of said

synchronizer on the side directed to said faceplate so that the pressure tool will cooperate with said gear blank mounted on said faceplate; a clamping attachment for holding the gear blank on the faceplate datum surface and preventing said blank mainly from vertical displacements during tooth rolling; a means preventing the gear blank from radial and similar shifts caused by the forces arising in tooth rolling; at least three pushers incorporated



in said faceplate and intended for elevating said gear blank from the datum surface of the faceplate into the position providing for proper heating of the gear blank by means of a heating apparatus; a bar controlling said pushers, said bar being pivotally connected to each of these pushers and being accommodated inside the shaft of the gear wheel of said synchronizer, said gear wheel bearing said faceplate.

3,359,770
METHOD AND APPARATUS FOR CUTTING EXTRUDED MATERIALS ON MOVABLE CONTAINER TYPE METAL EXTRUDING PRESS
Akira Asari, Asahi-ku, Osaka, Japan, assignor to Kobe Steel Ltd., Fukiai-ku, Kobe, Japan
Filed June 28, 1965, Ser. No. 469,366
Claims priority, application Japan, June 29, 1964, 39/37,140
3 Claims. (Cl. 72—255)

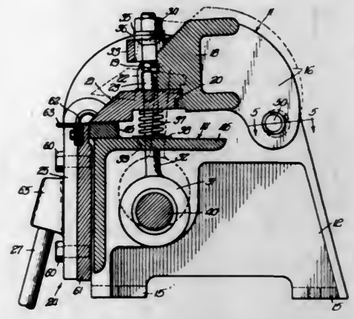


1. A method of cutting extruded materials on a movable container type metal extruding press, wherein use is made of a press having a plurality of containers attached to a container holder, said containers being moved after the completion of each operation of extrusion toward the center axis of extrusion to effect the next extrusion, the extruded material being cut between it and the extrusion remnant, said method being characterized by the steps of

(a) moving the container, with extruded material extending therefrom, in a direction normal to the direction of extrusion, and

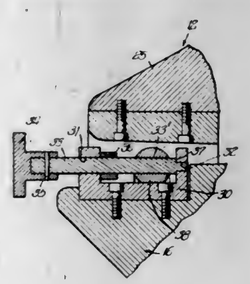
(b) cutting the extrusion from the container and the remnant therein during the movement being imparted thereto by step (a).

3,359,771
BENCH BRAKE
Frank R. Meyerchick, Jr., Dolton, Ill., assignor to Dreis & Krump Manufacturing Co., Chicago, Ill., a corporation of Illinois
Filed July 1, 1965, Ser. No. 468,772
7 Claims. (Cl. 72—319)



1. A bench brake comprising a pair of end support members, an anvil assembly attached to said end support members, hinge means mounting a top clamping leaf assembly at its rearward edge for pivoting movement into and out of clamping engagement with said anvil assembly, operating means to draw said top leaf assembly into engagement with said anvil assembly, said operating means including a unitary continuous clamp shaft jounaled in each of said end support members adjacent a forward part thereof for movement about a first axis, link means extending from a forward part of said top leaf to said clamp shaft, said link means being joined to said shaft for relative rotation about a second axis eccentric with respect to said first axis, means at one end of said shaft to facilitate manual rotation of the same to clamp sheet metal stock to be bent, a bending leaf supported for angular movement between said end support members with one edge thereof in close proximity to said anvil assembly, and means to adjust the limit of angular movement of said bending leaf thereby to permit adjustment of the angle of bending.

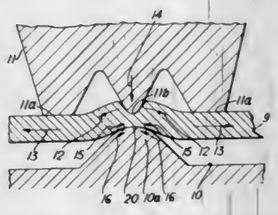
3,359,772
HAND BRAKE
Orville J. Fillip, Chicago, Ill., assignor to Dreis & Krump Manufacturing Company, Chicago, Ill., a corporation of Illinois
Filed Aug. 26, 1965, Ser. No. 482,817
1 Claim. (Cl. 72—319)



In a hand brake having a top leaf assembly, a bottom leaf and a bending leaf as well as means to move said top leaf relative to said bottom leaf, the improvement comprising an adjustable hinge means mounted at opposite ends of said top leaf assembly for shifting the rotational axis of said top leaf assembly, each of said adjustable hinge

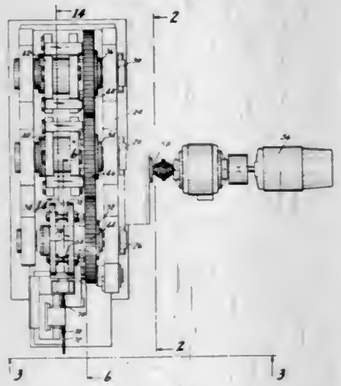
means including a generally U-shaped top saddle member attached to said top leaf assembly, a lower saddle member attached to said bottom leaf and slot means formed in side portions of said U-shaped top saddle member for co-operation with a hinge pin on said lower saddle member to form a hinge, and hand adjustable means to shift said hinge pin relative to said lower saddle member thereby to move said top leaf assembly relative to said bottom leaf thereby to adjust the position of said top leaf relative to said bending leaf.

3,359,773
SCORING OF THIN SHEET METAL
Arthur Leslie Stuchbery, Enfield, Middlesex, England, assignor to The Metal Box Company Limited, London, England, a British company
Filed Mar. 1, 1965, Ser. No. 436,024
Claims priority, application Great Britain, Mar. 3, 1964, 8,993/64
21 Claims. (Cl. 72—325)



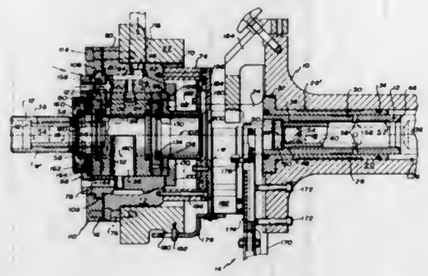
17. The method of scoring thin sheet metal comprising the steps of providing a portion of sheet metal to be scored, providing a sheet metal scoring tool, convexly bending the thin sheet metal toward the tool in the area to be scored, penetrating the sheet metal with the tool and terminating penetration prior to movement of the tool through the sheet metal.

3,359,774
ROTARY FORGING MACHINE OR THE LIKE
Arthur J. Bouchard, Wauwatosa, Wis., and Donald E. Hawkinson, Curtis R. Carlson, and Joel A. Jannenga, Rockford, Ill., assignors to Rota Forg Corporation, a corporation of Illinois
Filed Mar. 24, 1965, Ser. No. 442,356
18 Claims. (Cl. 72—339)



1. In a forging machine, the combination with means for feeding rod, of means for severing slugs therefrom, and means including complementary socketed dies, and rotors upon which the respective dies are mounted for rotative movement to and from tangential engagement for forging the slugs so severed, and means for transferring severed slugs from the severing means and placing them in position to be engaged between the cupped dies of the forging means in continuous uninterrupted movement.

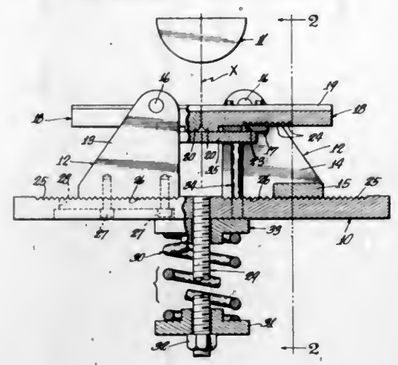
3,359,775
APPARATUS FOR FORMING CONTAINER BODIES
Cornelis Langewis, Walnut Creek, Calif., assignor to Kaiser Aluminum & Chemical Corporation, Oakland, Calif., a corporation of Delaware
Filed Aug. 2, 1965, Ser. No. 476,633
6 Claims. (Cl. 72—344)



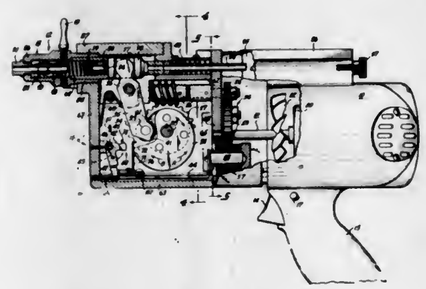
1. In an apparatus for forming container bodies comprised of a housing, forming die means, means for substantially sealably locking said die means in said housing, a hollow ram means mounted in said housing for advancing a workpiece through said die means and thereby forming said workpiece into a container body, stripper means mounted on said housing adjacent the exit end of said die means for disengaging a finally formed container body from the ram means at the end of the working stroke of said ram means and means for connecting the interior of said hollow ram means with the atmosphere during the disengagement of a container body from said ram means and while a portion of said ram means is disposed in said means for substantially sealably locking said die means in said housing to prevent the drawing of a vacuum in the interior of said container body, said last mentioned connecting means comprising at least one air vent passage means disposed at a preselected location in said sealably locking means, said air vent passage means being fully open to the atmosphere at all times and the interior of said sealably locking means and communicable with the interior of said ram means at least during a portion of time involved in disengaging the container body from said ram means.

3,359,776
BENDING APPARATUS
James K. Faull, 16 Walker Court, Poland, Ohio 44514
Filed Jan. 4, 1965, Ser. No. 423,143
13 Claims. (Cl. 72—389)

1. Tube bending apparatus comprising a base, a pair of pivot stands shiftably secured to said base in spaced-apart relation, a pair of bending arms normally disposed in end-to-end abutting relation for receiving the tube to be bent, a pivot carried by each of said stands and mounting respective arms aforesaid thereon, said pivots being spaced apart an amount equal to twice the radius to which the tube is to be bent, an arcuate bending head mounted for movement transversely of and toward said arms and along a path substantially bisecting the arm pivots to grip the tube between said head and said arms, means urging said arms about their pivots to end-to-end relation aforesaid and yieldably opposing movement of said arms about their pivots from such relation, and interengageable means in part carried by said base and in part carried by said stands providing for disposition of said stands at various preselected positions relative to the path of movement of said head to provide for bending of the tube to various preselected bend radii.



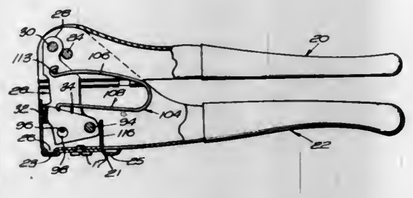
3,359,777
HAND TOOL
William H. Lee, Mount Vernon, N.Y., assignor to Elgen Manufacturing Corporation, a corporation of New York
Filed July 13, 1965, Ser. No. 471,570
14 Claims. (Cl. 72—391)



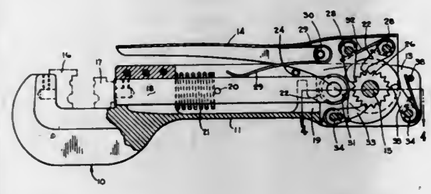
1. An electrically powered blind rivet setting tool, comprising electric motor means powering a rotary cam which provides the rivet setting action for said tool, means for supplying electrical current to said motor, means to rotate said cam to thereby cause the rivet setting action to occur, means for disconnecting said electrical current after said rivet setting action is substantially completed, whereby the inertia developed may be dissipated by the continued movement of said motor and cam while no electricity is supplied to the motor, and a reversing mechanism actuated by the said continued movement of said cam to reverse the direction of rotation of said motor and cam.

3,359,778
MANUALLY OPERABLE TOOL FOR SETTING TUBULAR RIVETS
Anthony E. Di Maio, Georgetown, Mass., assignor to Marson Fastener Corporation, Chelsea, Mass., a corporation of Massachusetts
Filed Oct. 18, 1965, Ser. No. 496,807
2 Claims. (Cl. 72—391)

1. A rivet setting tool capable of setting rivets of a plurality of diameters, each rivet having an external tubular element and an internal rupturable mandrel element, said rivet setting tool comprising a pair of handles pivoted to each other about a main handle center, a slider bracket pivoted to one of said handles about an eccentric handle center spaced from said main handle center, a housing on the other of said handles providing an anvil aperture, a turret pivotally attached to said housing providing a plurality of apertures any one of which may be moved into alignment with said anvil aperture, said slider bracket providing an integral jaw, a rocking jaw pivotally moveable about a main jaw center between positions remote from and adjacent to said integral jaw, said rocking jaw having a set of teeth arranged in an arc about an eccentric jaw center and biased toward said stationary jaw, said eccentric jaw center being spaced from and oriented to said main jaw center by two line segments at right angles to each other, the first line segment extending from said main jaw center a distance of approximately .250 to .500", the second line segment extending from said eccentric jaw center a distance of approximately .125 to .375", the radius of said arc being approximately from 1.100 to 1.300", a spring urging said rocking jaw into the position adjacent to said integral jaw, an abutment on said other of said handles limiting movement of said rocking jaw toward said integral jaw when said handles are opened, said rocking jaw being free of said abutment when said handles are closed, said rocking jaw and said stationary jaw being operative in alignment with said anvil aperture, said slider bracket including parallel channel sections, a pair of stationary pins extending between the channel sections, the bite between the channel sections constituting said stationary jaw, a journal hole in said rocking jaw pivotally receiving one of said pins, a limit hole of larger diameter than the other of said pins receiving said other of said pins.



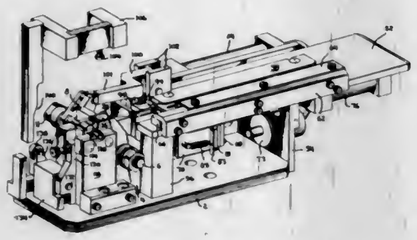
3,359,779
MULTIPLE-STROKE HAND TOOL
George J. Filia, Shelton, Conn., assignor, by mesne assignments, to Sargent & Company, New Haven, Conn., a corporation of Delaware
Filed June 16, 1965, Ser. No. 464,434
5 Claims. (Cl. 72—412)



1. In a hand tool, the combination of an elongated body providing a handle portion at one end thereof and having in fixed relation to the other end thereof a head portion having a work-engaging and -forming part, a ram mounted for sliding movement in the body toward and

away from said work-engaging and -forming part in a direction lengthwise of the body and having a work-engaging and -forming part for cooperation with the first-mentioned such part, a handle pivoted to the body, ratchet and cam means rotatably supported on the body in co-axial and angularly fixed relation to one another, which on angular movement from one position to another, drives said ram by said cam means to an extended position for cooperation of said work-engaging and -forming parts, a spring connected to said handle and to said ram acting to bias the ram to a retracted position and said handle in one direction relatively to said handle portion, and pawl means carried by said handle for cooperation with said ratchet means, whereby relative motion of said handle and handle portion in the other direction affects said extension of the ram for effecting an operation on a workpiece disposed between said work-engaging and -forming parts, and permits separation of the last-mentioned parts on retraction of the ram.

3,359,780
TERMINAL APPLICATOR
David Ronald Kerns and Paul Elwood Martz, Harrisburg, Pa., assignors to AMP Incorporated, Harrisburg, Pa.
Filed Mar. 19, 1965, Ser. No. 441,225
4 Claims. (Cl. 72—421)



4. Apparatus for severing contact devices and crimping the severed contact device onto a wire comprising a transfer plate rotatable in its own plane, a recess adjacent to each of the corners of said plate, a loading station and a crimping station, means for feeding said strip towards said loading station to position said leading contact in the recess disposed at said loading station, a shearing means disposed beside said loading station for shearing said leading contact from said strip concomitantly with loading, a set of fixed crimping dies on each side of said plate at said crimping station, a press ram, movable crimping dies on said ram cooperable with said fixed dies, and means responsive to movement of said ram for actuating said shearing means during movement of said movable dies towards said fixed dies and for indexing said transfer plate after crimping of a terminal at said crimping station onto a wire.

3,359,781
DIE HOLDER
Alex Gilbert, Horseshoe Drive, R.D. 3, Latrobe, Pa. 15650
Filed Sept. 23, 1965, Ser. No. 489,629
14 Claims. (Cl. 72—462)

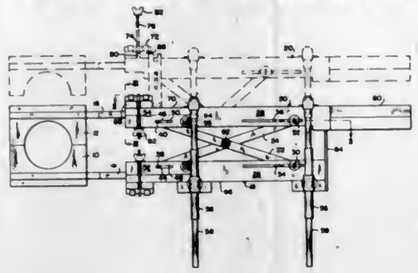
1. A die holder for positioning a pair of upper and lower dies in a foregoing press, each of said dies having a handle extending outwardly therefrom, said press having a table for seating the lower die, said holder comprising

(A) a lower arm having means on an end for detachably securing the handle of the lower die to said arm;

(B) an upper arm vertically aligned with and spaced parallel to said lower arm and having

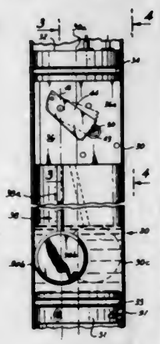
(1) means on an end for detachably securing the handle of the upper die to said arm and being aligned vertically with the means on said lower arm;

(2) means on the opposite end for raising the upper arm vertically from the lower arm; and



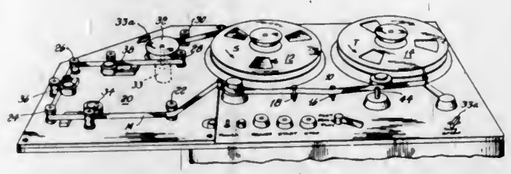
(C) means joining said arms for vertically aligning said arms parallel to each other and for adjustably supporting said lower arm vertically beneath said upper arm when said lower die is removed from the table whereby the dies may be vertically separated a distance corresponding to the separation of the arms to position a workpiece therebetween.

3,359,782
WELL BORE INCLINOMETER APPARATUS
Luong Van Bey, Houston, Tex., assignor, by mesne assignments, to Brown & Root, Inc., Houston, Tex.
Filed Aug. 17, 1965, Ser. No. 480,264
5 Claims. (Cl. 73—1)



1. Apparatus for measuring the inclination from the vertical of a well bore, comprising a housing insertable into such well bore with a reference axis that generally coincides with or is parallel to the longitudinal axis of the part of the well bore in which the housing is located, a pendulum, means pivotally mounting the pendulum in the housing to swing in one plane only, said plane including or being parallel to such reference axis, electrical circuit means including electrical indicating means and an adjustable element operatively connected to the pendulum for varying a parameter in the circuit according to the angular position of the pendulum relative to said reference axis, first stop means to prevent the pendulum from swinging in one direction in said plane from the position it occupies with the reference axis vertical and second stop means to limit to a predetermined and measured amount the angle through which the pendulum can swing in said plane away from the first stop means, whereby the indicating means may be calibrated by positioning the housing to place the pendulum in engagement with the first stop means and marking the indication corresponding to vertical position and then positioning the housing to place the pendulum in engagement with the second stop means and marking the indication corresponding to the maximum measurable angle of inclination.

3,359,783
MAGNETIC TAPE WEAR SIMULATOR
Jack Scheiman, Howard Beach, and Robert Schwartz, Brooklyn, N.Y., assignors to the United States of America as represented by the Secretary of the Navy
Filed Apr. 4, 1966, Ser. No. 540,096
3 Claims. (Cl. 73—7)



1. A magnetic tape wear simulator comprising

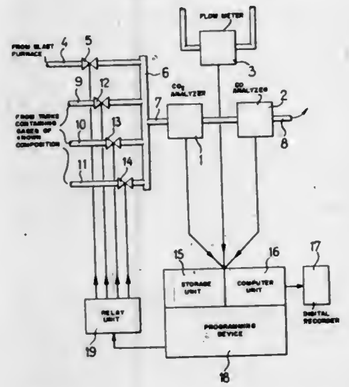
tape transport means including a supply reel assembly and a driven takeup reel assembly,

a driven counter-rotating pulley having an annular step presenting a sharp circular edge intermediate the ends thereof located to coincide with a tape track,

an idler pinch roller-capstan combination,

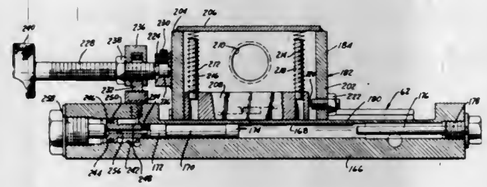
a plurality of idler guides for engaging from the supply reel tape on the non-coated face and for guiding the tape between the supply reel and the takeup reel for a predetermined angle of wrap-around engagement of the coated tape surface with said counter rotating pulley and for passage between said idler pinch-roller-capstan combination.

3,359,784
METHODS OF CONTROL OF INDUSTRIAL PROCESSES BY CONTINUOUS ANALYSIS OF A GASEOUS MIXTURE HAVING A VARIABLE COMPOSITION
Daniel Jorre, Scy-Bas, and Claude Staib, Metz-Tlantueres, France, assignors to Institut de Recherches de la Sidérurgie Francaise, Saint Germain-en-Laye, France, a professional institution of France
Filed Aug. 11, 1964, Ser. No. 388,815
Claims priority, application France Aug. 28, 1963, 945,915
7 Claims. (Cl. 73—23)



1. A method of control of the character described comprising the steps of analyzing components of a test gas by means of gas analyzing devices; feeding the thus obtained test output values into a computer; periodically interrupting the analyzing process of said test gas and introducing standard gases of known components into said analyzing devices to obtain corresponding comparison output values; recording the obtained comparison output values in a computer; converting the recorded comparison output values by means of a pre-established interpolation and extrapolation program by the computer into a calibration curve for the gas analyzing devices; and correcting said thus obtained test output values of the analysis of said test gas during the period of analysis immediately following said calibration on the basis of said calibration curve.

3,359,785
HYDRAULIC APPARATUS FOR TESTING LEAKS
Daniel B. Fournier, Roseville, Mich., assignor to Jered Industries, Inc., Birmingham, Mich., a corporation of Michigan
Filed May 28, 1965, Ser. No. 459,785
7 Claims. (Cl. 73—40)

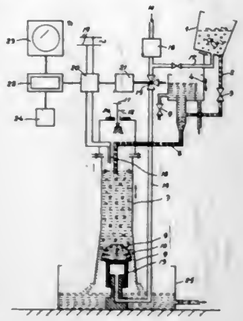


1. A leak test system comprising a unit having a fluid cavity, a movable plunger in said cavity, a fluid pressure source, conduit structure interconnecting said pressure source and a test part, a first passage forming a part of said conduit structure for distributing pressure from said source to one side of said plunger, another passage connecting the other side of said plunger to said test part, and valve means for selectively interrupting communication between said other side of said plunger and said source and establishing a hydraulic lock between said plunger and said test part whereby leakage of fluid from said test part will effect displacement of said plunger, and means for detecting a predetermined displacement of said plunger during a test interval, said displacement being a measure of the rate of leakage from said test part, a reset plunger adjacent said movable plunger and engageable therewith, a pressure area on said reset plunger, a stop disposed in the line of motion of said reset plunger, and branch passage means for distributing pressure from said source to said pressure area to move said reset plunger against said stop thereby precisely setting said movable plunger at a starting point.

3,359,786
METHOD OF AND APPARATUS FOR DETERMINING THE SHIVES CONTENT IN A FIBER SUSPENSION
Georg von Alfthan, Helsinki, Finland, assignor to Osakeyhtio Keskuslaboratorio Centrallaboratorium Aktiebolag, a corporation of Finland
Filed Apr. 6, 1965, Ser. No. 446,063
10 Claims. (Cl. 73—61)

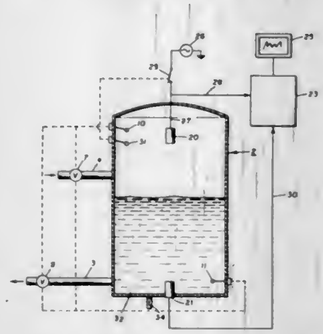
1. A method for the determination of the shive content of pulps, comprising forming a liquid suspension of a selected amount of pulp, causing said suspension to flow along a restricted path including a slit, dimensioning said slit to allow fibers to pass but to retain particles exceeding a pre-selected size, detecting a pre-selected decrease of flow through said slit caused by its partial clogging by retained particles, momentarily widening said slit for

rinsing it of said retained particles upon detecting said decrease of flow, and registering the number of rinsings



per said amount of pulp as a measure of the shive content of said pulp.

3,359,787
METHOD AND APPARATUS FOR MONITORING LIQUIDS
Joseph Zemanek, Jr., Dallas, Tex., assignor to Mobil Oil Corporation, a corporation of New York
Filed Dec. 24, 1964, Ser. No. 421,027
13 Claims. (Cl. 73—61.1)



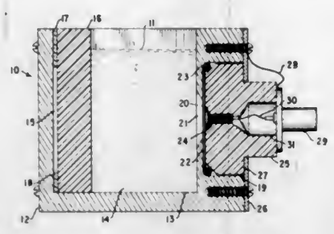
1. In a method of characterizing a liquid flowing through a conduit, the steps of flowing said liquid from said conduit into an enlarged chamber and vertically accumulating said liquid within said chamber, generating an acoustic signal within said accumulat of liquid and passing said signal between a first ele a in the accumulation of liquid in said chamber and a second elevation in said accumulation of liquid spaced vertically a known distance from said first elevation, detecting said signal at one of said elevations, measuring a characteristic of said detected indicative of a property of said liquid, and withdrawing said accumulated liquid from said chamber at an elevation no higher than the lowermost of said first and second elevations.

3,359,788
ULTRASONIC MEASUREMENT OF SOLUTION CONCENTRATION
Donald W. Colvin, Clearwater, Fla., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Mar. 2, 1965, Ser. No. 436,698
6 Claims. (Cl. 73—61.1)

1. A method for determining the concentration of a chemical component in solution which comprises:

(a) placing said solution in a cell provided with an ultrasonic reflecting material having a first ultrasonic reflecting surface in contact with said solution and a second ultrasonic reflecting surface in contact with a gas;

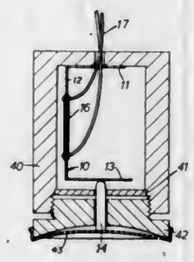
(b) transmitting ultrasonic pulses through said solution whereby said pulses are reflected through said solution by said first and second ultrasonic reflecting surfaces;



(c) detecting the ultrasonic pulses reflected from said first and second ultrasonic reflecting surfaces; and

(d) comparing the ratio of the amplitudes of said reflections to determine the concentration of said chemical component in said solution.

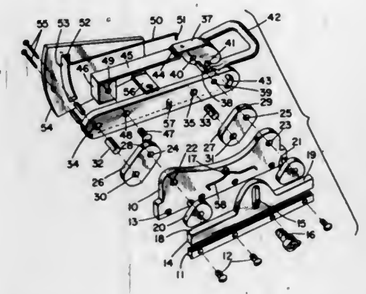
3,359,789
ELECTRICAL TONOMETERS
Maurice S. Forse, New Barnet, England, assignor to Ether Engineering Limited
Filed Mar. 8, 1965, Ser. No. 437,886
Claims priority, application Great Britain, Mar. 9, 1964, 9,826/64
6 Claims. (Cl. 73—80)



1. A transducer device for an ophthalmic tonometer and including a resilient strain element which comprises a resilient member bearing at least one transducer element electrically sensitive to a bending strain, an actuator member extending at an angle from one end of said resilient member, a suport member secured to the other end of said resilient member and bearing a concave surface for cooperating with the cornea of an eye; and a pin extending movably through an aperture in said concave surface and connected to said actuator member for applying a bending stress to said transducer element.

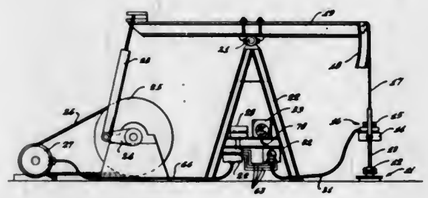
3,359,790
WIRE TENSIONING APPARATUS
William C. Dillon, Van Nuys, Calif., assignor to W. D. Dillon & Co., Inc., a corporation of California
Filed May 18, 1965, Ser. No. 456,696
4 Claims. (Cl. 73—143)

1. A wire tensioning and tension measuring apparatus comprising, in combination: a first frame; a lower jaw member secured to said first frame; an upper jaw member running generally parallel to and above said lower jaw member to define opposing wire gripping surfaces; guide means coupling said upper jaw member to said first frame for movement toward and away from said lower jaw member to vary the spacing between said wire gripping surfaces; cam means eccentrically mounted for rotation to said first frame and engaging the upper surface of said upper jaw member; a second frame; means eccentrically connecting said cam means to said second frame such that movement of said second frame relative to said first frame in response to a rearward pulling force rotates



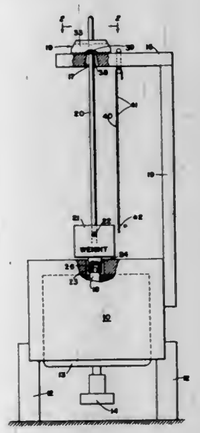
said cam means to thereby cam said upper jaw down towards said lower jaw; a block pivoted to a rear portion of said second frame at a first point and having a connecting means for exerting said pulling force at a second point out of alignment with the direction of said pulling force so that said block tends to rotate in response to said pulling force; a bending beam secured to a forward portion of said second frame at one end and having a free end engaging said block to oppose rotation of said block; and indicating means including a pointer secured for movement with said block and a scale secured to said second frame adjacent to the free end of said pointer to provide an indication of said pulling force.

3,359,791
SYSTEM RESPONSIVE TO WELL PUMPING LOADS
Rodney A. Pantages, Los Angeles, Calif., assignor to Well Sentry, Inc., Los Angeles, Calif., a corporation of California
Filed Oct. 19, 1964, Ser. No. 404,741
9 Claims. (Cl. 73—151)



1. A system responsive to the performance of a pumping well comprising: load-measuring means connected to a well pump rod so as to be continuously responsive to the load thereon; instrument means remote from and connected to said load-measuring means; control means for the well pumping operation; means on said instrument means responsive to the attainment of either a predetermined high load value or a predetermined low load value for activating the control means to discontinue the well pumping operation; and additional means on said instrument responsive to failure of the pump rod load to reach a predetermined intermediate value over a prolonged interval for activating a signal means to indicate abnormal performance of the well but without terminating the pumping operation.

3,359,792
ENERGY MEASURING APPARATUS
Charles Lukens, Cheltenham, Pa., assignor to the United States of America as represented by the Secretary of the Army
Filed July 8, 1965, Ser. No. 470,642
4 Claims. (Cl. 73—167)



1. An assembly for test measuring the energy of an energy stored element such as a firing pin or the like, comprising

a horizontally extending support member having a vertical opening therethrough,

a sprag assembly on said support and overlying said opening,

a rod extending through said opening and suspendable by said sprag assembly,

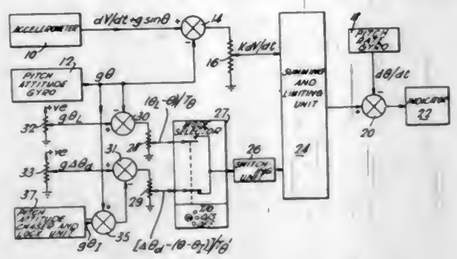
a weight secured to said rod for adjacently overlying said energy stored element, said weight having a downwardly opening recess for receiving a sensitive portion of said element.

so constructed and arranged that upon release of said element it will propel said weight to elevate said rod relative to said sprag assembly.

3,359,793
AIRCRAFT INSTRUMENTS
Eric R. Kendall and Stanley B. Newport, Cheltenham, England, assignors to S. Smith & Sons (England) Limited, London, England, a British company
Filed Nov. 27, 1964, Ser. No. 414,368
Claims priority, application Great Britain, Nov. 28, 1963, 47,122/63
19 Claims. (Cl. 73—178)

1. An aircraft instrument comprising means for providing a first signal dependent upon forward acceleration of the aircraft, means for providing a second signal dependent upon rate of change of pitch attitude of the aircraft, means for providing a third signal dependent upon the extent to which change in pitch attitude of the aircraft differs from a predetermined value, and means responsive to the first, second, and third signals to provide an indication of at least the sense of difference between

said rate of change of pitch attitude and a function that is dependent upon both said forward acceleration and



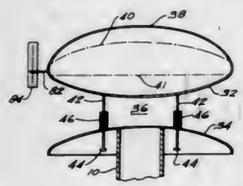
the extent by which the change in pitch attitude differs from said predetermined value.

3,359,794
OMNI-DIRECTIONAL CURRENT METER
Edgar N. Rosenberg, 6914 Mission Gorge Road, San Diego, Calif. 92120
Filed Feb. 4, 1965, Ser. No. 430,504
4 Claims. (Cl. 73—189)



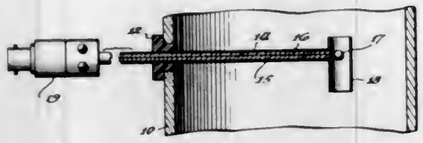
1. Metering apparatus for determining the direction and velocity of a relatively flowing fluid, comprising;
a spherical body member,
means for supporting said body member in a fixed position immersed in said relatively flowing fluid,
at least twelve substantially equidistantly-spaced impedance-type temperature sensing means mounted in the skin surface of said body member,
means for monitoring and indicating the temperatures of each of said sensing means, and
means to compute directly from the said temperatures the direction and velocity of the following fluid.

3,359,795
WIND VELOCITY INSTRUMENT
Bruce R. Walsh, Pittsburgh, Pa., assignor to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware
Filed Apr. 29, 1965, Ser. No. 451,707
8 Claims. (Cl. 73—189)



1. Velocity measuring apparatus comprising a pair of convex members, support means for maintaining said members in spaced-apart relationship with the convex surfaces facing each other, the convex central regions of said members facing each other in spaced-apart relationship to form a circular venturi-like throat therebetween, one of said members being gravity biased toward the other of said members at all times, said support means adapted to permit movement of said members relative to each other upon changes in velocity of a fluid flowing across said apparatus, and measuring means for measuring the extent of movement of said members relative to each other.

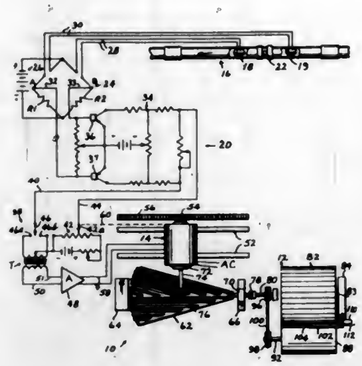
3,359,796
APPARATUS FOR MEASURING MASS FLOW USING A SHIELDED PROBE
Robert C. Dimick, Urbana, Ill., assignor to University of Illinois Foundation, Urbana, Ill.
Filed Jan. 23, 1964, Ser. No. 342,847
2 Claims. (Cl. 73—194)



1. Apparatus for measuring the mass flow of electrostatically charged solid particles in a solid-gas suspension flowing in a duct system having an aperture therein, said apparatus comprising:
a spherically shaped conductive probe in said flow stream within said duct system;
an elongated conductor extending through said aperture, said elongated conductor having one end connected to said spherical probe;
an electrometer electrically coupled to the other end of said elongated conductor outside of said duct system for measuring the current produced by the impact of said particles against said probe;
a conductive cylindrical shield tube surrounding said spherical probe in said duct system, said cylindrical shield having open ends aligned with the flow stream in said duct system for directing said flow stream to said spherical probe; and
support means insulatably supporting said spherical probe and cylindrical shield within said duct system.

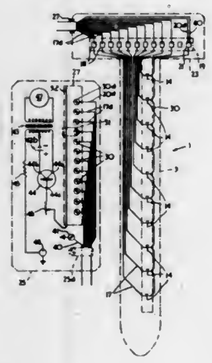
3,359,797
APPARATUS FOR RECORDING AN INTEGRATED RECORD OF GAS FLOW
Hugh A. Preller, 1210 NW. 18th, Oklahoma City, Okla. 73106
Filed Sept. 30, 1964, Ser. No. 400,426
6 Claims. (Cl. 73—204)

1. A rate of gas flow sensing means adapted to be connected with a gas conveying line for measuring the volume of gas passing through an orifice in the gas line, comprising: a pair of balanced thermistors positioned in said gas line on opposite sides of said orifice; a pair of slide rails; a two-phase balancing motor mounted on said slide rails for movement along said rails in opposing directions, said balancing motor having a control winding; a spur gear connected with the armature of said balancing motor; a rack meshing with said spur gear; a chart holding and advancing means; a chart mounted on the chart holding and advancing means; a stylus in contact with said chart; a synchronous motor mounted on said balancing motor; a variable speed means interconnecting said synchronous motor with said chart holding and advancing means for varying the rate of advancement of the latter; and a differential voltage potential sensing circuit and amplifying means connecting said thermistors with the control winding of said balancing motor for energizing the latter in response to gas flow



through said orifice, whereby the position of said balancing and synchronous motors on said slide rails determines the speed ratio of said variable speed means.

3,359,798
LIQUID LEVEL INDICATORS
Nicholas G. Katselis, Athens, Greece, assignor to Walker Crosweller & Company Limited, Clyde Crescent, Cheltenham, England
Filed Feb. 8, 1965, Ser. No. 430,842
5 Claims. (Cl. 73—308)



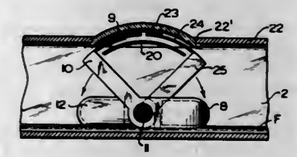
1. A liquid level indicator comprising in combination,
a level sensing probe adapted to be mounted on a receptacle for liquid in depending relation thereinto,
a plurality of float switches disposed in vertically spaced relation on said probe,
a float member for closing each of said switches,
a warning device located remotely from said probe and having a plurality of indicating switch contacts corresponding to said float switches, a movable contact member for selectively completing a circuit through any one of said indicating switch contacts, an indicating device actuated in response to closed condition of one of said float switches and the activation of the corresponding indicating switch contact, and a test contact for activation by said movable contact member to test the operativeness of said indicating device.

3,359,799
INDICATING DEVICE AND METHOD OF FILLING CONTAINERS
William H. Lubin, 22 Silver Spring Road, West Orange, N.J. 07052
Filed July 29, 1965, Ser. No. 478,024
13 Claims. (Cl. 73—308)



1. A device for indicating the level of material in a container comprising a first tube open at both ends thereof, plug means positioned in one end of said first tube and having an aperture therethrough, a float tube slidably disposed in said first tube below said plug means, and means associated with said float tube for indicating the level of material in the container, said means including a float rod extending upwardly from said float tube through said plug means, an enlarged stop on the upper end of said float rod of larger dimensions than the aperture in said plug means for arresting downward movement of said float rod, a level marker affixed on said float road intermediately thereof and a reference ring slidably mounted on the periphery of said first tube for indicating a determined level of material in a container.

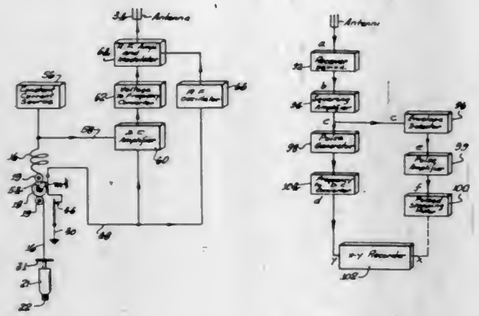
3,359,800
FLUID LEVEL INDICATOR FOR ENVELOPE-FLAP-MOISTENING DEVICES
Friedrich Heil, Frankfurt am Main, Germany, assignor to Telefonbau und Normalzeit G.m.b.H., Frankfurt am Main, Germany
Filed Dec. 15, 1965, Ser. No. 514,039
5 Claims. (Cl. 73—311)



1. A fluid level indicator comprising in combination:
(a) a housing having a window-like aperture;
(b) a pair of masks movable relative to each other arranged inside said housing in a position viewable through said aperture, said pair of masks having juxtaposed edges defining a gap of variable width between said pair of masks;
(c) a pair of floats inside said housing each for operating one of said pair of masks in response to changes of the level of a fluid inside said housing; and

(d) a pair of operating mechanisms each operatively connecting one of said pair of masks to one of said pair of floats to move said pair of masks in opposite directions in response to changes of the level of a fluid inside said housing to change the width of said gap between said pair of masks in response to said changes.

3,359,801
BATHYTHERMOGRAPH SYSTEM
Robert A. Rasmussen, San Diego, Calif., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Sept. 15, 1964, Ser. No. 396,785
1 Claim. (Cl. 73—344)



A bathythermograph system including a radio-telemetering buoy for telemetering depth and temperature indications of a body of water and a receiving and recording network for receiving and recording said indications comprising:

said radio telemetering buoy including:

a container;

temperature sensing circuit means, located within said container and including circuit line means payable therefrom downwardly into the water, for producing a voltage which is a function of the water temperature;

means within said container coupled to said temperature sensing circuit means for receiving said voltage and producing a signal frequency variation which is proportional to the voltage;

means within said container for transmitting said frequency;

means within said container actuated by the circuit line means as it is paid out for interrupting the transmission of said frequency at constant interval lengths of the circuit line as it is paid out, whereby the transmission includes water temperature and depth indications; and

the receiving and recording network including:

means for receiving the interrupted signal transmitted by the radio telemetering buoy;

means coupled to the receiving means for converting the receiving means signal frequency output between the interruptions to a square wave frequency;

means coupled to the square wave converter for detecting the envelope of the square waves between the interruptions:

means coupled to the envelope detector for producing a pulse at the leading edge of each envelope;

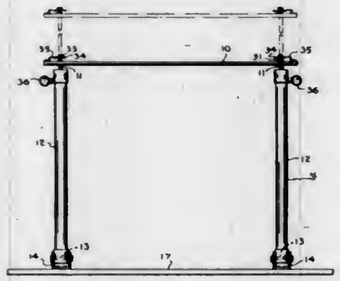
a stepping motor coupeld to the pulse producing means and having an output shaft which is step rotated by each pulse received by the motor;

an X–Y recorder connected to the motor shaft so that the X-axis of the recorder is progressively increased by each step rotation of the motor shaft;

means coupled to the square wave converter for converting the square wave outputs between the interruptions to DC pulses which have amplitudes corresponding to the square wave frequencies; and

said X–Y recorder being coupled to the DC converter so that the Y-axis of the recorder is driven according to the magnitude of the DC pulses.

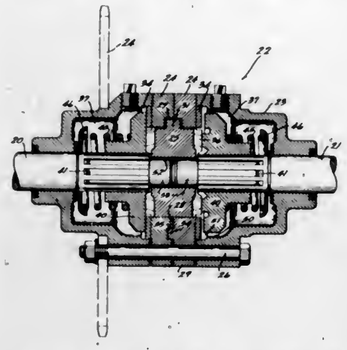
3,359,802
APPARATUS FOR BAR-BELL TYPE EXERCISES
Carl E. Sollenberger, 94 W. Salome St., Akron, Ohio 44310
Filed May 8, 1964, Ser. No. 365,894
11 Claims. (Cl. 73—379)



1. An exercising device, comprising a hydraulic unit including a pair of laterally spaced hydraulic cylinders containing hydraulic fluid; attaching means pivotally anchoring said cylinders to a working surface to swing about an axis parallel thereto; a piston slidable in each said cylinder and each having a piston rod thereon slidably extended outwardly of the other end of the respective cylinder; rigid hand grip means affixed between the outward extensions of said piston rods for manually reciprocating said pistons in various selected positions of swinging movement of said unit about said axis; and selectively adjustable by-pass means in said cylinders for controlling the effective pressure required to be applied to said hand grip means to move pistons in said cylinders in unison in at least one direction of the strokes thereof against the pressure of the fluid in the cylinders.

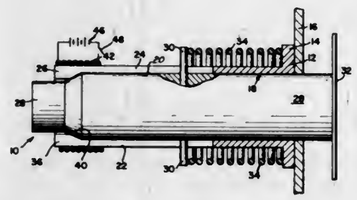
9. An isometric exercising device for use in a room or other situs having a horizontal working surface, comprising: a rigid upright; means for mounting said upright at the situs to anchor the same generally in upstanding relation to the working surface of the situs to resist longitudinal compression and tension stresses applied to the upright while in said upstanding relation; a rigid stress applying member adjustably rigidly connected to said upright; and cooperating adjustment means on said member and said upright for adjustment of the location of the rigid connection of the member on the upright to the variably spaced positions thereon above the working surface of the situs; said member including at each position rigid immovable arm means fixedly mounted on said upright and cantilevered of the situs forwardly of the upright and terminating in a laterally extending crossbar having gripping portions on each side of said rigid arm means; the space between said bross-bar and the working surface of the situs being substantially free and unobstructed whereby in the variously spaced positions of the member above the working surface a person assuming various exercising postures on the said surface can engage parts of the body with the underside of said crossbar to apply upward exercising pressure thereto.

3,359,803
TORQUE DIVIDER
Arthur R. Long, Kiel, Wis., assignor to Gilson Bros. Co., Plymouth, Wis., a corporation of Wisconsin
Filed Oct. 12, 1965, Ser. No. 495,211
8 Claims. (Cl. 74—650)



1. In a torque divider having a driving cage with oppositely facing sets of driving jaw teeth, a center cam carrier with oppositely facing sets of cam teeth, a driving connection between the center cam carrier and the cage, differentially driven shafts having proximate inboard ends, respective torque transmitting rotors splined to the respective shafts and having respective sets of driven jaw teeth and cam follower teeth registering respectively with the driving jaw teeth on the cage and cam teeth on the cam carrier and springs biasing the rotors toward the cam carrier, the improvement which comprises said shafts having end bearing portions inwardly of the splines thereon and the center cam carrier having an axially elongated bore providing complementary bearings for said portions whereby the cam carrier comprises a center bearing member for the shafts.

3,359,804
MECHANICAL ACTUATOR PACKAGE
John J. Phillips, Rolling Hills, Calif., assignor to Gray & Huleguard, Santa Monica, Calif., a corporation of California
Filed Oct. 11, 1965, Ser. No. 494,851
16 Claims. (Cl. 74—2)



1. An electromechanical actuator package including the combination of

an outer member,

an inner member moveably disposed inside of said outer member,

a plurality of resilient fingers on the outer member surrounding said inner member and being moveable between a radially inner position and the radially outer position,

a cam surface on the inner member,

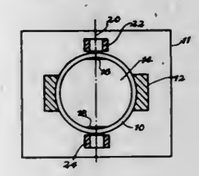
cam shoulders on said fingers positioned to engage said cam surface when the fingers are in the inner position and prevent the members moving relatively to each other, the cam shoulders being effective to disengage the cam surface and release said members for relative movement when the fingers are in the radially outer position,

spring means connected to said members and forcing the inner member through said fingers, said spring forcing the cam surface against said shoulders whereby the fingers are forced radially outwardly towards the second portion,

a keeper wrapped around said fingers and keeping them in the inner position,

said keeper including a wire having a tensile strength at ambient temperatures that is greater than tension produced in said wire by the expanding fingers, said keeper including a resilient sleeve around said wire to unwind the keeper when the wire separates.

3,359,805
INERTIAL NAVIGATION SYSTEMS
Helmut W. E. Schlitt, Woodland Hills, Calif., assignor to Bell Aerospace Corporation, Wheatfield, N.Y.
Filed Feb. 10, 1965, Ser. No. 431,593
7 Claims. (Cl. 74—5.6)



1. A gyroscope system characterized by minimization of random drift, which comprises,

a two-degree-of-freedom gyroscope having a rotor mounted for movement about a pair of perpendicular axes orthogonally related to the spin axis of said rotor,

means for driving said rotor,

said rotor having variable moments of inertia about each of said pair of axes so that drift-inducing torque which may be acting about one of said pair of axes will manifest itself in oscillatory precession about the other of said pair of axes, and vice versa,

a pick-off and a torquer on each of said pair of axes,

first compensating means connected between the pick-off of said one axis and the torquer of said other axis,

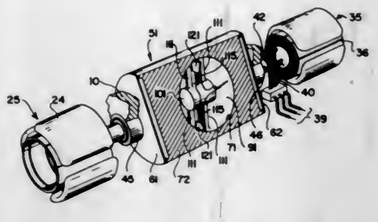
and second compensating means connected between the pick-off of said other axis and the torquer of said one axis,

said compensating means being effective to counteract drift-inducing torque which may be acting about the respective axes.

3,359,806
RATE SENSOR
Roland Pittman, Grand Rapids, Mich., assignor, by mesne assignments, to Northrop Corporation, Palos Verdes, Calif., a corporation of California
Filed May 3, 1965, Ser. No. 452,703
13 Claims. (Cl. 74—5.6)

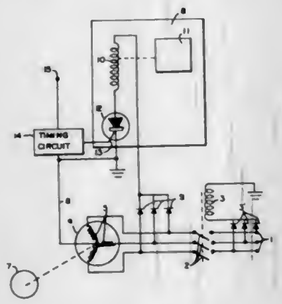
1. A rate gyro comprising a frame, an enclosure rotatably supported on said frame, said enclosure having a spherical chamber therein, the polar axis of the chamber being coincident with the axis of rotation, a dense

fluid filling the chamber to constitute a rotor for the gyro, means to rotate said enclosure and, through viscous drag at the interface between the fluid and wall of the chamber, to rotate the rotor, means to sense displacement of the rotor due to displacement of the frame, said sensing means comprising a member immersed in the fluid, means to support said member comprising a strut positioned nor-



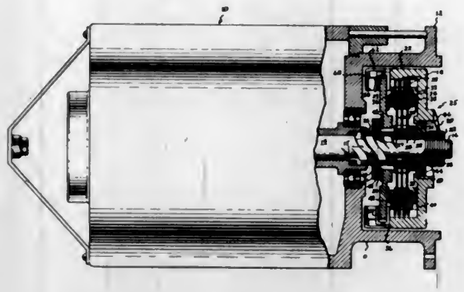
mally to said axis substantially along an equatorial diameter of the chamber and carried on the wall of the chamber, and means coactive with said member actuatable by said member upon movement thereof by the displaced fluid to generate a voltage, and a resolver to measure the magnitude of said voltage and the phase thereof relative to a fixed reference.

3,359,807
GYRO ERECTION SYSTEM
Arthur E. Foulds, Lynnfield, and Gerald L. Sullivan, Georgetown, Mass., assignors to General Electric Company, a corporation of New York
Filed May 17, 1965, Ser. No. 456,301
8 Claims. (Cl. 74—5.41)



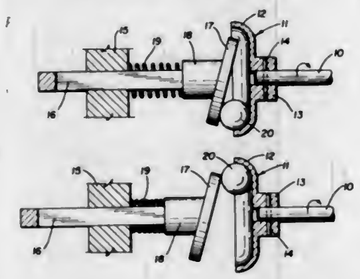
1. In a gyro system having a first and a second type of erection mode, means for changing the erection cycle of said gyro after an interrupton in the power supplied to the gyro system, and an electric motor for rotating a gyro rotor, the improvement comprising:
(a) the cycle changing means including control means having a first energization state for effecting the first erection mode and a second energization state for effecting the second erection mode,
(b) the cycle changing means also including energy level responsive means,
(c) means for coupling energy generated by the motor as it is rotated by the gyro rotor after the power interruption to the cycle changing means, and
(d) means for coupling said energy level responsive means to said control means so that said control means is in the second energization state upon reapplication of power to the gyro system as long as the portion of the generated energy coupled to said energy level responsive means remains above a predetermined energy level.

3,359,808
STARTER DRIVE ARRANGEMENTS
Richard D. Hall, Erie, Pa., assignor to General Electric Company, a corporation of New York
Filed Aug. 31, 1965, Ser. No. 483,941
7 Claims. (Cl. 74—7)



1. An adjustable torque starter drive arrangement for connection to the output shaft of a prime mover utilized in starting machines, the combination comprising:
(a) a sleeve connected to the end of said output shaft, said sleeve having spiral grooves which mate with spiral threads on said output shaft so that said sleeve is arranged to be moved axially outwardly upon rotation of said shaft;
(b) a hollow housing having engine engaging dogs at one end thereof;
(c) a friction coupling device disposed within said hollow housing and operative to yieldably couple said hollow housing to said sleeve, said friction coupling device including friction adjusting means for varying the maximum torque limit of said friction coupling device;
(d) means for positively axially positioning said hollow housing with respect to said sleeve; and
(e) force by-pass means for preventing the angular forces created during the engaging action from causing rotation of said friction adjusting means.

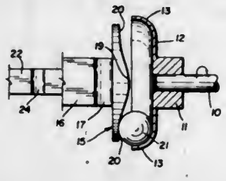
3,359,809
MECHANISM FOR CONVERTING ROTARY TO RECIPROCATING ACTION AT REDUCED SPEED
Donald L. Spender, Cheshire, Conn., assignor to Scovill Manufacturing Company, Waterbury, Conn., a corporation of Connecticut
Filed July 25, 1966, Ser. No. 567,438
4 Claims. (Cl. 74—55)



1. Mechanism for converting rotating to reciprocating action comprising:
(a) a rotated shaft,
(b) a driving plate fixed on and rotated with the shaft,
(c) a non-rotatable shaft mounted for reciprocating action axially aligned with the rotated shaft,

(d) a rigid non-tiltable swash plate mounted on the non-rotatable shaft at an angle of less than 90 degrees to the axis of the shaft,
(e) means urging the swash plate toward the driving plate, and
(f) rollable means between the driving plate and swash plate for moving the swash plate and non-rotatable shaft in axial direction.

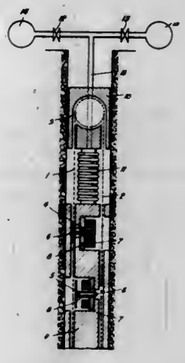
3,359,810
MECHANISM TO CONVERT ROTATING ACTION TO RECIPROCATING ACTION AT REDUCED SPEED
John M. Hansen, Racine, Wis., assignor to Scovill Manufacturing Company, Waterbury, Conn., a corporation of Connecticut
Filed Mar. 2, 1966, Ser. No. 531,305
9 Claims. (Cl. 74—60)



1. Mechanism to convert rotating action to reciprocating action at reduced speed comprising
(a) a rotated shaft,
(b) a driving plate provided with a ball retaining peripheral rim fixed on the shaft and rotated with the shaft,
(c) a support,
(d) a non-rotated disc having a working surface facing the driving plate,
(d–1) said working surface having diametrically opposite high areas, diametrically opposite low peripheral areas located between said high peripheral areas, and gradually inclined surfaces between the high and low areas, providing an alternately high and low path adjacent the periphery of the disc,
(e) a connecting means between the center of the disc and the support permitting tilting movement of the disc,
(f) a ball freely rollable between the driving plate and disc on said alternately high and low path of the disc, and
(g) a member connected to the disc at a distance from the disc center for receiving reciprocatory motion from the disc when the disc is tilted by the ball traveling on said path.

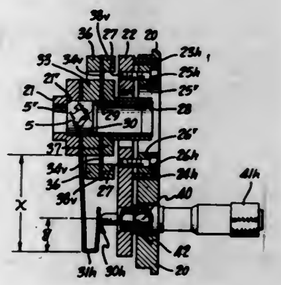
3,359,811
DRIVE MECHANISM FOR NUCLEAR REACTOR CONTROL RODS
Maurice Lechevallier, Viry-Chatillon, France, assignor to Groupement Atomique Alsacienne Atlantique, Le Plessis-Robinson, Hauts-de-Seine, France
Filed Nov. 12, 1963, Ser. No. 322,728
Claims priority, application France, Nov. 12, 1962, 915,120
5 Claims. (Cl. 74—89.2)

1. A drive mechanism for a nuclear reactor control rod, comprising: a guiding device; a frame, one of said guilding device and said frame being fixed and the other thereof being movable with respect thereto; a control rod disposed below said guiding device and said frame; a control rod suspension member passing over said guiding device and having one end thereof secured to said control rod, the other end of said suspension member being attached to said frame; a first securing means operable for locking said suspension member in pisition, located between said guiding device and said control rod; a second securing means operable for locking said suspension member, located between said guiding device and said other end of said suspension member, both said first and said second securing means being mounted on said frame, said control rod being locked in position when both of said securing means are locked and being free to drop when both of said securing means



are released; and means for producing and controlling relative displacement between said quiding device and said frame, operable to displace said guiding device in one direction relative to said frame when said first securing means is released and said second securing means is locked to thereby move said control rod, and operable to displace said guiding device in the opposite direction relative to said frame when said first securing means is locked and said second securing means is released, said means for producing and controlling relative displacement including: a bellows connected between said guiding device and said frame; and a pneumatic control system connected with said bellows.

3,359,812
ANGLE ADJUSTING MECHANISM FOR OPTICAL ELEMENTS
John C. Everitt, San Jose, Calif., assignor to Spectra-Physics, Inc., Mountain View, Calif., a corporation of California
Filed Mar. 13, 1964, Ser. No. 351,661
8 Claims. (Cl. 74—89.15)



1. An angle adjusting mechanism for an optical element, comprising: a fixed plate; a mounting plate positioned substantially parallel to said fixed plate and having

means secured thereto for holding an optical element; and four pairs of set screws joining said fixed plate and said mounting plate, two of said pairs being aligned along a first direction and two of said pairs being aligned along a second direction which is perpendicular to said first direction, one pair of set screws along each direction extending through said fixed plate in threaded relation therewith and bearing against said mounting plate whereby rotation of said screws effects movement of said mounting plate away from said fixed plate, and one pair of set screws along each direction extending through said fixed plate in translation-captured relation therewith and being threadedly engaged in said mounting plate whereby rotation of said screws effects movement of said mounting plate towards said fixed plate.

3,359,813

NON-STEP SPEED VARYING MECHANISM BY MEANS OF A COMBINATION OF TWO ECCENTRICS

Takeji Okano, 1 1-chome, Kasugacho, Bunkyoku, Toyko, Japan

Filed Sept. 14, 1964, Ser. No. 396,242
Claims priority, application Japan, Sept. 17, 1963, 38/49,912
4 Claims. (Cl. 74—117)



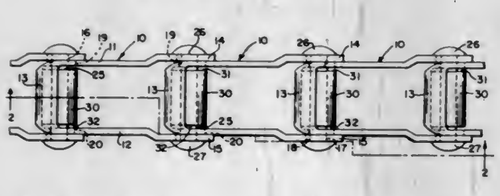
1. Non-step continuously adjustable speed varying mechanism comprising: a drive shaft and a driven shaft; a small eccentric fixedly and eccentrically mounted on the drive shaft; a large eccentric rotatably and eccentrically mounted on the small eccentric; a swing plate rotatably mounted flushly on the outer surface of the large eccentric; means to rotate the large eccentric at the r.p.m. of the drive shaft; means to adjust the combined eccentricity of the small and large eccentrics about the drive shaft; and means to couple tangential swinging movement of the swing plate to the driven shaft to effect rotation thereof.

3,359,814

CHAIN

Richard A. Kummerer, 500 6th Ave., Alfred Den Besten, 1304 8th Ave., and Joseph T. Chester, 8 Sharon Lane, all of Fulton, Ill. 61252

Filed May 5, 1965, Ser. No. 453,372
17 Claims. (Cl. 74—245)



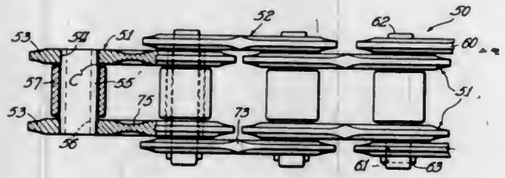
1. A chain link comprising: a U-shaped link member having opposite side portions opening at one end and closed at the opposite end by a bight portion with an inner surface facing the open end and an outer surface, the bight portion being arcuate shaped and formed substantially about an axis parallel to the bight portion; a pair of transversely aligned slots in the side portions adjacent the bight portions extending longitudinally of the side portions; a link pin extending through the slots and between the sides; a bushing member fixed to the pin with opposite ends closely adjacent the respective inner surfaces of the side portions and having an outer surface complementary to and engaging the inner arcuate surface of the bight portion, the bushing member further retaining the pin spacedly between the opposite longitudinal ends of the slots.

3,359,815

POWER TRANSMISSION CHAIN LINK PLATE

Joseph O. Jeffrey, Ithaca, N.Y., Elmer D. Robinson, Greenville, Miss., John R. Mueller, Denver, Colo., and Myron Hawley, Wilmerding, Pa., assignors to Morse Chain Company, Ithaca, N.Y., a corporation of New York

Filed Sept. 26, 1963, Ser. No. 311,827
2 Claims. (Cl. 74—250)



1. A power transmission chain link element comprising a link plate having a waist portion and apertures formed laterally through end portions of said link plate for receiving a connecting pin to pivotally interconnect adjacent pairs of said plates to form a continuous load transmitting chain, said end portions each having a cross section passing through the axis of the aperture having one portion of uniform thickness extending radially outward from the aperture and another portion having a uniformly tapered section centered on the axis of the aperture and radially beyond the uniform thickness portion thereof, said waist portion interconnecting said end portions, said waist portion extending between parallel common tangents to the uniform thickness end portions and having a maximum thickness equal to the thickness of said uniform end portions throughout the length thereof, said waist portion having a single curved and continuous indentation formed in each side thereof in the waist portion extending between parallel common tangents to the end portion apertures and the uniform thickness portions of the ends.

3,359.816

DIGITAL SELECTOR

Otto Hermann, Cincinnati, Ohio, assignor to The R. K. Le Blond Machine Tool Company, Cincinnati, Ohio, a corporation of Delaware

Filed Feb. 4, 1966, Ser. No. 525,084
12 Claims. (Cl. 74—335)

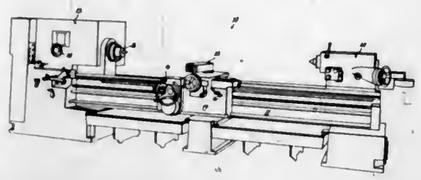
1. In a machine tool, a shifting arrangement for a geared transmission which comprises,

a plurality of shiftable members each operatively connected to one of the shiftable gears of said transmission,

a multi-position fluid motor connected with each of said members,

a movable valve operative to control the position of each of said fluid motors,

the improvement which comprises a positioning apparatus for controlling the position of said valve, said positioning apparatus including a frame, a plurality of positioning elements movably mounted upon said frame, one dimension of each of said elements being binarily related to a corresponding dimension of all of the other of said elements, said elements being selectively movable between an inactive to an active position, each of said elements being alignable when



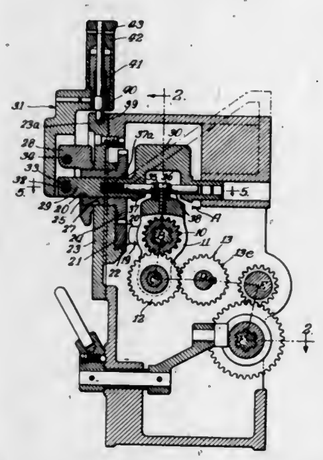
in the active position with all of the other of said elements when said other elements are in the active position, said one dimension of said elements being located in an axis of alignment when said elements are in said active position, said elements being selectively movable into juxtaposition in said axis of alignment to form a stack having a predeterminned dimension which is a function of the sum of said binarily related dimensions of said selected elements.

3,359,817

GEAR CHANGE MECHANISM

Bernard E. Olson, Loves Park, Ill., assignor to Rockford Machine Tool Co., a corporation of Illinois

Filed June 17, 1965, Ser. No. 464,705
7 Claims. (Cl. 74—348)



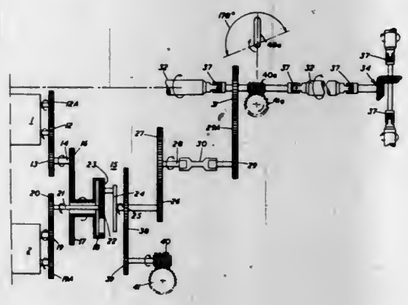
1. A gear change mechanism for the headstock of a lathe or the like comprising: a gear assembly having a generally conical cross section, a second shaft generally parallel to the first shaft, gear cluster means carried on said second shaft for sliding movement longitudinally along said gear assembly, said gear cluster means being swingably mounted on said second shaft, a first gear carried by said cluster means along said second shaft, means for rotating said first gear, a swingable second gear in mesh with said first gear and carried by said cluster means for swinging movement about said second shaft whereby said second gear may be moved into and out of engagement with the gears in said gear assembly, means for moving said cluster means longitudinally along said gear assembly so that said second gear may be aligned with the desired gear in said assembly, cam means responsive to longitudinal movement of said cluster means to swing said second gear about said second shaft at a substantially uniform rate to compensate for major variations in the diameters of the gears in the gear assembly, means for swinging said cluster means about said second shaft to move said second gear into and out of engagement with the gears in the gear assembly, a manually operable control member for controlling both said moving means and said swinging means, said control member being movable in a first direction for controlling said moving means and movable in a second direction for controlling said swinging means, and means for selectively locking said control member in different positions in said second direction for compensating for variations in the diameters of the gears in the gear assembly from the path of the second gear determined by the cam means.

3,359,818

ACTUATION SYSTEM MORE PARTICULARLY FOR CHANGING THE DIRECTION OF THE JET ENGINE NOZZLES OF A VERTICAL TAKE-OFF AND LANDING AIRCRAFT

Geoffrey J. Deverell, Southampton, and Peter B. Kahn, Catisfield, Fareham, England, assignors to The Plessey Company Limited, Ilford, England, a British company

Filed Mar. 23, 1965, Ser. No. 442,130
6 Claims. (Cl. 74—388)

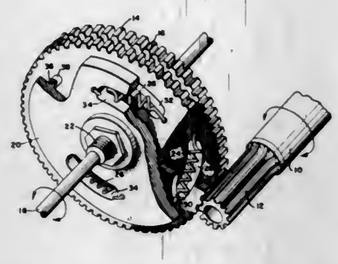


1. An actuation system for the change of direction of jet-engine nozzles in a vertical-take-off-and-landing aircraft, comprising two reversible displacement-type air motors, a single control valve including a control member having a central position in which the valve cuts off the passage of air through both air motors, a first operative position at one side of the central position in which the valve permits passage of air through both air motors in parallel to each other in a first direction, and a second operative position at the other side of the neutral position, in which the valve permits passage of air through both air motors in parallel to each other in a direction opposite to said first direction, an output shaft for connection to at least one jet-engine nozzle, a first three-legged differential gear drive the three legs of which are respectively operatively connected to said two air motors and to said output shaft, a pilot's control element, a feed-back member driven by said output shaft, and a second three-legged differential gear drive the three legs of which are respectively connected to the pilot's lever, the feedback member, and said control member.

3,359,819
BIDIRECTIONAL STEP TORQUE FILTER WITH ZERO BACKLASH CHARACTERISTIC

Leo J. Veillette, Lanham, Seth R. Williams, Seabrook, and Ralph L. Baker, Baltimore, Md., assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed Apr. 25, 1966, Ser. No. 545,805
5 Claims. (Cl. 74—409)

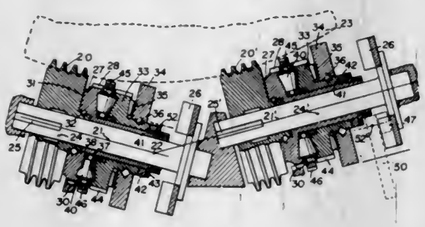


1. A gearing system for providing a smooth torque on an output shaft in response to a variable torque on an input shaft comprising:
a driving gear,
an output shaft,
first and second driven gears meshed with said driving gear and mounted for free rotation on said output shaft,
means for biasing said first and second driven gears in opposite directions of rotation on said output shaft,
and means for rotating said output shaft in response to rotation of one of said driven gears.

3,359,820
WORM AND WORMGEAR REDUCTION DRIVE

Ernest Wildhaber, Brighton, N.Y.
(124 Summit Drive, Rochester, N.Y. 14620)

Filed Oct. 18, 1965, Ser. No. 497,108
11 Claims. (Cl. 74—426)

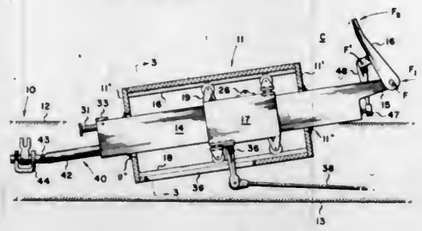


1. A reduction drive comprising a plurality of rotatable and axially reciprocable parts having helical threads, a driven member engaging said threads, a rotary driver, means for periodically rotatably indexing said parts at staggered intervals about the axes of their respective threads, a member connected to each part to partake in its axial bodily motion but not in its indexing, means for reciprocating each of the second-named members and its part along the thread axis of said part, said reciprocating means comprising an axially fixed rotary element coaxial with said part and receiving motion from said driver, said element having undulating side surfaces on opposite sides, said second-named members having undulatory side surfaces mating with the first-named undulatory surfaces, and rollers disposed between at least one of said opposite sides and the mating side surface of the associated second-named member.

3,359,821
CONNECTING MECHANISM BETWEEN A CONTROL LEVER AND MULTIPLE CONTROLLED MEMBERS

Richard G. Beardsley, Eugene P. Craven, and James M. Norman, Atlanta, Ga., assignors to Lockheed Aircraft Corporation, Burbank, Calif.

Filed Oct. 11, 1965, Ser. No. 494,673
11 Claims. (Cl. 74—471)

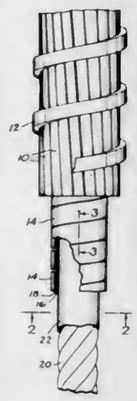


1. A connecting mechanism between a control lever and multiple controlled members comprising a beam, a first pivotal connection at one end of said beam for engagement with said lever, a second pivotal connection carried by said beam for engagement with one of said members, a linearly adjustable shaft disposed parallel to said beam, a crank on one end of said shaft, a link pivotally connecting the outer end of said crank to said lever in spaced relation to said first pivotal connection, and torque transfer means connectable to another of said members connected to the outer end of said shaft.

3,359,822
PUSH-PULL CABLE WITH PLASTIC LINED SHEATH

John B. Hurlow, 2616 West Parkway, Tacoma, Wash. 98466

Filed Dec. 13, 1965, Ser. No. 513,230
7 Claims. (Cl. 74—501)

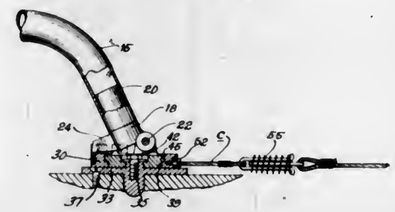


1. A push-pull cable assembly comprising
(a) a sheath comprising
(1) at least one sheath wire wrapped in a helix
(2) a lining support wire wrapped in a helix and disposed within the sheath wire,
(3) a lining strip of thin plastic wrapped in a helix disposed within the lining support wire,
(4) the turns of the plastic lining strip helix being immediately adjacent and in substantial registration with the turns of the lining support wire helix,
(5) interengaging means for securing the plastic lining strip in operative position with relation to the lining support wire, and
(b) an elongated core member adapted to transmit tension and compression forces mounted within the sheath with its outer surface in sliding contact with the inner surface of the plastic lining strip.

3,359,823
TILLER ARRANGEMENT FOR SAILBOATS

Jack H. Brazier, Fort Myers, Fla., assignor to Sears, Roebuck and Co., Chicago, Ill., a corporation of New York

Filed Dec. 17, 1965, Ser. No. 524,989
4 Claims. (Cl. 74—501.5)

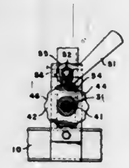


1. In a steering mechanism for a navigable craft, including a direction-control element and flexible means for transmitting motion thereto,
(a) a pulley operatively connected to said transmission means,
(b) means for rotatably mounting said pulley on a surface of the craft including
(c) a bearing rotatably seating said pulley,
(d) a manual steering element,
(e) means connecting said steering element to said bearing and permitting rotary movement of the steering element in a vertical plane, and
(f) interconnecting means on said steering element and said pulley, respectively, operative when the steering element is in lowered position to permit transmission of motion from the steering element to the direction control element.

3,359,824
LOCKING DEVICE

Claude K. Focht, New Holland, Pa., assignor to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware

Filed Apr. 20, 1966, Ser. No. 543,897
6 Claims. (Cl. 74—527)

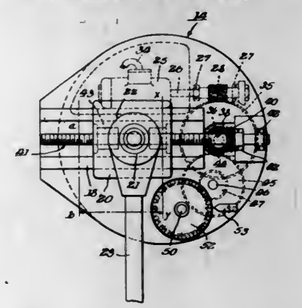


1. A locking device for a rotatably adjustable screw shaft comprising a disc affixed to said shaft and extending in a plane perpendicular thereto, said disc having a scalloped periphery forming angularly spaced arcuate notches, a handle mounted in the same plane as said disc and being movable about a pivot axis parallel to the axis of said shaft, said handle having a cam at one end and at such a radius from said pivot axis that when said handle is in one position the cam projects into a notch of said disc, and said handle having a second portion adjacent said cam and at such a radius less than the radius of said cam that when said handle is in a second position the cam is withdrawn from said disc and the disc may be freely rotatably adjusted.

3,359,825
MOTORIZED MICRO ADJUSTMENT FOR ROLL FEEDS

Chester M. Wiig, Lincolnwood, Ill., assignor to F. J. Littell Machine Co., Chicago, Ill., a corporation of Illinois

Filed Feb. 17, 1966, Ser. No. 528,287
6 Claims. (Cl. 74—600)

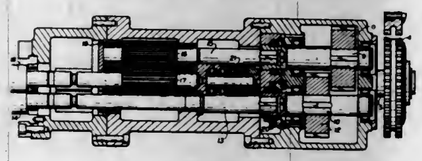


1. In an adjusting device of the character described, the combination with a plate member adapted to rotate, of a block member mounted on the plate member for reciprocating movements approximately diametrically of the plate member, an outwardly extending trunnion provided by the block member and forming a crank arm when eccentrically positioned with respect to the axis of rotation of the plate member, and means for producing movement of block member on the plate member including an electric motor carried by the plate member, an actuating shaft journalled by the plate member and having a threaded portion in threaded relation with the block member, and speed reducing mechanism comprising gearing operatively connecting the drive shaft of the electric motor with the threaded actuating shaft.

3,359,826
DRIVING GEARING FOR PLASTIC EXTRUDERS

Wilhelm Hanslik, Vienna, Austria, assignor, by mesne assignments, to Anger Plastic-Verarbeitungsmaschinen Gesellschaft m.b.H. & Co. KG., Vienna, Austria

Filed Nov. 24, 1965, Ser. No. 509,556
4 Claims. (Cl. 74—665)



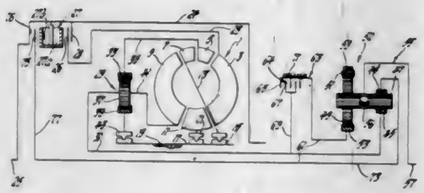
1. In a driving mechanism of a multi-screw extruder with at least two adjoining screws having their axes spaced apart from each other for a predetermined
first distance, the combination of a main driving shaft, a main driving gear arranged on said main driving shaft, two driven gears meshing with said main driving gear, two parallel driven shafts each in driven connection with one of said driven gears, one of said driven shafts being coaxial with the first of said screws and connected thereto, two meshing pinions,

one being in driven connection from said other driven shaft and the other pinion being in driving connection with said second extruder screw, the axes of said meshing pinions being spaced apart from each other for a

second distance,

the distance between the axis of the other driven shaft and the axis of the said first extruder screw being independent from said predetermined first distance and independent from said second distance.

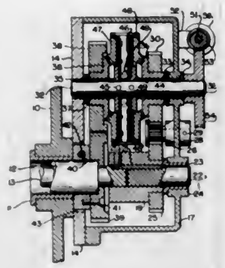
3,359,827
TRANSMISSION
Charles S. Chapman, Jr., Grand Blanc, and Frank H. Walker, Flint, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 14, 1964, Ser. No. 396,021
12 Claims. (Cl. 74—677)



1. In a transmission comprising an input member, a hydrodynamic torque converter having a pump and first and second turbines, means connecting said pump with said member, a torque converter planetary gear set, a range gear set, first and second drive shafts, and an output member, said converter gear set being formed by a ring gear, meshing planet gears, and a sun gear, means connecting said first turbine to said ring gear, a carrier for said planet gears, said carrier being operatively connected to said second turbine and to said first drive shaft, said range gear set having first and second sun gears of differing pitch diameters, first planet gears meshing with said first sun gear, second planet gears meshing with said first planet gears and said second sun gear, a first ring gear meshing with said first planet gears and a second ring gear meshing with said second planet gears, a carrier for said first and second planet gears of said range gear set, said output member connected to said last-mentioned carrier, said first ring gear connected to said second drive shaft, said first sun gear of said range gear set being connected to said first drive shaft, braking means selectively engageable with said second ring gear for holding said second ring gear for reaction, second selectively engageable braking means for releasably holding said second sun gear of said range gearing for reaction, third releasably engageable means for connecting said second sun gear to said first drive shaft for rotation therewith, selectively engageable clutch means conditionable to operatively connect said pump with said input member and also conditionable to operatively connect said second drive shaft with said input member while disconnecting said pump from said input member.

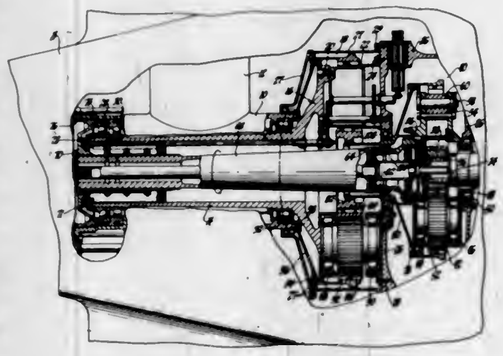
3,359,828
ADJUSTMENT DEVICE FOR END LABEL UNIT
Fred L. Waite, 1435 Bedford St., Stamford, Conn. 06905
Filed June 30, 1965, Ser. No. 468,401
4 Claims. (Cl. 74—675)

1. An adjustment device for use on an end label unit having a tubular driven shaft and a drive shaft extending through said driven shaft, said adjustment device having a housing into which said drive and said driven shafts extend, a first spur gear attached to said drive shaft, at least one pinion driven by said first spur gear, a differential shaft rotatably journalled in said housing, a second spur gear driven by said at least one pinion, a first bevel gear fixed to said second spur gear, said second spur gear and said first bevel gear being rotatably mounted on said differential shaft, a third spur gear, a second bevel gear



fixed to said third spur gear, said third spur gear and said second bevel gear being rotatably mounted on said differential shaft, a transition piece fixed to said differential shaft between said bevel gears, at least one bevel gear pinion meshing with said bevel gears and being rotatably mounted on said transition piece, a fourth spur gear mounted on said driven shaft and meshing with said third spur gear, and adjustment means rotatably positioning said differential shaft in said housing.

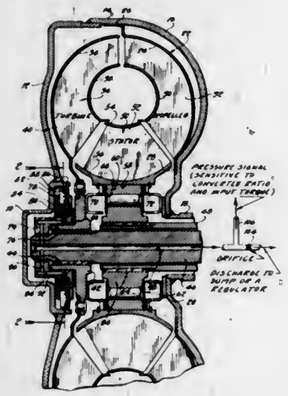
3,359,829
PROPELLER DRIVE
Donald G. Busch, Calvin C. Covert, and Cyril M. Hawkins, Indianapolis, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed May 24, 1965, Ser. No. 457,998
4 Claims. (Cl. 74—705)



1. An aircraft propeller drive system including, a high speed input shaft, a split torque gear reduction unit comprising a high speed reversing gear set and a low speed reversing gear set, each gear set including a gear, a ring gear and a plurality of gears connecting said gear and said ring gear including a carrier for said gears, a driving connection between said high speed gear and said input shaft, a stationary support for said low speed gear carrier,

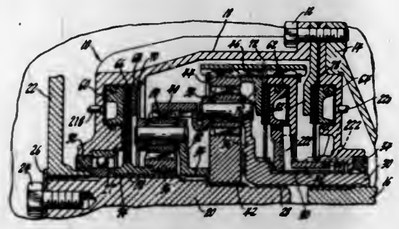
said low speed gear carrier having an integral stationary hollow shaft extension, a propeller hub journalled by spaced bearings on said stationary shaft extension, a driving connection between said high speed ring gear and said low speed gear, and dual drive paths from said split torque gear reduction unit to opposite ends of said hub comprising a positive driving connection from said high speed gear carrier including means extending through said hollow shaft extension to the front of said hub and a positive driving connection between said low speed ring gear and the rear of said propeller hub.

3,359,830
HYDROKINETIC POWER TRANSMISSION MECHANISM WITH SPEED RATIO SENSITIVE CONTROL SIGNAL SOURCE
Po-Lung Liang, Lincoln Park, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Feb. 17, 1964, Ser. No. 345,331
6 Claims. (Cl. 74—731)



1. In a power transmission mechanism having a hydrokinetic torque converter, multiple ratio gearing, a converter speed ratio sensitive pressure source comprising a first fluid displacement member drivably connected to driving portions of said mechanism, a second fluid displacement member cooperating with said first fluid displacement member, said second fluid displacement member being drivably connected to driven portions of said mechanism, passage means for distributing a pressure signal from said fluid displacement members to pressure sensitive portions of said mechanism, said pressure sensitive portions including fluid pressure operated servo means for controlling the motion of said gearing to effect ratio changes, valve means for controlling distribution of pressure to said servos through said passage means, said first fluid displacement member comprising a cam ring, said second fluid displacement member comprising a pump body, radially movable pumping members carried by said body in camming engagement with said cam ring whereby said pumping members are moved radially upon relative movement of said cam ring with respect to said pump body, radial openings receiving said pumping members, said passage means communicating with radially inward regions of said openings, and a flow restricting orifice forming a part of said passage means thereby creating a pressure differential thereacross, said servos being located on the downstream side of said orifice and said valve means being located on the upstream side of said orifice, said valve means responding to changes in the pressure developed by said ratio sensitive pressure source.

3,359,831
MULTIPLE SPEED FAN DRIVE
Milton H. Scheiter, Bloomfield Hills, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed May 20, 1965, Ser. No. 457,434
15 Claims. (Cl. 74—761)

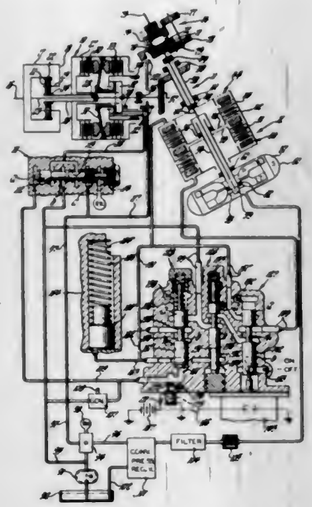


4. In combination, an engine having a crankshaft, liquid for cooling said engine and a fan for cooling said liquid, a variable speed drive for driving said cooling fan, said drive comprising, a housing secured to said engine, an output shaft journaled in said housing having said fan secured thereto for rotation therewith, a first sun gear and a first sleeve member secured to said output shaft for rotation therewith, said output shaft also having a second sleeve member rotatably supported thereon, said second sleeve member having a second sun gear secured thereto for rotation therewith, a third sleeve member having one end secured to said crankshaft for rotation therewith and the other end extending into said housing, said other end of said third sleeve rotatably supporting one end of said output shaft, said other end of said third sleeve also supporting a first planet carrier and a first ring gear radially spaced from said output shaft, said first planet carrier having a first planet pinion rotatably supported thereon, said first planet pinion being meshably engaged with said first sun gear, said second sleeve member supporting a second planet carrier radially spaced from said output shaft, said second planet carrier having a second planet pinion gear rotatably supported thereon, said second pinion gear being meshably engaged with said first ring gear and said second sun gear, a fourth sleeve member rotatably supported on said third sleeve member, said fourth sleeve member supporting a second ring gear in meshing engagement with said first planet pinion gear, a first friction engaging means for securing said first sleeve member to said housing for preventing movement of said first sleeve member, a second friction engaging means for securing said fourth sleeve member to said third sleeve member for movement thereof together, a third friction engaging means for securing said fourth sleeve member to said housing for preventing movement of said fourth sleeve member and control means responsive to the temperature of said liquid for selectively actuating said friction engaging means for connecting said crankshaft to said output shaft whereby, for any given speed of the crankshaft, the speed of the output shaft may be increased, decreased or maintained at the same speed as that of the crankshaft.

3,359,832
TRANSMISSION
Hans O. Schjolin, Birmingham, and Luther N. Kern, Berkley, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Jan. 6, 1966, Ser. No. 519,103
6 Claims. (Cl. 74—781)

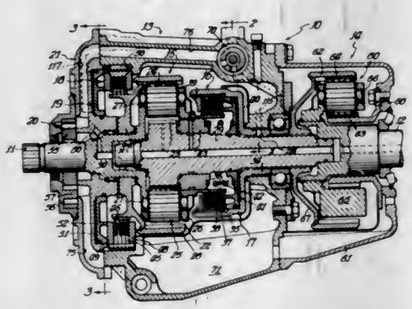
1. In a transmission, drive means operative to establish a first and a second ratio including a first friction torque establishing means for establishing one ratio and a second

friction torque establishing means for establishing a second ratio, means for selectively engaging said first and second friction torque establishing means including spring means rotatable at times and operative to normally engage said first friction torque establishing means to engage said friction torque establishing means and stationary motor means operatively connected to said spring means by a transfer bearing and operatively connected to said second friction torque establishing means, and control



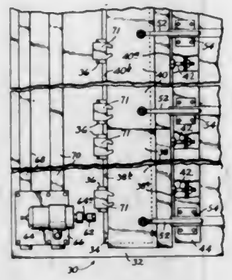
means to supply fluid pressure to said motor means to preload said thrust bearing means sufficient to load said transfer bearing for rotation only at the bearing surfaces but insufficient to compress said spring means and in another selective position to supply a pressure to said motor means apply chamber to move said spring means to disengage said first friction torque establishing means and to engage said second friction torque establishing means.

3,359,833
TRANSMISSION CONTROLS
George E. Flinn, Muncie, Ind., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed Nov. 25, 1964, Ser. No. 413,888
8 Claims. (Cl. 74—785)



8. In a transmission mechanism, the combination of a drive shaft, a driven shaft, gearing interconnecting said shafts, a plurality of fluid actuatable devices selectively actuatable to establish different drive trains between said shafts, a source of fluid pressure, a selector valve connected to said source of pressure and said devices adapted to selectively actuate said devices, said selector valve including means to regulate the fluid pressure from said source, said means including a sleeve member having a closed end, a piston slidably mounted within said sleeve member, means operative in response to movement of said piston and movable therein to regulate said fluid pressure, said piston having a pair of lands of different area thereon, a bore located in said sleeve member said bore normally being open to allow fluid to pass therethrough from said closed end, one of said lands on said piston being adapted to block said bore to trap fluid within said closed end and prevent said piston from contacting said closed end when said piston is moving toward said closed end as the fluid pressure is being regulated and to thereby quiet said regulating means as said fluid pressure is being regulated.

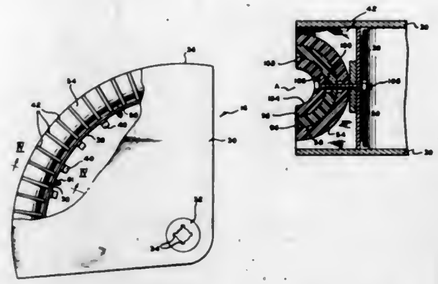
3,359,834
METHOD AND APPARATUS FOR PRESETTING KNIVES
Kenneth R. Crabtree, Portland, Oreg., assignor to Everett F. Armstrong, Siletz, Oreg.
Filed Dec. 28, 1965, Ser. No. 516,850
8 Claims. (Cl. 76—101)



2. A method of presetting a knife for installation in a knife mounting comprising preparing a deposit on the back edge of the knife by molding it on the knife, with such deposit including a mass extending rearwardly from said back edge which is suspended by the knife and is fully exposed along an expanse disposed opposite said back edge and includes margins substantially in the planes of the knife faces joining with such expanse, without moving the knife after the preparing of such deposit cutting off a portion of such deposit along a plane spaced rearwardly from the back edge of the knife, such portion being part of said mass which extends rearwardly of the knife edge and is suspended by said knife.

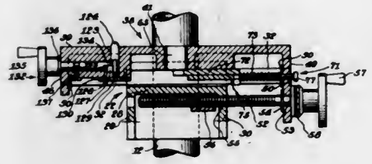
3,359,835
METHOD OF MAKING A TUBE-BENDING DIE
George E. McDowell, Ypsilanti, Mich., assignor to Michigan Tube Benders, Inc., Ypsilanti, Mich.
Original application Mar. 13, 1963, Ser. No. 264,977, now Patent No. 3,276,236, dated Oct. 4, 1966. Divided and this application June 16, 1966, Ser. No. 558,105
4 Claims. (Cl. 76—107)

2. The method of forming a lightweight, inexpensive tube-bending die adapted to be rotated about an axis comprising the steps of interconnecting a pair of plate members in spaced relationship, forming a hub member upon said plates defining the axis of rotation of the die, interposing a backup member between said plates and connected thereto, said backup member being radially spaced from said hub and of a circular segment configuration concentric to said hub and including an outwardly facing concave recess, placing a nonmetallic, moldable, hardenable material within said recess, permitting said material to set and harden, placing said plates and assembled components upon a tube-bending machine in normal operative position wherein said hub is concentric with the operative axis of rotation of the die, mounting a shaping tool upon the tube-bending machine, rotating said plates and assembled components about the axis of rotation of



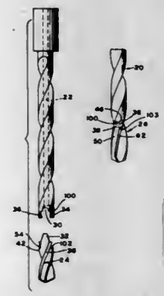
the tube-bending machine, and engaging said shaping tool against said hardenable material while said plates and assembled components are rotating to define an elongated tube-receiving die cavity of arcuate longitudinal configuration concentric to the axis of rotation of the tube-bending machine and concave cross-sectional configuration.

3,359,836
DRILL PRESS WORK-HOLDING APPARATUS
Oscar W. Jalava, 17862 Pierson Ave., Detroit, Mich. 48219
Filed June 9, 1965, Ser. No. 462,493
2 Claims. (Cl. 77—63)



1. Work-holding apparatus for a drill press which includes a vertical support column and a spindle spaced therefrom, comprising support means including a bracket portion adapted for vertical mounting on said column and for vertical adjustment on said column, said support means including a work table portion supported by said bracket portion and adjustable for horizontal movement relative to the longitudinal axis of said column and said spindle, said table portion having a substantially flat top surface wherein there is provided a rotatable work-holding device adapted to hold work pieces having circular or curved portions, said device comprising a main body member having a substantially flat bottom surface and rotatably supported on said flat top surface, means for securing said body member to said means for detachably holding said device, said table portion having formed therein a vertical aperture which extends downwardly from said flat top surface and which is offset from the center of said top surface, said body member having a plurality of index holes extending upwardly from said bottom surface and spaced apart along the circumference of a circle, an indexing pin disposed for vertical reciprocal movement in said aperture, said indexing pin having at its lower end below said aperture a detent portion which extends substantially horizontally and which has a flat surface facing upward, selectively operated means for holding said pin in its upwardly extended vertical position wherein it projects into a first one of said holes to lock said body member in a first one of said holes to lock said body member in a first desired angular position and for holding said pin in its retracted position out of contact with said body member while said body member is rotated from said first angular position toward its next desired angular position and for holding said pin again in its upwardly extended position wherein it projects into the next one of said holes to lock said body member in said next desired angular position when said body member has been rotated to said last-mentioned angular position, said pin-holding means includes spring means for holding said pin in each of said holes when said body member is in the respective desired angular position, said pin-holding means further including a control member operable against the force of said spring means for holding said pin in its retracted position while said body member is rotated from each of said desired angular positions toward the next desired angular position, said control member including a horizontal eccentric pin manually rotatable from its outer end and having an eccentric portion at its inner end which is generally semicylindrical and which has its flat surface facing downward abutting the flat surface of said detent portion when said eccentric pin is in a first angular position and said indexing pin is in said upwardly extended position under the control of said spring means, said eccentric pin being manually rotatable through substantially 180 degrees to a second angular position whereat said eccentric portion has driven said detent portion, and hence the entire indexing pin, down to said retracted position against the force of said spring means, and means for detachably holding said device on said table portion normally against vertical movement.

3,359,837
ROTARY TOOL CONSTRUCTION
Donald C. Andreasson, Birmingham, Mich., assignor to Detroit Reamer & Tool Company, Birmingham, Mich., a corporation of Michigan
Filed Jan. 26, 1965, Ser. No. 428,164
2 Claims. (Cl. 77—68)



1. In a coolant carrying rotary tool of the type using a driving shank having an axial coolant passage therein and a co-axial bit on the working end thereof,

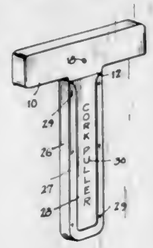
(a) an elongate bit having a flute and land configuration in cross-section between a cutting end and a shank end having a reduced radius over its entire leading land and a trailing land on respective sides of a coolant flute, a portion of the trailing land at the shank end having a reduced radius over its entire circumferential dimension,

(b) a driving shank having an axially extending coolant passage and a recess at the bit end to telescopically receive a portion of the shank end of said bit, said

shank having an extending skirt portion forming a portion of a wall of said recess and circumferentially dimensioned to overlie a portion of a flute at the shank end of said bit with one edge of said skirt in abutting engagement with a wall of said coolant flute at the leading land and the other edge of said skirt completely overlying and engaging the trailing land at said reduced radius, and

(c) means bonding said skirt to said bit at said engaging portions whereby said coolant passage of said shank is open to said recess and said coolant flute inside said skirt.

3,359,838
CORK PULLER AND PROTECTIVE SHEATH THEREFOR
Kurt M. Vogel, 84 Easton Road, Westport, Conn. 06880
Filed May 31, 1966, Ser. No. 553,984
3 Claims. (Cl. 81—3.48)



3. A cork puller for removing a cork from a bottleneck comprising:

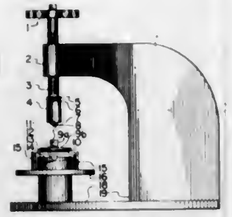
(A) a transverse handle,

(B) a pair of thin strip-like legs having relatively thin longitudinal edges and relatively wide inner and outer sides, said legs being secured to said handle and extending downwardly therefrom with their inner sides in laterally opposed spaced relation to each other, and

(C) a longitudinal series of spaced outwardly projecting closed embossings disposed along the longitudinal center line of said legs in inwardly spaced relation to their longitudinal edges, and presenting smooth outwardly disposed surfaces, whereby upon insertion of said legs between said bottleneck and said cork, said outwardly disposed surfaces of said embossings engage the inner surface of the bottleneck over a relatively small total area and said legs imbed in the cork to an extent equal to the sum of the thickness of said legs and the embossings projecting from the outer sides of said legs.

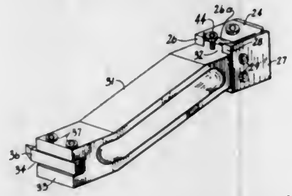
3,359,839
CONSTANT PRESSURE WATCH BACK REMOVER
Roy G. Miller, Canton, N.C. 28776
Filed Feb. 7, 1966, Ser. No. 526,018
2 Claims. (Cl. 81—6)

1. In a constant pressure extractor for use in loosening, tightening, removing and replacing screw-type watch backs; a base; an anvil on said base; watch receiving means on said anvil adapted to receive a watch with the face thereof directed downwardly, said receiving means having a depression therein for receiving a watch stem; upwardly extending pin means on said anvil for engaging watch band lugs; a generally L-shaped arm mounted on said base and having a threaded bore therein in vertical alignment with the center of said anvil; a drive screw in said threaded bore having rotating means on the upper end thereof; a sliding chuck; means drivingly interconnecting said drive screw and said chuck; a drive washer connected to said chuck; a jeweller's wrench having means thereon for releasably engaging screw-type watch backs and drivingly connected to said drive washer, whereby upon initially rotating said drive screw, the said wrench attached



thereto moves into engagement with the back of a watch positioned in said receiving means and upon further rotation thereof torque is applied to the back of said watch and the sliding chuck permitting limited axial movement of said wrench.

3,359,840
EXTENSION TOOL HOLDER
Joseph H. Soleau, Caldwell, N.J., assignor to Philips Electronics and Pharmaceutical Industries Corp., New York, N.Y., a corporation of Delaware
Filed Feb. 1, 1965, Ser. No. 429,364
1 Claim. (Cl. 82—36)



A tool holder for a chucking machine and the like, said tool holder comprising:

a mounting block for attachment to one surface of a chucking machine turret;

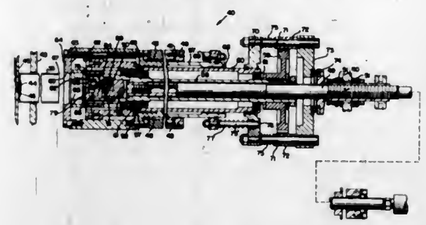
an extension arm;

tool bit gripping means comprising a transverse slot at one end of said arm, the other end of said arm being movably attached to said block to be moved perpendicular to said surface;

a stop on said block;

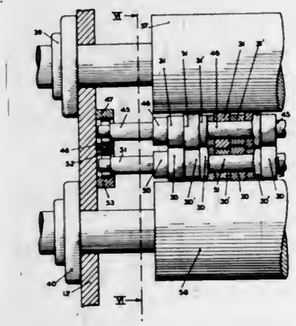
means on said other end of said arm to set said arm with respect to said stop, said one end of said arm being offset with respect to said other end in the direction toward said surface of said turret, said means comprising a second slot extending part-way across said other end of said arm perpendicular to said surface and to said transverse slot, a set screw threaded through said other end of said arm and extending into said second slot in alignment therewith to press against said stop when said arm is slid into place on said mounting block, and matching male and female dove-tail engagement members on said block and said other end of said arm extending parallel to said second slot to guide said arm into position on said block, one side of said female dove-tail member being movable perpendicular to said second slot and being provided with engagement means to grasp said male dove-tail member to hold said arm rigidly in place on said mounting block with said set screw in contact with said stop.

3,359,841
CONTAINER BODY TRIMMING APPARATUS AND METHOD
Daniel S. Cvacho, Chesterfield, Va., and David H. Hussey, Orlando, Fla., assignors to Reynolds Metals Company, Richmond, Va., a corporation of Virginia
Filed Nov. 12, 1964, Ser. No. 410,698
26 Claims. (Cl. 82—82)



1. Apparatus for trimming an annulus from the end of a cylindrical container body or the like comprising a single head, means for causing relative movement between said head and said end of said container body to telescope the same for said trimming operation and to untelescope the same after said trimming operation, said head including female means for telescopically receiving said end of said body, said head including a male knife means receivable in said end of said body, and means for moving said male knife means outwardly and relative to said female means to completely trim said annulus from said end of said body while said male knife means in said out position and said female means remains stationary relative to said knife means.

3,359,842
APPARATUS FOR SLITTING METAL FOIL
Roger W. Young, Upper Montclair, N.J., assignor to John Dusenbery Company, Inc., Clifton, N.J., a corporation of New Jersey
Filed June 30, 1965, Ser. No. 468,336
6 Claims. (Cl. 83—500)



2. Slitting apparatus comprising,

(a) a pair of spaced, parallel, freely-rotatable, supporting shafts,

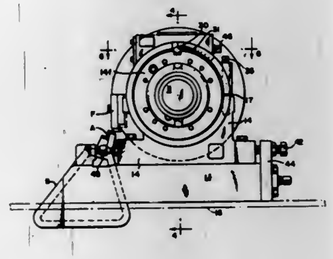
(b) a first set of cutting knives and spacers alternately disposed on one of the said shafts and rotatable therewith, said knives having a diameter exceeding that of the spacers,

(c) a second set of similar cutting knives and spacers similarly carried by the other of the said shafts, each of these knives and spacers being aligned respectively with the spacers and knives of the said first set,

(d) means spacing the said shafts so that the peripheral surfaces of the two sets of knives overlap, and

(e) at least one driven back-up roll in peripheral engagement with each set of cutting knives.

3,359,843
BLADE ADJUSTING MECHANISMS FOR ROTARY PAPER CUTTERS
Glle A. Mead, Hoquiam, Wash., assignor to Lamb-Grays Harbor Co., Inc., Hoquiam, Wash.
Filed May 5, 1966, Ser. No. 547,879
14 Claims. (Cl. 83—349)

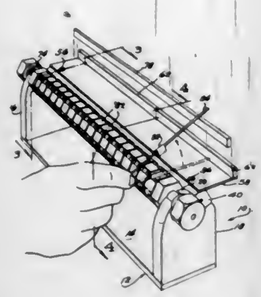


1. In a paper cutter having a knife blade, a rotatable mandrel and a fly knife mounted on said mandrel for cutting co-action with said knife blade for cutting sheet material passed between said fly knife and said knife blade, the improvement comprising adjusting means supporting a section of said paper cutter for adjusting the relative positions of said fly knife and said knife blade with respect to each other; said adjusting means comprising rotatable assembly means rotatable about a first axis, and supporting means for mounting the paper cutter section having a second axis parallel and eccentric to said first axis, said rotatable assembly means and said supporting means being interrelated such that rotation of said rotatable assembly about said first axis causes said second axis to shift position along an arc on a radius defined by the eccentricity between the two axis; said knife blade comprising a stationary anvil blade; and said adjusting means being adapted to support a section of said anvil blade and comprises a rotatably adjustable cylindrical bearing member, a cylindrical support member connected to and extending from each end of said bearing member and having aligned axis parallel to and slightly eccentric to the bearing member axis, means for mounting said anvil blade on said support members, and means for rotatably adjusting said bearing member.

3,359,844
ELECTRICAL WIRE CODING MACHINE OR DEVICE
Ralph L. Comet, Hawthorne, N.J., assignor to Mask-O-Matic, Inc., Paterson, N.J., a corporation of New Jersey
Filed Aug. 10, 1962, Ser. No. 216,158
10 Claims. (Cl. 83—435)

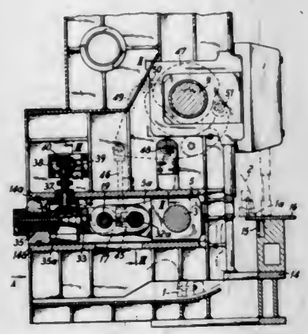
1. A device for making tabs from a strip of tape and for applying such tabs to wires for coding thereof, comprising a support member, a shaft, means supporting said shaft for rotation on said support member, a plurality of pairs of axially-spaced wiper blades carried on said shaft and projecting laterally therefrom, the adjacent pairs of wiper blades being spaced to define cavities for reception of wires to be coded, a plurality of cutter blades corresponding in number to the number of said pairs of wiper blades, means on said support member for mounting said

blades in longitudinally-spaced relation with each cutter blade, respectively, having a portion thereof extending between each of said pairs of wiper blades, and said wiper blades having tape supporting edges disposed in alignment in a common plane to receive an axially-extended



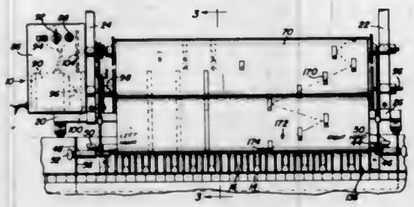
strip of tape thereon parallel to said shaft and overlying said cavities, whereby rotation of said shaft in a direction toward said cutter blades causes said tape to engage said cutter blades for transverse severance from its leading edge to its trailing edge thereby forming said tabs.

3,359,845
SHEET METAL SHEARS WITH COMPENSATION FOR KNIFE DRUM TILT
Karl Greis and Paul Hamacher, St. Ingbert, Saar, Germany, assignors to Verwaltungsgesellschaft Moeller & Neumann offene Handelsgesellschaft, St. Ingbert, Saar, Germany
Filed Oct. 23, 1965, Ser. No. 503,582
Claims priority, application Germany, Nov. 17, 1964, V 27,181
8 Claims. (Cl. 83—556)



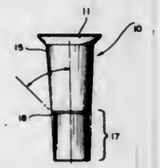
1. Sheet metal shears for trimming sheet metal strips and plates adapted for double shears installations comprising in combination two oppositely disposed individual shears, each of said shears including a shaft disposed parallel to the path of movement of said sheet, a movable knife support carried by said shaft, said support including at least one radial arm, a movable knife mounted on said arm, a stationary knife mounted for cooperation with the movable knife on said arm, a reciprocating drive means for oscillating said knife support, bearings for said knife-support-shaft, guideways for slidably mounting said bearings, power means including toggle linkages connected to said bearings and to a pivot shaft each disposed at each shears frame for moving said bearings, shaft, support and movable knife toward and away from said fixed knife to prevent contact between said movable knife and the cut edge of said sheet during the return stroke of said movable knife, and means for moving said pivot shafts, toggle linkages, bearings, shaft, support and movable knife independently of said power means for adjusting the knife gap with said toggle linkages in a straight position.

3,359,846
PIANO INSTRUCTION AID
Allen M. Foote, % Dampp-Chaser Inc., P.O. Box 1641, Hendersonville, N.C. 28739
Filed Oct. 18, 1963, Ser. No. 317,169
11 Claims. (Cl. 84—478)



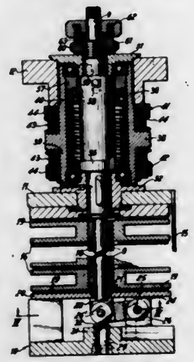
1. An instruction aid for instruments having keyboards with a plurality of depressible keys orientated therein comprising a framework adapted to be supported from the instrument, a supply roll carried by the framework, a take-up roll carried by the framework, an idler roller carried by the framework, a web of paper movable over the idler roller and wound onto and off of the supply roll and take-up roll, means for rotating said rolls for moving the paper web, said idler roll being adjustably supported from the framework for orientation immediately above and adjacent the inner ends of the keys on the keyboard for guiding the paper web to a point adjacent the keys and indicia on the paper web for indicating which key to depress at a particular time whereby such indicia will be orientated immediately adjacent the keys for enabling easy depression of the key.

3,359,847
TAPERED RIVET
Gus Richmond, 157 Plantation Road, Smyrna, Ga. 30080
Filed Mar. 15, 1967, Ser. No. 633,649
5 Claims. (Cl. 85—37)



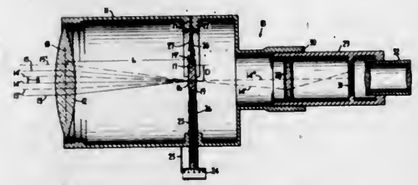
1. A rivet adapted to secure structural parts disposed in surface to surface contact one with another and pierced by holes in alignment to define a tapered passage for said rivet comprising a tapered shank substantially coextensive in length with said passage when ultimately inserted therein, the material of said rivet having a predetermined stiffness and yield strength relative to that of said parts and the taper of said shank corresponding to that of said passage continuously along the entire length thereof with the diameter of said shank being oversized with reference to that of the passage to produce a predetermined interference within the range of .006 and .025 inch per inch of diameter therebetween with a maximum of .018 inch interference, said interference being that occurring when the rivet is fully inserted in said passage, an enlarged head on the larger end of said shank, and a bucktail section at the other end of said shank extending beyond the exit of the passage when inserted as aforesaid, said bucktail section having a cross sectional dimension adjacent its outer end that is within the range of 90 percent to greater than 99 percent and less than 100 percent that of the said shank at the passage exit aforesaid and a length within the range of .60 and 1.25 times the diameter of said shank at said passage exit.

3,359,848
CARRIER FOR BRAIDING MACHINES
Max Ostermann, Wuppertal-Barmen, Germany, assignor to W. & M. Ostermann, Wuppertal-Barmen, Germany, a firm
Filed Sept. 16, 1965, Ser. No. 487,874
Claims priority, application Germany, Sept. 17, 1964, O 10,382
8 Claims. (Cl. 87—56)



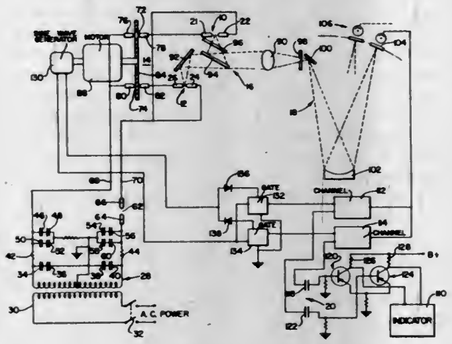
1. Carrier arrangement for braiding machines comprising a rotary carrier having an axis; a tension shaft mounted on said carrier and having an axis coinciding with said axis; and a plurality of spools for braiding material mounted for rotation about said axis on said tension shaft.

3,359,849
OPTICAL MICROMETER
Harry S. Friedman, Northampton, Mass., assignor to Kollmorgen Corporation, Northampton, Mass., a corporation of New York
Filed June 18, 1963, Ser. No. 288,652
3 Claims. (Cl. 88—14)



1. An optical micrometer comprising
(a) objective lens means for receiving light rays from a remote location and causing the rays to converge toward an image plane rearwardly of the lens,
(b) laterally displaceable lens means of finite focal length disposed rearwardly of the objective lens means so to intercept non-parallel rays therefrom, said means having at least one lens with a primary principal plane located in the infinity focal plane of the objective lens,
(c) calibrated means for displacing the laterally displaceable lens means perpendicularly to the axis of the objective lens means,
(d) reticle means disposed rearwardly of the objective lens means and the displaceable lens means to provide a reference pattern related to the axis of the objective lens means,
(e) focusing lens means interposed between the displaceable lens means and the reticle means to permit focusing of the rays from the objective and laterally displaceable lens means in the plane of the reticle, and
(f) adjustable eyepiece means disposed rearwardly of the reticle means to permit an operator to focus on the said reticle.

3,359,850
SPECTROSCOPIC APPARATUS
Walter S. Baird, Lexington, Mass., assignor to Baird-Atomic, Inc., Cambridge, Mass., a corporation of Massachusetts
Filed Jan. 27, 1964, Ser. No. 340,429
8 Claims. (Cl. 88—14)

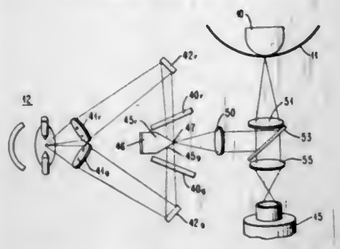


1. Spectroscopic apparatus comprising a pair of sources for exciting a pair of chemical samples to emit a pair of characteristic radiation distributions, an entrance slit for transmitting said pair of characteristic radiation distributions, a diffraction grating for dispersing said characteristic radiation distributions into a pair of spectra, said pair of spectra having a plurality selected pairs of lines of substantially like wavelength, a plurality of exit slits positioned to transmit said plurality of selected pairs of lines of said spectra, a plurality of photodetectors for receiving said plurality of selected pairs of lines from said exit slits, a plurality of pairs of readout channels, one each of said plurality of pairs of readout channels being operatively connected to one each of said plurality of photodetectors, one line of a particular selected pair causing a signal in one channel of a particular selected pair and the other line of said particular selected pair causing a signal in the other channel of said particular selected pair, a plurality of pairs of readout capacitors, one each of said plurality of pairs of readout capacitors being operatively connected in one each of said plurality of channels, chopping means for alternately applying said one line of said pair of spectra and said other line of said pair of spectra to said one each of said plurality of photodetectors, gate means for alternately applying said signal in one channel of said particular selected pair to one capacitor of a particular selected pair and applying said signal in said other channel of said particular selected pair to the other capacitor of said particular selected pair, and synchronizing means operatively connecting said chopping means and said gate means.

3,359,851
TWO COLOR MULTIPLE BEAM INTERFEROMETER FOR MEASURING SMALL SEPARATIONS

Lewis D. Lipschutz and Tseng K. Chow, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Apr. 29, 1964, Ser. No. 363,368
3 Claims. (Cl. 88—14)



1. An apparatus for directing light through a transparent subject to a nearby surface of a reflective subject in such a way that interference patterns appear in the light reflected from the surface of the reflective subject and the nearby surface of the transparent subject according to the separation between the surfaces and the wavelength of the light, the surfaces being illuminated in one region with a light of one color and in an adjoining region with a light of a different color whereby lines in the interference pattern corresponding to different colors which coincide signify a predetermined absolute value of the separation between the two subject surfaces, comprising,

a mirror having two surfaces meeting along a knife edge;

an optical system arranged to focus the image of said knife edge on said surfaces of said subjects in such a way that interference patterns appear in the light reflected from the subject surfaces;

means to illuminate one of said mirror surfaces with light of a first color and to illuminate the other of said mirror surfaces with light of a different color, whereby the region of said subject surfaces on one side of the image of said knife edge is illuminated in said first color and the region of said subject surfaces on the other side of said image of said knife edge is illuminated in said other color;

a camera positioned to photograph the subject surfaces to produce a record of the interference pattern.

3,359,852
MULTIPLE COLOR, MULTIPLE BEAM INTERFEROMETER

Janusz S. Wilczynski, Ossining, and John S. Harper, Carmel, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Oct. 22, 1964, Ser. No. 405,795
3 Claims. (Cl. 88—14)

1. Apparatus for producing interference pattern representative of the distance between a surface of a transparent subject and a nearby surface of a reflective subject comprising:

collimating lens means having a primary focal point;

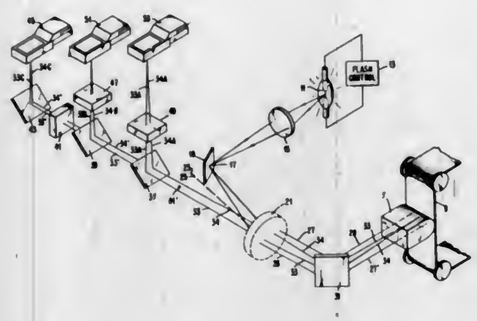
a source of light positioned offset from said focal point, said source providing, at least, lights of three different predetermined wavelengths;

means associated with said light source for focusing said light near said focal point;

said collimating lens means being disposed to apply said light to said surfaces in such a way as to produce interference patterns in the light reflected from said surfaces;

a plurality of respectively aligned dichroic light reflecting and transmitting means disposed in the path of said reflected light transmitted through said collimating lens means, each of said dichroic means reflecting one of said predetermined wavelengths and transmitting the remainder of said light; and

a plurality of light sensitive recording means, each disposed in the path of one of said predetermined wave-



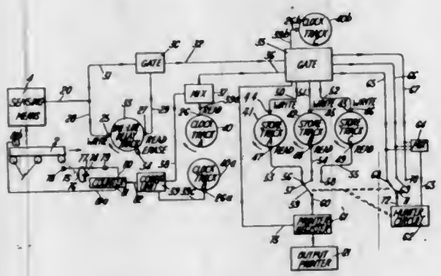
lengths of light reflected from one of said dichroic means for separately recording the complete interference patterns contained in the light reflected from each dichroic means;

said interference patterns being representative of the distance between said surfaces.

3,359,853
APPARATUS FOR DETECTING FAULTS IN OR ON THE SURFACE OF FLAT GLASS

Harold Benson, St. Helens, Albert Rickaby, Burscough, and John R. Beattie, South Maghull, near Liverpool, England, assignors to Pilkington Brothers Limited, Lancashire, England, a corporation of Great Britain

Filed Feb. 6, 1967, Ser. No. 614,166
14 Claims. (Cl. 88—14)

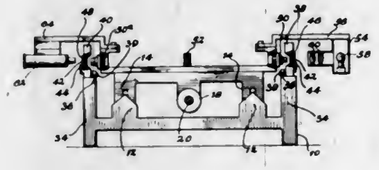


1. Apparatus for detecting faults, for example stone, bubble, ream or scratches in or on the surface of flat glass, comprising means for supporting and advancing the glass, optical scanning means mounted relative to the glass supporting means so as to scan step-by-step contiguous strip-shaped zones of the advancing glass, a photoelectric device mounted in the scanning means to receive an image as the scanning means scans each said zone of the glass and responsive to an image of a fault in the glass to produce a fault indicating electrical output signal, a clock pulse generator connected to the scanning means and operable to generate a train of clock pulses in synchronism with the scanning of said contiguous zones of the glass, a clock pulse gating circuit connected to the photoelectric device output and to the clock pulse generator, and a data storage device connected to the gating circuit, said clock pulse gating circuit being opened by a fault indicating signal from the photoelectric device so as to transmit clock pulses to the storage device during the remainder of the scanning period in which a fault is detected so that the number stored in the storage device at the end of the scan indicates the distance of the sensed fault from one side edge of the glass, and means for closing the gating circuit at the end of the scanning period.

3,359,854
APPARATUS FOR THE PRODUCTION OF MICROSCOPIC LINEAR MEASURING SCALE

Gordon E. Elliott, Bronx, N.Y.
(61 Spruce St., Jamestown, N.Y. 14701)

Filed May 14, 1963, Ser. No. 299,131
4 Claims. (Cl. 88—24)



1. In a photographic projection printer including means for holding a photographic original immovably in a given plane and means for holding a print receiving surface immovably in a second plane parallel to and spaced from said first plane,

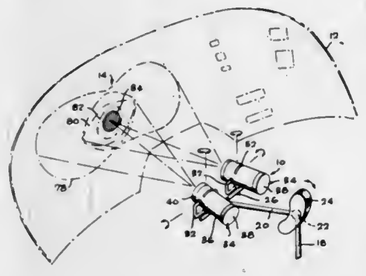
an optical projection system for imaging a portion of said photographic original on a corresponding portion of the surface of said print receiving surface, said optical projection system being symmetrical about its center,

and means for transporting said optical system parallel to said first and second planes.

3,359,855
OPTICAL PROJECTOR SYSTEM

James E. Webb, Administrator of the National Aeronautics and Space Administration, with respect to an invention of Robert A. Beam, La Habra, Calif.

Filed Sept. 9, 1966, Ser. No. 578,931
6 Claims. (Cl. 88—24)



1. An optical projector system for evaluating as well as establishing the arrangement of instrument clusters which comprise:

(a) a substantially vertical standard for pivotally supporting an arm which pivots on said vertical standard to simulate the horizontal, vertical, and angular movements of the human head;

(b) a pair of spaced brackets pivotally supported by said arm, said brackets each being horizontally pivotal about a vertical axis so as to simulate the horizontal side-to-side movement of the eyes; and

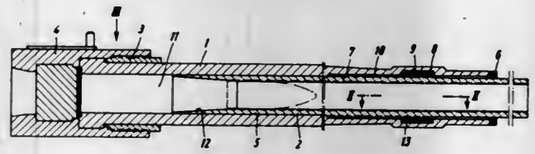
(c) a photographic slide projecting unit pivotally supported by each bracket, said units each being vertically pivotal about a horizontal axis so as to simulate the vertical up and down movement of each eye:

(1) each of said units include a wide angle lens for achieving a wide angle display of a light source as well as the image on a slide, the display being such as to provide for accurately simulating the visual ability and limitations of each eye to establish the arrangement of instrument clusters.

3,359,856
GUN BARREL WITH VARIABLE CAPACITY CHAMBER

Herbert Grosschopf, Neus (Rhine), and Paul Zehfeld, Dusseldorf, Germany, assignors to Firma Rheinmetall G.m.b.H., Dusseldorf, Germany

Filed May 5, 1966, Ser. No. 547,863
Claims priority, application Germany, May 15, 1965, R 40,646
3 Claims. (Cl. 89—16)

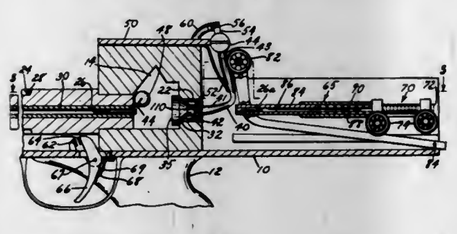


1. A gun barrel comprising in combination an outer supporting barrel member, a bore tube positioned in the barrel member and longitudinally displaceable relatively thereto in such manner as to vary the capacity of the chamber of the weapon, and means for adjustably holding the boretube in a required position in the barrel member, said bore tube having an end inside said barrel member and a tapering bore portion at said end, said taper bore increasing in size from the internal diameter of said bore tube to substantially the external diameter of the latter and forming a variable position part of said chamber.

3,359,857
FIREARM HAVING A COLLAR FOR CLEANING THE SEAT OF AN INTERNALLY SEALED BREECH BLOCK

William A. Robinson, P.O. Box 242, Towaco, N.J. 07082

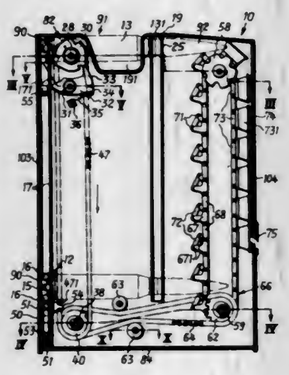
Filed May 23, 1967, Ser. No. 640,522
4 Claims. (Cl. 89—25)



1. An explosive-operated firearm comprising a barrel open at its discharge end and sealed at its loading end by means defining a firing chamber, means defining a breech opening adapted to admit through said breech opening and into said barrel at its loading end a projectile to be fired from said firearm, a valve seat disposed

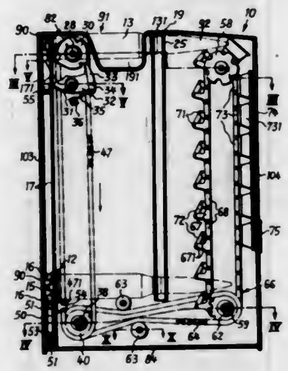
on an internal wall of said firing chamber around said breech opening between said breech opening and said firing chamber, a movable breech-block adapted to mate with and seal against said valve seat from inside the firing chamber, driving means for reciprocating said breech block away from said valve seat and into said firing chamber in order to open said breech opening to permit loading of a projectile therethrough into the loading end of said barrel, means for cleaning said valve seat while said breech block is away from said seat, means normally urging said breech block against said seat, and means for firing an explosive charge within said firing chamber, whereby on explosion of an explosive charge within said firing chamber, said breech block is further urged against said seat by the pressure of the explosion, thereby utilizing the firing chamber pressure to cooperate in maintaining a gas-tight seal of the breech opening.

3,359,858
AMMUNITION CONTAINER WITH CONVEYOR MEANS FOR THE INTERMITTENT FEEDING OF SETS OF CARTRIDGES
Heinrich Herlach, Zurich, Switzerland, assignor to Oerlikon-Buhrle Holding Ltd., Zurich, Switzerland
Filed July 1, 1966, Ser. No. 562,151
Claims priority, application Switzerland, July 2, 1965, 9,320/65
3 Claims. (Cl. 89—34)



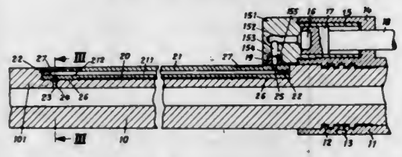
1. An ammunition container in which the sets of cartridges, held in chargers arranged in layers, are, by means of a conveyor device with spring activation, movable along a straight-line path across the layer towards a feed orifice for the sets of cartridges, with a locking device for the conveyor device which is provided by a ratchet wheel in driving connection with the latter, and has a ratchet lever, provided with a contact surface, which can be held in a locked position of the locking device by the charger adjoining the feed orifice, in a working position, in which it engages with the ratchet wheel and locks the conveyor device, and which is swingable against the force of a supplementary spring, into a release position, in which it is out of engagement with the ratchet wheel, characterized in that, in the locked position of the locking device, the spring activation presses the contact surface on the ratchet wheel against the charger adjacent to the feed orifice, that furthermore, on release of the spring activation by feeding in the sets of cartridges through the feed orifice, the ratchet lever is held in the working position by the supplementary spring, and that on release of the ratchet lever caused by extraction through the fed orifice of the set of cartridges adjacent to the feed orifice, the ratchet lever swings into the release position through rotation of the ratchet wheel caused by spring activation and, after further rotation of the ratchet wheel, under the influence of the supplementary spring, comes into renewed engagement with the ratchet wheel.

3,359,859
AMMUNITION CONTAINER WITH CARTRIDGE LIFT MECHANISM HAVING A CHAIN DRIVE WITH TWO ADJUSTABLE TENSIONING ROLLERS
Heinrich Herlach and Ernst Metzger, Zurich, Switzerland, assignors to Oerlikon-Buhrle Holding Ltd., Zurich, Switzerland
Filed July 28, 1966, Ser. No. 568,429
Claims priority, application Switzerland, July 30, 1965, 10,770/65
3 Claims. (Cl. 89—34)



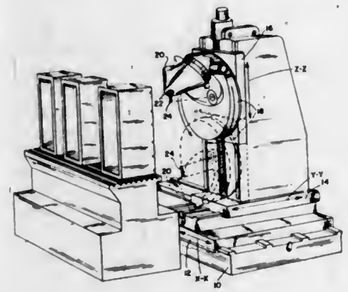
1. An ammunition container in which sets of cartridges are arranged in layers movable along a straight-line path transverse of a layer, comprising two supporting elements for supporting the lower set of cartridges, driving means connected to one of said supporting elements, an endless chain connecting both supporting elements movably together, two sprocket wheels over which said chain is guided, an adjustable tensioning roller for tensioning one run of said chain, said chain driving the other of said supporting elements and a second adjustable tensioning roller for tensioning the other run of said chain so that the angular relationship of said two chain sprockets is adjustable by shifting said two tensioning rollers in the same direction.

3,359,860
GAS OPERATED AUTOMATIC FIREARM HAVING A BARREL WITH A GAS CONDUCTING INSERT
Ernst Mühlemann, Zurich, Switzerland, assignor to Oerlikon-Buhrle Holding A.G., Zurich, Switzerland
Filed Nov. 17, 1965, Ser. No. 508,229
Claims priority, application Switzerland, Nov. 19, 1964, 14,918/64
4 Claims. (Cl. 89—193)



1. An automatic firearm regulated by gas pressure comprising a barrel having a gas inlet and an exterior surface, an exposed groove extending in the longitudinal direction of said barrel in the exterior surface of said barrel, a longitudinal insert piece having its two ends located completely in said groove and held therein by said ends, said insert having a gas conduit therein with a gas inlet and gas outlet spaced from one another in the direction of said barrel, a breech casing having a sealing surface wherein said barrel is replaceably mounted by said insert piece, a gas cylinder in said breech casing having a piston displaceable by the gas pressure, a gas inlet bore in said breech casing extending to said gas cylinder, said gas inlet bore terminating at said sealing surface, a further sealing surface on said insert piece contacting said sealing surface on said breech casing, said gas conduit within said insert piece connecting said gas inlet bore of said breech casing with said gas outlet of said insert and through said conduit to said gas inlet of said insert to said gas inlet of said barrel.

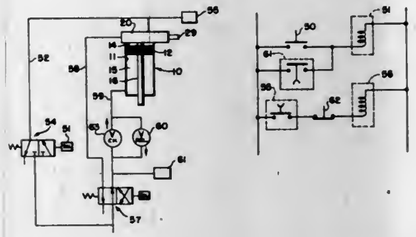
3,359,861
FIVE AXIS MILLING MACHINE
Harry T. Johnson, Dearborn, and Earle H. Stevenson, Detroit, Mich. assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Continuation of abandoned application Ser. No. 480,349, Aug. 17, 1965. This application Sept. 1, 1966, Ser. No. 577,121
3 Claims. (Cl. 90—17)



1. A milling machine comprising a base, a longitudinal slide adjustable along the X—X axis and supported upon said base, a cross slide adjustable along the Y—Y axis and supported upon the longitudinal slide, a vertical slide adjustable along the Z—Z axis and supported upon the cross slide, a secondary tool support mounted rotatably upon the vertical slide with its axis of rotation vertical to the plane of movement of the vertical slide, a primary tool support rotatably mounted upon the secondary tool support with its axis of rotation arranged at approximately a 45 degree angle to the plane of movement of the vertical slide and a rotary tool driving means incorporated in the primary tool support, the axis of the rotary tool driving means extended intersecting the axis of rotation extended of the secondary tool support, the angle formed by said tool axis with respect to the axis of rotation of said primary tool support being approximately 45°

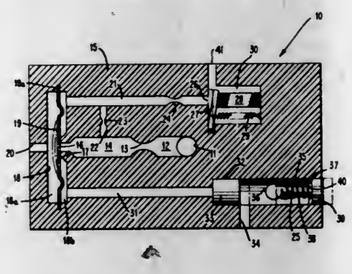
3,359,862
PISTON LOCKING MEANS
Jack L. Modrich, San Juan Capistrano, Calif., assignor to McDowell-Wellman Engineering Co., Cleveland, Ohio, a corporation of Ohio
Filed Feb. 25, 1966, Ser. No. 530,133
6 Claims. (Cl. 91—42)

1. A fluid-operated cylinder having a piston slidably mounted therein for movement between first and second positions within said cylinder, said piston dividing said cylinder into first and second pressure chambers, first and second conduit means respectively connected to and in fluid communication with said first and second pressure chambers, connecting means for selectively and alternately connecting said first and second conduits to a pressure line and an exhaust port so that when one of said conduits is connected to the pressure line, the other conduit is connected to the exhaust port, means operative to lock the piston in a preselected position within the cylinder, means for operating said locking means alternately into and out of locking relationship with said piston, said connecting means including means operable only after the locking means has been operated to unlock the piston for connecting the first pressure chamber to the



pressure line and the second pressure chamber to the exhaust port to move the piston away from the locking means, means to retain the locking means in its unlocked condition, means to operate said connecting means so that the connecting means connects the second pressure chamber to the pressure line and the first chamber to the exhaust port to move said piston toward said locking means, means responsive to a preselected pressure increase in said second chamber to release said retaining means and to cause the locking means to operate into locking relationship with the piston, said preselected pressure being at least sufficient to move the piston to said preselected position within the cylinder.

3,359,863
MONOSTABLE FLIP-FLOP FOR CONTROLLING CARD PUNCH OR PRINTER
Edwin R. Phillips, Rosemont, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Mar. 23, 1964, Ser. No. 353,880
2 Claims. (Cl. 91—50)



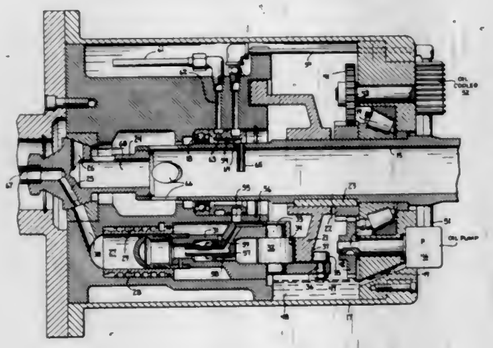
1. A fluid pulse generator for providing high energy fluid pulses of short duration, comprising in combination: a circular chamber, a diaphragm disposed within said circular chamber dividing said circular chamber into two compartments, fluid supply means, storage means for storing a finite volume of fluid at a desired pressure, orifice means connecting said storage means to one compartment of said circular chamber, said one compartment of

said circular chamber having an outlet, means in the other compartment of said circular chamber normally biasing said diaphragm to cover said orifice means, duct means having an opening connecting said one compartment to the atmosphere, first restrictor means connecting said fluid supply means to said storage means, second restrictor means connecting said storage means to said duct means, said first and second restrictor means establishing an equilibrium pressure within said storage means, cylinder means connected to said outlet means, piston means slidably disposed within said cylinder, means for selectively covering said opening of said duct means such that the pressure build-up in said one compartment causes said diaphragm to uncover said orifice whereby the finite volume of fluid in said storage means is rapidly discharged into said cylinder to displace said piston within said cylinder.

3,359,864
BARREL ENGINE HAVING FORCED LUBRICATION

Halley H. Hamlin, Lyndhurst, Ohio, assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed Apr. 29, 1966, Ser. No. 547,080
4 Claims. (Cl. 91—175)

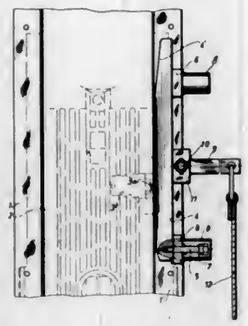


1. A barrel engine comprising:
a stationary mounted housing,
a hollow shaft rotatably mounted within said housing,
a plurality of cylinder bores in said housing extending in circular array about said hollow shaft with their axes being parallel thereto,
a plurality of pistons slidably disposed one each in each said cylinder bore, each said piston having a hollow hemispherical head thereon,
cam means fixedly attached to said hollow shaft and in engagement with said pistons whereby said hollow shaft is rotated upon slidable motion of said pistons,
a valve rotatably mounted in said housing having an inlet port and an exhaust port, said inlet port selectively providing a passageway between a fluid source and said cylinder bores, and said exhaust port selectively providing a passageway between said cylinder bores and said hollow shaft,
a quantity of lubricating oil in said housing,
an oil distribution annulus within said housing for distributing said quantity of lubricating oil,
a plurality of oil nozzles communicating with said oil distribution annulus, said nozzles being attached one each to each said piston and adaptable for directing said liubricating oil against the inner surface of said hemispherical heads of said pistons, and
means for pumping said lubricating oil from said housing to said distribution annulus.

3,359,865
RAM OR PILE DRIVER

Manfred Burk, Magstadt, and Achim Kehrberger, Nellingen, Germany, assignors to Delmag-Maschinenfabrik Reinhold Dornfeld, Esslingen (Neckar), Germany

Filed Oct. 20, 1965, Ser. No. 498,475
Claims priority, application Germany, Dec. 1, 1964, D 30,239
6 Claims. (Cl. 91—358)



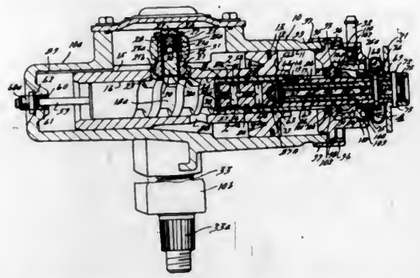
1. In a ram having a rammer movable in its longitudinal direction of movement, fixed guide means for guiding said rammer at least during a part of said movement, and a control element connected to and movable with said rammer for controlling the operation thereof, said control element having an actuating member movable in a direction substantially at right angles to said longitudinal direction of movement and projecting laterally from the peripheral surface of said rammer, the improvement comprising a control lever pivotably mounted on said guide means and having two arms and an end surface on one of said arms located within a plane extending at an angle to the longitudinal axis of the other arm of said lever, a connecting member intermediate said end surface and said actuating member, resilient means connecting said connecting member to said guide means and pressing said connecting member toward said end surface and thereby tending to maintain said control lever in a neutral position in which said end surface is in full engagement with a surface area of said connecting member of a corresponding size, and pivot means for mounting said control lever on said guide means so as to be pivotable in different directions from said neutral position when a force is exerted upon said other arm of said lever in a direction extending at an angle to said longitudinal axis of the other arm, whereby when said lever is pivoted out of said neutral position against the action of said resilient means, said end surface is tilted relative to said connecting member and thereby exerts a leverage upon the latter so that said connecting member is pressed against said actuating member and thereby depresses the same.

3,359,866
POWER STEERING GEAR

Walter E. Folkerts, Hazel Park, Mich., assignor to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware

Filed Dec. 28, 1965, Ser. No. 516,911
7 Claims. (Cl. 91—375)

1. In a vehicle power steering gear, manually operated rotatable driving means, driven means, a fluid operated motor for actuating said gear, rotary valve means for controlling the flow of operating fluid to said motor, torsion means, means operatively connecting said driving means and one end of said torsion means with said valve means for rotation as a unit therewith, and means for adjustably connecting the other end of said torsion means with said driven means for rotation as a unit therewith,

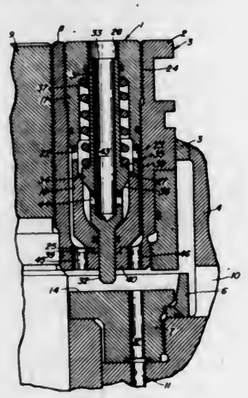


said valve means being thereby rotatable relative to said driven means upon rotation of said driving means and deformation of said torsion means.

3,359,867
VALVES FOR USE IN PISTON DRIVEN MACHINES

Jack B. Ottestad, La Jolla, Calif., and Gerald J. Farrell, Elmhurst, Ill., assignors to U.S. Industries, Inc., New York, N.Y., a corporation of Delaware

Filed Dec. 2, 1964, Ser. No. 415,268
5 Claims. (Cl. 91—422)

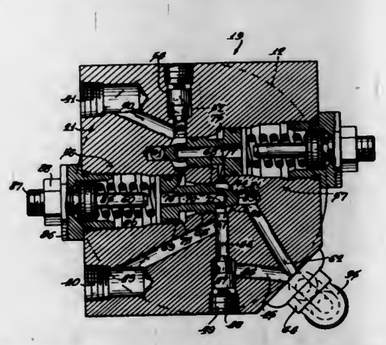


1. A valve for controlling the flow of working fluid comprising
(a) an elongated housing,
(b) said housing having
(1) one passageway extending axially therethrough,
(2) one annular valve seat in one end portion of said passageway and facing toward the other end of said passageway,
(3) an annular shoulder in the other end portion of said passageway and facing toward said valve seat, and
(4) a second passageway extending laterally through said housing in communication with said one passageway between said seat and said shoulder,
(c) the outer end portion of said one end portion of said one passageway being of smaller cross-sectional size than the remainder thereof,
(d) an elongated valve member mounted in said one passageway in co-axial relation thereto,
(e) said valve member having
(1) a reduced outer end of one end portion thereof slidably mounted in said outer end portion of said one end portion of said one passageway,
(2) the other end portion thereof slidably mounted in said other end portion of said one passageway,
(3) an enlarged head on said one end portion thereof having a second annular valve seat facing toward said one annular valve seat,
(4) a third passageway extending longitudinally through said other end portion thereof and through said head, and
(5) a fourth passageway extending laterally through said one end portion thereof in communication with said third passageway on the side of said head remote from said other end portion of said valve member,
(f) said head being disposed in such position in said one passageway that
(1) when the pressure of such working fluid is greater in said second passageway than in said fourth passageway said pressure is effective to urge said second seat toward said seating engagement with said one seat for closing communication between said second and fourth passageways and thereby prevent the flow of working fluid through the valve, and
(2) when the pressure of said working fluid is greater in said fourth passageway than in said second passageway by more than a predetermined amount said pressure is effective to urge said second seat away from said first seat for opening communication between said second and fourth passageways and thereby permit the flow of working fluid through said valve,
(g) a tension coil spring disposed around said valve member between said shoulder and said head in position to urge said second valve seat toward said one valve seat, and
(h) said reduced outer end of said valve member projecting outwardly from said housing in position to be pushingly engaged in a direction effective to move said second valve seat away from said one valve seat against the urging of said spring and said working fluid in said second passageway.

3,359,868
HYDRAULIC CYLINDER ASSEMBLY

Robert L. Hoffman, St. Joseph, and Robert C. Miller and John T. Parrett, Benton Harbor, Mich., assignors to Benton Harbor Engineering Works, Incorporated, a corporation of Michigan

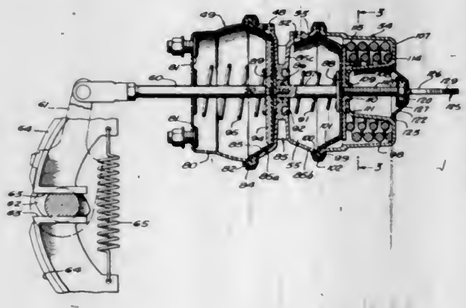
Filed Apr. 8, 1965, Ser. No. 446,654
14 Claims. (Cl. 91—447)



2. A holding valve assembly adapted for use with a reciprocating hydraulic piston and cylinder device having an inlet port and a discharge port, comprising: a valve

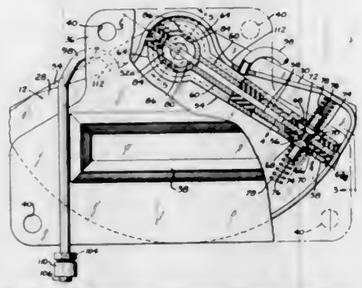
housing member, a discharge passage in said housing adapted to be connected to the cylinder device discharge port to receive discharge fluid from the device, a valve seat in said passage, a valve member in said passage positioned to close in opposition to the pressure of the discharge fluid so that discharge fluid tends to open said valve member, a low pressure return passage in said valve housing selectively connectable with said discharge passage through said valve member, resilient means for biasing said valve member to a closed position, said resilient means being of sufficient strength to maintain said valve member closed against the pressure of the discharge fluid in said discharge passage, said valve seat limiting movement of said valve member beyond said closed position, control means for selectively opening said valve member and permitting discharge flow from said discharge passage to said return passage including fluid actuated means separate from said discharge passage connected to open said valve member whereby discharge fluid leakage is minimized and bypass passage means in parallel with said valve member communicating with said low pressure return passage and said discharge passage for supplying fluid under pressure to the discharge port of the device.

3,359,869
FLUID OPERATED BRAKE
Walter C. Avrea, Placentia, Calif., assignor to Royal Industries, Inc., Pasadena, Calif., a corporation of California
Application June 18, 1965, Ser. No. 467,189, now Patent No. 3,285,672, which is a continuation of application Ser. No. 97,368, Mar. 21, 1961. Divided and this application May 31, 1966, Ser. No. 554,185
3 Claims. (Cl. 92—63)



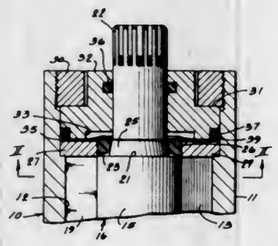
1. In combination with a brake booster having an emergency mechanical operator secured to the end cap thereof, said emergency operator comprising a housing carried by and projecting axially from said end cap and divided transversely thereof into first and second chambers by a generally flat imperforate flexible diaphragm, follower means having a fluid-tight sliding fit through said housing for operating the brake booster and with its opposite end extending into said housing for normally bearing against the adjacent face of said emergency diaphragm, powerful coil spring means including a bearing plate nested to one end thereof enclosed by said second chamber with said bearing plate held pressed against the central area of said diaphragm, solely by said spring means, the other end of said spring means being nested to positioning means therefor carried by the interior end wall of said second chamber, said bearing plate and the adjacent end of said spring being floatingly supported within said second chamber opposite the central area of said diaphragm free of sliding engagement with any other surface of said brake operating assembly during compression and expansion of said spring thereby allowing tilting of the bearing plate a substantial amount without any risk of binding whereby operation of the emergency operator is assured, and means to admit pressurized air to said first chamber to hold said spring normally compressed in said second chamber.

3,359,870
OSCILLATING HYDRAULIC ACTUATOR AND CIRCUIT THEREFOR
Howard M. Purcell, South Euclid, Ohio, assignor to Ashtabula Bow Socket Company, Ashtabula, Ohio, a corporation of Ohio
Filed Sept. 2, 1965, Ser. No. 484,649
8 Claims. (Cl. 92—121)



1. A hydraulic actuator comprising; a casing substantially sector shaped in longitudinal cross section and rectangular shaped in transverse cross section, a shaft extending into the casing substantially at the apex of said sector, a paddle in the casing sealingly fitted in the casing and fixed to said shaft, and means in said casing near said apex for selectively admitting pressure fluid into or exhausting fluid from said casing on respectively opposite side of said paddle to rotate said shaft, said casing comprising two substantially identical sector shaped portions having marginal flanges upstanding at the periphery thereof, said portions being placed together with the respective flanges coplanar and in engagement, and weld means sealingly rigidly connecting said flanges together, said paddle having a pair of grooves therein extending completly around the edge of the paddle and including portions extending around opposite sides of the shaft, and resilient seal means in said groove means to seal the paddle to the casing and including the region thereof around said shaft.

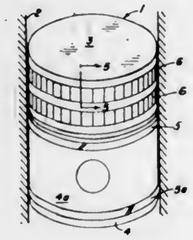
3,359,871
ROTARY ACTUATOR HUB SEAL
Gordon W. Kamman, Buffalo, N.Y., assignor to Houdaille Industries, Inc., Buffalo, N.Y., a corporation of Michigan
Filed Oct. 22, 1965, Ser. No. 501,497
9 Claims. (Cl. 92—121)



1. In a rotary actuator,
a housing having an interior wall forming an actuator chamber and having an abutment extending radially inwardly therefrom,

a wingshaft within said housing and having a hub having at least one vane extending radially therefrom,
an actuator shaft extending from said hub,
a shoulder defining the juncture of said actuator shaft and hub, the improvements comprising:
a thrust ring seated in said housing and having an internal wall of a diameter substantially equal to the external diameter of said hub,
a seal on said shaft in registry with said internal wall of said thrust ring,
and a flat spring washer retained in abutting engagement with the outer side of said thrust ring and engaging the outer face of said seal and pressing said seal into sealing engagement with said thrust ring and shoulder with the axial thrust required to seal the end of said housing along said hub.

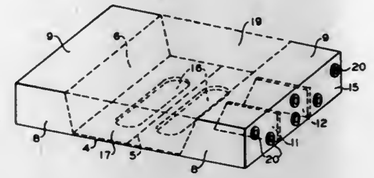
3,359,872
FLUID PRESSURE SEAL RINGS
Berry W. Foster, Santa Monica, Calif. (2415 Thomas Ave., Redondo Beach, Calif. 90278)
Filed Oct. 22, 1965, Ser. No. 501,317
18 Claims. (Cl. 92—172)



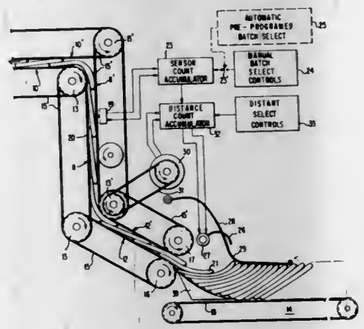
1. Seal means in an engine for restricting the flow of fluid from a high pressure side to a low pressure side of two mating cylindrical engine parts which move freely with respect to each other, said seal means comprising a seal ring and mechanical spring means for seating said seal ring in and connecting it to one of said mating parts closely adjacent the second said mating part, said seal ring having an arched surface and perforations therethrough providing converging nozzle means and fluid bearing surface means for causing a very small flow of said fluid past said seal ring to oppose said spring force and to reduce the clearance between said seal ring and its said second mating part, thus reducing said flow to a minimum, said fluid that does flow between said bearing surface and said second mating part thereby serving to lubricate these surfaces and to prevent metal-to-metal contact as said mating parts move freely relatively to each other.

3,359,873
ARTICLE CARRIER
Robert A. Carle and Richard J. Bennett, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
Original application Sept. 8, 1964, Ser. No. 394,831. Divided and this application Oct. 3, 1966, Ser. No. 583,892
1 Claim. (Cl. 93—37)

A method of forming a carrier comprising a closed, rectangular, plastic unitary container, said container having integral therewith at least one divider in each end thereof in a position such that when a central section of said container is removed the pockets formed by the closed ends of said container have said dividers therein which dividers will serve to separate articles transported in the pockets of said carrier, removing from a central area of said container a tri-sided section of material to thereby provide an article comprising a single, flat web of plastic material comprising only one side of said container, said web separating and integrally joining pockets formed by the closed ends of said container, moving said pockets into an abutting relationship by bending said web about a center line therein which passes transversely of said web and between said pockets thereby providing a carrier composed of contiguous pockets integrally joined by said web, a double thickness of which extends upwardly above the upper surface of said pockets, said container having preformed areas on opposite sides but adjacent said center line which areas align with one another when removed and when said pockets are moved into an abutting relationship thereby defining a handle means for said carrier, opposite ends of said container which form the bottom of said pockets when said pockets are moved into an abutting relationship having preformed areas that define drain holes when removed and removing said preformed areas.



3,359,874
VARIABLE BATCHING DEVICE FOR CONVEYER-BORNE FOLDED PAPER PRODUCTS
Jerry A. Stegenga, Coral Gables, Richard L. Tesch, Hollywood, Edward Bleckner, Jr., Fort Lauderdale, and James G. Quakenbush, Hollywood, Fla., assignors to Milgo Electronic Corporation, Miami, Fla., a corporation of Florida
Filed Sept. 30, 1965, Ser. No. 491,746
21 Claims. (Cl. 93—93)



1. Batching apparatus for paper products progressing in overlapping relation in a stream, comprising
driven conveyer means delivering said stream to a batching location,
ramp means receiving said stream from said conveyor means,
receiving table means adjacent said ramp means for storing successive batches of products,

load means above said ramp and table means for arresting said products in compacted relation at the end of said stream, and having a downwardly curved leading shoulder,

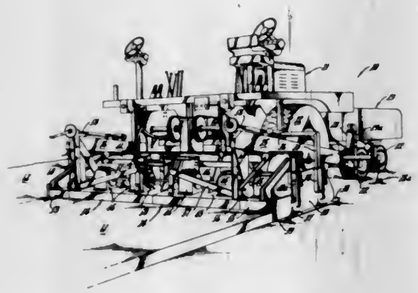
displacement means actuatable from a retracted to an active position wherein a leading edge of the next arriving product is upwardly curved to a position above the stream, being disposed forward of said shoulder when in said active position,

means retracting said displacement means to a position beyond said shoulder thereby to release said curved leading edge against said shoulder,

counting means indicating the number of products passing a point along said stream since the final product of a prior batch, effective to provide a signal at the end of a selected batch, and

means responsive to said signal for actuating said displacement means for a period approximating the time spacing between successive said products in the stream.

3,359,875
METHODS FOR LAYING SOIL CEMENT
John Henry Reider, 2325 N. Graham, Indianapolis, Ind. 46218
Filed Apr. 9, 1965, Ser. No. 446,818
5 Claims. (Cl. 94—24)



The method of laying a roadway of cement and aggregate to a finished density, thickness and grade which comprises the steps of uniformly conveying

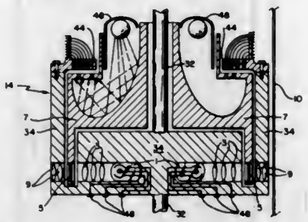
a premixed mixture of aggregate in the form of a soil of a type equivalent to that commonly found in place in a roadway and containing some relatively fine granular material,

Portland cement by volume constituting a minor proportion of said mix but sufficient to harden the soil to a hard, durable paving material after hydration of the cement,

and water to provide substantially optimum moisture content of the mix and sufficient to cause hydration of the cement but with the mix having substantially no slump characteristic,

into an extrusion mold of predetermined volume defined by a downwardly and rearwardly sloping adjustable screed plate spaced above the road bed and provided with slip form plates at the sides of said screed plate and which ride upon the ground surface, and vibrating said screed plate uniformly along its length whereby the mixture in said mold space is vibrated and compressed as said mold moves forwardly, with amplitudes and frequencies to provide vibrational energy imparted to the mixture such that, when taken with the inclination of the screed plate, the mixture is compacted to optimum density of about 95% as the mold passes over the mixture.

3,359,876
CONTINUOUS PAGE PRINTER
Roy J Lahr, Lexington, Ky., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed May 18, 1965, Ser. No. 456,704
22 Claims. (Cl. 95—4.5)



1. A continuous printer comprising:

a font carrying character information,

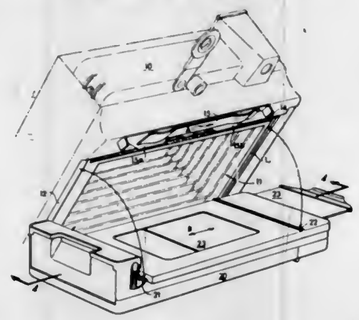
means to revolve at a relatively high speed said font past a print station of length of at least two character widths as established by the dimensions of said continuous printer,

at least one printer transferal means adapted to transfer individual character images from said font to a substrate material,

means to normally continuously revolve at a relatively low speed said print transferal means past said print station, said print transferal means, when said print transferal means revolves past said print station, being mounted to be substantially on a straight line intersecting and perpendicular to the operative, character bearing surface of said font at said print station, and

means to continuously feed substrate material past the length of said print station at an angle defined by the angle between preselected distances defining successive lines of material printed by said continuous printer.

3,359,877
PHOTOGRAPHIC FILM HOLDER
Samuel Kitrosser, Lexington, Mass., assignor to Avant Incorporated, Lincoln, Mass., a corporation of Massachusetts
Filed Apr. 30, 1965, Ser. No. 452,140
8 Claims. (Cl. 95—13)



1. An improved photographic film holder for self-processing photographic film packs, said film pack including a housing having one wall with an aperture formed therein to enable exposing film located in surface-to-surface contact with said wall, and said holder adapted for coupling to a camera back so that the film to be exposed is in the focal plane of said camera comprising:

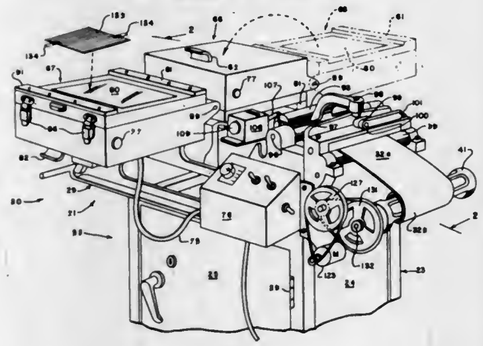
a housing having a first compartment formed therein for receiving said film pack, and a second compartment having processing means therein for processing film as it is transported therethrough, said housing having at least one flat wall having a first surface adapted to be coupled in face-to-face contact with said camera housing, said wall having an aperture formed therein, whereby said film pack wall is in surface-to-surface contact with a second surface of said housing wall opposed to said first surface, said housing and pack apertures being aligned to enable imaging light to expose said film, said housing and pack walls having a combined thickness predetermined to locate the film to be exposed in said camera focal plane;

a first elongated groove formed in said housing wall adapted for coupling to a complementary rib formed in said camera back;

first light sealing means coupled to said first groove for preventing non-image forming light from exposing said film;

a rib extending from said housing wall elongated parallel to said first groove for insertion into a complementary second groove in said camera back thereby providing a second light sealing means.

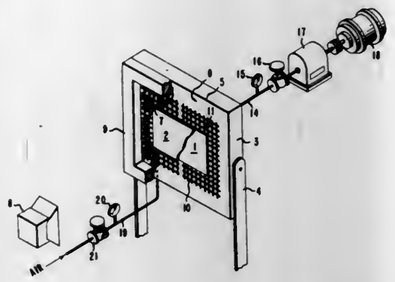
3,359,878
AUTOMATIC PHOTOGRAPHIC POSITIVE PRINTER
Joseph A. Mallandi, 7315 Ave. U, Brooklyn, N.Y. 11234
Filed Jan. 19, 1965, Ser. No. 426,502
13 Claims. (Cl. 95—75)



1. In a photographic printing machine, the combination of a framework, means carried by said framework to support a reel of positive photographic paper, means for movement of said positive photographic paper across said framework, means for intermittently halting said movement of said positive photographic paper, means for exposing said positive photographic paper to a negative, a pair of light boxes carried by said framework, either of said light boxes being adaptable to hold said negative during exposure thereof to said positive photographic paper, and each of said light boxes having means for being selectively pivotable on said framework from an inoperative position to a printing position above said positive photographic paper.

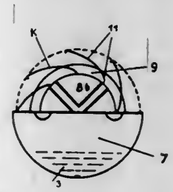
3,359,879
VACUUM FRAME UTILIZING AIR INBLEED DURING EXPOSURE OF PHOTOSENSITIVE MATERIALS
James Samuel Hamlin, Cherry Hill, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Apr. 13, 1965, Ser. No. 447,766
6 Claims. (Cl. 95—76)

1. A vacuum apparatus for preparing an image-containing photopolymer element from an unexposed photopolymer element in contact with the matte surface of an image-bearing transparency which apparatus comprises (a) a backing support having two separate aperture areas on the same surface of said support, (b) vacuum means connected to one of said aperture areas of said support, (c) vacuum bleed means connected to the other aperture



area of said support, and (d) means for hermetically sealing said aperture areas while said unexposed photopolymer element is held in contact with each of said aperture areas, thereby allowing air passage control between said aperture areas utilizing said vacuum means and said vacuum bleed means.

3,359,880
DAYLIGHT UNIVERSAL DEVELOPING APPARATUS
Heinrich Huss, Obertshauserstrasse, Lammerspiel, near Offenbach, Germany
Filed Sept. 28, 1964, Ser. No. 399,931
Claims priority, application Germany, Sept. 30, 1963, H 50,411
9 Claims. (Cl. 95—93)



1. A developing apparatus comprising a light-proof chamber, a bowl within the chamber and tiltably mounted about its longitudinal axis, a rotatable drum within the chamber and mounted co-axially with the axis about which the bowl is tiltable, and a plurality of curved support members for supporting emulsion carriers, said support members being mounted in slots extending inwardly from the periphery of said drum, whereby when said drum is rotated the support members pass around the bowl and liquid contained in the bowl flows across the support members.

3,359,881
WINDSHIELD DEFROSTING UNIT FOR AUTOMOBILE
Terrence R. Lamb, 1917 S. Randolph St., Arlington, Va. 22204
Filed Oct. 22, 1965, Ser. No. 500,650
3 Claims. (Cl. 98—2)

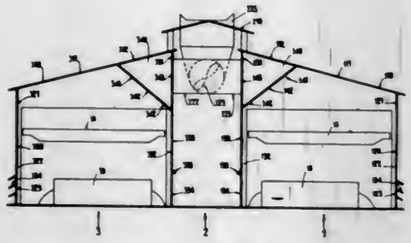
1. A detachable defroster unit for supplying air flow from remote supply ducts of the automobile directly to the lower portion of a windshield mounted in a resilient

molding at its lower periphery and having an air supply duct at at least each lower outward corner of the windshield, said ducts defined in part by thin rigid outlet distributors spaced from and parallel to the windshield wherein the defroster unit comprises an elongated hollow housing including a top surface, a bottom surface, and a longitudinal channel, said defroster unit adapted to be disposed adjacent the lower portion of the automobile windshield wherein the longitudinal channel fits snugly around the resilient molding, means on said hous-



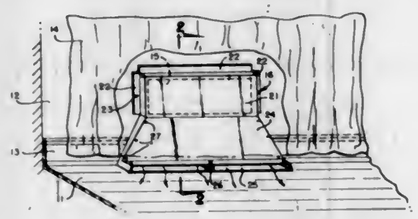
ing adapted to be frictionally held between the windshield and the outlet distributors, said housing containing a plurality of airflow scoops integral therein and communicating with the hollow interior thereof, said air flow scoops positioned adjacent to the remote supply ducts to effect transfer of the air flow from the supply ducts to the hollow interior of the housing and a plurality of air flow apertures positioned within the upper surface of the defroster housing.

3,359,882
PLANT FOR HOUSING ELECTROLYTIC CELLS
Jean Pierre Givry, Jacques Clair, and André Pailhiez, Saint-Jean-de-Maurienne, and Robert Scalliet, Saint-Cloud, France, assignors to Pechiney-Compagnie de Produits Chimiques et Electrometallurgiques, Paris, France
Filed Oct. 7, 1966, Ser. No. 585,139
Claims priority, application France, Oct. 14, 1965, 34,966
12 Claims. (Cl. 98—33)



1. In an electrolysis plant having a plurality of electrolytic cells which give off heat, fumes and dust, a building for housing the cells comprising at least one cell shop in which the cells are arranged to extend crosswise of the shop in side by side spaced relation, a covered corridor adjacent the inner side of the shop, said shop being defined by an outer wall, an inner wall separating the shop from the corridor and a roof which slopes downwardly from the inner side to the outer wall, air inlet openings in the lower portion of the outer wall communicating the interior of the shop with the outside atmosphere, an air passageway in the upper inner portion of the shop between the roof and the inner shop wall and a baffle wall extending angularly between the roof and the wall spaced from the adjacent ends thereof, openings through the baffle wall communicating the interior of the shop with the passage for the passage of polluted air from the shop into the passageway, a hood extending lengthwise in the upper portion of the corridor adjacent the passageway, openings communicating the passageway with the hood for the passage of polluted air from the passageway into the hood, a washer communicating with the hood for the passage of polluted air from the passageway into the washer, an exhaust communicated with the washer for the passage of cleaned air from the washer to the atmosphere, and means in the hood for the displacement of air for the passage of air from the atmosphere into the shop and from the shop into the passageway and into the hood and from the hood through the washer into the atmosphere.

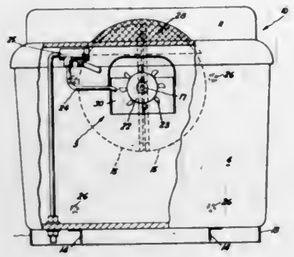
3,359,883
HEATING DUCT ATTACHMENT
Robert A. Murphy, Arlington, Va., assignor of one-half interest to Charles F. Wirth, Hyattsville, Md.
Filed Aug. 26, 1965, Ser. No. 482,753
4 Claims. (Cl. 98—40)



1. A readily removable attachment for forced air vents which are situated in a partition and which are normally terminated in a cover or register, said attachment comprising a generally boxlike receiver having two adjacent sides open, one of said open sides being arranged to fit over a vent, flanges on at least one edge of said receiver for attaching said receiver to the surface in which said vent is formed, said flanges being formed such that said attachment may be substituted for said vent cover or register without structural modification of said vent or the surrounding partition, a duct portion connected at one end to the other open side of said receiver for conducting air forced from said vent into said receiver generally parallel to said partition and behind an obstruction to said vent, and a discharge portion connected at one end to the other end of said duct portion, the axis of said discharge portion being at an acute angle to the axis of said duct portion to discharge air around said obstruction and in the same general direction as the air flow from said vent.

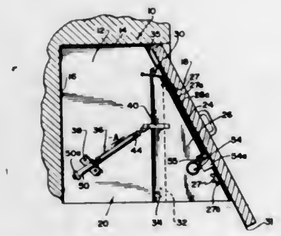
3,359,884
WATER-CLOSET VENTILATING FAN
Charles John Statter, Roseville, New South Wales, Australia, assignor to Statter Projects Pty. Limited, Roseville, New South Wales, Australia, a corporation of Australia
Filed May 6, 1966, Ser. No. 548,178
Claims priority, application Australia, May 6, 1965, 58,516
7 Claims. (Cl. 98—43)

1. In combination with a water closet including a flushing cistern and a water inlet nozzle located in the cistern for refilling the cistern after flushing; a water closet ventilator assembly comprising in combination, a hydraulic motor disposed within the cistern in close proximity to the outlet of the inlet nozzle to be driven by water issuing from the inlet nozzle after a flushing operation, an exhaust fan disposed outside the cistern, a drive transmission means extending from said hydraulic motor to said exhaust fan to drive the fan during refilling of the cistern, said hydraulic motor including a rotor, said cistern having a wall including an aperture extending through the wall, said drive transmission means including a shaft extending through said aperture in said cistern wall and having one end connected to said rotor and another end connected to said fan, said hydraulic motor further including a casing having an aperture therein located about the aperture in the cistern wall, said drive transmission means further including a support tube extending through said aperture in



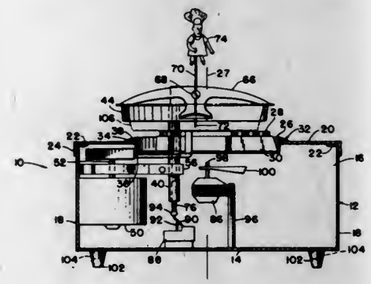
said cistern wall with the support tube receiving said shaft, a flange means projecting from said tube internally of said hydraulic motor casing and engaging the hydraulic motor casing to maintain the hydraulic motor casing against the wall of the cistern, said support tube having external peripheral threads, and a locking nut threadedly engaged on the threads on the support tube and secured in engagement with the outside surface of the cistern wall to act together with said flange means to secure the tube and shaft in position.

3,359,885
VENT HOOD
Francis L. Faehling, Wisconsin Rapids, Wis., assignor to Preway Inc., a corporation of Wisconsin
Filed Jan. 17, 1966, Ser. No. 520,973
1 Claim. (Cl. 98—115)



A ventilating hood construction for positioning in a recess in a kitchen cabinet arrangement above a subjacent cooking unit, comprising: a hollow casing including spaced generally vertical side walls and an open bottom; an outlet passage through said casing; blower means mounted in said casing for drawing air up through said open bottom into said casing and discharging the air out through said outlet passage; a front wall assembly including a vertical, flat thin structurally rigid front wall having an upper generally horizontal edge, side wall extensions extending perpendicular to said front wall into said hollow casing closely adjacent and parallel to the side walls of said casing, each of said side wall extensions having an inwardly turned flange underlying a portion of said front wall and secured thereto; means to pivotally mount said front wall assembly adjacent the upper edge of said vertical front wall to said casing for movement about a fixed pivot axis from a normally closed generally vertical position with said front wall flush with the adjacent kitchen cabinets to an open position with said front wall tilted and said side wall extensions protruding from within said casing enlarging the open bottom of said casing to provide a large trapping area to trap the hot gases rising upwardly from said subjacent cooking unit; a decorative front covering panel secured to said sheet metal front wall whereby said front wall protects said panel from hot gases rising from said subjacent cooking unit, and because of said biased pivot axis functions in all positions to block from view the structure disposed to the rear of the decorative panel; and a linkage having a longitudinal coil spring, said linkage having one end fixed to said casing and an opposite end secured to and movable with said front wall assembly, said linkage including means to maintain the coil spring under constant compression to direct a force from said one end thereof towards said opposite end and being adapted to direct said force to either side of the means pivotally mounting said front wall assembly to the casing to hold said pivotable front wall assembly in either of its vertical closed or tilted open positions.

3,359,886
POPCORN POPPER
Richard P. Dunn, Mount Clemens, Mich., assignor to Dun-Hot, Inc.
Continuation of application Ser. No. 503,380, Oct. 23, 1965. This application May 11, 1967, Ser. No. 637,847
23 Claims. (Cl. 99—238.3)



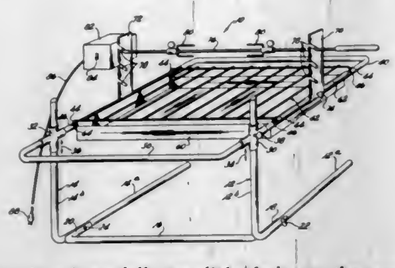
1. A machine for cooking comprising a housing, a heating element carried by said housing, a pivotally reciprocable movable support fixture mounted on said housing above said heating element for supporting a receptacle above said heating element, said support fixture having a vertical pivot axis, and means for energizing said heating element and for reciprocating said support fixture in a generally horizontal plane about said pivot axis to move the receptacle with respect to said heating element.

3,359,887
PORTABLE AND COLLAPSIBLE GRILL
Aldis L. Cleveland, Rte. 7, Box 75A, Medina, Ohio 44256
Filed Mar. 12, 1965, Ser. No. 439,351
3 Claims. (Cl. 99—421)

1. In a portable grill the combination of
a pair of support braces each having a horizontal leg and a vertical leg,
separate brace means removably connecting to and extending between the forward portions of the horizontal legs of the support braces to position them in spaced parallel relation,

a carrying frame slidably and adjustably mounted to the vertical legs of the support braces extending in the same direction and in substantially parallel relation to the horizontal legs of the support braces, said carrying frame being longer than the support braces,

a support bar and handle counted in fixed relation to the carrying frame extending forwardly there-



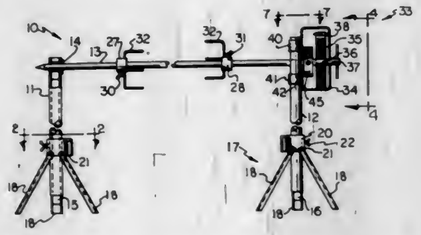
from in substantially parallel relation to the separate brace means,

a grill removably mounted in horizontal relation on the carrying frame,

a pan removably mounted in horizontal relation to the carrying frame beneath the grill, and

a rotisserie adjustably mounted in horizontal relation to the carrying frame over the grill.

3,359,888
PORTABLE COOKING APPARATUS
Gean E. Deege and Walter Deege, both of 6642 Rhea Ave., Reseda, Calif. 91335
Filed Nov. 7, 1966, Ser. No. 592,638
1 Claim. (Cl. 99—421)



A portable cooking apparatus adapted to be readily assembled and disassembled and to be self supporting on the ground or supported on a fire bed bowl comprising:

a pair of upright stanchions disposed in fixed spaced apart relationship;

a spit rod rotatably carried on the ends of said stanchions whereby said spit rod is elevated above the apparatus supporting the surface;

a tripod base means detachably carried by each of said stanchions for supporting said stanchions and said spit rod on the apparatus supporting surface and further including a collar and a plurality of leg members pivotally connected at one end to said collar so that the opposite end of each leg member is adapted to be positioned outwardly from said stanchion;

a bracket fixedly carried on each of said collars;

a hook member having a downwardly opening arcuate slot and pivotally carried on each end of each bracket whereby said hook members are adapted to be detachably engageable with the side wall edge of a fire bed bowl;

a housing carried on a selected one of said stanchions;

a rotatable shaft carried on said housing having one end thereof releasably coupled to one end of said spit rod and having its opposite end extending exteriorly of said housing and being adapted to be manually rotated;

a pin fixed to said housing in fixed space relationship to said shaft;

a leaf spring coiled about said shaft having one end thereof secured to said shaft and having its opposite end secured to said pin for effecting the automatic rotation of said spit rod;

a disc coaxially carried on said spit rod;

an arcuate member adapted to move toward and away from said disc;

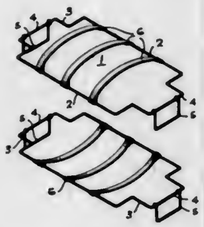
a shoe secured to the inner curvature of said arcuate member and adapted to frictionally engage with the circular periphery of said disc;

means rotatably carried on said housing and operatively coupled to said arcuate member to move said arcuate member in response to manual rotation thereof to selectively regulate the speed of spit rod rotation and to selectively lock said spit rod against rotation;

spring biased detent means releasably coupling said shaft to said spit rod; and

bearing means mounted on each of said stanchions for rotatably mounting said spit rod.

3,359,889
TURKEY TURNER
Virginia M. Young and Garth L. Young, Jr., both of 139 S. Carmelina Ave., Los Angeles, Calif. 90049
Filed Mar. 1, 1965, Ser. No. 435,973
3 Claims. (Cl. 99—426)



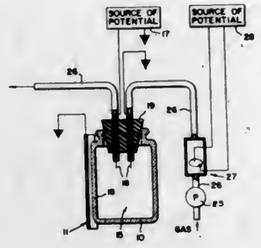
1. A roasting cradle comprising an upper cradle section and a lower cradle section, each cradle section comprising a frame, said frame comprising a pair of spaced longitudinal frame members and a pair of end members attached to the ends of said longitudinal frame members, handles swingingly attached to said end members, and flat rigid band cross members connected at each end of said cross members to said frame members, said cross members being spaced apart from each other along said frame members, portions of said cross members projecting from the plane of said frame members to form an obtuse angle.

3,359,890
CONDUCTIVE BACKING FOR PRINTING ON HOLLOW ARTICLES
Donald Marvin Fredrickson, Deerfield, Ill., assignor to American Can Company, New York, N.Y., a corporation of New Jersey
Filed Jan. 5, 1966, Ser. No. 518,956
10 Claims. (Cl. 101—35)

6. In an apparatus for printing by electrostatic deposition on gas-filled hollow articles wherein an element is spaced at a substantially uniform distance from an external area of a hollow article to be printed upon, and the thickness of said article through said area is substantially uniform, the combination comprising:

a source of electric potential:

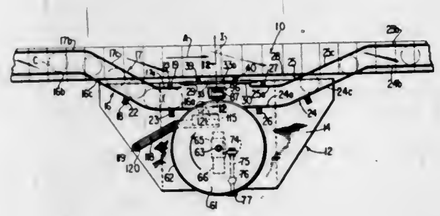
a pair of electrodes mounted in an insulating member and extending therefrom in parallelism one relative to the other leaving a predetermined gap therebetween, said electrodes being insertable into the gas-filled interior of said article and connected to said source of electric potential to produce a corona discharge in said gap for ionizing the gas within the article to form a gaseous conductive backing element therein;



means for establishing electrostatic charges of opposite polarity on said printing element and on the interior surface of said hollow article through said gaseous conductive element to produce an electrostatic field between said element; and

means for feeding printing material to said printing element, whereby particles of said printing material are electrostatically charged by contact with said element and move across said electrostatic field onto said external area of the article.

3,359,891
SIDE LINE BOTTOM CODER
Lewis C. Price, Jr., Yonkers, N.Y., assignor to Control Print Corporation, North Arlington, N.J., a corporation of New Jersey
Filed Aug. 22, 1966, Ser. No. 574,160
13 Claims. (Cl. 101—35)

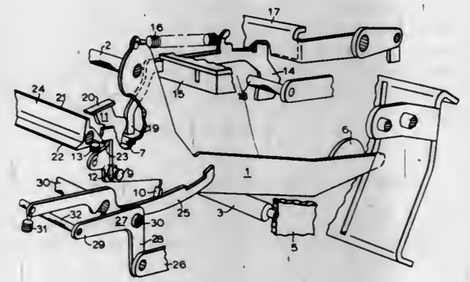


1. Apparatus for applying markings to container bottoms as the containers are moved along by a conveyor comprising a casing having a table surface independently mountable to said apparatus alongside the conveyor, guide means for diverting the containers from the conveyor over the table surface to a mark-applying position thereon and for subsequently returning the containers to the conveyor beyond said mark-applying position, independent driving means in said casing, driven means carried by said casing and operated by said independent driving means for gripping and diverted containers successively and positively moving them toward and beyond the mark-applying position, rotary mark-applying means at the mark-applying position for applying a mark to the bottom of each successive container as it moves through the mark-applying position, cyclic means controlled by motion of the successive containers through said guide means to said mark-applying position to provide cyclic intermittent rotation of the mrak-applying means so that only one marking will be applied to each successive container, and common driving means for effecting synchronous speed of movement of the bottom surface of each successive container and the mrak-applying means during application of the mark to such surface to insure clarity of the applied mark, said driven gripping means include a driven belt having a downwardly biased upper flight in direction of motion toward the mark-applying position engageable with a side of the containers to prevent displacement of the successive containers during actual application of markings to the containers, and a driven rotary disc member having a friction surface spaced from said driven belt also engageable with said side of said containers at a location opposite to the engagement thereof by said driven belt.

ERRATUM

For Class 101—93 see:
Patent No. 3,359,921

3,359,892
HAMMER MECHANISM
Edwin O. Roggenstein, Birmingham, Mich., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Dec. 28, 1964, Ser. No. 421,193
4 Claims. (Cl. 101—93)



1. A hammer mechanism comprising, in combination:

(a) a frame;

(b) drive means rotatably mounted in the frame;

(c) a hammer element rotatably mounted in the frame;

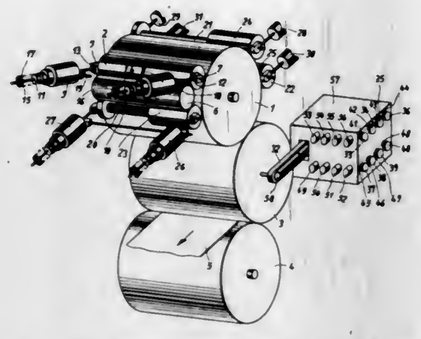
(d) an actuator element mounted on the hammer to rotate therewith;

(e) a stud formed on one of said elements cooperating with a slot formed in the other one of said elements, whereby the actuator element may slide and rotate relative to the hammer element for a predetermined limited displacement relative to said hammer element;

(f) resilient means connected between said hammer and actuator elements and urging the actuator element away from the drive means; and

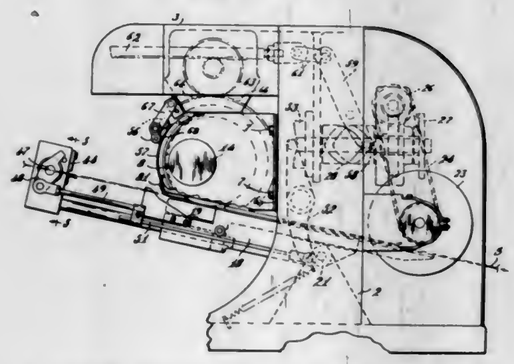
(g) a control member for selectively urging the actuator element into the path of rotation of the drive means for engagement therewith, whereby the drive means moves the actuator element for said predetermined limited displacement before motion is imparted to the hammer element.

3,359,893
OFFSET DUPLICATOR
Hermann Joseph Zahn, 19 Hans Melingstrasse, Seligenstadt, Hesse, Germany
Filed Oct. 25, 1963, Ser. No. 323,188
Claims priority, application Germany, Mar. 23, 1963, Z 9,999
28 Claims. (Cl. 101—91)



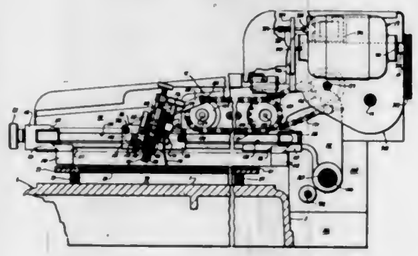
1. An offset duplicator comprising a master cylinder provided to carry a foil, a rubber blanket cylinder touching the said master cylinder, an impression cylinder, sheets to be printed passing between the said rubber blanket cylinder and the said impression cylinder, at least two ink form rollers having cylindrical parts transferring ink to the said master cylinder, said cylindrical parts of all the said ink form rollers having a different length, all the said ink form rollers having shafts and being turnable around said shafts, electromagnets engaging the ends of said shafts to press said ink form rollers against said master cylinder or to release said ink form rollers from said master cylinder, an electrical control mechanism actuated by one of the said cylinders, said control mechanism giving a voltage to the said electromagnets in dependance to the angle of rotation of one of said cylinders.

3,359,894
INK ROLLER MEANS IN DRUM SERIES PRINTING APPARATUS
Carl E. Rydman, Worcester, Mass., assignor to Dennison Manufacturing Company, Framingham, Mass., a corporation of Nevada
Filed Mar. 5, 1965, Ser. No. 437,513
5 Claims. (Cl. 101—97)



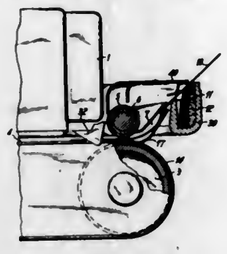
1. Printing apparatus comprising a head, a platen, means for producing relative movement between the head and platen, a series of coaxial wheels rotatably mounted on the head with aligned peripheries carrying type faces which can be set in an axial row of any desired combination of indicia at the printing position opposite the platen, an ink pad adjacent said row, an ink roller, an actuator for oscillating the roller back and forth over the ink pad and type along a predetermined path which has a first portion extending past the type faces and a second portion extending beyond the type face, means engaging the ink roller for driving the ink roller at the speed at which it rolls over the type faces so that it does not slip on the type faces in said first portion, and means for disengaging the ink roller from the driving means in said second portion so that it can rotate freely.

3,359,895
PIVOTAL SCREEN PRINTING APPARATUS
Charles F. Forslund, 3510 Rubin Drive, Oakland, Calif. 94602
Filed Feb. 15, 1965, Ser. No. 432,528
2 Claims. (Cl. 101—123)



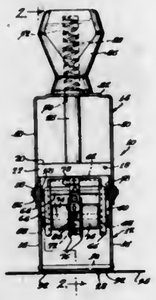
2. A screen printing apparatus comprising:
a printing head;
means carried by said head for clamping a printing screen thereto;
a squeegee carriage mounted on said head for reciprocation across said screen;
a squeegee carried by said carriage and movable relative thereto to an advanced position in engagement with said screen for traversing said screen in a printing stroke and being movable relative to said carriage to a retracted position removed from said screen during the return stroke;
a continuous loop drive for said carriage carried by said head and positioned in a plane perpendicular to said screen and parallel to the direction of reciprocation of said carriage;
a member connecting said loop drive and carriage for displacement of said squeegee through said printing and return strokes upon full circuit travel of said loop drive;
means connecting said squeegee to said member for displacement thereby to said advanced position during said printing stroke and to said retracted position during said return stroke;
a base adapted for receiving a part to be printed;
means mounting said head on said base for reciprocating movement of said head to and between a printing position juxtaposed to said base and a non-printing position spaced therefrom;
a motor;
drive means connected to said motor for displacing said head to and between its printing and non-printing positions;
a clutch connecting said motor to said loop drive for opening and closing of driving connection thereto;
means actuated by said drive means for closing said clutch; and
means actuated by said loop drive for opening said clutch.

3,359,896
POSTAL FRANKING MACHINE INCLUDING A MOISTENING DEVICE FOR FRANKED ADHESIVE STRIPS
Martin Leibbrand, Eutingen, near Pforzheim, Germany, assignor to Telefonbau und Normalzeit G.m.b.H., Frankfurt am Main, Germany, a joint-stock company of Germany
Filed Apr. 16, 1964, Ser. No. 360,341
Claims priority, application Germany, Apr. 20, 1963, T 23,863
4 Claims. (Cl. 101—235)



1. In a postal franking machine including a first franking part and a second feeding part for alternatively feeding through the machine postal matter and adhesive strips to be applied to postal matter after they have been franked by said franking part, the combination comprising means for moistening adhesive strips, a rockably mounted chute leading to said moistening means, and means for rocking said chute from one position into another position, an end of said chute when in said one position being removed from the path of movement of postal matter to cause the same to by-pass said chute and said moistening means, said end of said chute when in said other position being arranged close to the path of movement of said strips to guide the same to said moistening means for being moistened before leaving the machine, said end of said chute being formed as a deflector which, in said other position of said chute, projects into said path of movement of said strips to deflect the same towards said chute.

3,359,897
GRAPH MARKING DEVICE
Charles R. Harte, 714 Perth Ave., Flossmoor, Ill. 60422
Filed June 11, 1964, Ser. No. 374,325
3 Claims. (Cl. 101—334)

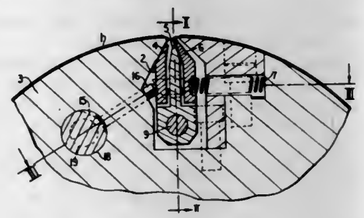


1. In a graph marking device for applying any one of a plurality of symbols to a graph, having a symbol bearing ribbon carrier having a pressure bar, an axle mounted in the carrier and extending parallel and adjacent to the pressure bar, a ribbon mounting drum, a flexible ribbon encircling the pressure bar and the drum and bearing a plurality of different graph marking sysmbols, a frame mounting the carrier for pivotal and reciprocal movement, an inking pad carried by the frame, means guided by the frame and connected to the carrier for moving the carrier from ribbon inking position to a position in which an inked symbol is projected for printing, the improvement comprising a device positioning indicator carried by the frame made of a transparent material and of a size to extend transversely beyond the frame, said indicator having a central opening through which the inked symbol may be projected against a graph to be marked, and a pair of perpendicularly oriented guide lines intercepted by said opening and which if projected across said opening would intersect at the point at which the symbol is projected.

3,359,898
PROCESS FOR ELECTROTYPE PRINTING PLATE
Frederick L. Baier, South Plainfield, and John B. Wheeler III, Somerville, N.J., assignors to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Aug. 27, 1965, Ser. No. 483,342
13 Claims. (Cl. 101—401.1)

1. Process for preparing an electrotype printing plate which comprises rendering the surface of a thermoplastic polyarylene polyether matrix electrically conductive, electroplating a platable metal onto the electrically conductive surface of said matrix from an agitated electroplating bath containing from about 0.1 to about 20 parts by weight of finely divided metal powder which is the same as said platable metal to form an electroplated metal shell having a roughened, semi-porous back and a thickness of from about 0.5 mil to about 4 mils, thereafter while maintaining the so produced shell in contact with said matrix backing said shell with a thermoplastic material employing heat and pressure.

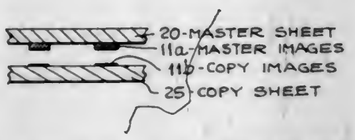
3,359,899
SPRING TENSIONED WRAP-AROUND PLATE CYLINDER CLAMPING ARRANGEMENT
Hans J. Luehrs, Westerly, R.I., assignor to The Cottrell Company, Westerly, R.I., a corporation of Delaware
Filed Feb. 1, 1965, Ser. No. 429,430
7 Claims. (Cl. 101—415.1)



1. A wrap-around plate cylinder clamping mechanism in combination with a cylinder and at least one printing plate thereon having crimped leading and trailing edges, a longitudinal cylinder surface slot having leading and trailing side portions for receiving said leading and trailing edges, groups of leading and trailing edge plate clamp units spaced and pivotally mounted along said slot, each unit comprising a swingable leading edge plate aligning clamp and a swingable pair of first and second circumferentially opposed trailing edge clamps, jaws on each of said clamps for engaging the respective plate edges, means for actuating each clamp unit toward and from plate edge engaging position and other means for biasing parts of said unit toward plate clamping and tensioning positions, said other means comprising sets of opposed springs of different strengths, said springs of greater strength being mounted between the said trailing side

portion of the cylinder slot and the said first trailing edge clamp and in contact therewith, and the springs of lesser strength being mounted between and in contact with the said second trailing edge plate clamp and the leading edge clamp for normally urging the leading edge clamp into the leading edge engagement and the trailing edge jaw of said second trailing edge clamp toward the other trailing edge jaw of said first trailing edge clamp for engaging a plate trailing edge and tensioning the plate to cylinder.

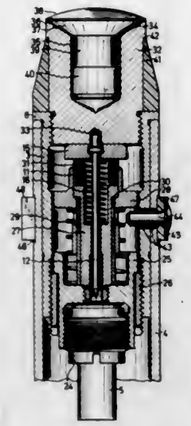
3,359,900
COPYING PROCESS
Douglas A. Newman, Glen Cove, N.Y., assignor to Columbia Ribbon and Carbon Manufacturing Co. Inc., Glen Cove, N.Y., a corporation of New York
Filed Oct. 15, 1965, Ser. No. 496,526
9 Claims. (Cl. 101—468)



1. A duplicating process comprising the steps of:
(a) superposing a master sheet in surface contact with the imaging layer on a flexible transfer sheet foundation, said layer being mass-transferable under the effect of localized impact pressure and comprising a resinous binder material having dispersed therein an ink which is liquid at ordinary room temperatures and comprises coloring matter and an oil, the ink being incompatible with the said binder material and being exudable therefrom at ordinary room temperatures under the effects of overall pressure of lower magnitude than said localized impact pressure;
(b) applying an impact in the form of localized imaging pressure against the superposed sheets to cause the layer comprising binder material and dispersed ink to transfer in image form to the surface of the master sheet;
(c) superposing the imaged surface of the master sheet with the surface of a copy sheet; and
(d) applying an overall pressure of lower magnitude than said localized impact pressure by compressing the images between the master and copy sheets to cause a portion of the said ink to flow from the binder material to the surface of the copy sheet and form mirror-reverse duplicates of the master images.

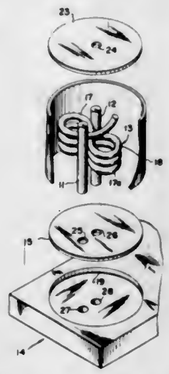
3,359,901
EXPLOSIVE SHELL HAVING CONTACT FUSE DETONATED BY SHEARING OF FLANGE ON FUSE BODY
Hans Bedall, Nuremburg, Germany, assignor to Diehl, Nuremberg, Germany
Filed July 12, 1965, Ser. No. 471,086
Claims priority, application Germany, July 14, 1964, D 44,936; July 25, 1964, D 45,043
3 Claims. (Cl. 102—73)

1. A fuse structure for an easily deformable shell adapted for having an explosive charge therein, said shell having a bore in its nose end, a fuse casing in the said bore having a percussion cap operable when ignited to detonate said charge, and means in the casing operable upon impact of the shell against an object for igniting said percussion cap, said casing having a portion protruding from the nose end of said shell a distance substantially equal to the distance the shell will travel during the interval from said impact of the shell against an object up to ignition of said percussion cap, the outermost end of said casing having an axial bore therein with a flared mouth, a resilient member having a shank in said bore and a disc-like head fitting said flared mouth and convex on the outer side, said fuse casing including an axially short shearable annular collar thereon engaging the nose end of the shell and which collar will shear off upon the impact of the shell against an object, said fuse casing



closely fiting said bore but being slidable inwardly in the bore upon impact of the shell against an object, and a sleeve of relatively brittle synthetic material surrounding said fuse casing forwardly of said collar and having one end resting on the collar and tapering inwardly from the collar end thereof to the other end thereof, said casing having a rearwardly facing shoulder engaging the said other end of said sleeve.

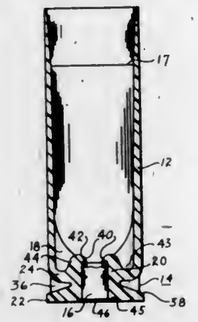
3,359,902
BOOSTER
Joseph J. Minnick, Terre Haute, Ind., and Roy D. Sarson, Marion, Ill. (both % Commercial Solvents Corporation, Terre Haute, Ind.)
Filed Dec. 27, 1965, Ser. No. 516,394
5 Claims. (Cl. 102—24)



1. In a booster for detonating insensitive blasting charges having a core of Primacord-sensitive explosive material encased within a sheath of relatively insensitive explosive material of high brisance, said booster having at least one perforation adapted to receive a detonating fuse and extending through said sheath, the improvement comprising the formation of said core material into a

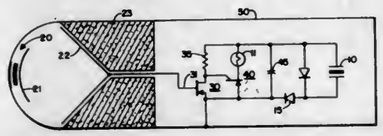
configuration with two series of superimposed loops which extend outwardly from the perforation in different directions with the outward portion of the loops embedded within the relatively insensitive explosive material of high brisance whereby there are no voids adjacent said outward portion of the loops, the necks of which loops converge closely adjacent said perforation, said loops extending substantially perpendicularly outwardly from a plane parallel to said perforation and passing through each perforation and said necks.

3,359,903
PLASTIC SHOTGUN SHELL
Edward A. Sobolewski, 19850 State Line, South Bend, Ind. 46637
Filed Feb. 11, 1966, Ser. No. 526,789
3 Claims. (Cl. 102—43)



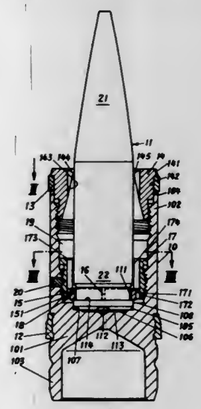
1. A plastic shotgun shell, comprising a disc-shaped base having opposite end faces and having a hole extending axially therethrough for receiving a primer cap, a relatively thick generally annular portion extending from one end face and surrounding said hole, said annular portion having an annular flange at the end removed from said one end face extending radially into said hole, said flange having a lip at the end removed from the annular portion for engaging an inner end of said cap and forming a seal therewith, and a tubular side wall having one end connected integrally with said annular portion, said sidewall and said annular portion defining in cross-section an annular groove surrounding said annular portion within said side wall, and a plurality of spaced fins in said groove connected between said annular portion and said sidewall defining a plurality of recesses in said groove.

3,359,904
PIEZOELECTRIC PROJECTILE FUZE
Eldon Nerheim, Minneapolis, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed July 5, 1966, Ser. No. 562,581
8 Claims. (Cl. 102—70.2)



1. Electrical signal producing means responsive to the impact of a projectile with its target, said signal producing means comprising:
a first piezoelectric crystal;
means connected to said first crystal to generate energy for crystal activation in response to the setback force produced in the launching of the projectile;
an electric energy storage means connected to said first piezoelectric crystal to receive and store the electric energy generated by said first crystal;
output means;
switching means having a first terminal connected to said electric energy storage means, a second terminal to said output means, and further having a control terminal;
a second piezoelectric crystal;
means connected to said second crystal for compressing said second crystal and generating an electric signal in response to the impact of the projectile with the target; and
means connecting said second crystal to said control electrode of said switching means, whereby said switching means is operated in response to the electric signal generated by said second crystal to direct the electric energy stored in said storage means to said output means.

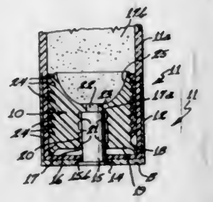
3,359,905
SABOT PROJECTILE
Walter Engel, Zurich, Switzerland, assignor to Oerlikon-Buhrle Holding AG, Zurich, Switzerland
Filed Mar. 28, 1966, Ser. No. 537,816
Claims priority, application Switzerland, Apr. 1, 1965, 4,523/65
9 Claims. (Cl. 102—93)



1. A sabot projectile adapted to be fired from the barrel of a gun having means for imparting rotation to said sabot projectile around a longitudinal axis parallel to its direction of movement, said sabot projectile comprising:
a projectile body extending along the longitudinal axis and having a supporting surface on the rear end thereof and a ring groove in the peripheral surface thereof, said groove having a wall normal to said longitudinal axis;
sabot means having a coaxial recess therein adapted to receive said projectile body, said sabot means having means on the periphery thereof adapted to engage said rotation imparting means, said sabot means having front and rear opposed and longitudinally spaced stop faces within said recess normal to said longitudinal axis, said rear stop face acting as a support for the supporting surface on said projectile body and adapted to be deformed by said projectile body, said front stop face being ring shaped and surrounding the projectile body;
adjustment means for adjusting the relative axial positions of said front and rear stop faces; and

ring-shaped safety means positioned within said ring groove and having a first axial surface supported on said groove wall and a second axial surface in engagement with said front stop face, the engagement force therebetween being controlled by said adjustment means, said safety means being adapted to hold said projectile body within said sabot means until said sabot means attains a minimum rotational speed.

3,359,906
SHOTSHELL BASE WAD
George L. Herter, Waseca, Minn., assignor to Herter's Inc., Waseca, Minn., a corporation of Minnesota
Filed Dec. 20, 1965, Ser. No. 514,935
2 Claims. (Cl. 102—95)



1. A base wad adapted to be seated within and corporate with the head of a shotshell, said base wad comprising:

a generally cylindrical plastic body having a base end and a concave front end to receive a powder charge therein,

an annular flange integral with said base end and projecting radially outwardly and slightly axially therefrom and defining with said base end a concave cushioning pocket between the base end and shotshell head,

a primer in said body extending axially from said base end for receiving a primer cap therein,

said body having an opening therein extending axially from said concave front end and communicating with said primer pocket, said opening being of a substantially smaller cross-sectional size than said primer pocket to define an annular shoulder for overlying the end of a primer cap in the primer pocket,

said body having a plurality of similar sealing and cushioning elements integrally formed therewith throughout the length thereof and projecting outwardly from the exterior surface of said body and adapted to engage the inner circumferential surface of the shotshell, each of said elements being equally spaced apart and disposed in closely proximal relation to each adjacent element to define a plurality of closely spaced apart outwardly opening grooves of substantially the same size whereby said elements may be readily urged towards each other to form a seal with the inner surface of the shotshell and to produce a cushioning effect thereat when the base wad is subjected to pressure forces produced by a detonated propeller charge.

3,359,907
CENTRA-TURBINE PUMP
John Bochan, Louisville, Ky., assignor to General Electric Company, a corporation of New York
Filed June 24, 1965, Ser. No. 466,776
6 Claims. (Cl. 103—3)

1. A reversible fluid pump comprising:

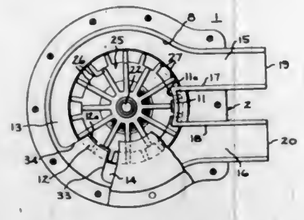
(a) a housing forming a pump chamber having a peripheral wall and a pair of spaced end walls;

(b) said peripheral wall including a pair of spaced, inwardly extending dams dividing said chamber into a pair of adjacent chamber sections;

(c) said peripheral wall defining an outlet adjacent each side of one of said dams;

(d) one of said end walls defining an inlet;

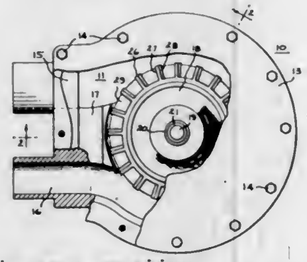
(e) an impeller mounted for reversible rotation within said chamber;



(f) said impeller including a centrifugal portion substantially in axial alignment with said inlet to insure filling of both chamber sections;

(g) and said impeller also including a turbine portion to force fluid from said pump through a predetermined one of said outlets depending upon the direction of rotation of said impeller.

3,359,908
TURBINE PUMP
Daniel N. Toma, Louisville, Ky., assignor to General Electric Company, a corporation of New York
Filed Jan. 24, 1966, Ser. No. 522,543
2 Claims. (Cl. 103—3)



1. A turbine pump comprising:

(a) a casing defining an annular pumping chamber,

(b) said casing further defining a pair of openings to said chamber for ingress and egress of fluid,

(c) a turbine impeller mounted for reversible rotation within said chamber,

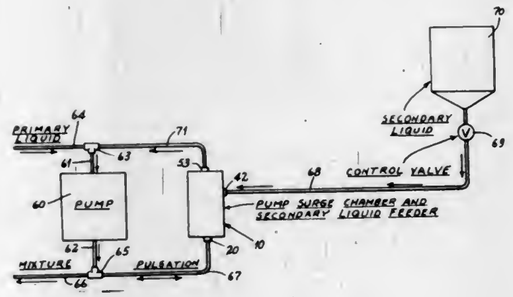
(d) said impeller including a circumferential web and spaced, peripheral vanes extending from said web for entraining fluid within said chamber,

(e) each of said vanes including a first face disposed in a plane radial to the axis of rotation of said impeller and a second face disposed at an angle to said first face so that the effectiveness of said pump is different dependent upon the direction of impeller rotation.

3,359,909
PUMP SURGE CHAMBER AND SECONDARY LIQUID FEEDER
Russell L. Johnson and John D. Harris, Dallas, Tex., assignors to John E. Mitchell Company, Dallas, Tex., a corporation of Missouri
Filed June 10, 1965, Ser. No. 462,895
2 Claims. (Cl. 103—6)

1. A liquid mixing system including a primary pump and a secondary pump, the primary pump being of greater

capacity than the secondary pump, the secondary pump comprising a surge chamber and secondary liquid feeder including a housing, a pumping chamber within the housing, a spring chamber within the housing, an inlet opening to the pumping chamber, a wall reciprocable within the pumping chamber, means providing a liquid seal to block the flow of liquid past the reciprocable wall and to thereby block liquid communication between the pumping chamber and the spring chamber, a compression spring within the spring chamber biasing the wall in a direction tending to reduce the volume of the pumping chamber, the primary pump being a pulsating pump having an inlet and an outlet, means to connect the pulsating pump inlet to a source of primary liquid thereby causing the primary liquid to be pumped from the inlet to the outlet of the pulsating pump, means for connecting the inlet opening of



the secondary pump to the outlet from the pulsating pump thereby causing the wall to move in response to pulsations of the pulsating pump and dampen surges at the primary pump outlet caused by such pulsations, inlet and outlet ports opening through the secondary pump housing to the spring chamber, means to connect the inlet port to a source of secondary liquid, means to connect the outlet port to the inlet side of the pulsating pump, whereby reciprocations of the wall caused by pulsations of the pulsating pump cause flow of liquid from the secondary liquid source through the spring chamber to the primary pump inlet for mixture with liquid from the source of primary liquid, and one-way valve means in the inlet and outlet ports to permit flow in one direction only from the secondary liquid source toward the pulsating pump inlet, the secondary pump deriving its pumping energy solely from the pulsations of the primary pump.

3,359,910
APPARATUS FOR PROGRAMMING FLUID FLOW
Allen Latham, Jr., Jamaica Plain, Mass., assignor to Arthur D. Little, Inc., Cambridge, Mass., a corporation of Massachusetts
Filed June 10, 1965, Ser. No. 462,928
1 Claim. (Cl. 103—6)

An apparatus for controlling the flow rate and composition of a fluid stream, comprising in combination:

(a) a plurality of fluid reservoirs;

(b) a manifold adapted to receive a controlled flow of fluid from each of said fluid reservoirs;

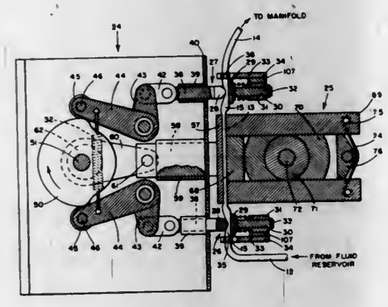
(c) a fluid impermeable tubing communicating between each of said reservoirs and said manifold, said tubing being essentially circular in cross-section in the absence of any appreciable external force acting thereon and being formed of an elastomeric material of sufficient elasticity to allow it to be contracted with the application of external force and to return to a circular cross-section with the removal of said external force; and

(d) pumping means associated with a section of each of said tubings, comprising in combination:

(1) a movable platen adapted to contact each of said tubing sections and in its motion to apply and release external force on said sections,

(2) a pressure plate associated with each of said tubing sections and adapted with said movable platen to continuously program the cross-sectional configuration and hence the fluid displacement volume of each of said tubing sections positioned between said pressure plates and said movable platen,

(3) inlet valve means positioned below said pressure plates and movable platen and outlet valve means positioned above said pressure plates and movable platen, said valve means comprising force applying means adapted to engage said



tubing sections and apply sufficient external force to cut off fluid flow in said tubing,

(4) tubing clamping means associated with said valve means and adapted to hold said tubing sections in alignment,

(5) cam-driven actuating means associated with said valve means and adapted to alternately actuate the force applying means of said inlet valve means and said outlet valve means,

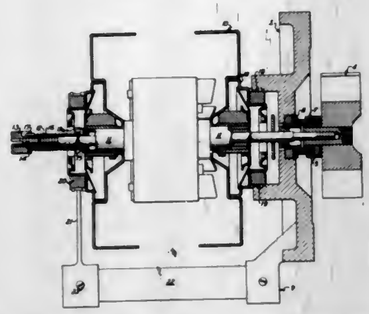
(6) driving means adapted to cause said movable platen to apply said external force when said outlet valve means is open and to release said external force when said inlet valve is open, and

(7) cam-driven actuating means associated with each of said pressure plates and adapted to effect the fluid displacement programming of each of said tubing sections; said cam-driven actuating means associated with said valve means and said driving means being mechanically connected to said cam-driven actuating means associated with said pressure plates through reduction gears, whereby said cam-driven actuating means associated with said pressure plates operate at a slower predetermined speed.

3,359,911
CIRCULATING PUMP ARRANGEMENTS

Richard Weinstein, Huntington, N.Y., assignor to Flair Manufacturing Corp., Hauppauge, N.Y.

Filed Feb. 21, 1966, Ser. No. 528,883
9 Claims. (Cl. 103—87)



1. A circulating pump comprising a housing, an impeller rotatably mounted in said housing, an elongated impeller shaft connected to said impeller, mounted for limited free axial play and extending from said housing, a hollow drive shaft rotatably mounted adjacent said housing coaxially with said impeller shaft, with said impeller shaft turnably extending therethrough, a seal for the pump having a pair of sealing elements in sealing engagement, one of said elements being connected to said impeller shaft to be pressed in tighter sealing engagement with the other upon axial movement of said impeller shaft and means resiliently connecting said impeller and drive shafts at their end portions distal said impeller, and resiliently biasing said impeller shaft in an axial direction to tighten sealing engagement of said sealing elements.

3,359,912
INSERT FOR SHAFT DRIVEN ROTATING MEMBERS

Carl Victor Gates, Baldwinsville, N.Y., assignor to Morris Machine Works, Baldwinsville, N.Y., a corporation of New York

Filed Apr. 19, 1966, Ser. No. 543,567
1 Claim. (Cl. 103—114)

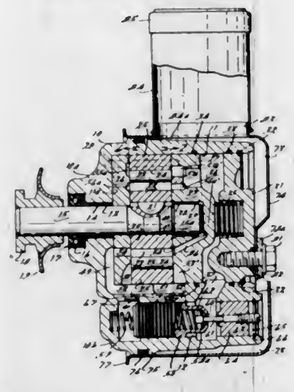


A centrifugal pump having a unitary, integral impeller comprising a main body and vanes of a hard, non-machineable metal, and single, unitary, integral locking insert disposed between said impeller and the driving shaft to which said impeller is connected, composed of a relatively soft grade of metal which is machineable, said impeller insert having radial right hand over left hand grooves formed thereon and cast integral with said impeller, the intersurface of said locking insert being of a relatively soft metal, capable of being machined and having screw threads machined thereon for connection to the driving shaft of machineable metal.

3,359,913
HYDRAULIC PUMP

David C. Halsey, Birmingham, Mich., assignor to Chrysler Corporation, Highland, Mich., a corporation of Delaware

Filed Oct. 22, 1965, Ser. No. 501,450
10 Claims. (Cl. 103—136)



1. In a fluid pump, a housing, cam means in said housing defining a pump cavity, said housing having a pair of coaxial openings spaced by and communicating with said cavity, inlet and outlet ports communicating with said cavity to supply fluid thereto and to discharge fluid therefrom respectively, a rotor shaft having oppositely directed end portions extending coaxially into said openings respectively, pumping means carried by said rotor shaft in said cavity for pumping said fluid from said inlet port to said discharge port, means providing a bearing support for one of said rotor end portions within one of said openings, a pressure plate slidable axially within the other of said openings, an outer closure member for said other opening and secured therein axially endwise of said pressure plate and cooperating therewith to define a discharge header therebetween, means connecting the fluid pressure at said discharge port with said discharge header to urge said axially slidable pressure plate toward said pumping means and against said cam means with a force proportional to the discharge pressure of said pump, and means supporting the other of said rotor end portions and sealing the latter from the pressure in said discharge header comprising a central cup-shaped portion of said pressure plate providing a recess opening toward said cavity and having said other rotor end portion journaled therein, the last named means also comprising confronting annular sealing portions of said pressure plate and pumping means around said recess and mating to effect a high resistance fluid leakage path therebetween into said recess.

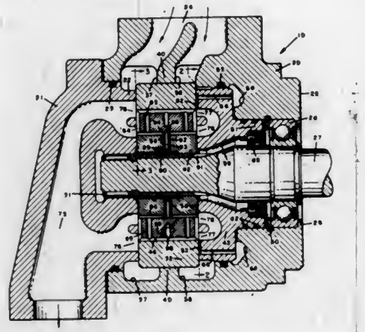
3,359,914
METHOD AND APPARATUS FOR IMPROVING EFFICIENCY OF VANE PUMPS

Cecil E. Adams, Columbus, and Randall E. Griffith, Westerville, Ohio, assignors to American Brake Shoe Company, New York, N.Y., a corporation of Delaware

Filed Sept. 27, 1965, Ser. No. 490,220
20 Claims. (Cl. 103—136)

8. A vane type hydraulic pump comprising:
a rotor having a plurality of vanes mounted for relative movement,
a stator presenting a cam surface and side walls for engagement by the outer ends of said vanes,

liquid transfer chambers defined between said vanes, a suction port and a pressure port at circumferentially spaced positions between said rotor and said cam surface, the space between said ports defining a transfer zone,
clearance gaps between said vanes and said stator,
means for rotating said rotor so as to transfer liquid from said suction port to said pressure port while increasing the pressure on the liquid at said pressure port to a pressure substantially greater than that

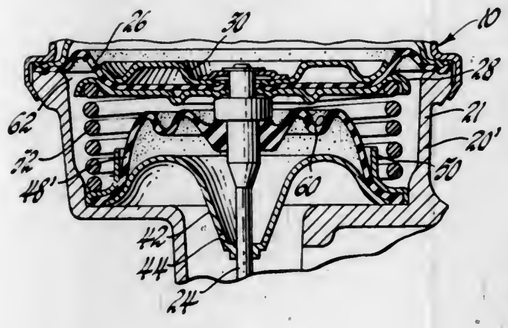


at said suction port whereby liquid pressure in front of a vane located in said transfer zone is greater than the pressure behind said vane with the result that liquid flows through said clearance gaps past the leading edge of the vane in an attempt to reach the lower pressure chamber behind said vane, and
velocity reducing passageway forming means collecting and directing liquid blown by said leading edge to the zone of lower pressure behind said vane while reducing its velocity to reduce turbulence in said low pressure zone.

3,359,915
DIAPHRAGM PUMP WITH CLOSED SPRING CHAMBER

Dimitar Toschkoff, Flint, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Nov. 26, 1965, Ser. No. 509,725
1 Claim. (Cl. 103—150)

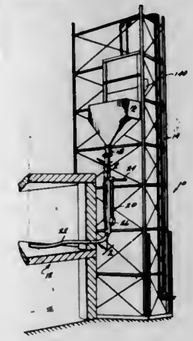


A pump including a pump body, a pumping diaphragm, a flexible sealing diaphragm, a rigid sealing member with a port therein, a plunger slidable in said rigid member and fixed to said diaphragms, said rigid sealing member and flexible sealing diaphragm having annular troughs therein surrounding said plunger and extending toward said pumping diaphragm so that said rigid sealing member may prevent reversal of curvature of said sealing diaphragm, a spring surrounding said plunger, an annular spring retainer forming a seat for one end of said spring, said body and diaphragms cooperating to define a closed chamber of substantially constant volume and enclosing said spring with said pump body having an imperforate wall surrounding said spring, and said sealing diaphragm and rigid member defining an annular chamber of variable volume and encompassed by said annular spring retainer.

3,359,916
FLUID CONTROL STRUCTURE

Joe B. Houston, 2267 Roscomare Road, Los Angeles, Calif. 90024, and Harvey H. Davis, 4145 Lynd Ave., Arcadia, Calif. 91006

Filed Oct. 24, 1965, Ser. No. 504,468
10 Claims. (Cl. 103—152)



1. A pump for forcefully displacing pumpage, between an intake and an outlet during cyclic loading and exhausting operations, comprising:
a housing means defining a closed chamber;
a flexible duct member positioned in said chamber whereby to receive pumpage from said intake;
cyclic-operating means for initially collapsing one portion of said duct within said chamber, contiguous to said intake whereby to initiate an exhaust flow from said duct member; and
cylic-operating means for varying the fluid pressure within said housing whereby to provide a fluid pressure to alternately collapse and release the major other portion of said flexible duct whereby to force said pumpage out of said outlet.

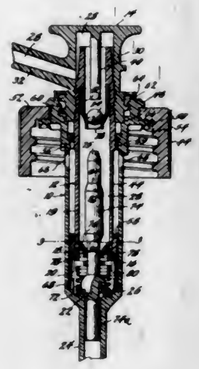
3,359,917
LIQUID DISPENSER

Rex C. Cooprider, Hacienda Heights, Calif., assignor to Calmar, Inc., City of Industry, Calif., a corporation of California

Filed Mar. 1, 1966, Ser. No. 530,853
8 Claims. (Cl. 103—188)

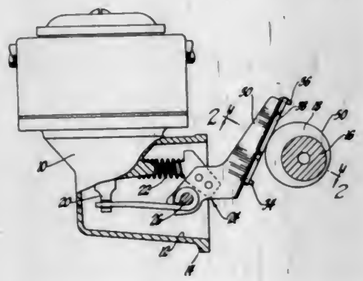
1. A liquid dispensing pump comprising a pump cylinder adapted for disposition through the discharge outlet of a liquid container, said cylinder having an open outer axial end and being provided with an inlet port adjacent its inner end, a plunger disposed for axial reciprocation in said cylinder through the open outer end thereof and jointly with said cylinder defining a variable volume pump chamber, said plunger being formed with part of a discharge passage extending axially therethrough from the pump chamber, means within said discharge

passage for preventing substantial backflow of liquid toward the pump chamber, an inlet valve operatively associated with said inlet port for axial opening and closing movement relative to the inlet port, means for confining the inlet valve to a predetermined range of operative movement between its open and closed positions, said range being substantially less than the amplitude of the plunger reciprocation, said inlet valve including a portion extending axially through the pump chamber and into said passage for telescopic association with the inner end portion of the plunger, said telescopically-associated portions of the inlet valve and plunger being relatively spaced and proportioned to provide clearance space within said discharge passage, and



clutch means within said passage arranged to permit liquid flow through the passage while establishing a yieldable coupling between the plunger and said inlet valve for transmitting axial movement from said plunger to the inlet valve to actuate said inlet valve in response to and in coordination with the movement of the plunger, said clutch means comprising a plurality of gripping fingers in annular configuration around said valve portion in axially parallel planes thereto, said fingers having inwardly directed generally convergent free ends in frictional engagement with said valve portion and relatively outwardly divergent ends fixedly connected to the inner wall of said plunger around the periphery of the discharge passage.

3,359,918
FUEL PUMP WITH ROCKER ARM WEAR PAD
Joseph P. Casassa, Clio, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed June 9, 1965, Ser. No. 462,620
6 Claims. (Cl. 103—215)



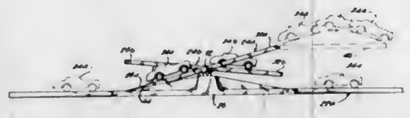
1. A fuel pump having a housing, a rocker arm pivotally retained on said housing and having an oscillatable elongated portion extending from said housing, spring means urging said rock arm to rotate in one direction, a surface of said portion extending along the length of the latter and facing said one direction, said surface being straight along said length and convex across said length, a flat shoe extending along and in tiltable relation with said surface, and means retaining said flat shoe against linear movement with relation to said surface.

3,359,919
LOAD LIFTING AND TRANSPORT SYSTEM AND METHOD
Faye H. Stewart, 2765 Fairmont Blvd., Eugene, Oreg. 97403
Filed Nov. 26, 1965, Ser. No. 509,697
14 Claims. (Cl. 104—22)



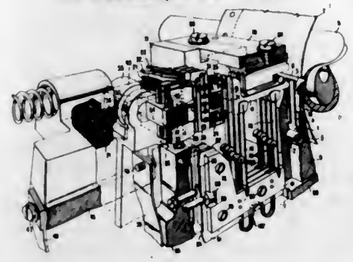
1. In combination; a line hauling system for moving a load between spaced points on the earth's surface, an aerodynamic lift-wing for applying vertical lift to said load when moved by said line hauling system, a lighter-than-air lift vehicle, and means connecting said vehicle to said wing to maintain the same above the surface.

3,359,920
TILT-TRACK SECTION FOR SLOT CAR RACERS
Pasquale Iammatteo, Staten Island, N.Y., assignor to The Lionel Corporation, New York, N.Y., a corporation of New York
Filed May 14, 1965, Ser. No. 455,80[illegible]
23 Claims. (Cl. 104—160)



1. In a track assembly for electric toy vehicles: elongated tilt-track means having opposed free ends, support means supporting said tilt-track means for turning movement about an axis extending transversely of said tilt-track means and situated between said free ends, means for urging said tilt-track means into a rest position in which one of said free ends is located at a level lower than the other end to permit a vehicle to move onto said tilt-track means, said tilt-track means being adapted to be tilted by the weight of a vehicle situated between the axis and the other end of the tilt-track means and moving at less than a given rate of speed, and electrically conductive means carried by and extending along said tilt-track means for supplying electricity to an electric vehicle moving on said tilt-track means from one to the other free end thereof.

3,359,921
PRINT HAMMER UNIT FOR HIGH SPEED PRINTERS
Sieghard Arnold, Hildrizhausen-Boblingen, Gerold Bührmann, Stuttgart, Jürgen Hansis, Boblingen, Horst Heinrich, Stuttgart-Bad Cannstatt, Manfred Nitschke, Stuttgart-Rohr, Günter Schacht, Boblingen, and Eberhard Spieth, Holzgerlingen, Germany, assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed July 19, 1965, Ser. No. 473,093
Claims priority, application Germany, July 25, 1964, J 26,273
14 Claims. (Cl. 101—93)



1. In a print hammer unit for a high speed printer having movable means for presenting a plurality of type characters at a print line for cooperative print action by print hammer means,

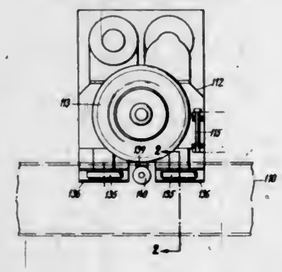
a print hammer having a hammer portion adjacent the print line at each of a plurality of print positions and having an armature portion,

resilient support means for each of said hammers including a pair of parallel flat spring members,

means including electromagnetic means having a separate magnetic yoke at each print position with a single hold winding common to all of the yokes operable to produce magnetic flux in said armature portions to hold said armature portions away from the print line and flex said spring members to store potential energy therein,

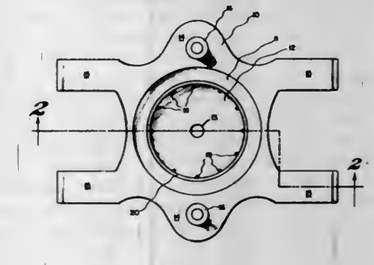
means operable to effect movement of said hammers in response to said stored energy by reducing the flux in the armature portions below the holding point to effect release of said hammers.

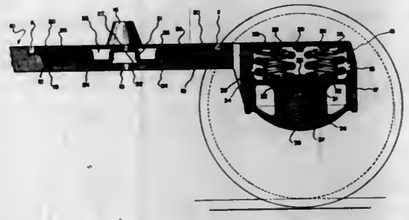
3,359,922
GUIDING DEVICE FOR DOUBLE-RAIL TRAINS
Ulrich Mühlethaler, Thun, Switzerland, assignor to Maschinenfabrik Habegger, Thun, Switzerland
Filed Sept. 1, 1965, Ser. No. 484,361
Claims priority, application Germany, Feb. 16, 1965, M 64,171
6 Claims. (Cl. 104—247)



1. A guiding device for a bogie of a train or the like adapted to run along two rails of a narrow gauge double-rail track, each of said rails having an upper, substantially horizontal flange and a substantially vertical web, said guiding device comprising a bogie part; a single pair of coaxial wheels rotatably mounted on said bogie part and adapted to run along the upper sides of said flanges; two pairs of guide rollers mounted on said bogie part so as to be rotatable about substantially perpendicular axes and disposed between said two rails, the wheels of each of said two pairs of guide rollers being disposed behind each other, as seen in the longitudinal direction of said rails, and respectively to opposite sides of the axis of said single pair of coaxial wheels, one of said pairs engaging with and adapted to run along the web of one of said rails and the other pair engaging with and adapted to run along the web of the other rail for preventing said wheels from derailing in lateral directions; and a pair of bracing rollers arranged at a distance from each other smaller than the distance between the web-engaging portions of corresponding guide rollers of said two pairs of guide rollers, each of said bracing rollers being disposed between the two guide rollers of each pair, as seen in said longitudinal direction, and mounted on said bogie part so as to be rotatable about a substantially horizontal axis and adapted to engage with the bottom face of said upper flange of one of said rails for preventing said wheels from being lifted off said rails.

3,359,923
RAILWAY BOGIE
David B. Wood, Cleveland Heights, Ohio, assignor to Aluminum Company of America, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Apr. 6, 1965, Ser. No. 446,024
4 Claims. (Cl. 105—189)



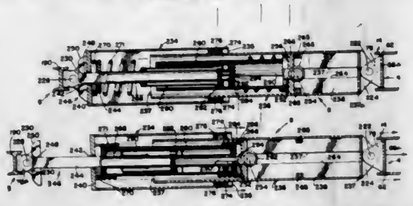


1. A railroad car truck component for assembly with and support on wheel assemblies comprising a main frame member having means for pivotal connection with a railroad car body and a recess presenting a circular shoulder facing inwardly and a second circular shoulder facing inwardly within and below said first named shoulder, said shoulders being concentric with said connection means, a retainer plate having peripheral clearance within said first named shoulder and presenting a shoulder facing outwardly within and concentric with said second named inwardly facing shoulder, longitudinally, laterally and diagonally arranged pairs of complementary bosses extending radially between said second named inwardly facing shoulder and said outwardly facing shoulder, and radially disposed coil springs retained on said pairs of bosses.

3,359,924
CUSHIONING MEANS FOR RAILROAD CAR

Jack E. Gutridge, Dyer, Ind., assignor to Pullman Incorporated, Chicago, Ill., a corporation of Delaware

Original application Aug. 31, 1965, Ser. No. 484,059, now Patent No. 3,319,583, dated May 16, 1967. Divided and this application Oct. 18, 1965, Ser. No. 497,268
18 Claims. (Cl. 105—454)

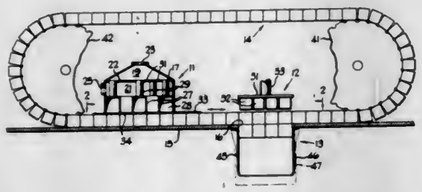


1. A resilient unit for a railroad car or the like having relatively movable portions, said unit including first and second intercoupled overlapping members telescoping within one another in generally the same longitudinal plane and a yoke having one end part in generally said same plane and in overlapping reciprocal relation thereto, the other end part of said yoke being adapted to be connected to one of the movable car portions and forming the means of connecting one of the intercoupled members of the resilient unit with one of the car portions and means adapted to connect the other one of the intercoupled members of the resilient unit to the other car portion, a retainer means seated within each of the intercoupled members, resilient means contained between and engaging the retainer means for biasingly urging the members outwardly of one another, said one member having means for having said one yoke part being extendable outwardly of the one member for increasing the length of the unit and having the other yoke part engageable with the resilient means for biasingly urging the yoke outwardly of the retainer means of the one member, whereby when the resilient unit is subjected to stress in one direction the resilient means is compressed between said other part of the yoke and the retainer means of the one member thereby elongating the resilient unit and when subjected to stress in the other direction the resilient means is compressed between each of the retainer means thereby contracting said resilient unit.

3,359,925
METHOD AND APPARATUS FOR FORMING AN EDIBLE PRODUCT

Joseph J. Porada, Norridge, Ill., assignor to National Dairy Products Corporation, New York, N.Y., a corporation of Delaware

Filed Sept. 1, 1965, Ser. No. 484,243
12 Claims. (Cl. 107—1)

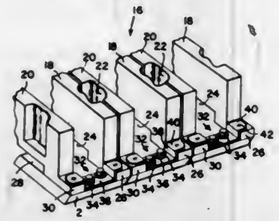


6. Apparatus for forming an edible product into a block comprised of a plurality of sections of different plastic materials arranged in layers, including in combination, means for forming a plurality of layers with each layer being comprised of sections of different materials, means for transporting each layer thus formed to a position remote from where it is formed, and means at such remote position for placing the layers adjacent each other to form the block independently of forming the layers.

3,359,926
LIQUID MOLDING MACHINE

Jacob M. Shelly, Lansdale, Pa., assignor to Shelly Bros., Inc., Lansdale, Pa., a corporation of Pennsylvania

Filed Apr. 8, 1966, Ser. No. 541,364
3 Claims. (Cl. 107—8)

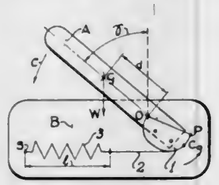


1. In a liquid molding machine having a pair of parallel endless conveying means the improvement comprising:
a plurality of mold supporting plates,
means to secure each plate to each of the conveying means with adjacent plates closely spaced,
one portion of a split mold resting on the forward end of each plate and the other portion of the said mold resting on the rear end of the immediately preceding plate,
each mold portion having a laterally extending flange at each side thereof, and
a spring clip yieldingly holding down each flange and secured to the plate which the flange overlies.

3,359,927
BALANCING MECHANISM

Stanley Janus, 1 Browning Ave., Apt. 2, Toronto, Ontario, Canada

Filed Jan. 14, 1965, Ser. No. 425,389
7 Claims. (Cl. 108—2)

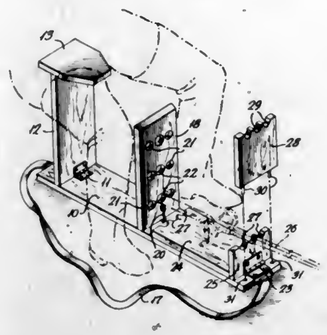


1. A balancing mechanism for a group of at least two bodies including a base body wherein a straight line passing through any two points thereof remains at a constant angle of inclination with respect to a horizontal plane, and including a movable body connected to said base body by connecting means establishing at least one axis for rotation of said movable body relative to said base body, said balancing mechanism being provided for a said axis of rotation of said movable body operatively interposed between said bodies and including:
a cam member axially pivoted to one of said bodies and having cam surfaces thereon said cam being locked against rotation relative to said base body;
cable means attached by one end to said cam member and extending partially around camming surfaces thereof;
and spring means connected between the other end of said cable means and said one body urging said cable to unwind from said cam and to rotate the same relative to said one body, said spring means yielding to rotation of said cam in the reverse direction to permit winding of said cable thereon when said movable body is rotated about said axis as to lower its centre of gravity relative to said base body.

3,359,928
COMBINED FISHING ROD HOLDER AND SEAT

James J. Gamble, P.O. Box 442, Kingstree, S.C. 29556

Filed June 2, 1967, Ser. No. 643,113
5 Claims. (Cl. 108—50)

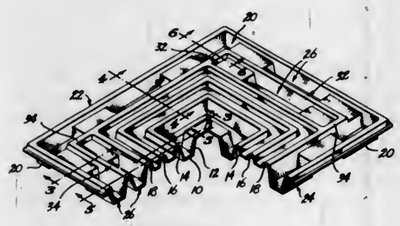


1. A fisherman's seat and rod supporting structure comprising in combination, a plate-like base member to rest upon the ground and being elongated, a seat secured hingedly to the base member near one end thereof and having an erect use position and a folded-down non-use position, an intermediate rod support member hingedly secured to the base member substantially forwardly of the seat and having an erect use position and a folded-down non-use position, said intermediate rod support member having plural groups of rod supporting openings at plural elevations, and a forward rod rest member hingedly secured to the base member near the forward end thereof remote from the seat and substantially forwardly of the intermediate rod support member, said rest member including rod receiving recesses for substantial alignment with plural groups of said rod supporting openings, whereby rods may be bodily supported by the intermediate member and rest member.

3,359,929
MOLDED PALLET

Bayard L. Carlson, Portland, Oreg., assignor to Fibers, Incorporated, Vancouver, Wash., a corporation of Oregon

Filed Apr. 18, 1966, Ser. No. 543,200
8 Claims. (Cl. 108—58)

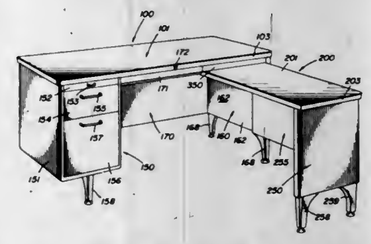


1. A molded fiber pallet, comprising:
a rectangular deck of molded sheet material having a continuous marginal stiffening inverted channel forming the perimeter thereof;
edge-supporting and corner-supporting hollow pedestals formed integral with said deck and located inwardly adjacent said marginal channel, said pedestals extending below said deck an appreciable distance whereby to support the lower side of said deck in spaced relation above a base surface;
a medially located hollow square pedestal formed integral with said deck and extending therebelow coextensive with said edge-supporting pedestals; and
a graduated series of continuous rectangular corrugations formed in said deck coplanar on their upper surfaces with said marginal stiffening channel and having upright walls located in surrounding relation to said medially located pedestal, said corrugation series terminating inwardly adjacent said edge-supporting pedestals;
said edge-supporting and corner-supporting pedestals and said medially located pedestal being arranged to provide therebetween at least one parallel pair of fork-lift tine-receiving channels beneath said deck in underlying relation to opposed portions of said corrugations.

3,359,930
DESK CONSTRUCTION

Kenneth D. Schreyer, Doylestown, Pa., assignor to Lyon Metal Products, Incorporated, Aurora, Ill., a corporation of Illinois

Filed May 9, 1966, Ser. No. 548,569
29 Claims. (Cl. 108—92)



1. A desk construction comprising a desk top having a front edge and an end edge, a pair of spaced apart mounting channels secured to the underside of said desk top and extending substantially parallel to said front edge and substantially normal to said end edge, leg structure on the ends of said desk top for supporting it in operative position above an underlying support surface, a run-off top having a rear edge extending substantially parallel to said desk top end edge and an end edge at one end of said run-off top extending substantially parallel to said desk top front edge, leg structure on the other end of said run-off top for supporting it in operative position above an underlying support surface, and an attachment assembly for adjustably interconnecting said one end of said run-off top to said desk top mounting channels, said attachment assembly including an attachment frame extending between and mounted on said desk top mounting channels, first structure slidably interconnecting said one end of said run-off top and said attachment frame for movement of said run-off top along a path parallel to said desk top end edge and beneath said desk top and between said leg structures on the ends thereof, and second structure slidably interconnecting said desk top mounting channels and said attachment frame for movement of said attachment frame and the connected run-off top in a direction normal to said desk top end edge.

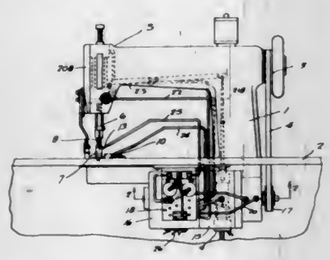
3,359,931
WORKPIECE CONTROLLED SEWING MACHINE

Roy E. Miller and Robert F. Miller, Mechanicsburg, Pa., assignors to General Automated Machinery Corporation, New Kingstown, Pa., a corporation of Pennsylvania

Filed May 28, 1965, Ser. No. 459,638
5 Claims. (Cl. 112—2)

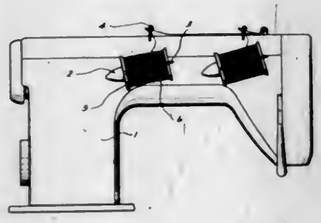
1. A workpiece controlled sewing machine comprising a sewing machine, an electric driving motor, an air con-

trolled clutch and brake unit having a drive shaft connected to said motor for being rotated thereby and a driven shaft connected to said sewing machine for at times driving the same, a control unit having an air passage and a pivotal plate for at times closing said air passage and positioned adjacent the sewing machine needle for being moved to its passage closing position by a workpiece to be sewn, a presser foot, a cylinder carried by said sewing machine, a piston rod extending into said cylinder, means for raising and lowering said presser foot connected to said piston rod, a switching unit, a source of compressed air connected to said switching unit and said control unit air passage, said switching unit having passages connecting said compressed air to the brake of



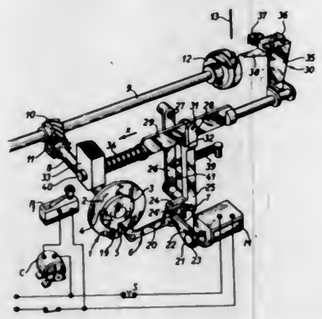
said clutch and brake unit and the piston rod raising side of said cylinder and, further passages connecting said compressed air to the clutch of said clutch and brake unit and the piston rod lowering side of said cylinder, electrically operating means consisting of electrically controlled three way valves for at times diverting the compressed air to one of said passages and simultaneously exhausting the other of said passages, an electrical circuit connected to said electrically operating means, a normally open first switch in said circuit, air operable means connected to said control unit closing said switch upon the closing of said control unit passage and means for exhausting air from said switching unit passages.

3,359,932
BOBBIN SUPPORT FOR SEWING MACHINES
Yasukata Eguchi, Tokyo, and Susumu Hanyu, Hachioojishi, Tokyo, Japan, assignors to Janome Sewing Machine Co. Ltd., Tokyo, Japan
Filed Dec. 21, 1964, Ser. No. 419,886
Claims priority, application Japan, Dec. 28, 1963, 38/97,771, 38/97,772
8 Claims. (Cl. 112—218)



1. In a sewing machine, in combination, a bed plate; an elongated sewing machine arm mounted on said bed plate having a side face and a top face; bobbin supporting means on said side face of said arm and including an elongated mounting member for one bobbin and extending in a vertical plane substantially parallel to the longitudinal axis of said arm and at angle not exceeding 30° with respect to the horizontal plane, said mounting member having spaced-apart ends and being adapted for rotatably supporting a bobbin; and thread guide means carried by said arm in the region of said top face and being located in an area of said arm bounded by two transverse planes substantially normal to the longitudinal axis of said arm and said planes intersecting said ends of said mounting member at an angle relative to the axis of the latter.

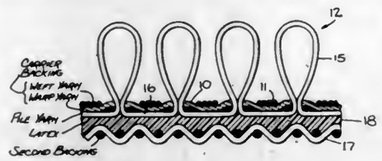
3,359,933
THREAD-CUTTING MECHANISM FOR SEWING MACHINES
Luigi Bono, Pavia, Italy, assignor to Necchi Società per Azioni, Pavia, Italy
Filed Feb. 8, 1965, Ser. No. 431,006
Claims priority, application Italy, Feb. 13, 1964, 714,952
5 Claims. (Cl. 112—252)



1. A thread cutting and stopping mechanism in combination with a sewing machine having a stitch forming mechanism, comprising a cutter, means mounting the cutter in an initial position adjacent the stitch forming mechanism, means for moving the cutter from said initial position toward said stitch forming mechanism at a predetermined speed and in timed relation with the stitch forming mechanism to a second position where said cutter is adapted to engage the sewing threads, means for moving the cutter after said engagement at a speed greater than said predetermined speed to sever the threads, and means for returning the cutter to said initial position and stopping the needle in a preselected raised position clear of the work, wherein the means for moving the cutter comprises a pinion, a rack in engagement with the pinion, and means for translating the rack, the means for translating the rack comprising a cam, abutment means integral with the cam, and a lever system connecting the cam and rack, wherein said lever system comprises a movable support and a first bell crank lever pivotally mounted on said movable support for pivotal movement about a selected axis, a second bell crank level pivotally mounted on one arm of said first level for pivotal movement about an axis normal to said selected axis, and means pivotally connecting the other arm of said first lever to the rack.

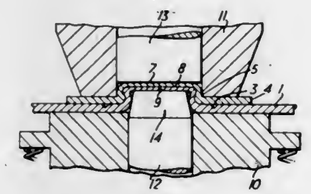
3,359,934
TUFTED CARPET HAVING SPLITTABLE FILLING YARNS IN THE PRIMARY BACKING
Harold A. Schwartz, Litchfield, Conn., and Morton I. Port, West End, N.J., assignors, by mesne assignments, to Patchogue-Plymouth Company, New York, N.Y., a joint venture
Continuation of application Ser. No. 355,255, Mar. 27, 1964. This application May 8, 1967, Ser. No. 636,804
7 Claims. (Cl. 112—410)

1. A tufted pile fabric comprising a primary backing woven of warp and filling yarns and rows of pile yarn tufted into said backing to produce pile loops above said backing and connecting loops therebelow, said filling yarns being formed of multi-sectional synthetic plastic yarns having a generally flat cross-sectional shape, each filling yarn being constituted by a multiplicity of longitudinally extending continuous filaments, means holding said filaments to-



gether in a cluster and permitting said filaments to separate without rupture of said filling yarns when subjected to the action of a tufting needle, the pile yarns being firmly anchored in said primary backing.

3,359,935
APPARATUS FOR SECURING DEFORMABLE SHEET METAL ELEMENTS
Thomas Albert Rosbottom, Hayes, England, assignor to The Metal Box Company Limited, London, England, a company of Great Britain
Filed May 10, 1965, Ser. No. 454,293
Claims priority, application Great Britain, May 20, 1964, 20,876/64
6 Claims. (Cl. 113—1)



1. Apparatus for securing one portion of ductile sheet metal to another, comprising a base member having an anvil associated therewith, said anvil initially being completely telescoped within said base member, a punch sleeve located above the base member and housing a punch of greater diameter than and co-axial with the anvil, and means for moving said base member, anvil, punch sleeve, and punch relative one to the other in timed relation so as to sequentially move the punch sleeve and anvil toward each other to surround and clamp areas of the superimposed portions of sheet metal to be secured, move the anvil to press the clamped areas into the punch sleeve to effect deformation of the clamped areas substantially to a frustrum of a cone the sloping sides of which extend across a space formed between the punch sleeve and the anvil, and move the punch to impact extrude metal from the closed end of the frustrum into said sloping sides thereby to effect deformation and interlocking of said frustrum sides in said space.

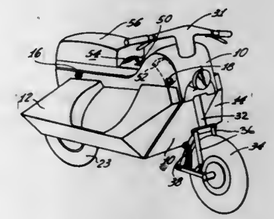
3,359,936
HYDROFOIL
Helmut Kock, Woodlyn, Pa., assignor to Wilson Shipyard, Inc.
Filed June 23, 1966, Ser. No. 559,974
2 Claims. (Cl. 114—66.5)

1. A hydrofoil structure comprising first and second shaped members;
said first shaped member having first, second, third and fourth surfaces, said first surface being curved so that one end thereof meets one end of said second surface to form an edge, said third surface joining the other ends of said first and second surfaces along a portion of the length thereof, said fourth surface joining the other ends of said first and second surfaces along the remainder of the length thereof, said fourth surface running at an angle from said third surface toward said edge;
said second shaped member having first, second, third and fourth surfaces, said first surface being curved so that one end thereof meets one end of said second surface to form an edge, said third surface joining the other ends of said first and second surfaces along a portion of the length thereof, said fourth sur-



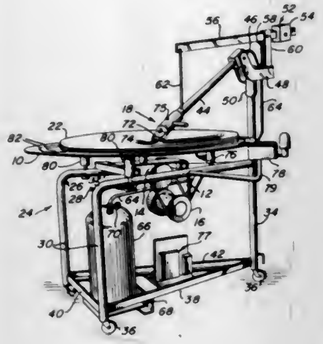
face joining the other ends of said first and second surfaces along the remainder of the length thereof, said fourth surface running at an angle from said third surface toward said edge;
a plate tapered to a point positioned between said first and second shaped members adjacent to the third surfaces of each of said members the angle of taper of said plate being equal to the angle formed between said third and fourth surfaces of said members; and
means adhering said plate to said first and second members and adhering the fourth surface of said first member to the fourth surface of said second member.

3,359,937
AMPHIBIOUS MOTOR SCOOTER
Ruggero A. D'Arena, P.O. Box 219, Woodacre, Calif. 94973
Filed Apr. 19, 1966, Ser. No. 543,650
5 Claims. (Cl. 115—1)



1. An amphibious vehicle including: a frame; wheels mounted on said frame; drive means for said wheels mounted in said frame; and flotation means hinged to said frame to extend down at least one side thereof when said vehicle is on land and to spread out and float as a buoyancy means when the vehicle is in water, said flotation means including a pair of flotation tanks hinged to both sides of said frame, and in which said flotation tanks are configured to permit the legs of a rider of the vehicle to extend down the outer faces thereof and to have skirts extending out from said outer faces to protect the legs of the rider.

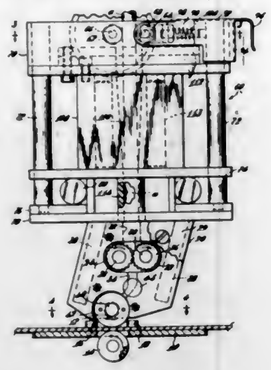
3,359,938
HEAD GLUER
Paul J. Klemmer, Appleton, Wis., assignor to Appleton Machine Company, a corporation of Wisconsin
Filed Aug. 16, 1965, Ser. No. 479,900
1 Claim. (Cl. 118—6)



An adhesive applicator for applying a controlled amount of adhesive onto the peripheral surface of a circular header comprising in combination a turntable, a motor for rotating said turntable, an adhesive extruder, means pivotally supporting said adhesive extruder above said turntable for universal adjustment to position said extruder adjacent the periphery of a header disposed on the turntable, balancing means associated with said pivotable support means for maintaining said adhesive extruder in floating equilibrium in said position, means coupled to said adhesive extruder for supplying adhesive thereto under pressure, first switch means for energizing said adhesive supply means to extrude adhesive through said extruder onto the peripheral surface of said header within selected radial limits and for simultaneously energizing said motor to rotate said turntable during adhesive extrusion, and second switch means responsive to a single revolution of said turntable for opening said first switch means to discontinue the adhesive supply and de-energize said motor, whereby a controlled amount of adhesive is applied to the periphery of said header.

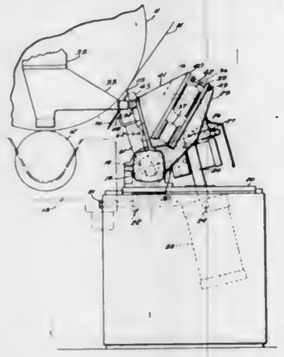
3,359,939
HOT MELT APPLICATOR
Bertram A. Von Schoppe, Watertown, Mass., assignor to Compo Shoe Machinery Corporation, Waltham, Mass., a corporation of Delaware
Filed July 9, 1965, Ser. No. 470,748
19 Claims. (Cl. 118—12)

9. Apparatus for supplying adhesive to a transfer roll comprising a block into which a part of the transfer roll is recessed and from which another part projects, said block containing a chamber for holding molten adhesive, rotors in the chamber rotatable in directions away from each other at the top of the chamber and toward each other at the bottom of the chamber, an outlet passage at the bottom of the chamber extending from the bottom of the chamber to the portion of the transfer roll recessed into the block, a valve in said passage, means for effecting continuous rotation of the transfer roll, other means for effecting rotation of the rotors, said chamber, rotors, passage, valves, recess and roll being maintained at a substantially uniform temperature by means of heating elements mounted in the block in spaced confronting relation to said components and to each other, a work-feeding roll supported for movement from an inoperative position below the transfer roll to an operative position in which it holds the work against the transfer roll, a treadle for



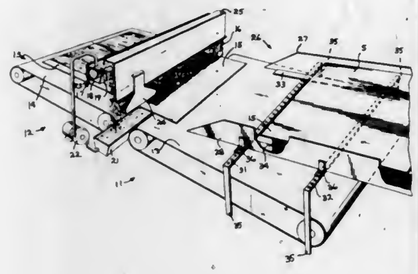
lifting the work feed roll to said operative position, and means operable by actuation of the treadle to initiate operation of the rotors and to open said valve.

3,359,940
BLADE HOLDING MECHANISM FOR COATERS
Cornelius Rempel and Arnold J. Schmitt, Beloit, Wis., assignors to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin
Filed Sept. 17, 1965, Ser. No. 488,090
15 Claims. (Cl. 118—126)



1. In a doctor for coaters and the like,
a doctor back having a front face,
and a top surface extending rearwardly of said front face,
a doctor blade adapted to be mounted on said doctor back and extending therealong,
a clamping plate clamping said doctor blade to said doctor back,
a series of clamping arms spaced along said doctor back and pivoted to said front face for movement towards and from said doctor blade about coaxial axes spaced downwardly of said blade,
means mounting the clamping plate on said arms for movement thereby into engagement with said doctor blade,
a power means moving said clamping arms toward and from said doctor back and holding said clamping plate in clamping engagement with said doctor blade,
a guard transversely pivoted to said top surface of said doctor back for movement about an axis parallel to the axis of pivotal movement of said clamping arms, and manually positionable over the doctor blade to act as a safety guard for said doctor blade when said clamping plate is released from said doctor blade during clean up of said clamping plate and doctor blade.

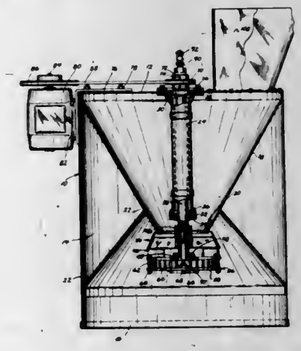
3,359,941
CURTAIN COATING APPARATUS
Ronald W. Sible, South Holland, Ill., assignor to Owens-Illinois, Inc., a corporation of Ohio
Filed June 4, 1965, Ser. No. 461,364
2 Claims. (Cl. 118—301)



1. In curtain coating apparatus for selectively coating a portion of a planar object with a liquid coating material comprising conveyor means for conveying planar objects in succession along a substantially horizontal path of travel from a first location to a second location, curtain forming means above the path of travel between the first and second locations and extending generally laterally across the path of travel for establishing a thin vertically falling curtain of said liquid material, and receiver means vertically aligned with the curtain forming means at an elevation between the curtain forming means and the path of travel for intercepting a portion of the free-falling curtain and for diverting the intercepted portion away from the path of travel to prevent the intercepted portion from contacting the planar object, the improvement comprising means for effecting accurate lateral positioning of the planar objects with respect to the receiver means, said means comprising first and second upright side wall members disposed above the path of travel and proximate to the first location, said first and second side wall members being spaced apart from one another a distance sufficient to closely contain the planar objects and having their horizontal longitudinal axes extending parallel to the path of travel, said means further comprising support means under the planar objects for supporting a stack of planar objects between the side wall members at a location rearward thereof and for guiding an individual planar object at a forward location therebetween as it is being transferred along the path of travel to the conveyor means.

3,359,942
FLUID APPLICATOR FOR FEED PRODUCTS
Richard Prince, 10001 S. St. Marys, Sioux City, Iowa 51106
Filed Dec. 28, 1964, Ser. No. 421,555
3 Claims. (Cl. 118—303)

1. In a fluid applicator for feed products,
an inverted, hollow, frusto-conical shaped hopper means,
a hollow, frusto-conical shaped member having its upper end receiving the lower end of said hopper means,
a hollow support tube secured to the upper end of said hopper means and extending downwardly into said hopper means and said frusto conical shaped member,
a drive tube rotatably mounted within said support tube having its upper end extending above the upper end of said support tube and its lower end extending below the lower end of said tube and the lower end of said hopper means,
a spindle secured to the lower end of said drive tube, said spindle including a horizontal plate; a plurality of pins extending substantially vertically upwardly from the periphery of said plate; a cone element on said plate between said pins and having its vertex spaced above said plate and in the center thereof,
a hollow feed tube extending through said drive tube and having its lower end terminating adjacent said cone at its vertex thereof and its upper end ter-

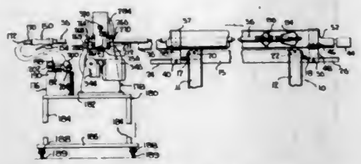


minating above the upper end of said drive tube, said feed tube adapted to supply a liquid substance to said cone element,
a slinger embracing said drive tube below the lower end of said hopper means and comprised of a central hub portion having a plurality of vane members radially extending outwardly therefrom to a frusto conical shaped rim member,
a spinner embracing said drive tube below said slinger and above said spindle and comprised of a horizontal, circular plate member having a plurality of upstanding, arcuate, blades on its upper surface,
power means operatively connected to the upper end of said drive tube to rotate said drive tube, spinner, slinger and spindle,
said hopper means having an opening therein for introducing a feed substance into the interior thereof whereby the feed substance will be discharged from said hopper means at its lower end onto said slinger.

3,359,943
APPARATUS FOR COATING THE INTERIOR OF TUBULAR MEMBERS
William H. Briggs, Thomas C. Armstrong, Jr., and Robert H. Walker, Jr., Newport News, Va., assignors to Newport News Shipbuilding and Dry Dock Company, Newport News, Va., a corporation of Virginia
Filed Feb. 25, 1964, Ser. No. 347,209
6 Claims. (Cl. 118—306)

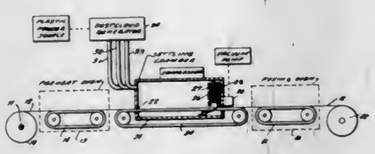
1. Apparatus for coating the interior of tubular members comprising spray coating means including a discharge nozzle adapted to discharge coating material in a 360° pattern so as to discharge coating material uniformly on the inner surface of a tubular member through which the coating means travels, conduit means operatively connected with said coating means and being connected with

a source of coating material, said conduit means being formed of flexible material so as to readily bend, centering means operatively connected with said conduit means adjacent coating means, and means for moving said conduit means, said centering means and said coating means through a tubular member at a substantially uniform accurately controlled rate comprising a pair of sheaves each of which is provided with a peripheral groove of arcuate cross sectional configuration adapted to engage opposite



portions of the outer surface of said conduit means, driving means positively connected with one of said sheaves and adapted to rotate said one sheave at a pre-selected rate, the other of said sheaves being free running, means resiliently biasing the other of said sheaves toward said one sheave so as to resiliently clamp said conduit means between said sheaves, and means guiding movement of said other sheave toward and away from said one sheave.

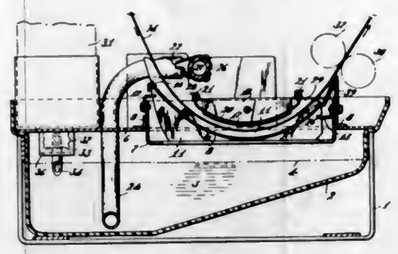
3,359,944
CLOUD DISPERSION OF FINE PLASTIC POWDER
John J. Quackenbush, Monroe, and Herbert O. Corbett, Bridgeport, Conn., assignors to National Distillers and Chemical Corporation, 99 Park Ave., New York, N.Y., a corporation of Virginia
Filed June 6, 1966, Ser. No. 555,543
4 Claims. (Cl. 118—309)



1. Apparatus for the dusting of a substrate with an even distribution of powdered particles of varying particle size and varying density; said apparatus comprising a dust cloud generator, a coating chamber, a heating oven, and means for moving said substrate from said coating chamber to said heating oven; said dust cloud generator comprising a first and second concentric cylinder defining a central chamber and an outer annular chamber; said central chamber and outer chamber communicating with one another at the bottoms thereof; said central chamber receiving a charge of said powdered particles; an air compressor means; said air compressor means connected to the top of said central chamber and to the top of said annular chamber; and outlet conduits extending from the top of said central chamber to said coating chamber.

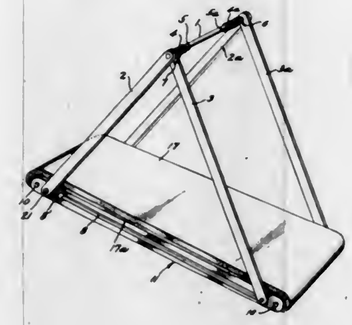
3,359,945
DEVELOPMENT OF ELECTROSTATIC IMAGES
Dana B. Hastings, Natick, and Alfred K. MacKenzie, Wayland, Mass., assignors to Dennison Manufacturing Company, Framingham, Mass., a corporation of Nevada
Filed Oct. 17, 1966, Ser. No. 587,198
2 Claims. (Cl. 118—637)

1. For developing electrostatic images on a sheet of material, apparatus comprising a container for a pool of developer, means for guiding the sheet through the pool along a predetermined path which dips into the pool with the image side of the sheet facing upwardly, upper and lower metallic members in the pool juxtaposed to the



upper and lower sides of the path respectively, the upper member being perforate, and means for flowing developer downwardly through the perforate member to the image side of the sheet.

3,359,946
PET CARRIER FOR SMALL ANIMALS
Pearl L. Schluttig, Box 7544, Washington, D.C. 20044
Filed June 1, 1966, Ser. No. 554,397
5 Claims. (Cl. 119—1)

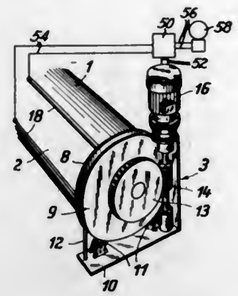


1. A structure adapted for carrying small animals comprising a floor member having parallel side members extending along the edge of and laterally of the floor member, a track slot in and extending longitudinally of the side members, locking slots at the ends of each track slot, carrying means comprising two pairs of arms connected by and pivoted to a cross bar forming a carrying handle, two of the arms being pivotally connected at their ends adjacent one end of the side members and the other two arms have means mounted for sliding movement in the track slots, said means engaging alternatively in the locking slots in the erected and collapsed positions of the arms.

3,359,947
FEEDING DEVICES FOR ANIMALS, MORE ESPECIALLY PIGS
Heinrich Biehl, Witzhave, near Trittau, Germany
Filed Sept. 27, 1965, Ser. No. 490,404
Claims priority, application Germany, June 4, 1965, B 82,282
9 Claims. (Cl. 119—51.12)

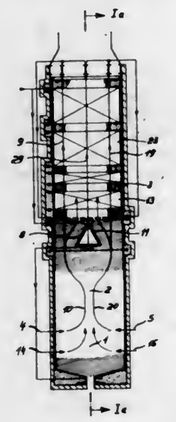
1. Feeding apparatus for animals comprising, in combination, an elongated tubular trough having a circumference and a longitudinal axis, a feeding slot defined in said trough circumference providing access into said trough, said slot being defined by first and second longitudinally extending edges spaced apart a circumferential extent less than 180° of the circumference of said trough,

an animal barrier located adjacent and above said trough and extending in the axial direction thereof, said barrier defining a first side on which animals are located and a second side removed from animal access, means supporting said trough for rotation about said axis, means for rotating said trough about said axis whereby said slot may



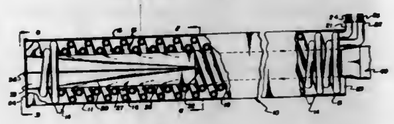
be selectively positioned on said first and second sides of said barrier, exposed electric conducting means mounted on said trough and disposed adjacent at least one of said slot edges, and controlled electric means for energizing said conducting means.

3,359,948
STEAM PRODUCER WITH RADIATION FLUE
Klaus Knizia, Gummersbach, Germany, assignor to L. & C. Steinmuller G.m.b.H., Gummersbach, Germany
Filed Dec. 21, 1965, Ser. No. 515,370
Claims priority, application Germany, Dec. 24, 1964, St 23,137
10 Claims. (Cl. 122—235)



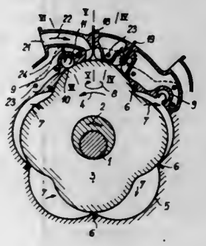
1. In a steam producer, a vertical fire-box, rows of burners disposed along opposite walls so that flue gases in the central space have higher temperatures than those at the sides of the fire-box, vertical flue means of the same substantially uniform cross section extending vertically upwardly from said fire-box, including a first radiation section having a clear central space surrounded by radiation absorbing surfaces to extract heat by radiation, and a second section above said first section through which the flue gases pass from said first section, contact heating surfaces disposed in said second section to extract heat from said gases by contact, and means to distribute the gases of unequal temperatures equally through said second section comprising a displacement body of substantial lateral extent suspended parallel to said opposite walls and extending substantially across the top centrally of the first section immediately below the contact heating surfaces to deflect the hot gases of the central space toward the sides of the flue means to mix with the cooler gases along the sides.

3,359,949
TUBE-TYPE WATER HEATER
William M. Bjarnason, 2160 Waterloo St., and Donald L. Nachbar, 1070 W. 26th Ave., both of Vancouver, British Columbia, Canada
Filed Aug. 19, 1966, Ser. No. 573,510
9 Claims. (Cl. 122—248)



1. A water heater comprising a water tube coiled into the form of an elongated helix having spaced apart coils and being adapted to be connected in a water supply system, heater means at one end of the helix for directing a high velocity stream of hot gases axially therein, a longitudinally elongated open ended casing of square cross sectional configuration encasing the helix in spaced but close relationship thereto so as to form at least four narrow longitudinally extending external passages, and an elongated conically shaped deflector arranged in the helix having its apex extending towards the heater so as to deflect the hot gases outwardly through and around the coils of the tube and into said passages.

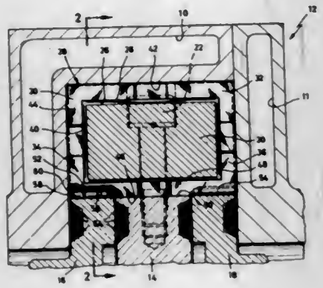
3,359,950
DIESEL ROTARY ENGINES
Gaetan de Coye de Castelet, Billancourt, France, assignor to Regie Nationale des Usines Renault, Billancourt, France, a French works under the control and the authority of the French Government
Filed May 21, 1965, Ser. No. 457,727
Claims priority, application France, May 29, 1964, 976,485, Patent 1,426,123
3 Claims. (Cl. 123—8)

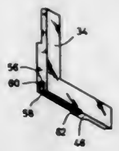


1. A diesel rotary engine of the type comprising a rotor of epicycloidal contour having n lobes, a stator having $(n+1)$ lobes, said rotor being mounted for eccentric revolution within said stator to provide $(n+1)$ working chambers, a cylindrical combustion chamber associated with each working chamber and communicating therewith through a rectangular aperture, said combustion chamber having the same length as the rotor and

having a turbulence induced therein by natural turbulence created by the movement of the rotor in the stator, inlet valve means and exhaust valve means provided in each said working chamber, said combustion chamber being disposed in said working chamber adjacent said valve means, the mesial plane of inlet ducts leading to each said inlet valve means being coincident with that of the rotor, the axis of said ducts being curved in order to add inlet turbulence to the natural turbulence of the engine, the clearance between the rotor and the stator being greater on one side than on the other side of the combustion chamber in order to provide a blowoff effect complementing the aforesaid turbulences, and fuel injector means disposed symmetrically in said combustion chamber.

3,359,951
SEALING DEVICE
Huschang Sabet, Eduard-Pfeiffer-Strasse 67, Stuttgart, Germany
Filed Oct. 22, 1965, Ser. No. 501,887
Claims priority, application Germany, Nov. 5, 1964, S 94,044
7 Claims. (Cl. 123—8)

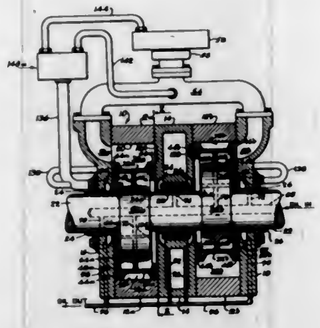




6. A sealing device for use in a rotary piston internal combustion engine having a central axis and having at least one vane piston, and hub parts rotatable with respect to each other and to one of which the vane piston is connected, said device comprising in combination a sealing assembly including a plurality of sealing strips arranged to be disposed in a groove of such vane piston and pressed against the peripheral surfaces of at least two hub parts of a rotary piston engine, at least one said sealing strip being provided with a groove assembly disposed in the region of the peripheral surface of one of the hub parts and parallel to the axis of the one part; and a strip-like sealing element disposed in said sealing strip groove and contacting such peripheral surface.

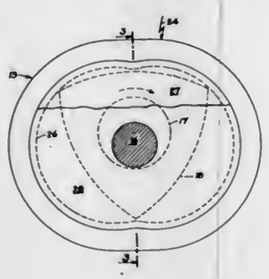
3,359,952
PRESSURE BALANCED SEALING CONSTRUCTION
Charles Jones, Hillsdale, William S. Hadaway and Walter L. Hermes, Cedar Grove, and Arthur M. Scheerer, Wayne, N.J., assignors to Curtiss-Wright Corporation, a corporation of Delaware
Filed Jan. 6, 1966, Ser. No. 519,101
7 Claims. (Cl. 123—8)

1. A pressure balanced sealing construction for an internal combustion engine or the like having an outer body containing a cavity, a piston supported on an eccentric shaft and disposed in said cavity for movement relative to the walls of said cavity, intake means communicating with said cavity at one portion thereof and crankcase means communicating with said cavity at another portion thereof with the pressure in said intake meaans and said crankcase means varying relative to one another, said pressure balanced sealing construction comprising oil seal means disposed radially outwardly of said eccentric shaft in sealing engagement with the adjacent walls of said piston and said cavity for sealing said intake means from said crankcase means, said crankcase means



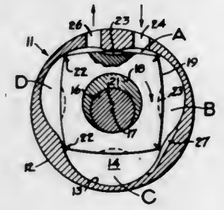
being defined between said oil means and the outer peripheral surface of said eccentric shaft, valve means operatively communicating with said intake means and said crankcase means and including means responsive to changes in the relative pressure between said intake means and said crankcase means with said valve means being operative for supplying an increase in pressure to one of said intake means and said crankcase means in response to changes in the relative pressures in said intake means and said crankcase means for minimizing the pressure differential across said seal means.

3,359,953
ROTARY INTERNAL COMBUSTION ENGINE
Claus Groth, Heilbronn (Neckar), Germany, assignor to NSU Motorenwerke Aktiengesellschaft, Neckarsulm, and Wankel G.m.b.H., Lindau (Bodensee), Germany
Filed Mar. 9, 1966, Ser. No. 532,953
Claims priority, application Germany, Mar. 10, 1965, N 26,349
6 Claims. (Cl. 123—8)



1. A rotary internal combustion engine, comprising in combination an outer body having a peripheral wall with a basically epitrochoidal multilobed inner surface and a pair of parallel end walls spaced apart by said peripheral wall along the longitudinal axis thereof; said peripheral wall having lobe junctions in a zone closer to said longitudinal axis than the remainder of said wall; a drive shaft transpiercing said end walls and having an eccentric portion disposed within said outer body, said eccentric portion having an axis displaced from and parallel to said outer body axis and planetating therearound; a multi-apexed inner body disposed within said outer body and mounted on said eccentric portion for rotation about said eccentric axis with said apexes sweeping said inner surface in sealing relation thereto; said inner body having at each end thereof an end face bearing end face seals disposed adjacent to the edges of said end face and generally parallel thereto, said end face seals sweeping the inner surface of said end walls in sealing relation thereto; each of said end walls having its inner surface faced with a hard wear-resistant metal in the region of at least one of said lobe junctions and the remainder of the inner surface faced with a less wear-resistant metal.

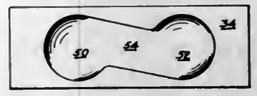
3,359,954
ROTARY INTERNAL COMBUSTION ENGINE AND METHOD OF OPERATION THEREOF
Dankwart Eiermann and Felix Wankel, Lindau (Bodensee), Germany, assignors to NSU Motorenwerke Aktiengesellschaft, Neckarsulm, and Wankel G.m.b.H., Lindau (Bodensee), Germany
Filed Apr. 5, 1966, Ser. No. 540,311
9 Claims. (Cl. 123—8)



1. A rotary internal combustion engine, comprising in combination an outer body having a peripheral wall with a basically epitrochoidal inner surface of first, second, and third lobes and a pair of parallel end walls spaced apart by said peripheral wall along the longitudinal axis thereof; a drive shaft transpiercing said end wals and having an eccentric portion disposed within said outer body, said eccentric portion having an axis displaced from and parallel to said outer body axis and planetating therearound; a four-apexed inner body disposed within said outer body and mounted on said eccentric portion for rotation about said eccentric axis with said apexes sweeping said inner surface in sealing relation thereto; said outer body having an intake port communicating with said first lobe and an exhaust port communicating with said third lobe; and said peripheral wall having passage means intercommunicating between said first and second lobes during at least some rotational positions of said inner body.

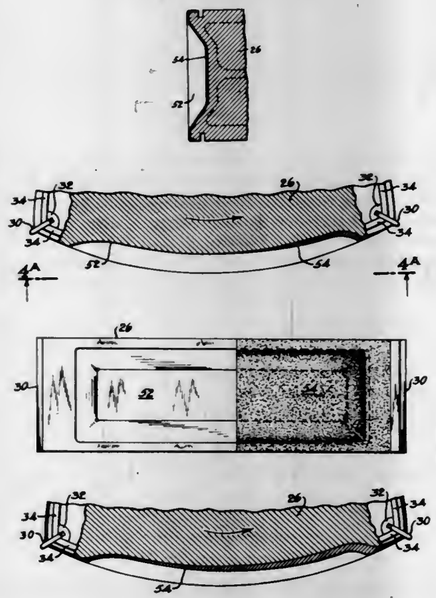
6. A method of operation for rotary internal combustion engines of the type having an epitrochoidal housing of first, second, and third lobes and having a four-apexed rotor therein forming variable volume chambers with said housing, comprising expanding a first chamber in said first lobe and intaking a fluid thereinto, then opening a communication between said first and second lobes into a second chamber, expanding said first and second chambers simultaneously and continuing fluid intake thereinto, then contracting said first chamber while maintaining said communication and transferring fluid therethrough to said second chamber, then closing said communication and compressing fluid in said second chamber, then igniting said compressed fluid to expand said second chamber to produce rotation of said rotor, then exhausting said second chamber.

3,359,955
ROTARY ENGINE COMBUSTION CHAMBER
Alec F. Turner, Glen Rock, N.J., assignor to Curtiss Wright Corporation, a corporation of Delaware
Filed Apr. 18, 1966, Ser. No. 543,366
14 Claims. (Cl. 123—8)



10. A rotor for a rotary combustion engine having an outer body including a cavity with said rotor being disposed in said cavity for relative rotation therein, said rotor including at least one working face with said working face defining a wall of an associated working chamber of said rotary combustion engine, said working face having two spaced cavity portions each having a curved cross-section for producing swirling of a working fluid in said cavity during relative movement of said rotor and said cavities being interconnected by a working fluid transfer passage so that the working fluid may pass between said cavity portions.

3,359,956
ROTOR CONSTRUCTION FOR ROTARY ENGINES
Max Bentele, Ridgewood, N.J., assignor to Curtiss-Wright Corporation, a corporation of Delaware
Filed Apr. 19, 1966, Ser. No. 543,659
10 Claims. (Cl. 123—8)



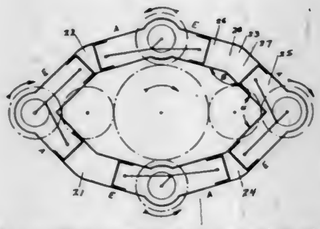
1. In a rotary combustion engine, a rotor supported in a hollow outer body for relative rotation therewith, said rotor including a peripheral wall having an outer peripheral surface with said outer peripheral surface being periodically exposed to combustion temperatures during relative rotation of said rotor; and said outer peripheral surface including a coating disposed on at least a portion of

said rotor peripheral wall with said coating being composed of a material having a relatively low thermal conductivity for minimizing heat transfer to said rotor outer peripheral wall surface such that the effective temperature of the outer surface of said rotor may be increased without substantially increasing the temperature of the rotor interior.

3,359,957
FOUR CYLINDER TWO-STROKE OPPOSING PISTON INTERNAL COMBUSTION ENGINE

Albrecht-Wolfgang Mantzel, Ingolstadt, Samhoferweg 21, Germany

Filed Oct. 31, 1966, Ser. No. 590,623
Claims priority, application Germany, Apr. 15, 1966, P 39,206
5 Claims. (Cl. 123—53)

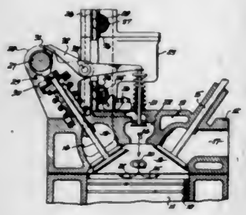


1. A four cylinder two-stroke opposing piston internal combustion engine having four parallel arranged crankshafts arranged about a central axis, including a first two opposite crankshafts being closer together than the second two opposite crankshafts, two pistons acting on each crankshaft and the cylinders of which are arranged at an angle to one another, characterised by the fact that the angle between the two cylinders associated with the said first two opposite crankshafts being greater than 90° and the angle between the two cylinders associated with the said second two opposite crankshafts being less than 90°.

3,359,958
EXCESS AIR CYCLE ENGINE AND AIR SUPPLY MEANS AND METHOD OF OPERATING SAME

Ernest A. von Seggern, 1051 E. Angeleno, Burbank, Calif. 91501, and Henry E. von Seggern, Rte. 2, Box 1910, Escondido, Calif. 92025

Continuation of application Ser. No. 303,116, Aug. 19, 1963. This application Aug. 29, 1966, Ser. No. 579,450
12 Claims. (Cl. 123—75)

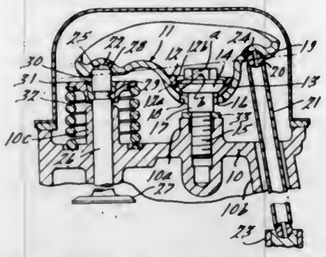


4. In an internal combustion engine of the type having dual working fluid admission means, of which one supplies a combustible fuel-air mixture to said engine, and one supplies excess air, the combination of: a fuel-air mixture supply means, including a choke, joined to one of said dual admission means; and an air flow control valve associated with said choke, and connected to said excess air admission means joined to the other of said dual admission means, whereby said air is prevented from entering said cylinder through said air admission means when said choke is closed.

3,359,959
WALKING BEAM ROCKER ARM

Frederick M. Rose, Sarasota, Fla., assignor to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware

Filed Nov. 29, 1966, Ser. No. 597,681
10 Claims. (Cl. 123—90)

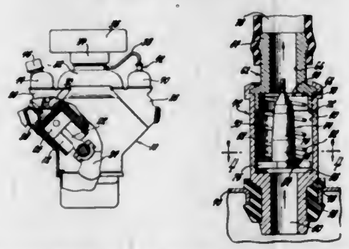


1. In a valve operating assembly for use with an automobile engine,
(A) a valve operating rocker arm having
(1) a first arcuate bearing surface,
(2) a valve operating portion for operatively coupling with a valve to operate the latter upon rocking of said arm, and
(3) an actuator engaging portion for operatively coupling with a reciprocating actuator to rock said arm,
(B) mounting means having
(1) a second arcuate bearing surface spaced from said first bearing surface,
(C) means cooperating with said first and second bearing surfaces to complete a scotch yoke type articulation therebetween comprising
(1) a spacer between said first and second bearing surfaces and having
(a) a third arcuate bearing surface conforming to and seated against said first bearing surface in rocking sliding relationship, and
(b) a fourth arcuate bearing surface conforming to and seated against said second ing bearing in rocking sliding relationship,
(c) the centers of curvature of said third and fourth bearing surfaces being eccentric with respect to each other to effect translatory movement of said rocker arm with respect to the center of curvature of said fourth bearing surface upon rocking of said rocker arm on said third surface.

3,359,960
CRANKCASE VENTILATION

William D. Pittsley, Flint, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Dec. 21, 1964, Ser. No. 419,686
7 Claims. (Cl. 123—119)

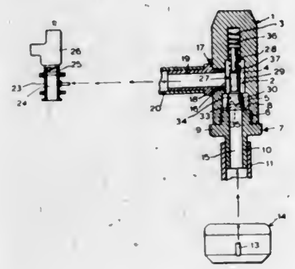


2. In combination, an internal combustion engine having a crankcase, an induction system and a plurality of cylinders and normally operable under load above a predetermined cylinder firing frequency and a crankcase ventilation valve connected with said crankcase and said induction system and including a spring biased plunger reciprocably movable to control the flow of crankcase vapors therethrough, said plunger and spring having a natural frequency of vibration below said predetermined cylinder firing frequency.

3,359,961
FUME ELIMINATOR

John De Paolo, 1101 Green St., San Francisco, Calif. 94109

Filed June 1, 1965, Ser. No. 460,179
1 Claim. (Cl. 123—119)

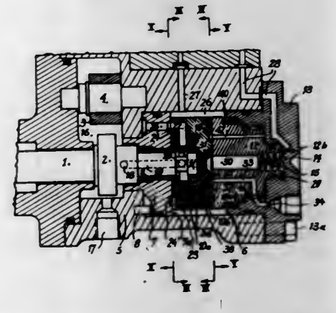


A crankcase fume eliminator comprising:
(a) A vertically elongated body formed with a recess extending longitudinally thereof opening outwardly at the lower end of said body providing an inlet, and said recess being closed at its upper end in the upper portion of said body;
(b) an outlet in said body for said fumes communicating with said recess at a point intermediate the upper and lower ends of said recess;
(c) means for connecting said inlet with a crankcase, and means for connecting said outlet with the intake manifold of an internal combustion engine;
(d) an upwardly facing annular shoulder within the lower portion of said recess extending radially inwardly from the side walls thereof around said inlet and spaced below said outlet, providing an upwardly axially facing surface;
(e) a vertically elongated control member within said recess coaxially thereof, said member including a valve element on the lower end thereof supported on said upwardly facing surface by gravity and closing said inlet and having an upward extension extending into the portion of said recess above said outlet, said control member including said valve element and said extension, being spaced from the side walls of said recess and from the upper closed end of said recess for upward movement thereof to an elevated position substantially out of contact with said side walls and with said upwardly directed surface under the influence of a partial vacuum developed in said recess above said element from said intake manifold when said inlet is connected with said manifold and such engine is operating;
(f) said surface being horizontal and substantially planar and the surface on said element in engagement with said axially upwardly facing surface of said shoulder being horizontal and substantially planar whereby said surface on said element will be free for engaging and for being supported stationary on said upwardly facing surface on said shoulder in different positions laterally relative to the vertical axis of said body upon falling by gravity from said elevated position upon cessation of said partial vacuum;
(g) a spring within said upper portion of said recess above said outlet out of the flow of fumes from said inlet to said outlet when said eliminator is in operation, said spring adapted to react between said extension and the upper end of said recess upon a predetermined degree of upward movement of said element within said recess when said eliminator is in operation.

3,359,962
DISTRIBUTING MEANS FOR A FUEL INJECTION PUMP

Jean G. Cadiou, Paris, France, assignor to Societe Anonyme Andre Citroen, Paris, France, a French society

Filed Oct. 21, 1965, Ser. No. 499,359
Claims priority, application France, June 24, 1965, 22,053
9 Claims. (Cl. 123—139)



1. Distributing means for directing the flow of fuel from a primary supply pump to an injection pump, then to a metering member and then successively to each of the cylinders of an engine, said distributing means comprising: a casing having an inlet and a plurality of outlets; a control shaft extending into said casing; three distributing discs having passageways extending therethrough and arranged in said casing coaxially to said control shaft; a first one of said discs being fixed in said casing completely surrounding said shaft, but allowing said shaft to freely rotate therein; a second one of said discs having a first flat face placed against a flat face of said first disc and being keyed on one end of said shaft for rotation therewith, the third one of said discs being placed against a second flat face of said second disc and having means preventing it from rotating in said casing but allowing movement in the axial direction; an axial compression spring located between said casing and said third disc for biasing said third disc against said flat face of said second disc; said second disc, when rotated, selectively controlling the flow of fluid from said inlet through said discs to said outlets.

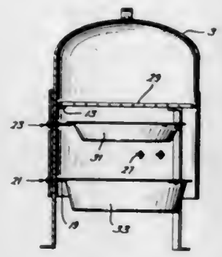
3,359,963
KNOCK-DOWN BROILING AND ROASTING APPARATUS

Ben C. Kostial, Houston, Tex., assignor to Texas National Manufacturing & Sales Company, Houston, Tex., a corporation of Texas

Filed Nov. 21, 1966, Ser. No. 595,810
6 Claims. (Cl. 126—9)

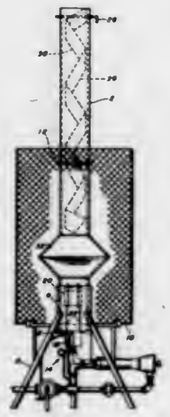
1. A broiling and roasting apparatus for cooking food items comprising
an annular, cylindrical body determined by a rectangular sheet, the ends of which overlap, said cylindrical body being open at either axial end,

a plurality of rectangular supports,
a plurality of screws for removably fastening said supports to said body, one of said supports being fastened to both overlapping ends of said body, thereby securing said ends together,
said screws projecting radially inwardly within said body, thereby determining a radial plane of support,
a radially inwardly projecting shelf secured to each of said supports, thereby determining a radial plane of support,
an annular grill for the placement of food items having an outside dimension less than the inside dimen-



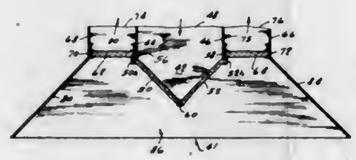
sion of said body and suitable for being supported by a radial plane of support,
an annular fuel pan having an outside dimension less than the inside dimension of said body and suitable for being supported by a radial plane of support,
an annular water pan having an outside dimension less than the inside dimension of said body and suitable for being supported by a radial plane of support, and
an annular lid having an outside dimension less than the inside dimension of said body and suitable for being supported by the radial plane of support nearest the axial end of said body opposite said supports.

3,359,964
FLOOR-TYPE RADIANT SPACE HEATER
Charles G. Wilson, Sr., McKeesport, Pa., assignor to United States Steel Corporation, a corporation of Delaware
Filed Nov. 12, 1965, Ser. No. 507,386
1 Claim. (Cl. 126—91)



A space heater comprising a vertical radiant tube, said tube being substantially polygonal in cross-section, a polygonal holder having an open upper end and an open lower end, the bottom end of said tube being removably fitted in said holder, a plurality of elongated leg members spaced around said holder each connected to said holder by one end and extending angularly therefrom to thereby support the holder above ground surface, a fuel burner disposed in the open bottom end of said holder firing into the bottom end of said tube, a shield-baffle fixedly mounted in the bottom end of said tube spaced above said burner, said shield-baffle being detached from said radiant tube, means connected with the nozzle of said burner supporting said shield-baffle, said shield-baffle being a polygonal tube extending transversely of said radiant tube and having a horizontal area less than the cross-sectional area of said radiant tube, an elongated baffle disposed in said tube spaced above said shield-baffle, said elongated baffle comprising a continuous strip of metal formed into a series of deflecting plates extending longitudinally along said radiant tube disposed at an angle to the longitudinal axis of said tube, and a circumferential bustle formed in said radiant tube in the portion thereof between said shield-baffle and said elongated baffle.

3,359,965
RADIANT HEATERS
William Cecil Milligan, 1618 San Angelo, San Antonio, Tex. 78201
Filed Oct. 23, 1965, Ser. No. 503,492
7 Claims. (Cl. 126—92)

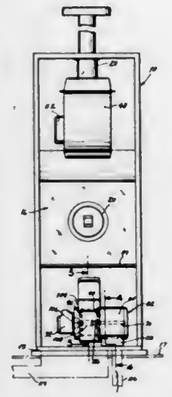


1. A gaseous-fueled radiant heater comprising:
a first and second gaseous porous ceramic tile having a burning surface for burning a gaseous fuel;
means for mounting said first and second tiles adjacent to one another at an angle to the horizontal;
means for defining a plenum chamber including the surfaces of said first and second tiles opposite to said burning surface;
a third and fourth gaseous porous ceramic tile each having a radiant heat emitting surface, affixed on opposite sides of said adjacent first and second tiles, said third tile being oriented so as to have its radiant heat emitting surface partially facing said burning surface of said first tile and said fourth tile being oriented so as to have its radiant heat emitting surface partially facing said burning surface of said second tile.

3,359,966
OIL FURNACE HAVING COMPARTMENTED AIR HANDLING SYSTEMS
De Wayne Thomas, Belleville, Ill., assignor to International Oil Burner Company, St. Louis, Mo., a corporation of Missouri
Filed July 18, 1966, Ser. No. 565,766
2 Claims. (Cl. 126—110)

1. A mobile home oil-burning furnace having improved air-handling provisions, comprising
a furnace cabinet,
a furnace therein having a heat transfer surface, an oil combustion burner, and auxiliary fuel supply and ignition devices therefor,
further having a room air circulating system including a suction inlet into the cabinet, a circulating fan,

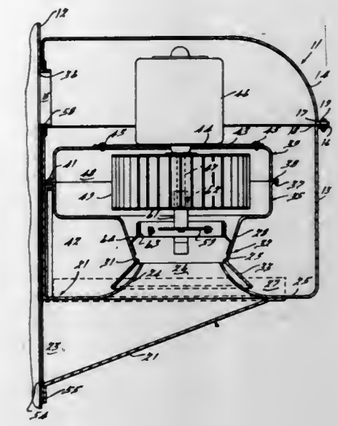
air flow casing means to deliver the air from the inlet through the fan and in heat transfer relationship with said heat transfer surface, and an air outlet for such air from the cabinet,
further having a combustion air system
including means to duct combustion gases from the furnace to the exterior of such mobile home and
combustion air supply means including
a combustion blower having an air inlet opening,
an electric blower motor having a motor casing including an air exit passage communicating with the blower air inlet opening, the motor casing further having an air inlet port, and
an air conduit sealedly secured to said motor casing about its inlet port and communicating to the exterior of said cabinet and there having inlet duct attaching means,



whereby to furnish all combustion air from the exterior of such mobile home through the motor casing, thereby to cool the said motor,
the cabinet further having an openable sealed compartment which encloses the said auxiliary devices and the said combustion air supply means and is penetrated by the said air conduit to the blower motor,
whereby to guard the said suction inlet of the room air circulation system from gases, odors and noise when the sealeable compartment is closed and to permit uninterrupted operation of said combustion air system when the compartment is opened for servicing.

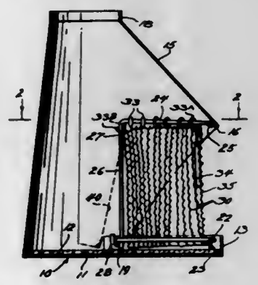
3,359,967
HUMIDIFIER
Bartell J. Homkes, Ada, Mich., assignor to Evans Products Company, a corporation of Delaware
Filed Dec. 27, 1965, Ser. No. 516,455
12 Claims. (Cl. 126—113)

1. A humidifying device for adding moisture to air and for washing foreign particles from the air comprising housing means defining a sump for containing a source of water, means defining an air passage from an air inlet to an air outlet through said housing means, means defining a venturi section within said air passage having a throat of restricted area, a fan supported within said air passage and interposed between said throat and said air outlet, said fan being adapted to create a pressure differential upon operation thereof between said air inlet and said air outlet for circulating air through said air passage and for creating a reduced static pressure at said throat, and conduit means extending fom a point beneath the normal liquid level in said sump to said throat for delivering water to said throat in response to the air flow therethrough, said fan having a plurality of fan blades supported for rotation within said air passage and positioned adjacent said throat in the path of air flow to impinged by the water globules discharged into said



passage from said throat upon the creation of a pres differential thereupon.

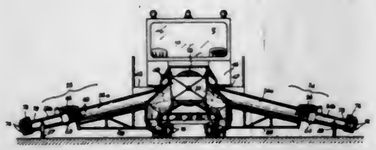
3,359,968
HOODED FIREPLACE CONSTRUCTION
Robert D. Thulman, 10002 Frederick Ave., Kensington, Md. 20795
Filed Oct. 1, 1965, Ser. No. 492,083
8 Claims. (Cl. 126—120)



1. In a fireplace, in combination,
(a) a substantially horizontal hearth,
(b) a tapered hood thereabove,
(c) said tapered hood meeting said hearth aroun proximately half the perimeter thereof to define and side walls about the rear portion of said he
(d) said tapered hood being spaced from said h around approximately the other half of the p eter thereof to define a fireplace opening,
(e) said opening being of greater height at its ce portion than at its side portions,
(f) a screen frame,
(g) said screen frame having a lower generally zontal guide means extending around the lower tion of said opening above said hearth and i wardly spaced relation to the perimeter of hearth,
(h) said screen frame having an upper generally zontal traverse rod extending inside said tapered at a level slightly higher than the greatest heig said opening and embracing an area of less than that embraced by said guide means,

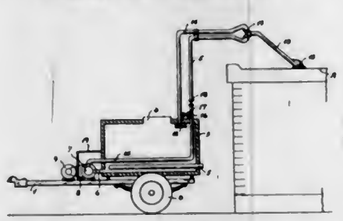
(i) means for centrally supporting said traverse rod from said hood above the center of said opening,
(j) inclined leg means supporting said traverse rod at its rear ends, said leg means being angled to lie proximate to and to generally conform to the taper of said hood throughout the major part of their heights, and to stand away from said hood at their upper portions to position the end portion of said traverse rod in spaced relation to said hood,
(k) said inclined leg means being secured to said hearth at their lower ends,
(l) curtain type flexible fire screen panels slidable on said traverse rod at either side of said central support and having a rearward and forward edges and sized to cover said fireplace opening when drawn so that their forward edges are contiguous to each other,
(m) said flexible fire screen means depending into the space between said guide means and the perimeter of said hearth and being held at a tapering slope by said guide means,
(n) suspended push-pull handle means secured to each of said first screen panels in spaced relation to the forward edges thereof and lying externally of said screen panels, for retracting and drawing the same,
(o) cantilever means supporting the forward edges of said screen panels for overlapping the same when said screen panels are drawn,
(p) heat shield means secured in said fireplace in spaced relation to rear and side wall portions thereof,
(q) said heat shield means supporting said leg means against said conical hood and securing the rearward edges of said screen panels against displacement along said traverse rod.

3,359,969
DEVICE FOR CLEARING WIDE SNOW- OR ICE-COVERED RUNWAYS, ROADS OR THE LIKE
Jean Henri Bertin, Neuilly-sur-Seine, and Ernest Dubois, Fontenay-aux-Roses, France, assignors to Bertin & Cie, Paris, France, a company of France
Original application Oct. 20, 1965, Ser. No. 498,453, now Patent No. 3,308,806, dated Mar. 14, 1967. Divided and this application Jan. 9, 1967, Ser. No. 608,098
Claims priority, application France, Jan. 27, 1965, 3,477
5 Claims. (Cl. 126—271.2)



1. An apparatus for cleaning wide tracks covered with snow or glazed frost and comprising: a carrier vehicle, a turbojet arranged on said vehicle with its exhaust facing the vehicle front, the axis of said turbojet being substantially horizontal, a chamber connected to the exhaust of said turbojet for collecting the hot gases issuing therefrom, a pair of curved main discharge ducts connected to said chamber and ending with transverse discharge apertures positioned near the ground and slightly staggered in the longitudinal direction which is the direction of vehicle movement, a pair of straight auxiliary discharge ducts also connected to said chamber and ending with discharge apertures positioned near the ground, said straight discharge ducts being disposed in a substantially transverse direction and slightly behind the curved ducts, wherein the improvement comprises a controllable stream-deflecting device comprising a plurality of deflector vanes each pivotable about a substantially horizontal axis extending substantially in said longitudinal direction and fitted at the discharge apertures of at least one of said pairs of discharge ducts to be immersed within the stream issuing therefrom, and a double-acting jack for controlling in operation the angular setting of said deflector vanes.

3,359,970
APPARATUS FOR APPLYING A LAYER OF THERMOPLASTIC MATERIAL
Soren Kristoffer Pedersen, Vangen 24, Tved, near Kolding, Denmark, and Jorden Peder Kjaer Jorgensen, Norregade 50, Vejen, Denmark
Filed Apr. 7, 1966, Ser. No. 540,885
Claims priority, application Denmark, Apr. 12, 1965, 1,842/65; Aug. 10, 1965, 4,084/65
7 Claims. (Cl. 126—343.5)



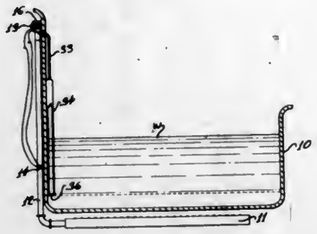
1. Apparatus for the application of thermoplastic materials, especially tar or asphalt, comprising a container for said materials, heating means for heating the materials in the container, a pumping device having a suction inlet communicating with said container, heating means for heating said pumping device, a discharge conduit passing from the outlet of the said pumping device through said container and within the container extending near the said heating means for the materials, and a reversible driving motor for said pumping device.

3,359,971
HEATING SYSTEM FOR TANK TRANSPORT OF LIQUIFIED MATERIALS
Charles D. Snelling, 2949 Greenleaf St., Allentown, Pa. 18103
Filed May 20, 1966, Ser. No. 551,690
5 Claims. (Cl. 126—343.5)



1. The combination of a transportation tank and a heating system for conveying heat sensitive liquids at temperatures above ambient temperatures wherein an engine-driven device is used to transport said tank, said engine having exhaust means for exhausting hot waste gases, said heating system comprising a condenser in heat conductive relationship with at least the underside of said tank, an evaporator mounted in heat conductive relationship with at least a portion of said engine exhaust means, a heat-transfer circulating system coupling said evaporator to said condenser, said coupling system comprising at least one vapor transfer line from said evaporator to said condenser and at least one fluid return line from the condenser to said evaporator, a predetermined amount of vaporizable heat-transfer fluid hermetically sealed in said circulating system, and a thermostatically operable valve coupled to said liquid return line adapted to control the flow of fluid from said condenser to said evaporator in accordance with the temperature requirements of said tank.

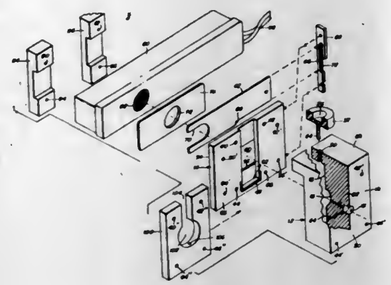
3,359,972
LOW LIQUID LEVEL SHUT-OFF APPARATUS FOR GAS BURNER
John S. Carothers, Birmingham, Ala., assignor to Alabama Gas Corporation, a corporation of Alabama
Filed Aug. 22, 1966, Ser. No. 574,013
4 Claims. (Cl. 126—374)



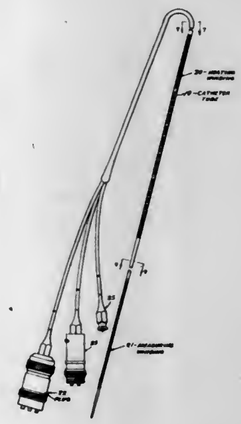
1. In combination, a vessel open to the atmosphere and adapted to contain a liquid to be heated, a burner for heating the liquid, and a gas supply line to the burner,
(a) a valve housing in said gas supply line having a gas inlet and a gas outlet and having a valve therein disposed to move selectively from a closed, seated position to an open position,
(b) a valve stem connected to said valve,
(c) a first diaphragm carried by said valve stem and defining a seal for one side of the valve housing,
(d) a second diaphragm carried by said valve stem and spaced from said first diaphragm to define a closed chamber therebetween,
(e) there being a tap passageway communicating said closed chamber with the gas inlet so that the gas pressure at said inlet exerts a force to aid in closing said valve,
(f) adjustable spring means urging said valve toward open position,
(g) counter spring means urging said valve toward closed position,
(h) a second closed chamber at the opposite side of said second diaphragm from the first mentioned closed chamber,
(i) a conduit communicating with said second closed chamber, and
(j) a depending dip tube having a lower open end and communicating at its upper end with the lower end of said conduit in position to extend downwardly into the liquid in said vessel and trap air within said dip tube so that pressure is increased and decreased within said second closed chamber in response to a rise and fall, respectively, in the liquid level in said vessel, whereby above a predetermined liquid level in the vessel pressure within said second chamber overcomes the pressure of the inlet gas and the force exerted by said counter spring to open said valve and below said predetermined level in the vessel pressure is reduced within said second chamber and the pressure of the inlet gas and the force exerted by said counter spring closes said valve.

3,359,973
BIOLUMINESCENCE REACTION CHAMBER
Duane G. Hoffman, Fairfax, Va., assignor to Hazleton Laboratories, Incorporated, Falls Church, Va., a corporation of Virginia
Filed Feb. 23, 1965, Ser. No. 434,240
10 Claims. (Cl. 128—1)

1. A reaction chamber for detecting the presence of microorganisms in a test sample by means of a bioluminescent reaction comprising housing means, means for positioning within said housing a reactant sensitive to the presence of adenosinetriphosphate in a test sample, means for injecting test material into said reactant, and detector means in light-transmitting relationship with said reactant for detecting the magnitude of the bioluminescent reaction when said test sample comes into contact with said reactant.



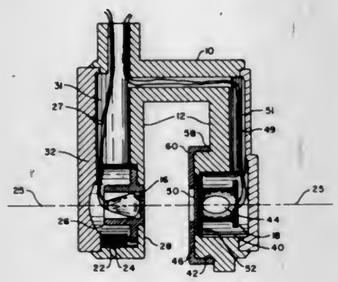
3,359,974
DEVICE FOR THE THERMAL DETERMINATION OF CARDIAC VOLUMETRIC PERFORMANCE
Hassan H. Khalil, University of Mississippi Medical Center, Jackson, Miss. 39216
Filed Oct. 7, 1963, Ser. No. 314,260
5 Claims. (Cl. 128—2.05)



1. A cardiac catheter arrangement for measuring the volume of the blood delivered by the heart, consisting of a flexible tubular catheter member adapted to be introduced into a blood vessel, a heater wire winding wound on said member, a thermometric winding wound on said member at a separate substantially spaced downstream position thereon, relative to said heater winding, the adjacent ends of said two windings being substantially spaced apart, first connections for supplying at a constant rate high-frequency heating current at short intervals to said heater winding, second connections connected to said measuring winding, and a measuring bridge circuit connected to said second connections said heater winding being relatively long in comparison with the length of said

catheter member and of the order of 12 centimeters said measuring bridge circuit being a three-lead bridge circuit having a first pair of resistance arms of substantially equal resistance and having a second pair of resistance arms one of which is said thermometric measuring winding and the other arm of said second pair being a winding of resistance equal to the resistance of said thermometric measuring winding, a first lead connected from the terminal of a first one of said first pair of arms which is not connected to a terminal of the second one of said first pair of arms, to a first terminal of said thermometric measuring winding which is not connected to a terminal of said other arm of said second pair of arms, a second lead connected from the second other terminal of said thermometric winding to a first terminal of the second one of said second pair of arms whose resistance is equal to the resistance of said thermometric measuring winding, a battery, and a third lead connected directly from a first pole of said battery to said second other terminal of said thermometric winding, and the second other pole of said battery being connected to the common point of the two arms of said first pair of arms, and the second other terminal of the second one of said second pair of arms being connected to the terminal of the second one of said first pair of arms which is not connected to the first one of said first pair of arms.

3,359,975
PULSE RATE SENSING DEVICE
Allan P. Sherman, Waltham, Mass., assignor to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California
Filed Oct. 23, 1965, Ser. No. 502,967
6 Claims. (Cl. 128—2.05)



1. A blood pulse rate sensing device adapted to position energy transmitting and receiving members on either side of the pinna of the ear, whereby the energy transmitted by said transmitting member passes through the tissue of the ear to the receiving member, said device comprising:

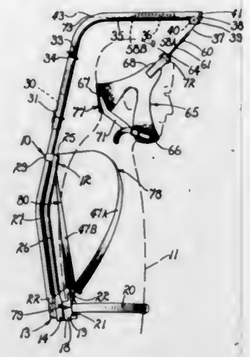
a U-shaped, opaque base member having first and second arms,

first and second oppositely-disposed housings in said first and second arms respectively each adapted to house a different one of said transmitting and receiving members, each of said housings having a common axis intersecting both of said arms,

a hollow end cap adapted to encase one of said housings, said end cap having an end face with a central portion on said axis pervious to the transmission of energy between said members, and

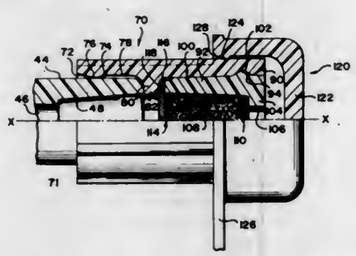
means to vary the spacing between said end face and one of said housings, thereby to engage the ear of a person whose pulse rate is to be sensed between one of said housings and said end cap.

3,359,976
PORTABLE DEVICE FOR MAINTAINING THE BACK OF A VERTEBRAL BODY IN TRACTION
Claude C. Laval, Jr., 2444 Farris Ave., Fresno, Calif. 93705
Filed Feb. 23, 1965, Ser. No. 434,501
6 Claims. (Cl. 128—75)



1. A device for maintaining in traction the back of a vertical body having a head, shoulders and a trunk, comprising a frame having angularly related predetermined upper and lower ends adapted to be mounted on the back of the trunk of such a body; a substantially rigid support post mounted in substantially upstanding relation on the frame centrally of the back of the trunk and having an angularly bent lower portion, said frame and said lower portion of the post being disposed in substantially conforming relation to the back of the trunk, said support post including a substantially rigid integral upper arm disposed in a substantially horizontal attitude and having a predetermined forward end disposed a predetermined distance forwardly of the head; shoulder strap means on the frame for holding the upper end of the frame in predetermined spaced relation to said trunk; sling means borne by the head providing a grip against the back of the head; adjustable tension means disposed within said arm and having an end downwardly rearwardly extendible from the forward end of the arm for connection to said sling means in substantially longitudinally aligned relation to said vertebral body to impose a rectilinear pulling force thereagainst and to produce a reaction force through said arm and post to press the frame downwardly and more tightly against the back of the trunk.

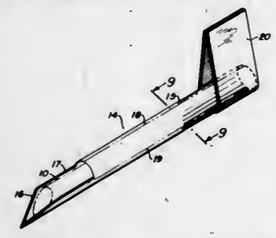
3,359,977
AIR FILTER MEANS
George K. Burke, Bethlehem, Pa., assignor to Burron Medical Products, Inc., Bethlehem, Pa., a corporation of Pennsylvania
Filed Mar. 19, 1965, Ser. No. 441,130
11 Claims. (Cl. 128—214)



6. Air filter means for use with a dual flow piercing device as used with intravenous injection apparatus, said filter means comprising an elongated hollow body means

defining a bore extending longitudinally therethrough, said body means including a first open end portion, said body means including an intermediate peripherally extending inwardly directed wall portion formed therewithin having a hole formed therethrough, plug means secured within the opposite open end portion of said body means, said plug means having an end wall portion defining an opening for the entrance of air therethrough, first filter means disposed within said plug means for filtering bacteria out of air entering through said last-mentioned opening, and second filter means disposed between said plug means and said intermediate wall portion, said second filter means comprising a disc-like member having the peripheral edges thereof clamped between one end of said plug means and said intermediate wall portion, said second filter means being pervious to air and substantially impervious to liquid.

3,359,978
GUIDE NEEDLE FOR FLEXIBLE CATHETERS
Raymond M. Smith, Jr., 1123 N. 18th St., Allentown, Pa. 18104
Filed Oct. 26, 1964, Ser. No. 406,237
16 Claims. (Cl. 128—214.4)



1. Surgical apparatus for introducing fluid to or selectively withdrawing fluid from a body, said surgical apparatus comprising:

(a) a hollow elongated member having a distal end and a proximal end,

(b) a sharpened needle portion at the distal end of said hollow elongated member and adapted to be inserted in said body,

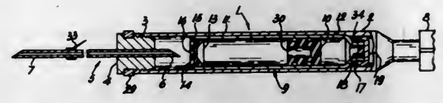
(c) a portion of the wall of said hollow elongated member being open longitudinally rearwardly from the distal end of said hollow elongated member to provide a trough extending longitudinally rearwardly from the sharpened needle portion of said hollow elongated member, said trough terminating short of the proximal end of said hollow elongated member between said distal and proximal ends thereof,

(d) a flexible catheter extending through said hollow elongated member from the proximal end thereof to a position substantially adjacent the distal end thereof, said flexible catheter being inserted simultaneously with said hollow elongated member in said body for conduction of said fluids,

(e) means to open said hollow elongated member from end to end thereof thereby to permit said hollow elongated member to be displaced laterally of, and completely detached from, said flexible catheter.

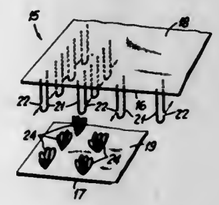
3,359,979
PROJECTILE HYPODERMIC SYRINGES
Colin A. Murdoch, 14A Hassel St., Timaru, Canterbury, New Zealand
Filed Nov. 12, 1964, Ser. No. 410,376
Claims priority, application New Zealand, Apr. 28, 1964, 138,029
5 Claims. (Cl. 128—218)

2. A projectile adapted to inject medicine, drugs and the like into animals comprising a hollow body closed at its rear end and a closure means, for closing its front end, a hypodermic needle extending axially of and secured to the closure means having a first portion extending into the body and a second portion projecting from the body, a capsule arranged for accommodation in and capable of axial movement within the body, a piston of resilient material within said capsule and capable of axial movement therein and dividing the capsule into anterior and posterior portions, a rupturable membrane closing the end of said anterior portion with said anterior portion being adapted to be filled with liquid medicine, actuating means in the form of a compressed



gaseous medium within said posterior portion normally urging said piston in the direction of said membrane and maintaining said anterior portion under pressure, such that upon penetration of the hollow second portion of the needle into the animal and the momentum of the capsule causing it to be displaced axially of the body thereby causing the first portion needle to penetrate and rupture the membrane to provide communication between said anterior portion and the interior of the needle, the actuating means then forces said piston towards the membrane thus expelling the liquid contents of the anterior portion through the hollow needle.

3,359,980
DIAPERS HAVING INTEGRAL FASTENERS
Carole Lila Rosenblatt, Hicksville, N.Y., assignor of one-half to Henry Rosenblatt, Hicksville, N.Y.
Filed Jan. 19, 1965, Ser. No. 426,497
1 Claim. (Cl. 128—284)



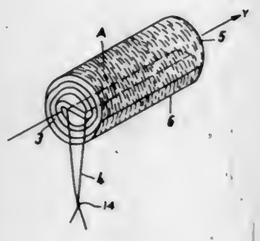
An adjustable and reusable diaper, which comprises:

an absorbent trapezoidal sheet element having a periphery defined by relatively long and relatively short parallel band portions joined by a pair of non-parallel sides;

a continuous fabric strip comprising a plurality of rows of hook-like fabric elements, the strip being permanently affixed along its entire length to the sheet and extending adjacent and parallel to the relatively short band portion along substantially the entire length of the latter band portion, the openings in each row of hook-like elements on the strip being aligned in a direction perpendicular to the relatively short band portion; and

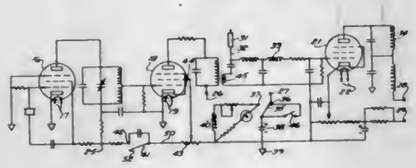
a pair of elongated fabric tabs each comprising a plurality of raised fabric loops engageable with the hook-like elements of the fabric strip, the tabs being permanently and individually affixed along their entire length to the sheet at opposite ends of the relatively long band portion with the longer dimensions of the tabs extending parallel to the respective non-parallel sides of the sheet, the length of each tab being less than the length of the fabric strip.

3,359,981
COTTON AND CELLULOSIC FIBER VAGINAL TAMPON
Josef Hochstrasser, Dusseldorf, Germany, assignor to Carl Hahn KG., a corporation of Germany
Filed Jan. 19, 1965, Ser. No. 426,695
Claims priority, application Germany, Jan. 22, 1964, H 51,460
7 Claims. (Cl. 128—285)



1. A tampon for use in feminine hygiene, which comprises a rectangular strip having a base layer of cotton batting and at least one layer of cellulose fibers disposed thereupon, said rectangular strip being successively folded upon itself to form an intermediate rectangular strip having a plurality of convoluted layers with the cotton batting on the exterior, said intermediate strip having a width defined by the distance between its opposite folds, said width being approximately equal to the length of the finished tampon, said intermediate strip being folded lengthwise and rolled to form an approximately cylindrical tampon having a withdrawal end at which the cellulose fibers are completely covered by cotton batting, and an insertion end with a core of cellulose fibers exposed.

3,359,982
SENSING CONTROL FOR A SURGICAL NEEDLE OR INSTRUMENT
Methodi Guiorguiev, 241 Knollwood Ave., Cranston, R.I. 02910
Filed Feb. 8, 1965, Ser. No. 431,015
13 Claims. (Cl. 128—303.18)



1. In a circuit for operating a surgical needle or instrument in which an AC current is rectified to DC, oscillated, and then fired through the surgical needle or instrument, a control circuit comprising means for applying an AC field to a human body, means for picking up an AC signal when the surgical needle or instrument contact the human body, a relay, means for energizing said relay, means operable by said AC signal for activating said energizing means, and a switch operable by said relay for initiating operation of the operating circuit when said relay is energized, a condenser on charge, a second relay, said switch connecting said condenser to said second relay, a second switch, said second relay operating said second switch to connect the current to the operating circuit during the discharge of said condenser, said condenser being discharged when said switch is operated to connect said condenser to said second relay.

3,359,983
SYNTHETIC SURGICAL SUTURES
Elmore Hathaway Northey, Warren Township, Somerset County, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed Jan. 23, 1963, Ser. No. 253,288
9 Claims. (Cl. 128—335.5)

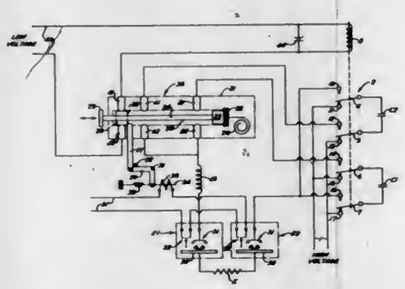
9. A surgical suture package comprising a sterile enclosure and therein a sterile needled surgical suture comprising an oriented lower alkylene polymer suture attached to a surgical needle, said polymer of the suture being selected from the group consisting of linear polyethylene having approximately the following characteristics:

Melting range, ° F.	260 to 280
Softening range, ° F.	250 to 260
Decomposition point, ° F.	Above 600
Odor	None
Plasticizer	None
Specific gravity	0.95 to 0.96
Tenacity, grams per denier	6 to 9
Ultimate elongation, percent	10 to 25
Strength, on original diameter, pounds per square inch	70,000 to 120,000

and isotactic polypropylene having approximately the following characteristics:

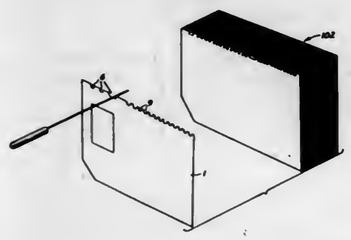
Melting range, ° F.	325 to 335
Softening range, ° F.	280 to 300
Decomposition, ° F.	Above 550
Odor	None
Plasticizer	None
Burning	Slow
Specific gravity	0.87 to 0.94
Tenacity, grams per denier	5 to 10
Ultimate elongation, percent	15 to 25
Molecular weight	300,000 to 450,000

3,359,984
ELECTRICAL CIRCUIT FOR VENTRICULAR DEFIBRILLATOR
William C. Daniher, Verona, and Adrian C. Billetdeaux, Pittsburgh, Pa., assignors to Mine Safety Appliances Company, a corporation of Pennsylvania
Filed Nov. 3, 1964, Ser. No. 408,487
4 Claims. (Cl. 128—419)



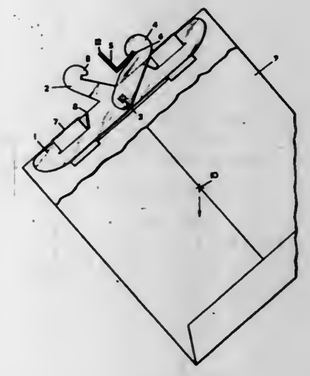
1. In a ventricular defibrillator for delivering successive pulses of electrical current from a plurality of capacitors to a pair of electrodes in contact with a patient's body, the combination comprising a source of high-voltage direct current and at least two capacitors and a pair of electrodes and a charging switch and a discharging switch, the charging switch having two positions in the first of which it connects the capacitors in parallel to the high-voltage source and disconnects those same elements completely from the discharging switch and the electrodes, the discharging switch having conducting armature means movable between cocked and uncocked positions and having a plurality of pairs of contacts, each of said pairs of contacts being connected together separately and successively and momentarily by the armature means when said means moves from its cocked to its uncocked position, means for cocking the discharging switch, means for releasably holding the discharging switch in its cocked position, and means operative when the discharging switch is in its cocked position to move the charging switch from its first position to its second position, said last mentioned means including electromagnetic means that are connected in series with a source of current by the armature means when the latter is in its cocked position, the charging switch in its second position disconnecting the high-voltage source completely from the capacitors and from the discharging switch and the electrodes and connecting a first side of each capacitor to the first electrode and the other side of a first capacitor to a contact in a first of said pairs of discharging switch contacts and connecting the other side of a second capacitor to a contact in a second of said pairs of contacts, the other contact of each of said pairs of contacts being connected to the second electrode, and means for moving the discharging switch from its cocked to its uncocked position to provide sequential pulses of current through the electrodes and the patient's body.

3,359,985
PERFORATED KEY WORD CARD
Alfred Luscher, Hergiswil, Switzerland, assignor to Dorec Verlags, A.-G., Hergiswil, Switzerland
Filed Jan. 25, 1966, Ser. No. 522,988
Claims priority, application Austria, Aug. 23, 1961, A 6,505/61
11 Claims. (Cl. 129—16.1)



1. In an information file card system having a series of unsorted file cards each containing information falling within the scope of at least one key word, each file card having along at least one edge thereof holes and at least one notch, which notch corresponds to the information on the card, and each file card having a portion of the edge thereof contoured in a shape for matching similarly contoured edge portions of the other file cards, so that to select from the series of cards all cards having information within the scope of a key word a needle is passed through the apertures and notches in the aligned cards in an appropriate position and the cards notched at that position drop out of the aligned cards and the remainder of the cards are retained on the needle, that improvement comprising, a plurality of key word cards each having a single key word thereon, at least one edge of each key word card in said plurality having therein at least one first notch corresponding to the key word of the card, said notch occupying a unique position on the key word card with respect to the said first notches on the other key word cards, each key word card having a portion of the edge thereof contoured in a shape for matching the similarly contoured portions of the edges of the file cards for correctly orienting each key word card when it is placed against the file cards so that said first notch registers with the notches of all cards in the file cards having information thereon falling within the scope of the respective key word card, said key word cards each having means thereon for visually indicating said at least one first notch, and key word carrying means on each of said key word cards having indicated thereon the key word, said key word carrying means on each card occupying a unique position on the card for the group of key word cards so that each key word card will be visible in said plurality of key word cards when they are properly positioned with respect to each other, whereby the user can find the desired key word card at a glance without having to go through the entire plurality of key word cards and the user can use the respective key word cards with the series of unsorted file cards without knowledge of the coding scheme for positioning the notches.

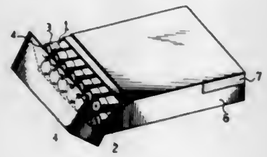
3,359,986
DEVICE FOR SUSPENDING PLANE ARTICLES SUCH AS ENVELOPES, PORTFOLIOS, AND THE LIKE, FROM A RAIL
Elisabeth Koenders, Utrecht, Netherlands, assignor to Blikman & Sartorius N.V., Amsterdam, Netherlands
Continuation of application Ser. No. 363,918, Apr. 30, 1964. This application June 21, 1966, Ser. No. 559,341
Claims priority, application Netherlands, May 1, 1963, 292,174
4 Claims. (Cl. 129—16.7)



1. Means for suspending a plane article on a suspension rail, comprising a strip fixedly connected to said article, two hooks having their hook noses pointing towards each other on said strip, each of said hooks partly defining a passage opening for said rail, one of said hooks being fixedly connected to said strip and the other hook being pivoted to said strip to be movable through an angle between two positions comprising a first position wherein said hook noses are spaced apart more than the width of said rail and a second position less than the width of said rail, said hooks in said second position confining the cross-section of said rail, and in the suspended position of the article the pivot of said pivoted hook being located lower than the hook noses and spaced from a vertical line through the center of gravity of said pivoted hook, the dimensions are such that said pivoted hook abuts against said rail so that it has a fixed position in time for the subsequent swiveling of said strip to take place forcibly

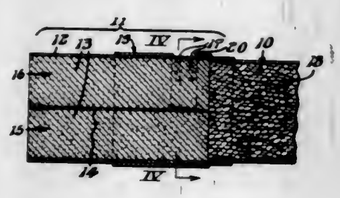
about the pivot of said pivoted hook only, as a result of which said hook nose of said fixed hook is sure to catch on an edge of said rail as it moves from said first position to said second position as a result of the weight of the assembly.

3,359,987
LIGHTING-MEANS-INCORPORATED CIGARETTE
Hiroshi Ishii, 1–26–4 Hojyo-cho, Toyonaka, Osaka, Japan
Filed May 17, 1966, Ser. No. 550,656
1 Claim. (Cl. 131—7)



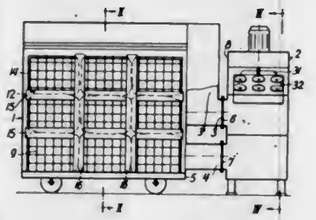
A lighting means incorporated with a cigarette comprising, in combination, a small piece of hardened paper rolled around a restricted portion of the tip of a cigarette roll, said small piece of hardened paper being applied thereover with an insoluble liquid including a mixture of a small quantity of sulphur and potassium bichromate with a glue solution and being thereafter dried, a short cotton strip having a coating of lighting material hardened thereon inserted on two points between the inner circumference of said hardened paper piece and the outer circumference of the cigarette roll, said short cotton strip slightly protruding from the lip of the cigarette roll and having an enlarged head portion for use as a striking head and a reduced tail end portion provided for insertion of the same, and another piece of hardened paper adhered to the side portion of a cigarette pack, said another piece of hardened paper being used as a striking surface over which is applied a lighting agent of red phosphorus and antimony sulfide with a glue solution.

3,359,988
FILTER CIGARETTE
Osborne M. Thomson, R.D. 4, Coatesville, Pa. 19320
Filed Apr. 21, 1965, Ser. No. 449,787
4 Claims. (Cl. 131—10.3)



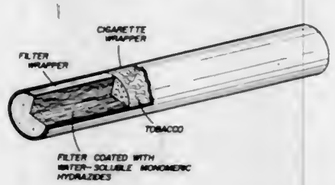
1. A filter cigarette comprising a body portion substantially filled with tobacco, a filter section attached to one end of said body portion, an outer wall for said filter section, a filter material substantially filling said filter section, a divider substantially impervious to smoke and air positioned in the filter material and extending substantially from side to side and lengthwise of the filter section thereby forming two filter channels separated one from the other by the divider, a second impervious divider transversely positioned across one of said filter channels substantially at the juncture of said body portion and said filter section and extending substantially across the interface between said one channel and said body portion, and a plurality of holes formed in the outer wall of said one filter channel.

3,359,989
APPARATUS FOR MOISTENING TOBACCO BALES BY MEANS OF A CURRENT OF MOIST AIR OR OF VAPOR IN A VACUUM
Heinrich Stöcklöcker, Vienna, Austria, assignor to Schiff & Stern Gesellschaft m.b.H., Vienna, Austria
Filed May 19, 1966, Ser. No. 551,289
Claims priority, application Austria, May 20, 1965, A 4,606/65
12 Claims. (Cl. 131—136)



1. An apparatus for moistening tobacco bales by means of a current of moist air, comprising
at least one stationary tapping unit having means for feeding and exhausting said moist air, and
a movable processing unit constructed as a moisture tight case housing said tobacco bales and releasably connected to said tapping unit means for moistening said tobacco bales by said moist air.

3,359,990
CIGARETTE FILTER ELEMENT CONTAINING WATER-SOLUBLE MONOMERIC HYDRAZIDES FOR THE SELECTIVE REMOVAL OF ALDEHYDE VAPORS
Ray E. Leonard and George P. Touey, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Oct. 20, 1965, Ser. No. 498,946
17 Claims. (Cl. 131—267)

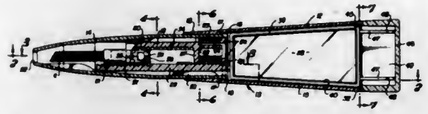


1. As a new article of manufacture, a tobacco smoke filter element containing a filter additive, said additive being a monomeric water soluble hydrazide which will react with and render harmless substantially all aldehyde vapors in the tobacco smoke passing through said filter element.

3,359,991
COSMETIC APPLICATORS
Walter B. Spatz, Los Angeles, Calif., assignor to Spatz Corporation, Venice, Calif., a corporation of California
Filed Sept. 28, 1964, Ser. No. 399,650
7 Claims. (Cl. 132—85)

1. In a cosmetic applicator: a housing having a forward outlet; a marking device slidable in said housing between a forward position projecting through said outlet

and a rearward position retracted within said housing, said device having a rack portion; a spring acting on said device to urge said device to said forward position; a rack actuator movable forwardly and rearwardly in said housing; a pinion rotatably mounted in said housing and meshing with said rack portion and rack actuator whereby forward movement of said rack actuator in the direction of



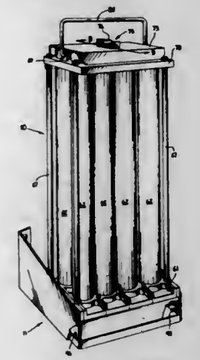
said outlet retracts said marking device rearwardly through said outlet and into said housing; means disposed rearwardly of and in axial alignment with said actuator and operatively associated therewith for shifting said actuator forwardly in said housing; and means releasably retaining said shifting means and actuator forwardly in said housing to hold said marking device in its rearward position in said housing.

3,359,992
COSMETIC APPLICATOR
Frank Cishek and Eustace Fotiu, Mahwah, N.J., assignors to Avon Products, Inc., New York, N.Y., a corporation of New York
Filed Nov. 6, 1964, Ser. No. 409,362
10 Claims. (Cl. 132—85)



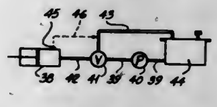
1. A product applicator comprising:
(a) a tubular housing having an open forward end, a rearward end and at least one longitudinally extending opening intermediate its ends;
(b) a complementary shaped product container for holding a flowable product therein, said container having a dispensing end facing the open end of said housing and being slidably positioned within said housing between an extended operative dispensing position and a retracted position;
(c) brush means fixed to the dispensing end of said container;
(d) a tube member connecting the interior of said container with an interior portion of said brush means;
(e) plunger means slidably positioned within said container adjacent its rearward end;
(f) selectively operable means for moving said plunger toward the dispensing end of said container to dispense product from said container and into said brush;
(g) means urging said container into said retracted position;
(h) positioning means operatively connected to said container and extending outwardly through the openings in said housing intermediate its ends; and
(i) a cover member adapted to be slidably received over either end of said housing for enclosing said container within said housing when disposed over the open end of said housing and for engaging said positioning means to move said container to its operative dispensing position when slid over the rearward end of said housing.

3,359,993
CHANGEMAKER
Edward J. Tryon, Trafalgar, and Melvin D. Perdue, Indianapolis, Ind., assignors to Standard Change-Makers, Inc., Indianapolis, Ind., a corporation of Indiana
Filed Mar. 4, 1966, Ser. No. 531,969
12 Claims. (Cl. 133—2)



1. In a money changer mechanism, a magazine including a chassis and means for holding a plurality of coins in stack relation, a slide plate member slidable in said chassis beneath said means for moving coins from said means and dispensing them, a housing, a solenoid mounted in said housing and having an armature member, said armature member being adjacent said slide plate member and engageable with said slide plate member for movement thereof by said armature, and means for securing said chassis to said housing whereby said solenoid slides said slide plate member, said means for securing said chassis to said housing comprising a projecting element and saddle which are mounted on said chassis and housing with said projecting element received in said saddle, said projecting element being detachable from said saddle and said armature and slide plate movable apart by merely lifting said chassis away from said housing.

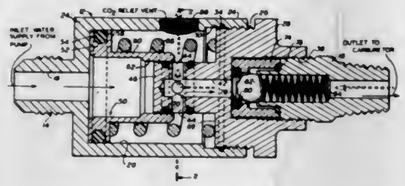
3,359,994
METHOD FOR BLEEDING A HYDRAULIC SYSTEM
Siméon Lapointe, 11764 James Morrice St., Montreal, Quebec, Canada
Filed Sept. 20, 1965, Ser. No. 488,680
6 Claims. (Cl. 137—15)



1. A method for bleeding a hydraulic motor connected in a hydraulic system including a reservoir, a feeding circuit and a return circuit between said motor and said

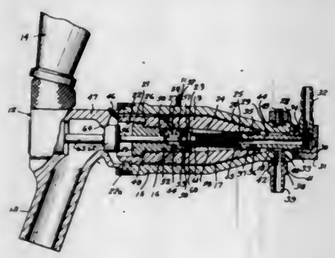
reservoir, said motor having a normally closed bleeding orifice, said method comprising the steps of temporarily connecting an auxiliary hydraulic line to said bleeding orifice and to said return circuit, circulating fluid through said motor, auxiliary line and return circuit into said reservoir until substantially all gas entrapped in said motor is returned to said reservoir wherein it becomes separated from said fluid, and thereafter disconnecting said auxiliary hydraulic line, and closing said bleeding orifice.

3,359,995
AUTOMATIC THREE-WAY VALVE
Michael J. Parisi, Paramus, N.J., and Thomas Migliore, New York, N.Y., assignors to Tap-Rite Products Corp., Hackensack, N.J., a corporation of New Jersey
Filed July 2, 1965, Ser. No. 469,164
11 Claims. (Cl. 137—102)



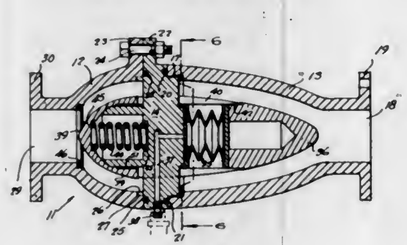
1. A fluid flow control system including a housing having a chamber therein, inlet and outlet passage opening through the housing and into said chamber at different locations on the housing, a vent passage at a third location on the housing and through which fluid escapes from within the chamber, a piston that slides in the chamber and that as an axially-extending bore, a guide element fixed relative to the housing and extending from one end of the chamber and into the axial bore of the piston, at least one of the passages opening through the circumference of the guide element and being closed by the piston when the piston covers one of said passages at one part of its stroke.

3,359,996
POST-MIX VALVE
Richard T. Cornelius, Minneapolis, Minn., assignor to The Cornelius Company, Anoka, Minn., a corporation of Minnesota
Filed July 19, 1965, Ser. No. 472,879
11 Claims. (Cl. 137—170.1)



1. A liquid mixing and dispensing device comprising:
(a) an outer body member having a cylindrical chamber and a frusto-conical chamber contiguous with and merging into said cylindrical chamber,
(b) an inner body member slidably positioned within said chambers of said outer body member, the outer surface of said inner body member being spaced from the inner wall of said outer body member,
(c) said inner body member having a frusto-conical nose having substantially the same angle of taper as the taper of said frusto-conical chamber,
(d) said inner body member having a bore extending axially therein for a portion of its length and being open at said nose end,
(e) non-carbonated liquid conduit means extending through said outer body member and into the open end of said bore of said inner body member,
(f) a fluid seal between said conduit means and the wall of said bore and arranged to permit relative axial movement of said inner body member and said conduit means,
(g) carbonated liquid conduit means extending into said outer body member in the region opposite the end of said nose,
(h) said inner body member having a fluid delivery duct connecting the inner end of said bore with the space between said inner and outer body members and thereby providing a mixing region for combining carbonated and non-carbonated liquids,
(i) valve means in said bore for controlling the passage of non-carbonated liquid to said mixing region,
(j) and a second valve means downwardly of said mixing region for controlling the discharge of the mixed fluid.

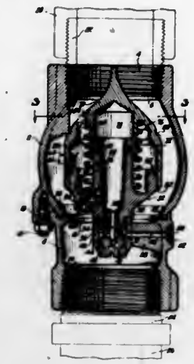
3,359,997
FLOW-CONTROL VALVE
Rolf H. Gardey, 4806 NE. 21st Ave., Fort Lauderdale, Fla. 33308
Filed May 14, 1965, Ser. No. 455,899
10 Claims. (Cl. 137—219)



1. In a pressure-controlled valve, a casing having an inlet passage at one end portion thereof, a support in said casing, an expansible resilient bellows secured at one end thereof to said support, said support being formed with a control fluid passage leading to and discharging into said bellows, said casing being provided with outlet passage means, a valve element movably mounted on said support surrounding said bellows and being secured to the other end of the bellows, said valve element being movable into sealing engagement with said inlet passage, and spring means on the side of the support opposite the bellows biasing said valve element toward said sealing engagement, said spring means acting against the expansive force of the bellows but being overcome when control media under sufficient pressure is admitted into the bellows through said control fluid passage.

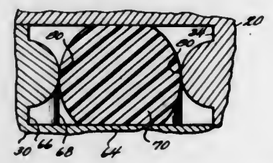
3,359,998
PRESSURE CONTROL VALVES FOR FUEL LINES
Robert G. Fike, Fairfax, Va., assignor to Donald G. Griswold, Newport Beach, Calif.
Filed Oct. 1, 1964, Ser. No. 400,859
10 Claims. (Cl. 137—220)

1. A pressure control valve for use in a fuel line or the like, comprising: a generally hollow body having an inlet port and an outlet port axially aligned therewith, said inlet port having a valve seat surrounding the same; means for securing a nozzle to said body at said outlet port for receiving flow therefrom; means for securing a fuel supply conduit to said body at said inlet port for directing flow thereinto; valve means in said body including an annular edge arranged to engage said seat to obstruct the flow therethrough from said inlet port to said outlet port, said valve means including a hollow axially movable valve member providing a pressure chamber, and force applying means within said valve member normally urging said



valve member axially to its open position and in a direction toward said outlet port with a substantially constant and predetermined but yieldable force, said axially movable valve member having an integral closed end portion with pressure equalizing passage means therein communicating with said pressure chamber and exposed to the outlet pressure of the fuel in said body adjacent said outlet port and being responsive to said outlet pressure to move axially toward said inlet port to close the same when said outlet fuel pressure exerts a force on said closed end portion exceeding said predetermined force.

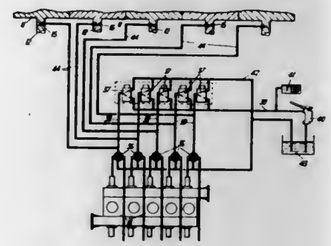
3,359,999
PACKING CHAMBERS FOR O-RINGS
Frank H. Mueller, Decatur, Ill., assignor to Mueller Co., Decatur, Ill., a corporation of Illinois
Filed Apr. 13, 1965, Ser. No. 447,811
9 Claims. (Cl. 137—246.15)



1. In an arrangement for effecting a seal between two relatively movable members including an annular packing chamber between the members, generally four-sided in radial section and defined by a pair of opposed generally radially-facing surfaces, one on each of the members, and a pair of opposed generally axially-facing surfaces, and a resilient pressure-deformable packing O-ring in the chamber, the O-ring being generally circular in radial section when unconfined, slightly compressed between the radially-facing surfaces, and subject to being forced against one of the axially-facing surfaces by mechanical or fluid pressure force, the improvement that the one axially-facing surface is at least partly convex in radial section and initially is engaged with the O-ring along substantially a line of contact located generally at the major axial dimension of the O-ring and generally midway between the radially-facing surfaces, whereby the O-ring can be deformed to a greater extent against the one axially-facing surface than if the latter were flat in the plane of the apex of the convex portion of said one axially-facing surface and whereby an increase is obtained in the ratio between the axial thickness of the O-ring when unconfined and the axial thickness of the O-ring, substantially midway between the radially-facing surfaces, when the O-ring is deformed against the one axially-facing surface to an extent to substantially conform thereto.

9. The structure defined in claim 1 wherein one of the members is the plug of a rotary plug valve and the other member is a seat means for the plug, the ring provides a seal between the valve plug and its seat means at one end of the latter, the annular packing chamber is defined by a groove in one of the opposed surfaces of the members, the one axially-facing surface forms the outer side wall of the groove, and wherein the valve is provided with a closed lubricant system which exerts lubricant pressure against the inner side of the packing ring.

3,360,000
DISCHARGING ARRANGEMENTS FOR BULK FLUIDS
Edward Clement Weston, Gloucester, and John Raymond Palfrey, London, England, assignors to Gloster Saro Limited, Gloucestershire, England, a British company
Filed Apr. 15, 1966, Ser. No. 545,203
7 Claims. (Cl. 137—267)



1. An arrangement for discharging bulk fluids from a tank or container divided into a number of compartments, wherein the tank compartments have separate delivery lines leading to a distributor or junction box which has valves for routing the delivery from any compartment to either one of two outflow lines but not both simultaneously, a manually-operable selector is coupled to the distributor valves to enable valves corresponding to selected tank compartments to be opened at will, and preset control means is provided in association with the distributor valves in an arrangement whereby the manner of opening of the valves can be selected in advance so that each tank compartment is connectable through the distributor to only a particular one of the outflow lines, that is until the setting is changed.

3,360,001
VACUUM JACKETED PIPE LINE AND JOINT CONSTRUCTION THEREFOR
James H. Anderson, 1615 Hillock Lane, York, Pa. 17403
Filed Mar. 17, 1965, Ser. No. 440,527
7 Claims. (Cl. 137—375)

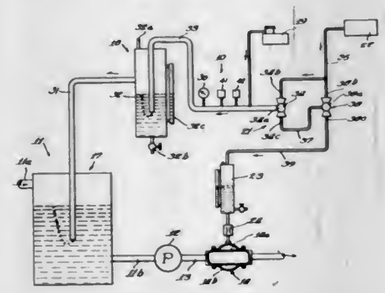
1. A thermally insulated pipe line structure for transporting a stream of high pressure fluid comprising: an inner pipe member suspended within an outer pipe member of lesser bursting strength than said inner pipe member and defining therewith an annular space which when evacuated reduces heat transfer between the pipe members; two axially spaced-apart sealing means extending

across said annular space and dividing said annular space into two elongated annular sections and a third annular section, said third annular section being disposed between said sealing means and being of small axial length relative to said elongated sections, each of said sealing means including means responsive to a predetermined high fluid pressure in the respective elongated annular section for passing fluid from that section into said third annular section and for preventing passage of high pressure fluid from said third annular section into either of said elongated annular sections; and pressure responsive means associated with said third annular section for automati-



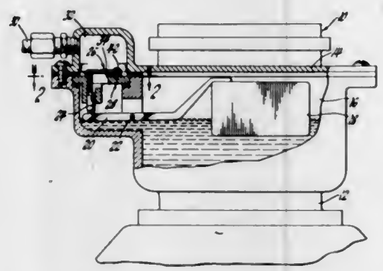
cally venting pressurized fluid from said third annular section to the outside of said pipe structure upon an increase in pressure occasioned by passage of fluid through either of said sealing means whereby an increase in pressure in one of said elongated annular sections caused by a leak in the wall of said inner pipe in said one elongated annular section will be relieved through the respective sealing means into said third annular section and then through said vent means without affecting the vacuum in the other elongated annular section and whereby said outer pipe is protected from excessive internal fluid pressure which would develop during a leak.

3,360,002
AUTOMATIC LIQUID LEVEL CONTROL MEANS FOR A SEWERAGE WET WELL
Frank G. Weis, Kansas City, Mo., and Charles R. Welty, Shawnee Mission, Kans., assignors to Union Tank Car Company, Chicago, Ill., a corporation of New Jersey
Filed Feb. 15, 1965, Ser. No. 432,751
8 Claims. (Cl. 137—395)



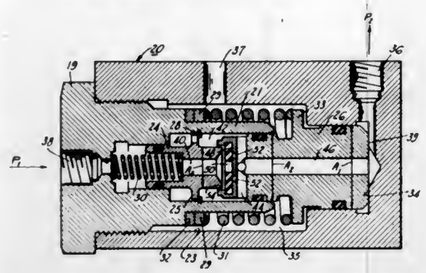
1. A sewage handling system which comprises the combination of a sewage wet well having an inlet and a discharge outlet;
a flexible conduit valve coupled to said discharge outlet for defining a fluid flow orifice of a cross-section inversely proportional to an applied pressure;
air compressor means;
signal developing means coupled to said compressor means for developing an air pressure proportional to the fluid depth in said wet well;
air reversing pressure boosting relay means having input, output and control ports, for translating an input port pressure to said output port in a magnitude inversely proportional to a control pressure applied to said control port;
volume boosting relay means having input, output and control ports for translating an input port pressure to said output port in a magnitude proportional to a control pressure applied to said control port;
means for coupling said input ports of both of said relay means to said air compressor means;
means for coupling said control port and said output port of said reversing relay means to respectively said signal developing means and said control port of said second relay means;
and means for coupling the output of said second relay means to said flexible conduit valve for effecting a continuous variation in the discharge flow rate from said conduit valve in proportion to the fluid depth in said wet well.

3,360,003
CARBURETOR FLOAT VALVE
Leland C. Parker, deceased, late of Rochester, N.Y., by Laura H. Parker, executrix, Rochester, N.Y., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed May 14, 1965, Ser. No. 456,006
1 Claim. (Cl. 137—448)



An internal combustion engine carburetor having a body defining a fuel bowl chamber, a fuel inlet chamber and an inlet port opening from said inlet chamber to said bowl chamber, a raised wall extending circumferentially about said port on the inlet chamber side thereof to form a valve seat having a generally triangular shape, a flexible valve member overlying said raised wall, said valve member having a shape which generally conforms to the shape of said valve seat and which coacts with said valve seat to control fuel flowing from said inlet chamber to said fuel bowl chamber, means securing a base portion of said valve member to said body adjacent a base portion of said valve seat, said valve member having an apex portion opposite said base portion and including a tab portion extending outwardly from said apex portion away from said base portion, a leaf spring member overlying said valve member and secured at one end adjacent the base portion of said valve seat and extending over said tab portion of said valve member, fuel level responsive float means disposed in said bowl chamber, a pivotal arm secured at one end to said float means, and a reciprocable plunger operated by said arm for opening said valve member in response to a decrease in fuel level in said bowl chamber, said plunger bearing only against and exerting a force on the apex portion of said valve member for flexing said valve member against the pressure of fuel in said inlet chamber and against the force of said spring member whereby only a small portion of said valve member may be unseated initially to permit fuel to flow at a low rate into said fuel bowl chamber and whereby increasing portions of said valve member may be unseated subsequently to permit fuel to flow from said inlet chamber to said fuel bowl chamber at higher rates of flow.

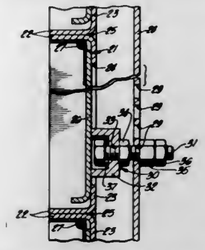
3,360,004
PRESSURE PROPORTIONING VALVE
Richard L. Lewis, Charles M. Barnes, and Donald W. Smith, St. Joseph, Mich., assignors to The Bendix Corporation, a corporation of Delaware
Filed Sept. 7, 1965, Ser. No. 485,215
6 Claims. (Cl. 137—493)



1. A pressure proportioning device comprising:
a housing having a bore therein, a first valve member and a second valve member mounted in said bore for substantial slidable movement therein, said bore including an inlet chamber and an outlet chamber, said second valve member having a first effective area exposed to pressure at said outlet chamber, first passage means carried by said first valve member communicating a second effective area on said second valve member and said outlet chamber with said inlet chamber, said first effective area being so arranged that outlet pressure acting thereon will urge said second valve member in one direction and into engagement with said first valve member, said second effective area being less than said first effective area and so arranged that inlet pressure acting thereon will urge said second valve member in the opposite direction, cooperating valve means on said valve members effective to cut off communication between said first passage means and said outlet chamber in closed position when said valve members engage each other and to communicate said inlet and outlet chambers in open position when said valve members are disengaged from each other, second passage means communicating said outlet chamber to said inlet chamber, check valve means located in said second passage means constructed to allow flow only from said outlet chamber to said inlet chamber, first stop means, first resilient means urging said first valve member in said opposite direction against said first stop means, second stop means, second resilient means stronger than said first resilient means urging said second valve member in said opposite direction against said second stop means, said valve members being so constructed that when each are simultaneously against said stop means, said valve means is open, said second valve member and said outlet chamber being so constructed and arranged to define an expansible chamber when said second valve member is moved in said one direction away from said second stop means.

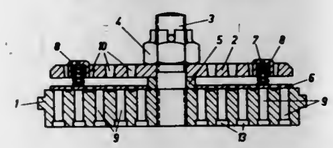
3,360,005
BY-PASS DAMPER DEVICE
Bruce M. Sopher and Joseph W. Collins, Torrance, Calif., assignors to Farr Company, El Segundo, Calif., a corporation of California
Filed Dec. 9, 1963, Ser. No. 329,099
3 Claims. (Cl. 137—512.1)

1. In an air by-pass arrangement for use in an opening in an air supply system, the combination of:
closure means pivotally mounted relative to said opening for positioning to close the opening,
said closure means being pivotable inwardly relative to the opening to an open position for admitting air through the opening,
a bracket means positioned substantially parallel to said closure means in the closed position of the closure means and extending at a substantial angle to the pivotal axis of the closure means, and magnetic means loosely mounted on said bracket means for



engaging said closure means in the closed position of said closure means, and said magnetic means being releasably mounted and movable to various locations along said bracket means for positioning at preselected distances from the pivotal axis of the closure means to produce preselected forces resisting the said movement from the closed position to said open position.

3,360,006
AUTOMATIC VALVE
Theodor Karl Kehler, Vienna, Austria, assignor to Hoerbiger Ventilwerke Aktiengesellschaft, Vienna, Austria
Filed Oct. 9, 1963, Ser. No. 314,962
Claims priority, application Austria, Oct. 27, 1962, A 8,497/62
3 Claims. (Cl. 137—516.13)

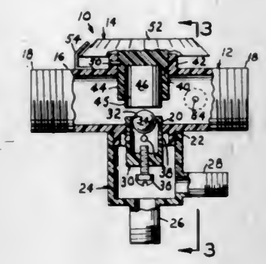


1. An automatic valve, particularly for compressors, comprising two plate-shaped portions, having passageways therethrough and one forming a valve seat and the other a valve guard, both portions being arranged in spaced relationship relative to each other, a closing member on the valve seat and spaced from the valve guard, and spring means between said plate-shaped portions projecting a force between the valve guard and the closing member, the passageways of at least one of said plate-shaped portions consisting of oblong channels separated from each other by webs and partitioned in the area of their outlets on the outer side of the valve by additional webs to produce apertures having a small cross-section as a protection against the passage of foreign bodies, the width of the areas occupied by the said apertures as measured in transverse relation to the oblong channels being greater than the width of the oblong channels.

3,360,007
GAS PRESSURE AND VACUUM PULL CONTROL VALVE
Thomas N. Haidek, 1905 N. Portland 73107, and Lewis C. Taylor, 620 NW. 9th 73102, both of Oklahoma City, Okla.
Filed Aug. 2, 1965, Ser. No. 476,470
6 Claims. (Cl. 137—528)

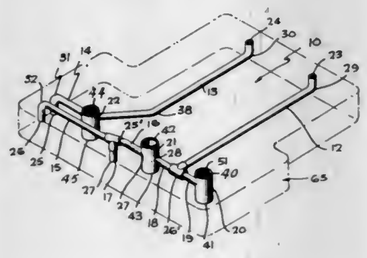
5. A vacuum pull regulating valve, comprising: a tubular housing having opposite open ends, one of which is

adapted to be connected to a source of pressure, said tubular housing having diametrically opposed openings in its wall intermediate its ends; a valve cage within one said wall opening, said valve cage projecting into said housing and having a valve seat adjacent its innermost end; a ball valve within said valve cage, a portion of said ball valve projecting through said valve seat when said ball valve is seated; a tube connected at one end to said tubular



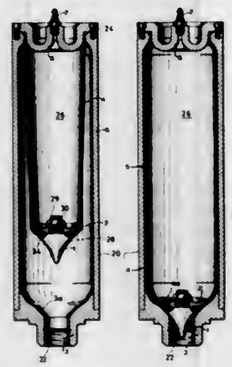
housing around said valve cage and adapted to be connected at its other end to a source of vacuum, said tube having an opening in its wall; a mandrel within the other said wall opening in said tubular housing, said mandrel having a recess in its inner end portion; a permanent magnet secured to said mandrel within and projecting out of the recess toward said ball valve to bias said ball valve toward its seat; and means for moving said magnet toward and away from said ball valve.

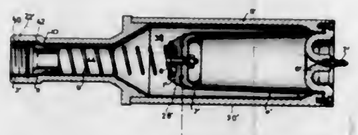
3,360,008
MOLDED MANIFOLD CONSTRUCTION AND METHOD OF FORMING
Frank A. Papale, Lodi, and Robert W. Childers, Tranquility, N.J., assignors to Raymond International Inc., New York, N.Y., a corporation of New York
Filed Oct. 7, 1964, Ser. No. 402,310
12 Claims. (Cl. 137—594)



1. In a manifold block for high pressure fluid lines an assembly of interconnected passages comprising a series of individual tubing lengths, captive ends of some of said lengths having fluid tight connections to others of said lengths, free ends of said lengths being at various locations with respect to said assembly, said free ends forming open end elements extending outwardly relative to said assembly, a wrapping of multiple plies of fiberglass fabric around said tubing lengths, said fiberglass fabric having an impregnation of thermosetting synthetic plastic resin, and a mass of initially substantially fluid plastic mixture encasing said assembly and enveloping the impregnated wrapping around said tubing lengths, said mass comprising a finely divided filler material adapted to pass a screen of 100 mesh and to be retained on a 500 mesh screen, said mixture including a binder of thermosetting synthetic plastic resin material substantially equal in volume to the volume of the voids in said filler material thereby filling said voids, said resin material embodying a hardener and being molded in place around said assembly whereby to form the manifold block.

3,360,009
HYDRAULIC FLUID ACCUMULATOR HAVING SEPARATING WALL TENSIONER
Adam Elmer, Dusseldorf, Germany, assignor to Hydraulik G.m.b.H., Duisburg, Germany
Filed July 2, 1965, Ser. No. 469,162
Claims priority, application Germany, July 3, 1964, E 27,336; Aug. 20, 1964, E 27,643
8 Claims. (Cl. 138—30)

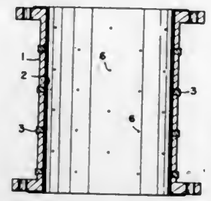




1. A hydraulic fluid accumulator comprising a cylindrical housing having a first end and a second end with means at said second end defining a fitting with a hydraulic opening therein, a cylindrical resilient separating member having a straight cylinder forming wall, said member extending into said housing from said first end and terminating on the interior of said housing at its inner end, a closure lid closing said first end of said housing and said member, and wall closure means engaged with the inner end of said member and biasing the periphery thereof toward the hydraulic opening, said closure means being of a weight to exert a downward stretching force on said member at least always greater than the lifting action of the hydraulic fluid to urge said cylinder wall to maintain its straight form without collapse.

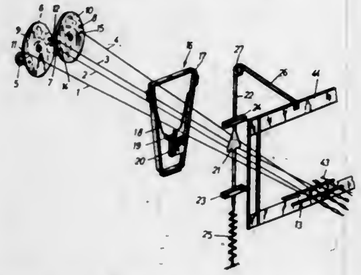
3,360,010
HIGH ANTICORROSIVE METAL LINING STRUCTURE
Asahiko Goto, Nada-ku, Kobe, Japan, assignor to Kobe Steel Works, Ltd., Fukiai-ku, Kobe, Japan
Filed Aug. 9, 1963, Ser. No. 301,115
Claims priority, application Japan, Aug. 15, 1962, 37/46,754
4 Claims. (Cl. 138—142)

1. A metal structure made of a metal which cannot be welded to titanium, zirconium, or tantalum, said metal structure being lined with an anti-corrosive liner of titanium, zirconium, or tantalum, a plurality of plugs of the respective metal of the liner having the shape of a frustrum and mounted in holes in the metal structure having a corresponding shape, the smallest diameter of the holes in the metal structure being located adjacent the liner, the plugs contacting the metal liner, the liner having a



plurality of welding holes therethrough, each welding hole aligned with and communicating with the inner end of a plug, the liner being weldingly attached to the plugs by a padding-weld of the respective metal of the liner and plug in the welding holes of the liner, whereby the liner is securely mounted to the metal surface.

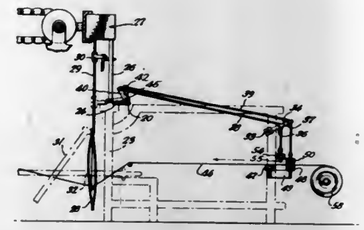
3,360,011
DEVICE FOR BINDING FABRIC EDGES
Heinrich Flühmann, Krefeld, Germany, assignor to Maschinenfabrik Carl Zangs Aktiengesellschaft, Krefeld, Germany
Filed May 19, 1966, Ser. No. 551,452
Claims priority, application Germany, May 22, 1965, M 65,338
6 Claims. (Cl. 139—54)



1. A device for binding an edge of a fabric being woven in a loom comprising; a pair of rotatable discs each having a pair of bobbins thereon and each disc having thread eyes therein for the threads from the respective said bobbins displaced from each other 180°, said threads leading from said bobbins through said eyes to the loom edge of the fabric being woven, said discs being mounted on axes which are substantially parallel to and coplanar with the warp threads of the fabric, and means for rotating said discs and in timed relation to the operation of the loom continuously and in unison so the threads leading therefrom to the fabric will alternately occupy upper and lower positions and will twist at the edge of the fabric.

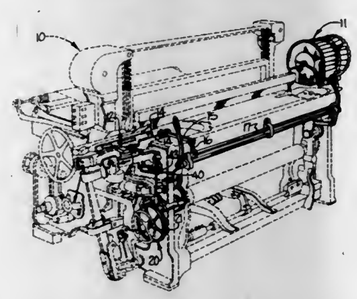
3,360,012
MECHANISM FOR REGULATING PILE WARP TENSION IN LOOMS
Joseph P. Erkes, 907 Charlotte Ave., Rock Hill, S.C. 29730
Filed Jan. 26, 1966, Ser. No. 523,193
10 Claims. (Cl. 139—102)

1. In a loom for weaving pile fabric, pile warp feed means, a pile warp heddle, a Jacquard mechanism on the loom operatively connected with said heddle and having a reciprocating part, and a two component tension and control mechanism for the pile warp on said loom connected with and operated by movement of the reciprocating part, the first component of the two component mechanism initially engaging and clamping the pile warp



to prevent linear movement thereof and the second component then engaging the pile warp to tension the same when the heddle is elevated and the pile warp is tending to be slack, both of said components disengaging the pile warp and releasing the same when said heddle is down to form the shed and the pile warp is taut.

3,360,013
CONTROL MECHANISMS IN A TEXTILE LOOM
Thomas J. Coleman, Donalds, S.C., assignor to Riegel Textile Corporation, a corporation of Delaware
Filed Apr. 4, 1966, Ser. No. 539,680
2 Claims. (Cl. 139—224)



1. In a centerfork textile loom having a lay, an automatic filling changer mechanism adapted to replenish the supply of filling yarn being utilized in the weaving operation of the loom, a let-back mechanism adapted upon actuation to permit the fabric to back up in the loom to the position occupied when the last filling yarn was inserted into the fabric, and a centerfork mechanism adapted to detect a break in a filling yarn as it is inserted into the fabric during weaving of the fabric on the loom including a filling fork feeler means pivotally mounted on and approximately at the center of said lay and adapted to assume a first position when the filling yarn being inserted into the fabric is not broken and adapted to assume a second position when the filling yarn being inserted into the fabric is broken and an oscillating rod means mounted on said lay and operatively associated with said filling fork feeler means and adapted to make a complete oscillation when said filling fork feeler means is in said first position and adapted to make an incomplete oscillation when said filling fork feeler means is in said second position; the improvement of control mechanisms operatively connected with said centerfork mechanism, said filling changer mechanism and said let-back mechanism and being responsive to an incomplete oscillation

of said oscillating rod means to be actuated thereby upon the breakage of a filling yarn during the weaving operation of the loom to actuate said automatic filling changer mechanism and to actuate said let-back mechanism so that upon breakage of a filling yarn during the weaving operation of the loom, the filling yarn supply will be automatically replenished and the fabric will be automatically let back allowing a new filling yarn to be laid in alongside the broken filling yarn without stopping operation of the loom.

3,360,014
TEXTILE CONTAINERS

William Henri Poisson, Stamford, and Nishan Bey Bogosian, Little Silver, Conn., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

Filed July 28, 1965, Ser. No. 475,403
4 Claims. (Cl. 139—389)



1. A textile article comprising tubular fabric portions alternately separated along the warp direction by:

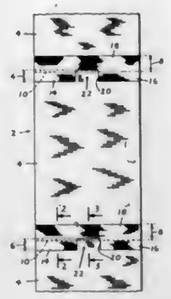
(a) strips parallel to the weft direction, said strips consisting of single-layer fabric formed by bringing together and combining in pairs every front warp end with a matching back warp end of the tubular fabric portion and weaving the resultant pair of ends as one; and

(b) composite strips parallel to the weft direction, each of said composite strips comprising at least two single-layer fabric portions and one double-layer fabric portion, said (a) strips and said (b) strips being so disposed that the ratio of the length along the warp of each tubular fabric portion to the width along the weft of said portion is between 1.4 and 2.2, and the ratio of the rectilinear surface of any tubular fabric portion to the containable volume thereof is between 2.3 and 2.6 reciprocal feet; and each said strip (a) and (b) spans the weft of each tubular fabric portion, each composite strip consisting of at least one composite segment spanning the weft of one said tubular fabric portion, each such segment of a composite strip consisting of one single-layer fabric portion at each end thereof and one double-layer fabric portion centrally thereof forming upon severance along such strips a sack with a mouth at the center of a narrower edge or top of the sack; said fabric being woven from continuous filament synthetic yarn and having a trapzeoidal tear strength across the warp direction of at least 190 pounds and a one-inch grab strength in the warp direction of at least 450 pounds; each such tubular fabric portion of said article having capacity for at least 80 pounds of moist sand.

3,360,015
CONTAINERS OF TEXTILE COMPOSITION

Osbert C. H. Hughes, Hopewell, Va., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York

Filed July 28, 1965, Ser. No. 475,404
4 Claims. (Cl. 139—389)



1. A textile article comprising tubular fabric portions separated by:

(a) strips parallel to the weft direction, said strips consisting of single-layer fabric formed by bringing together and combining in pairs every front warp end with a matching back warp end of the tubular fabric portion and weaving the resultant pair of ends as one; and in alternating and abutting relative therewith,

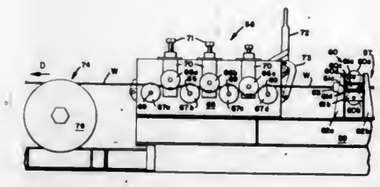
(b) composite strips parallel to the weft direction, each of said composite strips comprising at least two single-layer fabric portions and one double-layer fabric portion, the ratio of the length along the warp of each of the tubular fabric portions of said textile article to the width along the weft of such tubular fabric portion being between 1.4 and 2.2 and the ratio of fabric surface to bag volume, when said tubular portion is filled, being between 2.3 and 2.6 in units of feet; such bag when filled having a capacity of at least 80 pounds of moist sand; and wherein each said strip (a) and (b) spans the weft of each tubular fabric portion, each composite strip consisting of at least one composite segment which spans the weft of one said tubular fabric portion, each such segment of a composite strip consisting of one single-layer fabric portion at each end thereof and one double-layer fabric portion centrally thereof forming upon severance along such composite segment a sack with a mouth at the center of a narrower edge or top of the sack; said fabric being woven from continuous filament synthetic yarn and having a trapezoidal tear strength across the warp direction of at least 190 pounds and a one-inch grab strength in the warp direction of at least 450 pounds.

3,360,016
REWINDING PROCESS AND APPARATUS

Fred K. Coleman, Los Alamitos, Calif., assignor to Etiwanda Steel Producers, Inc., Etiwanda, Calif., a corporation of California

Filed Jan. 6, 1965, Ser. No. 423,721
9 Claims. (Cl. 140—1)

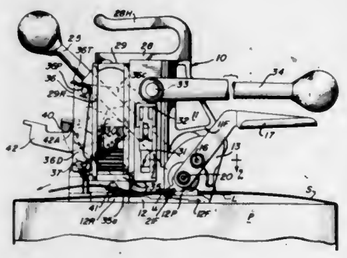
1. A continuous method for making wire coils from shorter individual coils which comprises: placing a plurality of said individual coils adjacent one another, securing an end of one of said individual coils to the compatible end of the adjacent coil thereby making said individual coils continuous, uncoiling said continuous individual coils, reciprocally bending said wire, passing said wire under tension about a precoiler and continuously removing said wire therefrom, reciprocally guiding said wire for level winding about a reel in a take-up position, rotating said reel with constant torque and winding said wire about said reel to form said coil.



3,360,017
COMBINATION STRAPPING TOOL

Ilmar J. Vilcins, Northbrook, Ill., assignor to Signode Corporation, a corporation of Delaware

Filed July 16, 1965, Ser. No. 472,625
6 Claims. (Cl. 140—93.4)

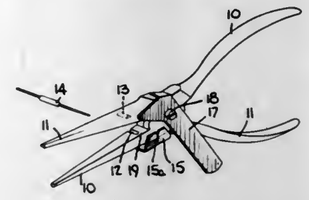


1. A combination strap tensioning tool of the type having a main frame, a base having a transverse fore foot portion to contact a package being tied with a strap loop that has opposite strap ends overlapping and extending in opposite directions above the fore foot portion, a strap feed wheel mounted from the main frame at a location above the fore foot portion for bodily swinging movement toward and away from the fore foot portion, said fore foot portion having an anvil mounted therein and presenting a concave arcuate gripping surface facing generally upwardly towards a cylindrical gripper surface presented by the feed wheel for underneath engagement with the lower strap end concurrently with overhead gripping engagement of the feed wheel with the upper strap end, means movable bodily with the feed wheel and rotatable to drive the same in one direction to draw the upper strap end in a loop tightening direction, seal storage magazine structure spaced from the feed wheel to provide a fore and aft intermediate chamber, a sealer jaw assembly in a lower region of said chamber and a sealer drive in an upper region of the chamber and connected to actuate the jaw assembly, said magazine structure having a floor spaced above the base and supporting a resiliently downwardly biased stack of seals by contact with the bottom seal of the stack, and seal feed mechanism responsive to operation of the sealer drive and including a finger retractable along said floor during closure of the jaw assembly and spring means for returning the finger to feed a seal after the jaw assembly opens.

3,360,018
LEAD WIRE SHAPING TOOL

David A. Lindsay, Brookfield, Conn., assignor to Data-Control Systems, Inc., Danbury, Conn., a corporation of Delaware

Filed July 29, 1965, Ser. No. 475,659
7 Claims. (Cl. 140—106)



1. A tool for shaping the connective element of an electrical component having a solid body with at least one connective element extending therefrom comprising:

plier-like jaws having indentations on the inner facing surfaces thereof, said indentations being in a mating relationship in the closed position of said jaws, said jaws being adapted to rigidly hold a portion of the length of the connective element between said facing surfaces while simultaneously receiving the component within said indentations without engaging the surface thereof,

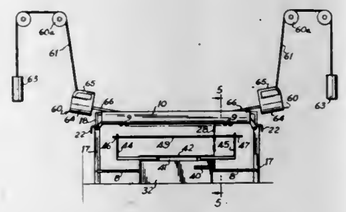
means disposed adjacent to said jaws for supporting another portion of the length of the connective element, and

means for applying a force to the connective element at a point between said jaws and said supporting means, whereby the application of force enables the connective element to be shaped into a predetermined form.

3,360,019
PROCESS FOR FILLING CONTAINERS WITH VISCOUS MATERIAL

Forrest H. James, Jr., Opelika, Eldridge H. Cockrell, Auburn, and Thomas D. Nixon, Opelika, Ala., assignors to Diversified Products Corporation, Opelika, Ala., a corporation of Alabama

Original application Sept. 16, 1963, Ser. No. 308,975, now Patent No. 3,270,390, dated Sept. 6, 1966. Divided and this application June 27, 1966, Ser. No. 560,554
3 Claims. (Cl. 141—12)



1. A method of simultaneously filling a plurality of containers with a viscous material through a small opening in each container comprising:

storing a mass of the viscous material in a substantially horizontally disposed trough having dispensing openings in its bottom surface,

positioning a plurality of containers below the trough,

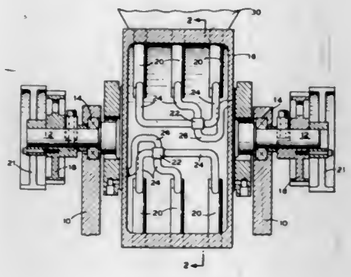
selectively moving each container along the length of the trough so that its opening communicates with one of the dispensing openings of the trough, and

simultaneously vibrating the containers and the viscous material in the trough to induce the viscous material to flow through the holes of the trough and the holes of the containers and settle in the containers.

3,360,020
APPARATUS FOR MEASURING AND FILLING POWDERS VOLUMETRICALLY INTO A PLURALITY OF CONTAINERS SIMULTANEOUSLY

Theodore F. Aronson, 60 Crescent Road, Glen Cove, N.Y. 11542

Filed Nov. 23, 1964, Ser. No. 412,904
9 Claims. (Cl. 141—235)

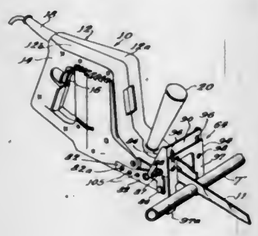


1. A filling head turret for filling a plurality of containers simultaneously comprising a cylinder arranged to oscillate around its axis, said cylinder having one side open substantially the length thereof, said cylinder having two diametrically opposite slots extending along the length thereof, said slots extending along said cylinder substantially parallel to said axis, insert blocks arranged to fill said slots and being removably supported therein, each of said insert blocks having at least one measuring cavity therein, and means for introducing a powdered material into and for discharging said powdered material from said cavities, said filling and discharging means communicating with said cavities inside said cylinder, said cavities and said filling and discharging means being accessible through said open side of said cylinder.

3,360,021
POWERED SAW

James B. Mejia, Naperville, Ill., assignor to Portable Electric Tools, Inc., a corporation of Illinois

Filed Jan. 11, 1965, Ser. No. 424,560
4 Claims. (Cl. 143—68)

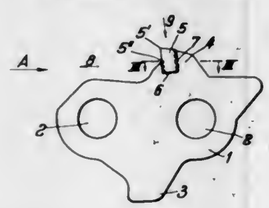


1. In a hand saw having a housing, a reciprocating drive in said housing, a plunger adjacent the forward end portion of the housing and rectilinearly reciprocated by said drive, a saw blade connector on the free end of said plunger, and a saw blade fastened by said connector to said plunger in combination with a shoe plate assembly adjustably mounted on the forward end portion of said housing in embracing relationship with respect to said reciprocating saw blade, said shoe plate assembly including a pair of spaced ribs adjustably mounted on said housing on opposite sides of said plunger and blade, a shoe means pivotally mounted to the forward end portion of each of said ribs for adjustment about a single axis passing through said end portions of said ribs, said shoe means lying in a plane which is pivoted from a position generally transverse to the axis of reciprocation of said blade to a position forming an acute included angle with respect to said axis of reciprocation of said blade, and releasable fastening means connecting the shoe means to the ribs in areas spaced from the pivotal connection of the shoe means to the ribs, said fastening means being movable between a first locking position wherein said shoe means is held against pivotal movement with respect to the ribs, and a second released position wherein the shoe means may be moved to a selected position of angular displacement with respect to the ribs and blade and subsequently locked thereat by movement of said fastening means to the locking position whereby the shoe means may be adjusted to any desired angular disposition with respect to said saw blade.

3,360,022
TOOTH LINK FOR MOTOR CHAIN SAWS

Andreas Stihl, Rohrbronn, and Adolf Rätz, Korb, Germany, assignors to Andreas Stihl Maschinenfabrik, Neustadt-Waiblingen, Germany

Filed Dec. 7, 1964, Ser. No. 416,405
Claims priority, application Germany, Dec. 7, 1963, St 21,431
3 Claims. (Cl. 143—135)



1. Saw chain apparatus for motor chain saws comprising
- a plurality of interconnected cutting tooth links, said links having cutting teeth, and said cutting teeth defining flat-sided grooves extending inwardly from edges of the cutting teeth;
- a plurality of hardened metal plates positioned in said grooves, said plates having a central portion fitted between opposite flat sides of the grooves, and said plates having flanges laterally extending from the central portions and overlying opposite sufaces of the cutting teeth, the hardened metal plates defining thereby a generally H-shaped cross section;
- and a plurality of means interconnecting adjacent cutting tooth links.

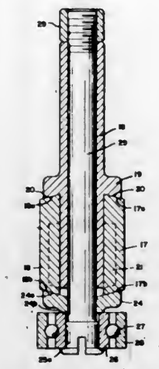
3,360,023
WOODWORKING TOOL

John D. Rutzebeck, P.O. Box 30, Hayward, Calif. 94543

Filed Sept. 27, 1965, Ser. No. 490,523
1 Claim. (Cl. 144—134)

In a rotary cutting tool adapted to be attached to a hand held drive unit, the combination comprising a hollow member, one end part of said hollow member forming a shank which is adapted to be gripped by the drive unit, said hollow member having a flange extending therefrom, one side of said flange being adjacent to one end of said shank, the other side of said flange being undercut,

the other end part of said hollow member having longitudinally extending recesses, cutting bits positioned in said recesses so that the cutting edges thereof extend radially therefrom, one end of each of said cutting bits engaging the undercut side of said flange, clamping means comprising a washer positioned adjacent said other end part of said hollow member and having an undercut side

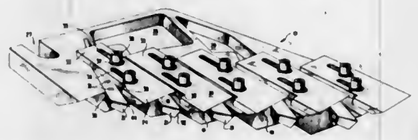


engaging the other end of each of said cutting bits and means comprising a rod-shaped member positioned in said hollow member clamping said cutting bits between said washer and said flange, and bearing means, said bearing means being clamped by said rod-shaped member against said washer, said bearing means having a rotatable member engaging the work surface to limit the depth of cut taken by said cutting bits in said work surface.

3,360,024
APPARATUS FOR DIVIDING LOGS INTO CHIPS

Josef Traben, Oberkirch, Baden, Germany, assignor to Gebruder Linck, Baden, Germany, a corporation of Germany

Original application Aug. 5, 1964, Ser. No. 387,755. Divided and this application Jan. 23, 1967, Ser. No. 611,039
8 Claims. (Cl. 144—176)



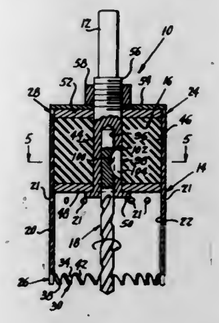
1. In a wood chipping device a rotating chipping head having a work engaging front face arranged for engaging the curved sides of a log to be cut, a plurality of stepped equally spaced ribs mounted on said front face and at least one set of two scoring knives in association with one planing knife mounted on each of at least two or said ribs, said two scoring knives disposed in parallel arrangement so as to engage first the log and define the width of the cut made by the planing knife which follows and engages the log in a direction parallel with the grain thereof.

3,360,025
DOUBLE EDGE HOLE SAW AND MANDREL

John Gallo, Sr., 64–66 Broad St., Boston, Mass. 02157

Filed Sept. 14, 1965, Ser. No. 487,283
12 Claims. (Cl. 145—130)

1. A hole saw which, in combination, comprises:
- a tubular saw member having a cutting edge on at least one end thereof;
- a rotatable shaft extending into the tubular member from one end for driving the saw, said shaft including a hole in the end thereof for receiving a pilot drill and a passage in the side thereof communicating with the hole for receiving a key;
- an annular resilient member snugly received on the shaft inside the tubular member for engaging the shaft and the interior wall of the tubular member; and

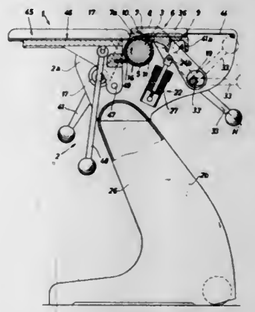


- means on the shaft for compressing the resilient member axially for expanding said member radially inwardly and outwardly for gripping both the shaft and the interior wall of the tubular member to thereby transmit rotary force from the shaft to the tubular member to thereby rotatably drive the saw; and
- a key received in said passage, said key being resiliently secured in said passage by the resilient member such that a portion of the key extends into said hole for engagement with a pilot drill having an aligned aperture therein whereby said drill is secured in said hole when said resilient member is axially compressed.

3,360,026
MACHINE FOR REMOVING THE RIND FROM BACON OR LIKE MACHINE HAVING AN ADJUSTABLE BLADE HOLDER AND A FEED ROLL

Hermann Schill, Goldscheuer, Baden, Germany, assignor to MAJA-Maschinenfabrik Hermann Schill KG, Goldscheuer, Baden, Germany, a firm

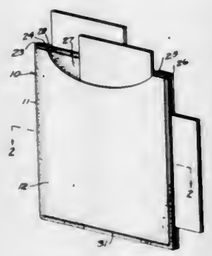
Filed Feb. 1, 1966, Ser. No. 524,317
Claims priority, application Germany, Feb. 16, 1965, M 64,157
22 Claims. (Cl. 146—130)



1. A machine for removing the rind from bacon or like machine, comprising a feed roll, an adjustable blade holder constructed as a rocker, adjusting means acted upon by displacement force and having a swingable end for mounting said blade holder thereon, a blade on said blade holder having its cutting edge situated substantially below the

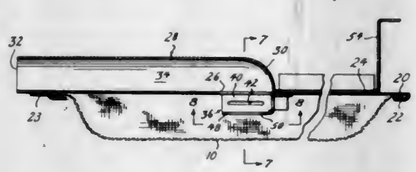
pivot of said rocker-like blade holder, a feed table, stop faces provided on the portion of said rocker-like blade holder facing said feed table, said stop faces serving for fixing the cutting edge of said blade in its foremost lower position, and bearing members on said machine serving to support said stop faces.

3,360,027
TICKET AND MONEY HOLDER
James W. Price, 3300 71st St. N., St. Petersburg, Fla. 33702
Filed Apr. 22, 1965, Ser. No. 450,025
1 Claim. (Cl. 150—39)



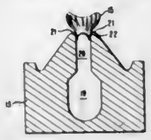
In a paper money holder, the combination which comprises a sheet of material folded on a line midway of the length thereof providing a front panel and a rear panel with depending arcuate recesses in the upper edges thereof, and a filler also having a front panel and a rear panel and folded to correspond with said folded sheet of material, said filler being positioned within said sheet with the fold of the filler adjacent said folded portion of the sheet, said filler and sheet being stitched together along some of the remaining edges to provide pockets between said filler front and rear panels and between said filler and sheet, said pockets between said filler and sheet having openings solely at said edge containing said arcuate recesses and the pocket between said filler front and rear panels having an opening solely at the edge opposite said fold line.

3,360,028
GAS BURNING INFRARED RAY GENERATOR
Domenick Saponara, Allentown, and Edward M. Redstreake, Jr., Macungie, Pa., assignors to Caloric Corporation, Topton, Pa., a corporation of Pennsylvania
Filed Jan. 3, 1966, Ser. No. 518,359
4 Claims. (Cl. 158—99)



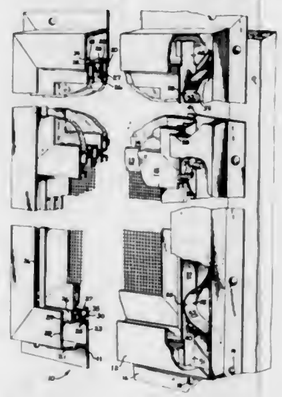
1. A gas burning infrared generator including:
a flat, elongated plate,
a generally concave screen secured to, and co-operating with, one side of said plate to form an elongated fuel receiving cavity,
there being an opening formed in said plate and leading to said cavity intermediate the ends thereof, and
a generally concave member secured to and coacting with the other side of said plate to form a generally semi-cylindrical fuel conduit with the fuel receiving end thereof near one end of said plate and with the fuel discharging end thereof overlying said opening.

3,360,029
FLAME TREATING BURNER DEVICE
Gordon Welton Thompson, Clinton, Iowa, assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Sept. 29, 1965, Ser. No. 491,186
2 Claims. (Cl. 158—116)



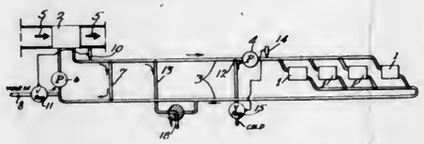
1. In an apparatus for flame treating the surfaces of plastic films comprising a rotatably mounted roller adapted to convey said film and to contain a fluid medium for regulating the surface temperature of the roller; means for impinging a flame on the exposed surface of said conveyed film comprising a burner adapted for communication with a supply of combustible gaseous fuel and having a narrow elongated orifice passage terminating in a fuel discharge opening, the improvement comprising a foraminous grid within said orifice passage, said foraminous grid being convex towards said discharge opening so that the center thereof is closer to said discharge opening than the edges thereof.

3,360,030
WINDOW AND FRAME STRUCTURE
Hans Baer, 4 Vermont Ave., Toronto, Ontario, Canada
Filed Feb. 8, 1965, Ser. No. 430,798
5 Claims. (Cl. 160—101)



1. In a prefabricated frame structure for combination window and screen panels including a unitized peripheral housing defining therewithin a rectangular panel compartment in which to assemble a plurality of said panels for endwise sliding movements in parallel paths leading between various locations within said panel compartment, said unitized housing having interspaced mutually facing side sections defining oppositely aligned centrally opening guide channels extending lengthwise of said side sections, panel guide tracks within said channel openings defining tracks providing guided direction for the sliding movements of said panels within said panel compartment, resilient biasing means within one of said channel openings, one of said panel guide tracks being biased laterally inward towards said panel compartment by said resilient biasing means and being shiftable depthwise of its respective channel opening against said resilient biasing means to accommodate assembly and disassembly of said panels relative to said panel guide tracks, the improvement comprising oppositely converging side wall shoulders within and narrowing said last-mentioned channel opening intermediate the inner and outer reaches thereof, said shiftable panel guide tracking providing an inwardly facing jamb wall bordered by marginal inwardly facing seating surfaces aligned to seat against and cooperate with said side wall shoulders to retain said jamb wall in a position continually biased against said resilient biasing means and confined within the outer reaches of said last-mentioned channel, an inwardly projecting guide rib extending lengthwise of said jamb wall intermediate said marginal seating surfaces and aligned to travel in a path leading between said side wall shoulders into the inner reaches of said last-mentioned channel opening to define parallel guide slots straddling said guide rib within said inner reaches of said last-mentioned channel opening when said shiftable guide track is biased against said side wall shoulders, and said guide rib being adapted to travel into the outer reaches of said last-mentioned channel opening when said shiftable guide track is depressed outwardly against said resilient biasing means to accommodate removable assembly and interchangeability of said panels within said panel compartment.

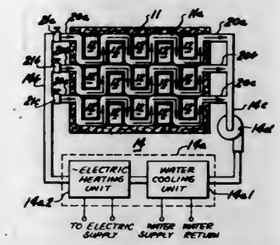
3,360,031
METHOD FOR AIR-CONDITIONING A PLURALITY OF ROOMS
Sigvard Matts, Farsta, and Lars-Owe Grudeborn, Jonkoping, Sweden, assignors to Aktiebolaget Svenska Flaktfabriken, Stockholm, Sweden
Filed Dec. 28, 1964, Ser. No. 422,882
Claims priority, application Sweden, Dec. 27, 1963, 12,297/63
8 Claims. (Cl. 165—2)



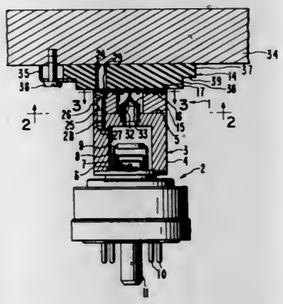
1. In a method for air-conditioning a plurality of rooms by means of air delivered from central air-conditioning apparatus, which air is transported to and distributed into the various rooms as primary air and which by ejection effect, induces and is intermixed with a quantity of local secondary air in at least one induction unit located in each room, in which unit the temperature of the secondary air before its mixing with the primary air is treated in heat-exchangers disposed in the induction unit having liquid heat-exchange medium supplied thereto, the liquid medium supplied to the exchanger of the induction units, irrespective of the outdoor condition and the season, being at a temperature common for substantially the whole plant, the temperature of the primary air being regulated in accordance with the outdoor condition; the improvement wherein said common temperature of the liquid heat exchange medium is controlled to remain in a range below the temperature of the secondary air, but not substantially below the dew-point temperature of the secondary air, the liquid medium thereby absorbing heat from the secondary air without causing condensation in the heat exchangers.

3,360,032
TEMPERATURE CONTROLLING SYSTEM
Edwin Theodore Sherwood, Milwaukee, Wis., assignor to Globe-Union Inc., Milwaukee, Wis., a corporation of Delaware
Filed Sept. 20, 1965, Ser. No. 488,413
15 Claims. (Cl. 165—30)

1. In a temperature controlling system, the combination which comprises a plurality of cells having two controllable sides, means for distributing a sheath of fluid having a desired temperature around the cells to aid in controlling the temperature therein, and auxiliary means associated with each side of each cell and responsive to the temperature in the associated side deviating from a prescribed level for altering the temperature so that each side of each cell is maintained substantially at a predetermined ambient temperature level.



3,360,033
THERMAL CONNECTOR FOR ELECTRON TUBES AND THE LIKE
William R. Stuart, San Carlos, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California
Filed Dec. 20, 1965, Ser. No. 515,063
12 Claims. (Cl. 165—47)

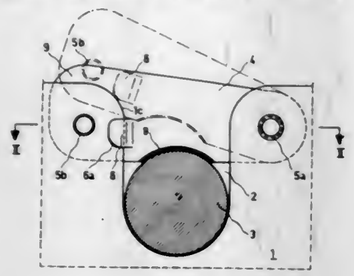


1. A thermal connector for electron tubes comprising a metal block, said block having one surface thereof shaped to provide a plurality of spaced projections extending outwardly from the metal block, a beryllium oxide block brazed to the ends of said projections, and means for detachably connecting said thermal connector to an electron tube.

3,360,034
SUSPENSION MEANS FOR HEAT TRANSFERRING PLATES OF HEAT EXCHANGERS OF THE PLATE TYPE
Tor Bertil Ohrfelt, Stockholm, Sweden, assignor to AB Rosenblads Patenter, Stockholm, Sweden, a corporation of Sweden
Filed Jan. 11, 1966, Ser. No. 519,918
Claims priority, application Sweden, Feb. 16, 1965, 1,946/65
2 Claims. (Cl. 165—77)

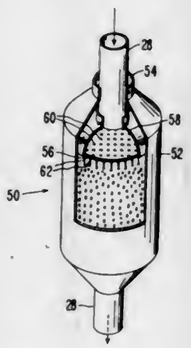
1. In a plate heat exchanger having heat transferring plates of thin plate material in side by side relation individually and detachably suspended on a common supporting rod which extends above said plates perpendicular thereto, the improved means for releasably attaching each of the plates to the rod which comprises, a suspension strap which bridges over the support rod, said strap being made of plate stock, being disposed parallel to the main extent of the plate, and having its ends close-

ly overlying the upper edge of the plate, means on one side of the rod for pivotally connecting one end of the strap to a first upper edge portion of the plate for movement from an upwardly extending open position to a closed operative position in which it overlies the rod, and means at the other side of the rod for releasably connecting the two members consisting of the other end of the strap and a second upper edge portion of the plate, said last named means comprising a first part in the form of a projection on one of said members extending toward the other member, and a second part in the form of a hole in the other member, said hole being adapted to receive the projection, the suspension strap and plate being laterally



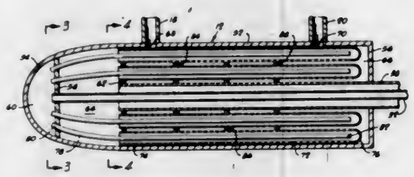
flexible so as to permit the projection to be disengaged from the hole by lateral flexion of the suspension strap and plate away from each other, and a hook means protruding from one of the members and bent so as to embrace the edge of the other of said members close to its respective part of the releasable connecting means, said projection and hook means being so constructed and arraged that when the projection is disengaged from the hole and the suspension strap is initially pivoted upwardly toward its open position the outer end of the projection part of the hook means still embraces a part of said other will pass the edge of the member which it confronts while member.

3,360,035
VAPOR COOLING SYSTEM HAVING MEANS RENDERING A FLOW OF LIQUID THEREIN ELECTRICALLY NONCONDUCTIVE
Coenraad Van Loo, San Jose, and James P. Polese, Menlo Park, Calif., assignors to Varian Associates, Palo Alto, Calif., a corporation of California
Filed May 3, 1967, Ser. No. 635,866
12 Claims. (Cl. 165—105)



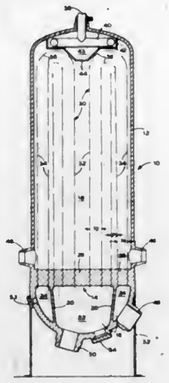
1. A vapor cooling system adapted to be filled to a certain level with a liquid and having a boiler, a condenser disposed above said boiler, a conduit communicating between said boiler and said condenser, and means disposed above said level within said conduit for interrupting the flow of a liquid therethrough to render said flow electrically nonconductive, said means comprising an obstruction having an upper surface and a lower surface defining a plurality of apertures, said lower surface having a plurality of projections spacially separated from said plurality of apertures from the ends of which projections pendant drops of said liquid form and fall.

3,360,036
HEAT EXCHANGER
Earl F. Holyfield, 600 NE. 19th St., Oklahoma City, Okla. 73105
Filed Aug. 20, 1965, Ser. No. 481,185
4 Claims. (Cl. 165—142)



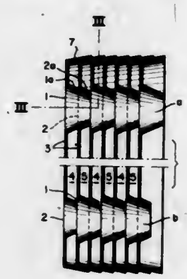
1. A heat exchanger comprising:
an elongated hollow body having first and second closed ends and having inlet and outlet openings therein;
a perforated first plate member disposed in said body adjacent the first closed end thereof and having a periphery connected in fluid-tight relationship with said body to form a first chamber in said body;
a perforated second plate member disposed in said body between said first plate member and second end and having a periphery connected in fluid-tight relationship with said body to form a second chamber with said first plate member and a third chamber with the second closed end of said body, said third chamber being in communication with said inlet and outlet openings;
a first conduit having an open end connected in one of the perforations in said first plate member w th said open end in communication with said first chamber and extending through the second closed end of said body to transfer fluid to and from said first chamber;
a second conduit encircling a portion of said first conduit and having an open end in communication with said second chamber and connected in one of the perforations in said second plate member, said second conduit also extending through the second closed end of said body to transfer fluid to and from said second chamber;
a plurality of tubes disposed in said body, each of said tubes having an open end connected in a respective one of the perforations in said second plate member and having a closed end thereon disposed in said third chamber adjacent the second closed end of said body;
a plurality of open-ended restrictor tubes disposed in said body, each of said restrictor tubes having one open end connected in the perforations in said first plate member in communication with said first chamber and having the other open end located in and adjacent the closed end of a respective one of said tubes; and,
a plurality of baffle members located in the third chamber of said body between said inlet and outlet openings whereby fluid flowing therebetween follows a circuitous path through said third chamber.

3,360,037
HEAT EXCHANGER U-BEND TUBE ARRANGEMENT
Johannes H. Ammon, Akron, Ohio, assignor to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey
Filed Aug. 24, 1965, Ser. No. 482,243
9 Claims. (Cl. 165—158)



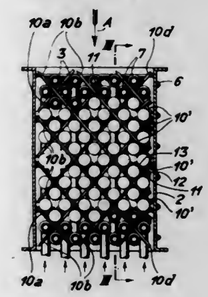
1. A tubular arrangement in a heat exchanger which comprises a plurality of U-bend tubes, a tube sheet having an inner central area portion receiving one end of each of said tubes to communicate same with one fluid compartment, and an outer annular area portion receiving the other end of each of said tubes to communicate same with another fluid compartment, said U-bend tubes being disposed equidistantly in an annular bank composed of a plurality of equiangular, sector-shaped sub-banks of tubes, the tubes in each sub-bank being disposed in mutually parallel planes.

3,360,038
ARRANGEMENT IN HEAT EXCHANGERS OF THE PLATE-TYPE
Tue Stampes, Stockholm, Sweden, assignor to AB Rosenblads Patenter, Stockholm, Sweden, a corporation of Sweden
Filed Feb. 2, 1966, Ser. No. 524,444
Claims priority, application Sweden, Feb. 17, 1965, 2,000/65
2 Claims. (Cl. 165—166)



1. A plate type heat exchanger for two fluid media, comprising a stack of a plurality of thin plates disposed in spaced at least generally parallel relationship, means for sealing the bordering edges of adjacent plates together to form a succession of closed fluid receiving channels, every second channel constituting a first set of channels adapted to receive a first one of said fluid media and the remaining channels constituting a second set of channels adapted to receive the second of said fluid media, the two sets of channels being isolated from each other, a set of inlet ports and a set of exhaust ports communicating with each channel of the first set of channels, and a set of inlet ports and a set of exhaust ports communicating with each channel of the second set of channels, the ports in each set thereof being aligned and being formed by a tapered collar on each plate disposed about an opening through the plate, the collars projecting and converging in the same direction with respect to the plates in the stack, alternate collars forming each set of ports being long, the remaining collars forming said set of ports being short, the free ends of the long collars being telescoped within the short collar on the next adjacent plate, the free ends of the short collars being spaced radially inwardly from the roots of short collars on the next adjacent plate to form said ports, and fusion welds sealingly connecting the telescoped contacting side surfaces of the long and short collars.

3,360,039
DAMPING DEVICE FOR HEAT EXCHANGERS
Hans Frei, Frauenfeld, Thurgau, Switzerland, assignor to Sulzer Brothers, Limited, Winterthur, Switzerland, a corporation of Switzerland
Filed Mar. 2, 1966, Ser. No. 531,178
13 Claims. (Cl. 165—172)



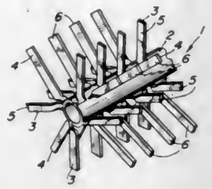
1. A damping device for insertion between the tubes of a heat exchanger comprising a damping bar sized to fit between the tubes of a heat exchanger in clamping engagement therewith, and a first leg of rectangular cross-section secured to said damping bar, said leg projecting perpendicularly from said damping bar at an inclined angle thereto for insertion between a pair of tubes of the heat exchanger to maintain said damping bar against longitudinal displacement.

3,360,040
HEAT EXCHANGER ELEMENTS
Richard W. Kritzer, Chicago, Ill., assignor to Peerless of America, Incorporated, Chicago, Ill., a corporation of Illinois
Filed July 30, 1965, Ser. No. 476,010
3 Claims. (Cl. 165—181)

1. A heat transfer element comprising
(a) an elongated tubular member, and
(b) a plurality of fins projecting outwardly from said tubular member and extending longitudinally thereof,
(c) each of said fins comprising
(1) a base portion projecting radially outwardly from said tubular member, and
(2) a plurality of pairs of elongated spines projecting longitudinally outwardly from said base portion, with the fins in each pair projecting

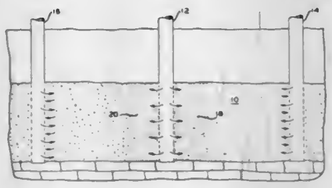
at an oppositely opening acute angle to the radius along which said base portion projects,

(d) adjacent ones of said spines in each of said fins being disposed alternately at said oppositely opening angles, and



(e) adjacent spines in adjacent ones of said fins projecting from the respective base portions thereof in the same general direction around said tubular member.

3,360,041
IGNITING AN OIL STRATUM FOR IN SITU COMBUSTION
Melcon Santourian, Meshed, Iran, assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Dec. 20, 1965, Ser. No. 515,141
9 Claims. (Cl. 166—2)



1. A process for initiating in situ combustion in a permeable oil stratum penetrated by a central well and first and second wells offset in substantially opposite directions from said central well, which comprises the steps of:

(1) injecting thru said central well a combustion-supporting volume of a low-temperature oxidizable liquid into an annulus of said stratum adjacent said central well;

(2) thereafter, shutting in said central well and injecting gaseous O_2-containing oxidant thru said first well so as to contact said liquid therewith and ignite and burn same, thereby igniting in-place oil adjacent said annulus and establishing a combustion zone;

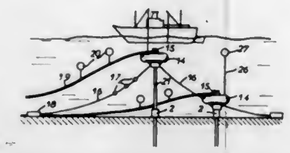
(3) continuing the injecting in Step 2 so as to cause said combustion zone to move toward said first well;

(4) during Steps 2 and 3, producing thru said second well;

(5) thereafter, opening said central well to production and injecting gaseous O_2-containing oxidant thru said second well, contacting the oxidizable liquid in said annulus nearest said second well therewith, and burning said liquid thereby igniting in-place oil and establishing a second combustion zone; and

(6) continuing the injecting in Step 5 so as to move said second combustion zone toward said second well while producing fluids from both combustion zones thru said central well.

3,360,042
WELL-HEADS FOR HYDROCARBONS AND AUXILIARY EXPLOITATION AND MAINTENANCE ARRANGEMENT
Henri Albert Marion, Rueil-Malmaison, France, assignor to Societe d'Etude du Transport et de la Valorisation des Gaz Naturels du Sahara "S.E.G.A.N.S.," Paris, France, a French corporation
Filed Mar. 9, 1965, Ser. No. 438,302
Claims priority, application France, Mar. 14, 1964, 967,471; Feb. 24, 1965, 6,777
13 Claims. (Cl. 166—.6)



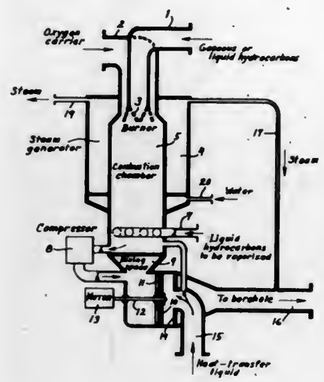
12. An oil well structure for oil production from an earth formation under a body of water, said well structure comprising in combination a well casing, a well-head, a Christmas tree, a releasable connection means interconnecting said well-head and said Christmas tree, means for releasing said connection means, guide means associated with said Christmas tree for the guiding thereof in movements between a lowermost position adjacent said well-head and an upper position in which work to be carried out on said Christmas tree is facilitated, an oil production tube connected to and depending from said Christmas tree into said well casing, hollow ballast means connected to said Christmas tree, said ballast means being adapted to be put selectively in communication with a source of compressed air and a source of liquid whereby said Christmas tree is selectively raisable to said upper position by said ballast means after release of said connection means and supply of compressed air to said ballast means and lowerable to said lowermost position by supplying liquid to said ballast means.

3,360,043
METHOD OF TREATING CLAY-CONTAINING FORMATIONS WITH GUANIDINE SALT SOLUTION
William B. Braden, Jr., and Joseph T. Carlin, Houston, Tex., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Dec. 22, 1965, Ser. No. 515,707
16 Claims. (Cl. 166—9)

1. A method of stabilizing a clay containing body which comprises contacting said body with a guanidine salt in a polar oxygenated aliphatic hydrocarbon solvent selected from the group consisting of a lower alkanol, dimethylsulfoxide, an admixture of dioxane and dimethylsulfoxide, and a mixture of said lower alkanols in an amount sufficient to stabilize said clay-containing body.

12. A method of recovering oil from an oil bearing underground formation containing clay wherein a displacement fluid selected from the group consisting of water, steam and mixtures thereof is applied to said formation and oil is recovered therefrom which comprises introducing a treating solution consisting of a guanidine salt in a polar oxygenated aliphatic hydrocarbon solvent selected from the group consisting of a lower alkanol, dimethylsulfoxide, an admixture of dioxane and dimethylsulfoxide, and a mixture of said lower alkanols into said formation, contacting said clay with said treating solution, thereafter introducing said displacement fluid into said formation under pressure to force said treating solution through the formation and recovering oil from said formation.

3,360,044
PROCESS AND APPARATUS FOR THE RECOVERY OF LIQUID BITUMEN FROM UNDERGROUND DEPOSITS
Hans Lange, Wietze, Kreis, Celle, Germany, assignor to Deutsche Erdol-Aktiengesellschaft, Hamburg, Germany
Filed Mar. 5, 1964, Ser. No. 349,589
Claims priority, application Germany, Mar. 21, 1963, L 44,426
11 Claims. (Cl. 166—11)



1. Apparatus for the production of compositions for the recovery of liquid bitumens from subterranean deposits comprising a combustion chamber surrounded by a steam generator, in which chamber is located a burner, a conduit for the introduction of hydrocarbons under pressure to said burner, a second conduit for the introduction of enriched oxygen carriers to said burner, a mixing chamber adjacent to and connected to said combustion chamber, means for introducing light hydrocarbons into the combustion gases in the said mixing chamber, means for distributing said light hydrocarbons into said combustion gases, and means for withdrawing the mixture of combustion gases and light hydrocarbons from said mixing chamber.

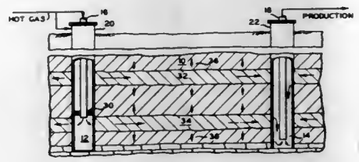
2. A process for the recovery of liquid bitumen from subterranean bituminous deposits by treating said deposits through drill holes with fluid media which comprises introducing through said drill holes into said deposits a mixture of a heat transfer medium and heated combustion gases and removing liquid bitumen through adjacent drill holes, said heated combustion gases produced by the combustion of hydrocarbons with an oxygen carrier containing 80 to 95% O_2, and the resulting modified gases of combustion being then mixed with said heat transfer medium comprising C_1–C_7 hydrocarbons.

3,360,045
RECOVERY OF HEAVY CRUDE OIL BY STEAM DRIVE
Melcon Santourian, Meshed, Iran, assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Dec. 15, 1965, Ser. No. 514,149
7 Claims. (Cl. 166—11)

2. A process for producing oil from a permeable stratum containing a heavy crude oil, said stratum being penetrated by an injection well and an offset production well, which comprises the steps of:

(1) driving a hot non-aqueous gas thru a restricted substantially horizontal zone of said stratum at an intermediate level thereof so as to displace oil therefrom into said production well and open up same to increased fluid flow;

(2) thereafter, injecting steam thru said injecting well along substantially the entire face of said stratum and driving same toward said production well so as to displace additional oil into said production well; and

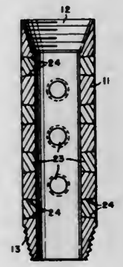


(3) recovering oil produced by steps (1) and (2) from said production well.

3,360,046
CEMENTING COMPOSITIONS FOR MAXIMUM THERMAL INSULATION
Billy J. Johnson, Duncan, and Charles Ray George, Stillwater, Okla., assignors to Halliburton Company, Duncan, Okla., a corporation of Delaware
No Drawing. Filed Feb. 8, 1965, Ser. No. 431,197
6 Claims. (Cl. 166—29)

3. The method of lining the bore hole of a well with a thermally insulating cement sheath which comprises injecting into the well a novel pumpable cement slurry composition comprising cement, about 25% to 40% silica flour, from 10% to about 150% of a member selected from the group consisting of vermiculite and perlite, all percentages being based on the weight of cement, and from 10 gallons to about 30 gallons of water per sack of cement, based on a 94 lbs. sack, and permitting said composition to set in said bore hole to form a thermally insulating cement lining having adequate compressive strength over the range of temperatures encountered in the well, and being capable of withstanding the forces encountered in said well.

3,360,047
WELL DRILLING DEVICE
Bob J. Burnett, P.O. Box 1123, 221 Garfield, Laramie, Wyo. 82070
Filed May 18, 1965, Ser. No. 456,653
6 Claims. (Cl. 166—46)



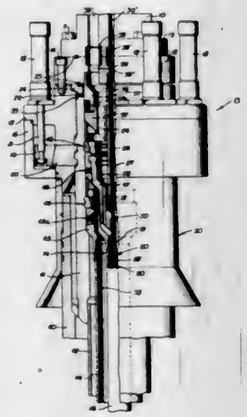
1. A device of the character described comprising a tubular sub member having a group of tubular connecting means at both of its ends, the walls of the member having apertures therethrough extending from the interior to the exterior, and plug members disposed in said aperatures

and frictionally engaged therewith so as to be completely removable explosively under internal fluid pressures below that required to rupture other portions of the member, said apertures being disposed in staggered relation axially of the tubular member and said plug members being contained in the apertures completely within the limits of the thickness of the walls.

3,360,048
ANNULUS VALVE

Bruce J. Watkins, Palos Verdes Estates, Calif., assignor to Regan Forge & Engineering Co., San Pedro, Calif., a corporation of California

Filed June 29, 1964, Ser. No. 378,675
15 Claims. (Cl. 166—87)



13. An annulus valve apparatus for controlling fluid flow through an annulus between a casing and an inner tubing wherein said valve apparatus is connected into said tubing and has an apparatus bore aligned to the tubing bore, said apparatus comprising:

annulus closing means for closing the annulus between the casing and the inner tubing to the passage of fluid;

passage means interconnecting portions of said annulus above and below said annulus closing means through a predetermined passage; and

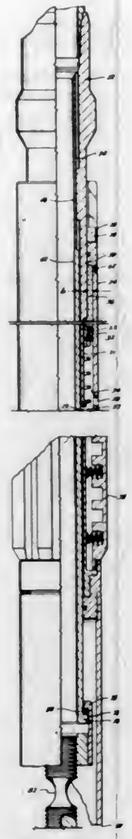
passage closure means and associated actuating means mounted within said valve apparatus for opening and closing said passage means to control fluid flow in the annulus between said tubing and casing, said actuating means being operable within said apparatus bore without removal therefrom by means removably run through said tubing and apparatus bores.

3,360,049
APPARATUS FOR OPERATING WELL TOOLS

James W. Kisling III, Houston, Tex., assignor, by mesne assignments, to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas

Filed Feb. 21, 1966, Ser. No. 528,973
9 Claims. (Cl. 166—123)

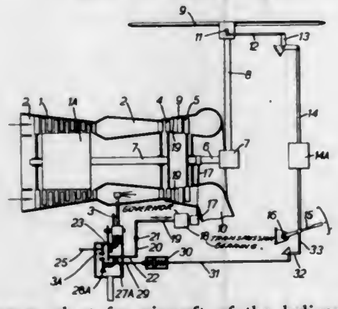
1. In an apparatus for imparting oppositely directed forces to a well tool in a well bore, means for releasably connecting the apparatus to a well tool to be operated in a well bore, said apparatus being adapted for connection with a suspension means, first power means operated by rotational movement of a portion of said apparatus for imparting oppositely directed forces to said well tool to partially operate said well tool, and second power means operated by longitudinal movement of a portion of said apparatus for further applying oppositely directed forces to said well tool to complete the operation of said well tool and to release said well tool from the device.



3,360,050
CONTROL APPARATUS FOR ROTARY WING AIRCRAFT

John D. Sibley, Watford, Edward A. Simonis, Kenton, and Desmond L. V. Lusby, Hillingdon, England, assignors to Bristol Siddeley Engines Limited, Bristol, England, a British company

Filed Sept. 24, 1965, Ser. No. 489,923
Claims priority, application Great Britain, Sept. 24, 1964, 39,061/64
7 Claims. (Cl. 170—135.74)

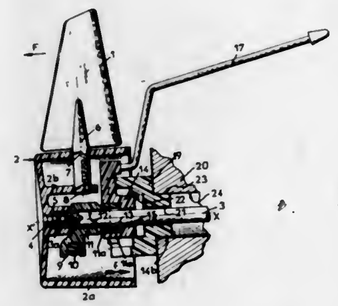


1. A power plant for aircraft of the helicopter type comprising, a power unit, a rotary wing system driven by the power unit, collective pitch control means controlling the collective pitch of the rotary wing system, automatic fuel control apparatus for the power unit arranged to respond automatically to changes in the power demands of the rotary wing system to vary the power available from the power plant in accordance with changes in such demands, and adjustable stop means which is automatically moved with movements of the collective pitch control and imposes a variable restriction on the range of movement of the fuel control apparatus in a manner such that at any setting of the collective pitch control means it will prevent the fuel control apparatus from moving in at least one direction more than a predetermined amount from the position appropriate to the power required at that setting.

3,360,051
PROPELLER FANS WITH VARIABLE-PITCH BLADES

Maurice Marie Achille, Trouilhet, Lyon, France, assignor to Calor Apparells Electro-Domestiques, Lyon (Rhone), France, a company of France

Filed Jan. 27, 1967, Ser. No. 612,239
Claims priority, application France, Feb. 1, 1966, 47,983
4 Claims. (Cl. 170—160.43)

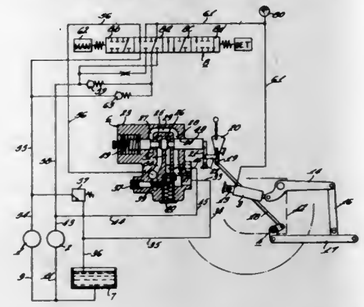


1. A ventilator more particularly adapted for home use, of adjustable pitch propeller type comprising a fixed frame structure, a rotatable driving hub, pivot pins, adjustable pitch propeller blades rotatively mounted on said pivot pins substantially at right angles to the rotational axis of said hub, stub means shifted in relation to the rotational axis of said pivot pins, said pivot pins being solid with said stud means, a propeller pitch controlling member engaging said stud means and presenting an annular configuration and freely sliding around said hub and along the axis of said ventilator, two annular members mounted around said hub which freely rotates therein, said annular members being located and pressed between said pitch controlling member and said fixed frame structure, cam face means provided between said annular members, the first one of said annular members being fixed in regard to said frame structure, the second one being rotatively movable around the ventilator axis and a control arm member associated with said second one of said annular members, whereby on rotation of said arm member around the ventilator axis said second member rotates in respect to said first fixed member, and said cam face means are correspondingly operated imparting along said ventilator axis a longitudinal sliding motion to said second member together with said propeller pitch controlling member against which it bears for varying the pitch of the propeller blades.

3,360,052
POWER LIFT SYSTEM FOR TRACTORS

Roy W. Johansen, West Allis, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.

Filed Dec. 7, 1964, Ser. No. 416,555
7 Claims. (Cl. 172—7)

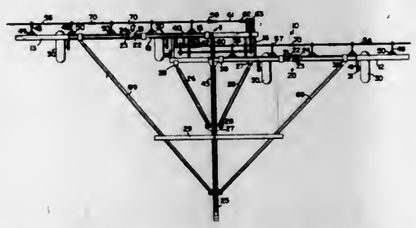


1. A hydraulic system comprising a reservoir, low volume and high volume pumping means connected at their intake sides with said reservoir, primary fluid passage means having an inlet connected to the delivery side of said low volume pumping means, secondary fluid passage means having an inlet connected to the delivery side of said high volume pumping means; a fluid motor; and a fluid control valve operatively connected with said primary and secondary fluid passage means and with said fluid motor for energizing the latter selectively by said low volume pumping means independently of said high volume pumping means, by said low volume and high volume pumping means conjointly; a weight transfer valve connected to said secondary passage means including a low resistance fluid duct and a high resistance fluid duct connected parallel with each other in fluid delivering relation with said reservoir, and said weight transfer valve including a valve mechanism selectively operable to direct the fluid output of said high volume pumping means through said low resistance fluid duct while said fluid motor is energized by said low volume pumping means, to direct the fluid output of said high volume pumping means to said high resistance fluid duct while said fluid motor is energized conjointly by said low volume and high volume pumping means.

3,360,053
FLEXIBLE ROD WEEDERS HAVING FOLDING WINGS

Francis Bernard Doepker, Annaheim, Saskatchewan, Canada

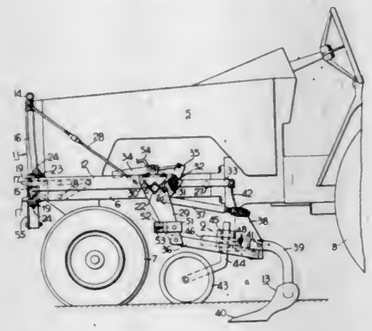
Filed Oct. 5, 1964, Ser. No. 401,477
Claims priority, application Canada, Oct. 5, 1963, 886,092/63
8 Claims. (Cl. 172—44)



1. In a rotary rod weeder made up of center and wing sections, a center frame section comprising front and rear frame bars and longitudinal cross bars connecting the front and rear bars as a braced unit, a ground wheel supporting each of said front and rear frame bars, a wing section frame bar connected by a universal cou-

pling joint in extending relation to each of said front and rear bars, a ground wheel outwardly supporting each wing section frame bar, a draw pole for the implement connected to said braced unit, draft members pivotally connected forwardly to the drawpole and rearwardly connected to the wing section frame bars intermediate the ends of said frame bars and being detachable therefrom, and a transverse frame carried forwardly on the drawpole on which the outer ends of the wing section frame bars may be supported when said wing sections are pivoted forwardly in relation to the center section.

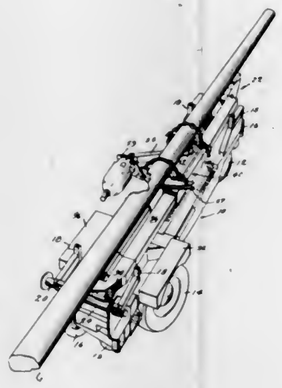
3,360,054
FRONT MOUNTED BEDDER (SWINGABLE FRONT FRAMES)
Allan L. Chilstrom, West Allis, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Feb. 16, 1965, Ser. No. 433,150
1 Claim. (Cl. 172—274)



A tractor mounted implementt including detachable frame means comprising a center section and outer sections swingably connected at one end to said center section and shiftable relative to the center section about generally vertical axes from a position substantially against the sides of the tractor to a position transversely outward therefrom, and ground working means connected with said outer frame sections and swingable generally vertically relative to the associated outer frame section between a ground working position and a position out of engagement with the ground, frame supporting means for said frame means for aiding in connecting and disconnecting said frame means to and from said tractor, comprising ground engaging support means connected with said center section to support the latter when disconnected from said tractor, a ground engaging gauge wheel having a short standard portion attached to said ground working means for movement therewith in normal operation, said ground engaging gauge wheel standard portion being detachable from said ground working means and being adapted for attachment to said outer frame for retaining said outer frame at the same height it was when supported from said tractor, and means carried by said outer frame for attaching said standard portion of gauge wheel to said outer frame with the axis of rotation of said wheel substantially intersecting the axis of swing of said outer frame and at right angles thereto.

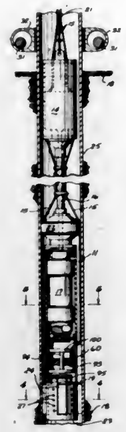
3,360,055
POLE HANDLING VEHICLE
Dean E. Broderson, 10116 Forest, Kansas City, Mo. 64131
Filed Apr. 25, 1966, Ser. No. 544,985
10 Claims. (Cl. 173—28)

1. A self-propelled vehicle for handling poles in confined work areas comprising:
an elongate and narrow chassis having supporting pairs of wheels at each end of the chassis, with a first pair of wheels being driven by a motor means and with a second pair of wheels being laterally extendable and retractable relative to the chassis of the vehicle,
first power-operated means for extending and retracting said second pair of wheels, thereby providing a narrow configuration for the vehicle when the wheels are retracted and for providing greater lateral stability for the vehicle when the wheels are extended outwardly,
a boom means pivotally mounted at one end to said chassis and about a horizontal axis, and including a second power-operated means for moving said boom about its pivotal mounting axis, said boom being movable for a range of horizontal and vertical positions relative to said chassis, and said boom having:
a carriage means mounted on said boom and extendable along said boom means by a third power-operated means connected between said carriage and a portion of said boom means, said carriage means further including a cradle for carrying poles, said cradle being mounted for rotation about an axis at right angles to the longitudinal axis of the boom and in a direction which extends upwardly from an upper surface of said boom means when the boom means is in a horizontal plane, and
extension members which can be added to hollow receiving portions of said boom means for extending the length of the boom, said hollow receiving portions providing for storage of said extension members when the extension members are not added to the boom means to lengthen the boom.



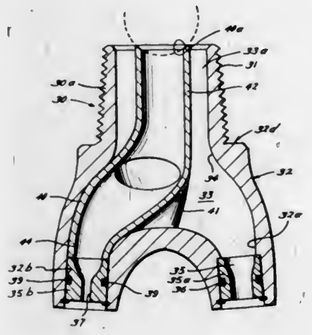
3,360,056
LATERAL SONIC VIBRATION FOR AIDING CASING DRIVE
Albert G. Bodine, Jr., 7877 Woodley Ave., Van Nuys, Calif. 91406
Filed Dec. 6, 1965, Ser. No. 511,778
9 Claims. (Cl. 175—55)

1. A method for sonically driving a member into an earthen formation comprising the steps of
applying sonic energy to said member longitudinally near one end thereof at a frequency such as to cause longitudinal resonant vibration of said member, thereby causing the other end thereof to drive into said formation, and
applying sonic energy to said member laterally to cause lateral vibration thereof at any point therealong where sticking of said member with the earthen formation is encountered,
such that said lateral vibration is superimposed on said longitudinal vibration to lower the friction in



the longitudinal vibration system thereby raising the Q thereof.

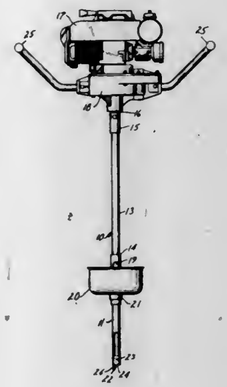
3,360,057
FLUID CONTROLLED DIRECTIONAL BIT AND ITS METHOD OF USE
Edwin A. Anderson, 1104 Chimney Rock Road, Houston, Tex. 77027
Filed Dec. 6, 1965, Ser. No. 511,773
8 Claims. (Cl. 175—67)



8. A method of drilling a well bore comprising the steps of:
(a) securing a drill bit to a drill string wherein the drill bit is provided with a plurality of jet nozzles, one of which is substantially larger than the others,
(b) lowering the drill string with the drill bit thereon into a well bore,
(c) lowering a survey instrument and spacer means to seat on the drill bit and aligning the large jet nozzle in a predetermined direction in the well bore,
(d) removing the survey instrument from the drill string,
(e) the spacer means also functioning to close off fluid flow to all of the jet nozzles except the large one,
(f) deviating the well bore by jet deflection,
(g) removing the spacer means and thereafter continuing normal rotary drilling operations,

(h) subsequently jet deflecting the same well bore by replacing the spacer means and survey instrument to first align the larger jet nozzle in a predetermined manner in the well bore,
(i) thereafter removing the survey instrument to enable jet deflection of the well bore to proceed, and
(j) removing the spacer means and thereafter continuing normal rotary drilling operations.

3,360,058
ROTARY SOD CORING DEVICE
Raymond E. Von Ruden, Box 334, Owatonna, Minn. 55060
Filed Mar. 7, 1966, Ser. No. 532,234
8 Claims. (Cl. 175—207)

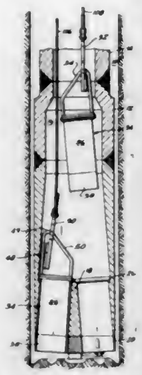


1. A coring device for use with a power head having a rotary output shaft projecting therefrom comprising:
(a) a tubular shaft defining an axially extended bore;
(b) means for coupling one end of said shaft to the extended end of the rotary output shaft;
(c) said bore terminating adjacent said one end and defining thereat a radial outlet opening in said tubular shaft;
(d) said tubular shaft adjacent said other end defining an axially outwardly and downwardly opening mouth communicating with said bore; and
(e) a diametrically extended wall portion carried by said tubular shaft and bisecting said mouth.

3,360,059
RETRIEVABLE BIT
Eber W. Gaylord, Pittsburgh, Pa., assignor to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware
Filed Dec. 27, 1965, Ser. No. 516,533
10 Claims. (Cl. 175—259)

10. Apparatus for positioning and retrieving nozzle holders in a drill bit comprising a hollow drill bit body adapted to be connected to the lower end of drill pipe, said drill bit body having a central opening of substantially elliptical cross section extending downwardly therein, a pair of chambers extending downwardly through the bottom of the drill bit body, a key extending inwardly from the wall of each of the chambers, a nozzle holder slideable in each of the chambers, a collar extending outwardly at the upper end of each nozzle holder to limit downward movement of the nozzle holder in the chamber, a downwardly tapering guide member on the lower end of each of the nozzle holders adapted to guide the nozzle holders into the chambers, a keyway in the outer

surface extending from the lower end of the keyway along surface of the nozzle holder, a downwardly facing cam the outer surface of the guide to guide the key into the keyway and thereby orient the nozzle holder in the chamber, a bail extending upwardly from the upper end of each of the nozzle holders, a cable container suspended from a wire line, a pair of opposed pivotally mounted arms suspended from the lower end of the cable container, a spring engaging said arms and urging the arms apart and



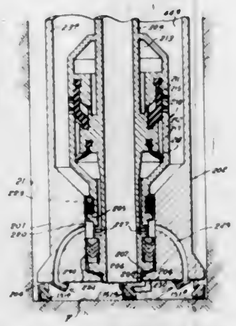
against the wall of the central opening in the drill bit body whereby the arms are oriented on the major axis of the elliptical opening in the drill bit body, a hook extending from each of the arms adapted to engage the bail of the holder, at least one of said hooks being separable from the arm, and a cable extending from the cable container to the separable hook of a length sufficient to delay withdrawal of the nozzle holder engaged by said separable hook on lifting the cable container until after the other nozzle holder is lifted from the chamber in the drill bit.

3,360,060
TENSION JARRING TOOL WITH TENSION ASSEMBLY
John C. Kinley, 5815 Royalton St., Houston, Tex. 77036; Myron M. Kinley, Chickasha, Okla.; and Clifford E. Anderson, Houston, Tex.; said Myron M. Kinley and said Anderson assignors to said John C. Kinley
Filed Aug. 18, 1965, Ser. No. 480,638
5 Claims. (Cl. 175—299)



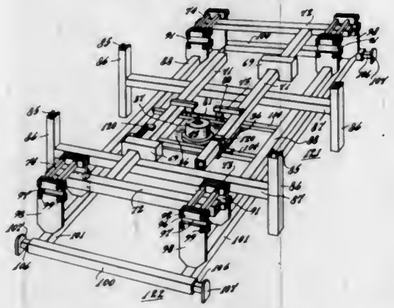
1. A jarring apparatus, comprising:
(a) a jarring tool for providing a jarring action in a well upon the application of a predetermined pulling force.
(b) a weight section connected above the jarring tool for increasing said jarring action, and
(c) a tension assembly connected above said weight section and having a spring therewith which is adapted to be stretched for developing substantially the entire pulling force required to initiate the jarring ring action by the jarring tool.

3,360,061
LARGE WELL BORE DRILLING APPARATUS
Carlos R. Canalizo, Las Vegas, Nev., assignor to Otis Engineering Corporation, Dallas Tex., a corporation of Delaware
Filed Oct. 8, 1964, Ser. No. 402,425
17 Claims. (Cl. 175—324)



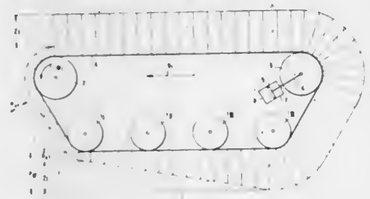
13. A well apparatus for drilling a well bore and transporting cuttings and liquids from the well bore, said apparatus including: a rotatablye drill pipe having a drill on its lower end; a tubing extending longitudinally through said drill pipe and spaced therefrom to provide an annular gas passage therebetween, said tubing having a longitudinal passage opening at its bottom end to the well bore below said drill and opening at its upper end to tre surface; means closing the upper and lower ends of said gas passage; means for introducing gas to the upper end of said gas passage; downwardly directed jet means mounted on said drill for directing jets of gas from said gas passage into the well bore below said drill downwardly toward the bottom of the well bore and toward the lower open end of said tubing; and flow directing means on the drill directing flow of gas and cuttings upwardly into the longitudinal passage of the tubing.

3,360,062
SCALE FOR MEASURING CHANGE OF WEIGHT OF CLINICAL PATIENT
James A. Potter, 12 Greenhouse Blvd., West Hartford, Conn. 06110
Filed Dec. 14, 1964, Ser. No. 417,928
11 Claims. (Cl. 177—144)



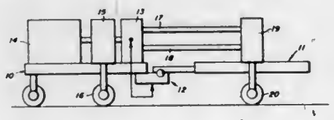
2. A scale for measuring the change of weight of a patient undergoing clinical observation comprising a base; a weighing frame; flexure pivots interconnecting the base and weighing frame; tare balancing means for balancing the scale at the beginning of an observation period; a differential transformer; lever means transmitting change of weight of the patient into relative movement between armature and coils in said differential transformer; and indicator means responsive to the electrical signal from the differential transformer for indicating the thus measured change of weight of the patient.

3,360,063
REGULATING APPARATUS FOR A HYDRAULIC TRACK SPREADER
Helmut Hausenblas, Kassel, Ewald Poppe, Overvellmar, and Hans Massholder, Kassel, Germany, assignors to Rheinstahl Henschel A.G., Kassel, Germany, a corporation of Germany
Filed June 27, 1966, Ser. No. 560,414
Claims priority, application Germany, Jan. 15, 1966, R 42,427
6 Claims. (Cl. 180—9.2)



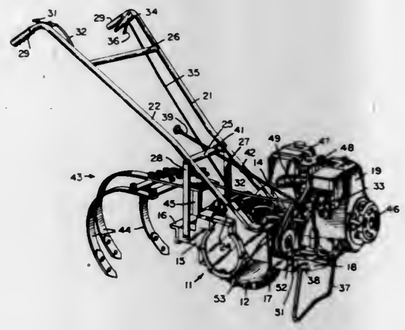
1. An apparatus for regulating a hydraulic track adjuster for a tracked vehicle which comprises means for measuring the driving torque applied to the track, and converter means connected thereto for producing a reference input for the regulation of the hydraulic pressure in the adjuster cylinder in accordance with a characteristic wherein (*a*) for driving conditions in which the track part over-running the reversing roller participates in the transmission of the tractive force from the track drive to the road surface, the reference input corresponds to a longitudinal force within the two parts of the track running off the reversing roller which is at all times in excess of, by an at least substantialy constant value, the driving force transmitted to the road by the track; and (*b*) for driving conditions in which the track part overrunning the reversing roller does not participate in the transmission of the tractive force from the track drive to the road surface, the reference input corresponds to an at least substantially constant longitudinal force in the two parts of the track running off the reversing roller which is substantially equal to the aforementioned excess value.

3,360,064
HYDROSTATIC MECHANISM
Tadeusz Budzich, 3344 Colwyn Road, Cleveland, Ohio 44120, and Arnold Pitt, 5 Hillgarden Road, Weston, Ontario, Canada
Original application Nov. 14, 1962, Ser. No. 238,079, now Patent No. 3,227,235, dated Jan. 4, 1966. Divided and this application Oct. 8, 1965, Ser. No. 596,351
7 Claims. (Cl. 180—14)



1. In an arrangement comprising a guiding vehicle and a guided vehicle for transporting a load, means connecting said guiding vehicle and said vehicle, means to impart a motion to said guiding vehicle and said guided vehicle including a prime mover, traction means for said guiding vehicle, traction means for said guided vehicle, and power transmission means between said prime mover and traction means of guiding vehicle; the combination therewith of a fluid power transmission and control system interposed between said prime mover and said traction means for said guided vehicle, said system includ ing a fluid pump driven by said prime mover, a plurality of fluid motors drivingly connected to said traction means for said guided vehicle and forming a fluid differential, differential steering means, duct means between said fluid pump and said differential steering means, fluid ducts between said differential steering means and each of said fluid motors, power control means adapted to vary the power transmitted through said fluid power transmission, force sensing means adapted to sense the impelling force between said guiding vehicle and said guided vehicle, means responsive to said impelling force sensing means to operate said power control means to maintain a substantially constant impelling force level between said guiding vehicle and said guided vehicle, steering force sensing means adapted to sense steering forces between said guiding vehicle and said guided vehicle, steering force sensing means adapted to sense steering forces between said guiding vehicle and said guided vehicle, and means responsive to said steering force sensing means to operate said differential steering means to eliminate said steering forces between said guiding vehicle and said guided vehicle.

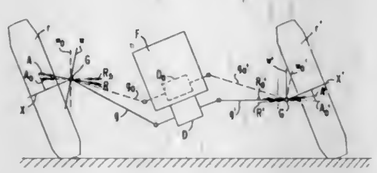
3,360,065
POWER CULTIVATOR
Richard M. Wyman, 14 Burr St., Framingham, Mass. 01701
Filed July 16, 1965, Ser. No. 472,608
4 Claims. (Cl. 180—19)



1. A power cultivator having
a pair of spaced elongated side frame members, manual control means including a pair of handles, one mounted on each said side frame member and extending in a direction rearwardly of said frame members,
drive means including
a motor mounted between said side frame members at the forward end thereof,
a worm and gear drive mounted within one of said side frame members,
said drive having a worm shaft extending longitudinally of said frame member to a power input means located externally of said frame member adjacent said motor and a gear shaft extending between said side frame members.
a single wheel located between said side frame members,

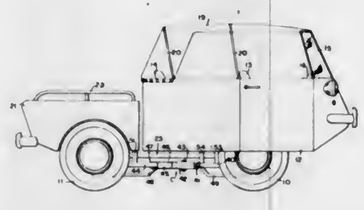
said wheel mounted on a wheel hub,
said wheel hub mounted coaxially of said gear shaft for movement laterally relative to the side frame members along the common axis,
clutch means mounted coaxially between said gear shaft and said wheel hub,
said clutch means comprising
a driving clutch element attached to said gear shaft,
and a driven clutch element attached to said wheel hub in a position to engage with said driving clutch element,
spring means located between said gear shaft and said wheel hub normally to urge said wheel hub along the common axis in a direction to cause said driven clutch element to engage with said driving clutch element,
clutch control means provided externally of said hub adapted to urge said wheel hub along the common axis in a direction to cause said driven clutch element to disengage said driving clutch element,
said clutch control means comprising
a clutch throw-out ring peripherally upstanding from said wheel hub and having an exposed face normal to said axis and facing the locus of said clutch elements,
a block of low-friction material adapted to bear against the exposed face of said clutch throw-out ring,
and means associated with said handles to move said block in a direction generally along said common axis a distance sufficient to cause said clutch elements to disengage,
and a seal element mounted on the side of each side frame member facing said wheel,
one said seal element bearing against the outer periphery of said gear shaft adjacent the respective said frame member,
the other said seal element bearing against the outer periphery of said wheel hub adajcent the other said frame member.

3,360,066
DRIVE ARRANGEMENT FOR VEHICLE STEERABLE WHEELS
Ludwig Kraus, Wettstetten, near Ingolstadt, and Kurt Enke, Fellbach, Germany, assignors to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed Dec. 30, 1964, Ser. No. 422,379
4 Claims. (Cl. 180—42)



1. A motor vehicle, comprising: two steerable wheels, each having a center of rotation and a universal joint drive input; steering means for pivoting said wheels about generally vertical axes for steering the vehicle; drive means including a differential mounted between said wheels; said differential having two coaxial opposite output universal joint drive means, each associated with a corresponding one of said wheels; separate means drivingly connecting each of said wheel drive input universal joints with the corresponding differential output universal joint drive means; control means for substantially decreasing the deflecting torque component normally exerted on the inside one of said wheels tending to pivot them about their generally vertical axes opposite to the steering means pivoted direction during cornering, including means mounting said differential in its entirety below the axis of rotation of said wheels when the vehicle is at rest with the wheels in a straight ahead position thereby disposing the output universal joint drive means a substantial distance below a line between said wheel universal joints when the vehicle is at rest and means in said differential for constituting said differential a limited slip differential producing at least a minimum output torque for each of said outputs.

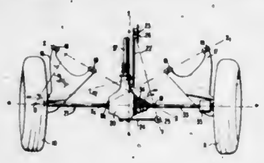
3,360,067
FOUR WHEEL DRIVE ARTICULATED VEHICLE
Floyd C. Scott, Wheatridge, Colo., assignor to Hustler Corporation, Adams City, Colo., a corporation of Colorado
Continuation of application Ser. No. 304,001, Aug. 23, 1963. This application Jan. 18, 1967, Ser. No. 610,201
10 Claims. (Cl. 180—51)



1. A vehicle adapted for travel over rough terrain comprising:
a front chassis portion including a pair of front wheels interconnected by a front axle;
a rear chassis portion including a pair of rear wheels interconnected by a rear axle;
pivot means interconnecting said front and rear chassis portions for pivotal movement about a vertical axis for steering said vehicle and for pivotal movement about a horizontal axis to permit lateral tipping of one chassis portion with respect to the other chassis portion;
an engine mounted on one of said chassis portions and connected to drive said axle of said one chassis portion;
a drive shaft spaced above said pivot means and connected to drive said axle of the other of said chassis portions; and
a universal joint at each end of said drive shaft and disposed respectively adjacent the drive connection between said engine and said axle of said one said chassis portion and the axle of the other said chassis portion.

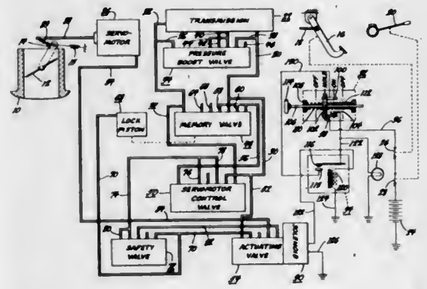
3,360,068
WHEEL SUSPENSION
Franz G. F. Behles, Ingolstadt, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed Apr. 9, 1965, Ser. No. 446,868
Claims priority, application Germany, Apr. 15, 1964, D 44,152
14 Claims. (Cl. 180—73)

5. A wheel suspension for the driven wheels of motor vehicles having a vehicle superstructure, comprising:
inclined guide means for each wheel,
bearing support means for supporting said inclined guide means at the vehicle superstructure about pivot axes disposed obliquely with respect to the vertical vehicle longitudinal center plane and with respect to the vertical vehicle transverse plane containing the centers of the wheels,
swinging half-axle means for supporting one of the two wheels including drive shaft means for said one wheel,
said swinging half-axle means being connected with the one inclined guide means associated therewith in at least a substantially angle-rigid manner,
support means for supporting said swinging half-axle means at said vehicle superstructure in such a manner that the pivot axes of said swinging half-axle means intersects the pivot axis of said one inclined guide means at least near the vertical vehicle transverse plane containing the wheel centers,
and joint shaft means for driving the other wheel which is supported on the other inclined guide means,



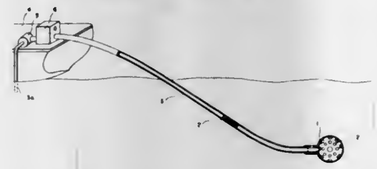
said swinging half-axle means essentially consisting of an axle gear housing means pivotally supported at the vehicle superstructure and of the drive shaft means rigidly connected with said one wheel and supported in said axle gear housing means and in said one inclined guide means,
said support means supporting the axle gear housing means of said swinging half-axle means at the vehicle superstructure and including a yielding longitudinal arm and a yielding cross arm and approximately vertical suspension guide means including elastic cushion means suspending the axle gear housing means of said swinging half-axle means at the vehicle superstructure by way of one of said arms.

3,360,069
FLUID PRESSURE CONTROL SYSTEM AND MECHANISM FOR CONTROL OF VEHICLE ROAD SPEED
Howard E. Chana, Flint, and Charles S. Chapman, Jr. and Frank H. Walker, Grand Blanc, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 6, 1965, Ser. No. 511,863
23 Claims. (Cl. 180—108)



1. A road speed control system for a vehicle having an engine, said system comprising
a source of governor pressure reflecting actual vehicle speed,
a source of line pressure which is greater than the governor pressure required to accurately reflect actual vehicle speed,
first valve means responsive to said governor pressure and establishing a speed signal varying in direct relation to variations in said governor pressure above a predetermined governor pressure,
locking means selectively locking said first valve means against further response to said governor pressure and therefore establishing said speed signal at a selected vehicle speed as a reference speed signal,
second valve means differentially responsive to said governor pressure and said reference speed signal and modifying line pressure to establish a control pressure reflecting changes in engine power demand required to maintain said governor pressure at a fixed pressure reflecting an actual vehicle speed equal to the vehicle speed reflected by said reference speed signal,
and an engine control including a servomotor receiving said control pressure to control the vehicle engine to maintain the vehicle speed at the selected vehicle speed reflected by the reference speed signal.

3,360,070
APPARATUS FOR FIRING EXPLOSIVE CHARGES UNDER WATER
Jacques Cholet, Rueil Malmaison, and Jean-Pierre Fail, Paris, France, assignors to Institut Francais du Petrole des Carburants et Lubrifiants, Rueil Malmaison, France
Filed Dec. 14, 1965, Ser. No. 513,690
Claims priority, application France, Dec. 18, 1964, 999,199
18 Claims. (Cl. 181—0.5)



1. An apparatus for firing explosive charges under water comprising a surface installation, a submerged perforated metal sphere, a tube having one extremity submerged and the other extremity not submerged, the inner wall of the tube being electrically non-conductive, the tube connecting the sphere to the installation at the surface, a plurality of cartridges containing said explosive charges and each having a cylindrical body with one end terminating as a nose and the other end as a head having at least one diameter greater than that of said cylindrical body and its largest diameter less than the internal diameter of the tube so as to permit passage of the cartridges through the tube, terminal sleeve coupling means at the submerged end of the tube for joining the tube to the sphere by means of a connecting sleeve of the latter, means for conveying the cartridges to the sphere including means for loading the cartridges into the tube at the non-submerged end of the latter, characterized by the association in combination of:
(A) cartridges of insulating material of which the interior communicates freely with the exterior and contains a detonator associated with the explosive charge and forming with conductors an open electric circuit of which one end is at the interior of the cylindrical body of the cartridge and the other end is at the exterior of the latter in the prolongation of the nose of the cartridge, these two extremities being in contact with the water when the cartridge is submerged, with

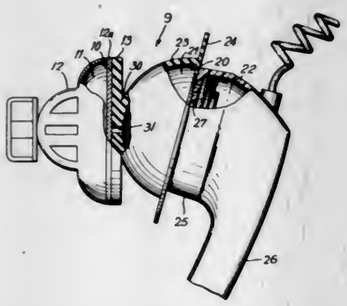
(B) means for feeding electric current to said electric circuit comprising

(a) a conductive crown electrically insulated from the sphere and positioned at the lower inner end of the sleeve coupling means of the tube,

(b) conductors connecting the conductive crown to a first terminal of a source of electric current, the second terminal of the latter being electrically connected to the sphere,

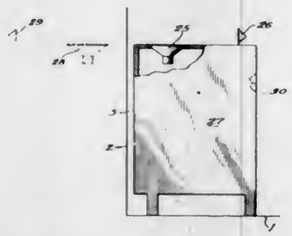
(c) a crown electrically insulated from the sphere and positioned between the connecting sleeve of the latter and the conductive crown, forming a cavity of which the lower part is cylindrical and of a diameter slightly greater than that of the cylindrical body of the cartridge, while smaller than the largest diameter of the head of the cartridge, and the upper portion of the electrically insulated crown having at least an internal diameter greater than the largest diameter of the head of the cartridge, this insulating crown forming an abutment for the head of the cartridge.

3,360,071
ACOUSTICAL COUPLER
Joseph Herbert Vogelman, Roslyn, N.Y., assignor to Chromalloy Corporation, West Nyack, N.Y.
Filed Aug. 2, 1965, Ser. No. 476,372
4 Claims. (Cl. 181—.5)



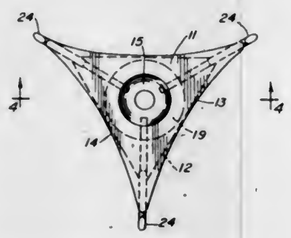
1. Sound coupling apparatus comprising: first and second transducer units, one of said units including sound translating means of the type operable by electrical input signals to produce corresponding sound signals, the other of said units including sound translating means of the type operable by sound signals to produce corresponding electrical output signals; an acoustical coupler between said transducer units to transfer sound energy between the respective sound translating means thereof, said coupler including a first part of generally cup-shaped configuration and provided with a first engagement surface around the mouth of the cup, said engagement surface being engaged with a corresponding surface of said first transducer unit, the sound translating means of said first transducer unit being positioned adjacent the mouth of said cup-shaped part to serve as one wall of a first cavity within the interior spaces of said cup-shaped part; said cup-shaped part being provided with a passageway one end of which communicates with said first cavity near the bottom of the cup at least approximately opposite the sound translating means of said first transducer unit, said passageway having a small cross-sectional area adapted to conduct sound energy; said coupler further including a second part integral with said cup-shaped part and presenting a second engagement surface surrounding the other end of said small passageway, said second engagement surface being engaged with a corresponding surface of said second transducer unit, said second transducer unit being formed to define a second cavity with the sound translating means of said second transducer unit serving as one wall of said second cavity opposite said other end of said small passageway, said first and second cavities having cross-sectional areas substantially greater than that of said passageway and providing acoustic communication between both sound translating means through said passageway.

3,360,072
SOUND REPRODUCING APPARATUS
Stig Carlsson, Holbergsgatan 168I, Stockholm-Bromma, Sweden
Filed Apr. 11, 1966, Ser. No. 541,690
Claims priority, application Sweden, Oct. 12, 1962, 10,974/62
27 Claims. (Cl. 181—31)



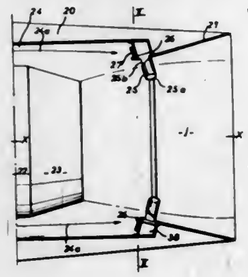
1. Sound reproducing apparatus comprising a casing having a front end and a rear end, high frequency radiating means comprising at least one loud speaker mechanism mounted on said casing, said high frequency radiating means having a plurality of main directions of radiation oriented in widely diverging directions including a forwardly direction and a rearwardly direction, mid frequency radiating means radiating approximately the 400 to 2000 c.p.s. range comprising a loud speaker mechanism mounted on the top of said casing and oriented substantially upwardly and having its center of radiation located closer to said rear end of the casing than the rearwardly oriented radiating portion of said high frequency radiating means.

3,360,073
LOUD SPEAKER ENCLOSURE
Edward J. Murry, Palos Park, Ill., assignor to Musi-Cloud, Inc., Chicago, Ill., a corporation of Illinois
Filed Aug. 8, 1966, Ser. No. 571,087
4 Claims. (Cl. 181—31)



1. An enclosure for a loud speaker having relatively high and low frequency sound components comprising in combination: a front plate member generally triangular in shape and having concave sides; a back plate member generally triangular in shape and having straight sides; dispersion cone-horn means extending between said front and back plate members for passage of relatively higher frequency sound; three solid web members extending from the external wall of said dispersion cone horn means between the space between said front and back plates to divide said space into three equal parts said enclosure having a back opening adapted to receive a diaphragm speaker; and vent means whereby the compression of air behind said speaker enclosure is adjustable said vent means comprising tubular members controlling the escape of air from the space behind said enclosure.

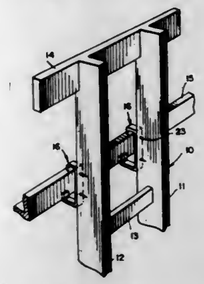
3,360,074
JET ENGINE SILENCERS WITH PIVOTAL AIR INDUCTION TUBES
Gaston Jean-Louis Ranvier, Issy-les-Moulineaux, and Gerhard Richter, Dammarie-les-Lys, France, assignors to Societe Nationale d'Etude et de Construction de Moteurs d'Aviation, Paris, France, a company of France
Filed June 3, 1965, Ser. No. 461,037
Claims priority, application France, June 8, 1964, 977,483
5 Claims. (Cl. 181—51)



1. In combination with a jet propulsion engine ending rearwardly with a convergent, hot gas flow discharge nozzle, and with a nacelle housing said engine in spaced relationship to define therewith a cool air flow passage and having a divergent section which extends rearwardly of said nozzle to bound outwardly said cool air flow and the rearward portion of said nacelle being freely supported spaced from said nozzle, a retractable noise suppressing device comprising a plurality of open-ended tubular silencer elements spaced rearwardly from said engine nozzle and pivotably fitted on said nacelle section to be rockable thereon into an operative position wherein said elements project into the hot gas flow discharged by said nozzle with an inner end of said elements being positioned into said hot gas flow and with an outer end thereof being immersed into said cool air flow adjacent said nacelle section, and into an inoperative position wherein said elements are retracted into said nacelle away from said hot gas flow, and controllable means operatively connected with said silencer elements for simultaneously rocking the same selectively into both of said positions thereof.

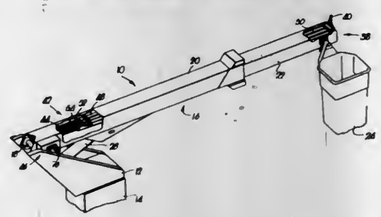
3,360,075
BED LADDER HOOK
Kenneth H. Gutner, 591 Roger Williams, Highland Park, Ill. 60035
Filed June 30, 1966, Ser. No. 562,959
1 Claim. (Cl. 182—106)

A bed ladder hook comprising a relatively elongated unitary metal member having a bight portion adapted to be secured to a bed ladder and be disposed generally vertically when the ladder is disposed generally vertically, said member including an upper arm portion extending generally horizontally from the upper end of said bight portion and integral therewith, said arm portion being generally L-shaped to provide a terminal part extending toward the other end of said main portion said arm portion being formed with a pair of transverse creases confronting the other end of said main portion to develop a right-angle configuration in said arm portion, said creases being located at the juncture of said



main portion and said arm portion and the juncture of said terminal part with the remainder of said arm portion, the horizontal dimension between said bight portion and the terminal part of said arm portion being at least about ¼" whereby said member is mountable on said bed ladder with said arm portion uppermost to engage a clip provided on the side rail of the bunkie bed and maintain said bed ladder in its generally vertical orientation.

3,360,076
AERIAL PLATFORM HYDRAULIC CONTROL MECHANISM HAVING OVERRIDE LINKAGE
Jack E. Stilwell, Overland Park, Kans., assignor to Pitman Manufacturing Company, Grandview, Mo., a corporation of Missouri
Filed June 13, 1966, Ser. No. 556,979
5 Claims. (Cl. 182—148)



1. For use with the hydraulically actuated operating of an aerial device having a boom, a personnel carrier on the boom, shiftable valve means operably associated with the mechanism for selective control thereof, carrier control components for the mechanism and mounted for access by a workman in the carrier, and movable valve control linkage extending along the boom and coupled to said control components for movement thereof, the combination with said valve means of a secondary control and override assembly comprising:

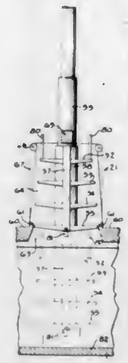
shiftable control structure remote from said carrier and operably coupled to said valve means for shifting the latter in response to manual operation of the structure; and

clutch means operably joining the movable linkage to said structure for operating the valve means through the structure upon actuation of the components,

said clutch means including normally interengaged parts joined to the structure and said linkage respectively, said structure being mounted for selective movement in a direction different from the direction of travel thereof for shifting the valve means, to effect uncoupling of the parts whereby the structure may

thereafter be manually manipulated to shift the valve means independently of the movable linkage and the control components.

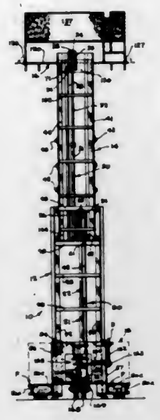
3,360,077
RETAIL MERCHANDISING FACILITIES AND METHODS OF USING SAME
John J. Horan, 420 Quigley Ave., Willow Grove, Pa. 19090
Filed June 15, 1966, Ser. No. 557,716
16 Claims. (Cl. 186—1)



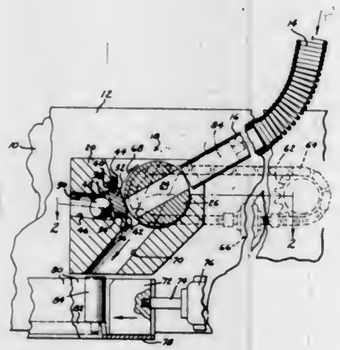
1. A facility for retail selling of various kinds of packaged merchandise, said facility comprising:
a building having wall means enclosing a stockroom on a lower floor and a salesroom on an upper floor;
at least one reciprocably mounted, two-station, self-service, merchandise-display counter,
said counter having a normal range of reciprocating excursion between said salesroom and said stockroom,
said counter having merchandise shelves arranged on at least two sides thereof;
said counter having an upper station in said salesroom for selection by customers from the merchandise displayed on said shelves,
said shelves being readily accessible to said customers,
said upper floor having an opening therethrough below said shelves of said counter in said upper station;
and reciprocating actuator means operatively connected between said building and said counter for vertically shuttling said counter through said opening at choice between said upper station and a lower station therefor in said stockroom therebelow,
said counter, when in said lower station, being accessible to employes in said stockroom for placement thereon of new merchandise to replace merchandise selected therefrom by customers,
said counter constituting a self-contained vehicle for transferring merchandise from the stockroom to the salesroom,
whereby said counter is reciprocated directly between said upper salesroom and said lower stockroom for replenishment of displayed merchandise.

3,360,078
LIFTS
Fred P. Hopfeld, Elmwood Park, Ill., assignor to Grand Specialties Company, Chicago, Ill., a corporation of Illinois
Filed Apr. 5, 1966, Ser. No. 540,409
7 Claims. (Cl. 187—9)

1. In a lift of the character described wherein a horizontal platform is to be raised and lowered by a pair of vertically extendible and retractible elements, a base on which said elements are supported, a pair of chains connected to said platform and having portions trained over said elements so that vertical movement of said elements is accompanied by vertical movement of the platform, and an equalizer for assuring that movement of one of said elements through a predetermined distance is accompanied by movement of the other of said elements through substantially the same distance, said equalizer including a horizontally disposed shaft carried by said platform, a sprocket at each end of said shaft, and each sprocket being meshed with a related one of said chains so that the chains become a track for the sprockets during vertical movement of said platform.

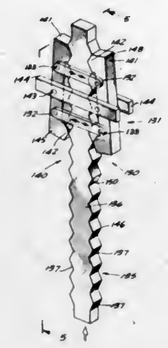


3,360,079
ENERGY ABSORBER AND METHOD
Walter H. Van Deberg, Berkley, Mich., assignor to Earl A. Thompson Manufacturing Company, a corporation of Michigan
Continuation of application Ser. No. 260,187, Feb. 21, 1963. This application Mar. 5, 1965, Ser. No. 443,746
23 Claims. (Cl. 188—1)



15. The method of controlling the motion of an article which includes moving the article along a path into a passage and against an energy transfer body whose mass substantially equals the mass of the article to transfer substantially the entire energy of motion of the article to the body without significant rebound, and moving the passage relative to the article to remove the article from the passage.

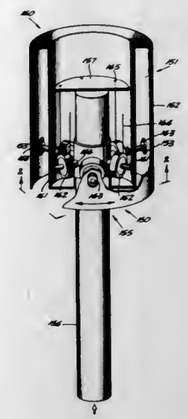
3,360,080
ENERGY ABSORBING DEVICE
David L. Platus, Covina, Frank A. Marovich, Hacienda Heights, and Patrick J. Cunningham, Fullerton, Calif.; said Marovich assignor to Ara, Inc., West Covina, Calif., a corporation of California
Filed Sept. 23, 1966, Ser. No. 581,480
4 Claims. (Cl. 188—1)



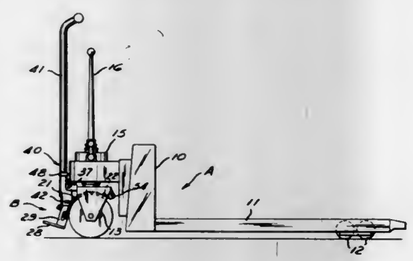
1. An energy absorbing device adapted to absorb unidirectional mechanical energy by cyclic plastic deformation comprising:
(a) an energy absorbing elongate extensible and compressible means;
(b) an energy transmitting means for imposing on said energy absorbing means alternate plastic tension deformation and plastic compression deformation in response to mechanical energy applied to said transmitting means approximately normal to the elongate axis of said absorbing means; and
(c) cycling means interconnecting said transmitting means and said absorbing means for converting mechanical energy applied to said energy transmitting means into plastic tension deformation and plastic compression deformation of said energy absorbing means, alternately, along said axis.

3,360,081
ENERGY ABSORBING DEVICE
David L. Platus, Covina, Frank A. Marovich, Hacienda Heights, and Patrick J. Cunningham, Fullerton, Calif.; said Marovich assignor to Ara, Inc. (Aerospace Research Associates), West Covina, Calif., a corporation of California
Filed Sept. 23, 1966, Ser. No. 581,625
8 Claims. (Cl. 188—1)

1. A lightweight, high-energy absorbing device adapted to absorb unidirectional mechanical energy by cyclic plastic deformation comprising:
(a) an energy absorbing means adapted to be subjected to plastic torsion deformation and reverse torsion deformation;
(b) an energy transmitting means for cyclically and reversely imposing twisting deformation on said energy absorbing means to sequentially produce torsion deformation and reverse torsion deformation in response to unidirectional mechanical energy applied to said transmitting means; and
(c) a cycling means actuated by said transmitting means for converting unidirectional mechanical energy applied to said energy transmitting means into cyclic plastic substantially torsion deformation and reverse torsion deformation of said energy absorbing means.

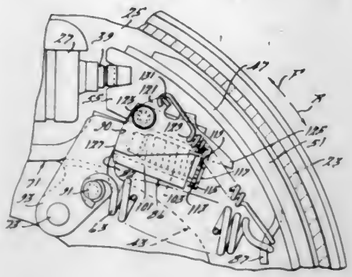


3,360,082
BRAKE ASSEMBLY
Walter H. Grubis, Burlington, Mass., assignor to The Colson Corporation, Chicago, Ill.
Filed Dec. 2, 1966, Ser. No. 598,855
5 Claims. (Cl. 188—29)



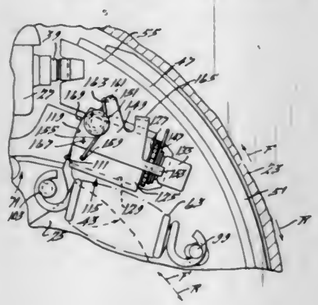
1. In a hand truck having a frame, load rollers, and a brake assembly for braking at least one of the rollers including a brake shoe pivotally connected at its forward end to the frame for movement between a downward position in braking engagement with the rim of the roller and an upward position out of braking engagement with the rim of the roller, an operating lever pivotally connected intermediate its ends to the frame and having an upwardly extending handle for pushing and pulling the truck, the handle being movable between a forward brake applying position and a rearward brake releasing position and means biasing the handle to its forward position; the improvement which comprises a connecting lever mounted for pivotal movement about the same axis as said operating lever, said connecting lever adapted to be releasably secured to said handle for pivotal movement therewith and having a downwardly extending arm, a link pivotally connected at one end to said arm and pivotally connected intermediate its ends to the rearward end of said brake shoe and means associated with the other end of said link for applying braking force when said connecting arm is released from said handle.

3,360,083
AUTOMATIC BRAKE ADJUSTER
David T. Ayers, Jr., Birmingham, Mich., assignor to Kelsey-Hayes Company, Romulus, Mich., a corporation of Delaware
Filed July 14, 1966, Ser. No. 565,292
18 Claims. (Cl. 188—79.5)



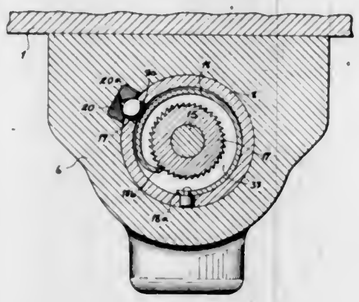
1. A self adjusting drum type brake for coaction with a rotatable brake drum, said brake comprising a fixed torque resisting means, a brake shoe carrying a lining and supported within the drum for movement of said lining into engagement with the drum, and an automatic adjusting device carried by said brake shoe and juxtaposed to said fixed torque resisting means, said automatic adjusting device comprising a first member abuttingly engaged with said brake shoe, a second member adapted to abuttingly engage said fixed torque resisting means for precluding rotation of said brake shoe in at least one direction, said first and said second members being extensible for compensating for wear of the lining of said brake shoe, and automatic adjusting means carried by one of said members, said automatic adjusting means having a first portion adapted to engage said torque resisting means and a second portion for incrementally extending said first and said second members relative to each other in response to a predetermined movement of said one of said members relative to said fixed torque resisting means.

3,360,084
AUTOMATIC BRAKE ADJUSTER
David T. Ayers, Jr., Birmingham, Mich., assignor to Kelsey-Hayes Company, Romulus, Mich., a corporation of Delaware
Filed July 14, 1966, Ser. No. 565,293
8 Claims. (Cl. 188—79.5)



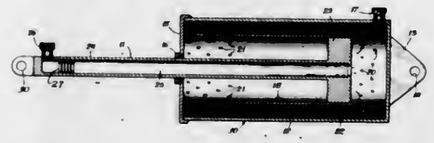
1. A self adjusting drum type brake for coaction with a rotatable brake drum, said brake comprising a fixed torque resisting means, a brake shoe carrying a lining and supported within the drum for movement of said lining from a retracted position into engagement with the drum, an automatic adjusting device carried by said brake shoe and interposed between said brake shoe and said torque resisting means for precluding rotation of said brake shoe in at least one direction and for automatically compensating for wearing of said lining, said automatic adjusting device comprising a first member abuttingly engaged with said brake shoe, a second member adapted to abuttingly engage said fixed torque resisting means, said first and said second members being extensible for compensating for wear of said lining, automatic adjusting means carried by one of said members for movement between first and second positions, said automatic adjusting means having a first portion adapted to engage said torque resisting means and a second portion for incrementally extending said first and said second members relative to each other upon movement of said automatic adjusting means from its first position to its second position, and biasing means engaging said automatic adjusting means for urging said first portion into engagement with said torque resisting means for moving said automatic adjusting means from its second position to its first position upon movement of said second member relative to said torque resisting means a distance greater than a predetermined distance and upon predetermined wear of said lining, and retraction spring means engaging said brake shoe for returning said brake shoe to a disengaged position, for urging said second member into engagement with said fixed torque resisting means, and for moving said automatic adjusting means from its first position to its second position after said biasing means has moved said automatic adjusting means from its second position to its first position whereby adjustment of said automatic adjusting device is effected upon retraction of said brake shoe.

3,360,085
SELF-ADJUSTING FLUID-OPERATED BRAKE
Juan Belart, Walldorf, Germany, assignor to Alfred Teves Maschinen- und Armaturenfabrik KG, Frankfurt am Main, Germany, a corporation of Germany
Filed Sept. 12, 1966, Ser. No. 578,732
Claims priority, application Germany, Sept. 10, 1965, T 29,377
5 Claims. (Cl. 188—79.5)



1. A fluid-operated brake comprising a guide cylinder, a hollow piston slidably received in said cylinder, fluid-operated drive means for intermittently urging said piston axially outwardly from a normal retracted position, an internally threaded sleeve rotatably lodged in said piston and coupled therewith for outward axial entrainment, an externally threaded stem in mesh with said sleeve, a brake shoe operatively coupled with said stem for displacement thereby in axial direction of said cylinder, said stem being nonrotatably supported on said cylinder with freedom of outward displacement in said axial direction, ratchet means rigid with said sleeve centered on said axis and surrounded with annular clearance by said piston, an elongated resilient pawl in said annular clearance having one end anchored to said piston and having its other end in engagement with said ratchet means, a pressure member on said piston radially bearing upon said pawl in the vicinity of said other end thereof, and cam means on said cylinder cooperating with said pressure member for urging the latter radially inwardly against the resilient force of said pawl in response to outward axial displacement of said piston with reference to said cylinder, said ratchet means having an array of sawteeth so disposed as to impart stepped rotation to said sleeve with consequent outward movement of said stem upon successive camming displacement of said pressure member by a piston motion exceeding a predetermined axial stroke length.

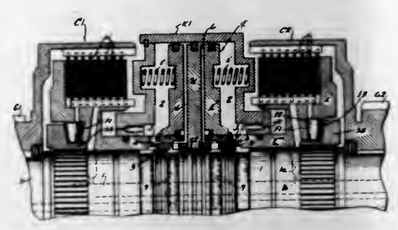
3,360,086
MEANS TO CONVERT MECHANICAL ENERGY INTO HEAT ENERGY IN A SHOCK ABSORBER
Albert C. Damske, Rte. 3, Box 723, Antioch, Ill. 60002
Filed Apr. 12, 1966, Ser. No. 542,108
2 Claims. (Cl. 188—97)



1. In a shock absorber, a reciprocating piston and cylinder assembly, fluid filling said cylinder on both sides of said piston, said shock absorber having fluid passageway means communicating with both sides of said piston, and restrictively porous means positioned in at least a portion of said fluid passageway means so that any fluid moved from one side of said piston to the other responsive to movement of said piston relative to said cylinder passes through said restrictively porous means, said porous means being formed so that a substantial portion of any fluid passing therethrough is directed into countless eddy currents which cause the force of the fluid movement to be substantially converted into heat energy, wherein said piston and cylinder assembly and said passageway means comprise, a pair of concentric cylinders, said piston being slidably carried in the inner cylinder of said pair of concentric cylinders, said pair of concentric cylinders having opening means between said cylinders at both ends thereof, and said restrictively porous means carried between said pair of concentric cylinders so that fluid flows through said porous means responsive to sliding movement of said piston relative to said cylinder.

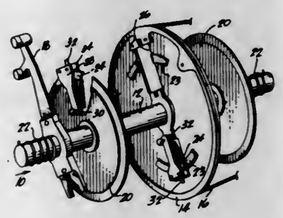
3,360,087
HYDRAULICALLY ACTUATED FRICTION CLUTCH HAVING TORQUE CONTROL MEANS
Conrad R. Hilpert, Winnebago, Ill., assignor to Twin Disc, Incorporated, a corporation of Wisconsin
Filed June 6, 1966, Ser. No. 555,460
10 Claims. (Cl. 192—56)

1. A hydraulically actuated friction clutch having input and output members a carrier rotatably and axially shiftably mounted on one of said members, torque measuring means between said one member and said carrier and adapted to measure torque by relative rotation therebetween, interleaved friction plates between the other member and said carrier and forming a disengageable friction clutch connection therebetween, an axially shiftable piston mounted on said carrier for rotational and axial shifting relative thereto and abuttable against said plates to cause clamp-up of said plates; said piston and carrier defining an expansible fluid, clutch actuating chamber, passage means for supplying pressure fluid to said chamber to cause expansion thereof and consequent axial shifting of said piston and clamp-up of said plates,



valve means in said passage means and actuated by axial shifting of said carrier, and resilient means for urging said carrier to a valve open position, whereby the maximum torque transmitted by said clutch is preset by said resilient means and is sensed by said torque measuring means and transmitted to said resilient means via said carrier.

3,360,088
AUTO RELEASE THROTTLE FRICTION CLUTCH
Alton E. Farr, Rolling Hills, and Clarence W. Neher, Long Beach, Calif., assignors, by mesne assignments, to McDonnell Douglas Corporation, Santa Monica, Calif., a corporation of Maryland
Filed Oct. 24, 1965, Ser. No. 504,960
7 Claims. (Cl. 192—66)

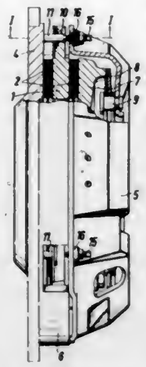


1. An auto release friction clutch comprising:
a shaft,
a control drum rotatably mounted on said shaft,
a clutch plate mounted on said shaft in nonrotatable position relative to said shaft,
means urging said plate against said drum for urging rotation of said drum with rotation of said shaft, and
release means for urging said plate out of contact with said drum and for independent rotation of said drum relative to said plate and shaft.

3,360,089
MULTIPLE DISC CLUTCH WITH WEAR COMPENSATOR
Bryan J. Cockerill and Ian M. Scholfield, Leamington Spa, England, assignors to Automotive Products Company Limited, Leamington Spa, England, a British company
Filed Aug. 3, 1965, Ser. No. 476,880
Claims priority, application Great Britain, Aug. 24, 1964, 26,161/64
6 Claims. (Cl. 192—111)

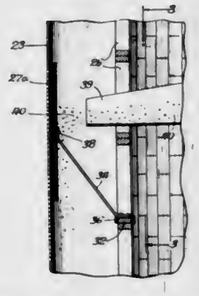
1. An automatic adjuster for a twin plate clutch comprising a pin, an intermediate pressure plate, said pin being mounted on said plate for slidable movement along an

axis parallel to the axis of rotation of the clutch, a friction member surrounding the pin and carried by the intermediate pressure plate for movement therewith and an abutment disposed adjacent each end of the pin, one of said abutments providing a stop determining the intermediate position of the intermediate pressure plate, the other abutment providing a stop for causing adjustment



of the pin relative to the intermediate pressure plate and friction member, said abutments being spaced so that upon any movement of the intermediate pressure plate in excess of the predetermined movement required for clutch engagement and resulting from wear in the friction elements the pin is caused to slide through the intermediate pressure plate relative to the friction member by contact of one end of the pin with the adjacent abutment forming said second mentioned stop.

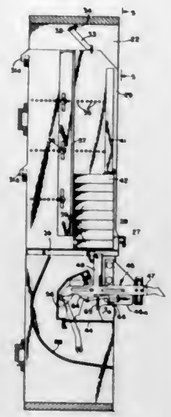
3,360,090
SILO CHUTE WALL PROTECTOR
Richard A. Davis, Plainfield, Ill., assignor, by mesne assignments, to P & D Mfg. Co., Inc., Plainfield, Ill., a corporation of Delaware
Filed Sept. 23, 1966, Ser. No. 581,599
13 Claims. (Cl. 193—1)



1. A wall protection for a vertically extending silo chute comprising a sheet of material for vertical disposition adjacent the inside of the wall of the silo chute opposite the opening into a silo through which silage is discharged, and means for adjustably supporting the sheet of material in a desired vertical position within the silo chute.

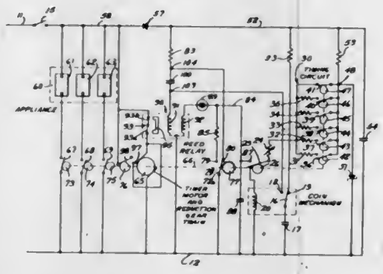
3,360,091
COIN CONTROLLED VENDING MACHINE
Harold D. Baum, Skokie, Ill. (6610 N. Clark St., Chicago, Ill. 60626)
Filed Aug. 20, 1965, Ser. No. 481,188
19 Claims. (Cl. 194—2)

1. In a vending machine, a plurality of hoppers for containing columns of articles to be vended, dispensing mechanisms one disposed at the bottom of each hopper and each movable between first and second positions, separate means normally locking each of said dispensing mechanisms in a first position, means responsive to the demand of a purchaser for unlocking selected of said mechanisms to permit them to be moved into a second position, said unlocking means comprising coin controlled means individual to each dispensing mechanism operable upon the



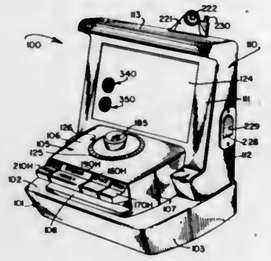
presence in a coin rejector mechanism common to all dispensing mechanisms of a coin or coins of a proper denomination, means operable upon initial movement of an unlocked dispensing mechanism from a first portion into a second position to lock the remaining mechanisms against such movement, and means individual to each said dispensing mechanism to lock said mechanisms in a first position when no article is present in the related hopper.

3,360,092
ELECTRONIC TIMER ESCAPEMENT AND COIN COUNTER
James L. McConnell, Stevensville, Mich., assignor to Whirlpool Corporation, Benton Harbor, Mich., a corporation of Delaware
Filed May 31, 1966, Ser. No. 559,649
40 Claims. (Cl. 194—9)



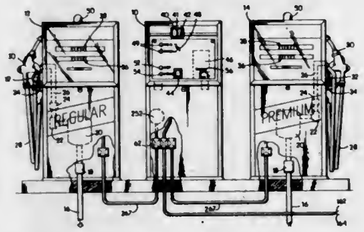
13. In an appliance,
a step-by-step timer device having an actuating circuit,
a coin-counting circuit having a coin switch for actuation a predetermined number of times by coins,
a relay controlling said actuating circuit of said timer device and having a start circuit energized each time said coin switch is actuated,
means for holding said relay actuated after actuation thereof,
means for releasing said relay,
means responsive to an increment of movement of said timer device to momentarily energize said relay release means to release said relay,
means for enabling operation of said appliance in response to a predetermined number of incremental movements of said timer device, and
means in said appliance controlled by said timer device during normal operation of said appliance.

3,360,093
COIN OPERATED TAPE EMBOSSING MACHINE
John V. McDonald, El Cerrito, and Gerald G. Graham, San Anselmo, Calif., assignors to Dymo Industries, Inc., Berkeley, Calif., a corporation of California
Filed Dec. 8, 1965, Ser. No. 512,306
30 Claims. (Cl. 194—10)



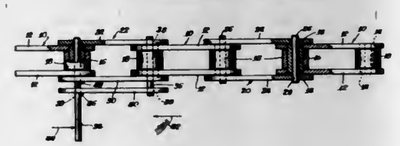
1. A coin operated plastic tape embossing machine comprising mechanism for embossing characters on an embossable plastic tape, mechanism for feeding an elongated strip of the plastic tape from a supply thereof past said embossing mechanism, manually operated lever arms for operating said embossing and feeding mechanisms, lock structure having a locking condition and an operating condition, said lock structure in the locking condition thereof rendering said embossing mechanism inoperative and in the operating condition thereof rendering both of said mechanisms operative, and a coin operated control apparatus responsive to the supply of predetermined coins thereto for placing said lock structure in the operating condition thereof, thereby to render both said mechanisms operative to emboss and to feed plastic tape upon actuation of said lever arms.

3,360,094
CURRENCY OPERATED FUEL DISPENSING PUMP
Albert F. Romanowski, Greeneville, Tenn, assignor to Bowser Inc., Greeneville, Tenn., a corporation of Indiana
Filed Apr. 4, 1966, Ser. No. 540,033
18 Claims. (Cl. 194—13)



1. In combination: fluid dispensing pump means having a computer including a fluid meter, indicating wheel means connected to said meter so as to be driven in rotation thereby during dispensing of fluid from said dispensing pump means at a rate proportional to the rate of delivery of said dispensing pump means, receiver means adapted for receiving units of money and operable to generate first signals in accordance with the value of the respective money units supplied therein, accumulator means, first circuit means operatively connecting said receiver means to said accumulator means for delivering said first signals to said accumulator means for storage therein, counting means operatively associated with said indicating wheel means and operable in response to rotation thereof to generate second signals, second circuit means operatively connecting said counting means to said accumulator means to supply said second signals thereto, said second signals when so supplied to said accumulator being operable to cancel said first signals therefrom sequentially, fluid flow controlling means in said dispensing pump means normally preventing the dispensing of fluid, and control means for said fluid flow controlling means adapted for connection to said accumulator means, said control means being operable when connected to said accumulator means for actuating said fluid flow controlling means to permit dispensing of fluid only when a first signal is stored in said accumulator means.

3,360,095
CONVEYOR CHAIN
Max Bower Harding, Kirklin, Ind., assignor to Amsted Industries Incorporated, Chicago, Ill., a corporation of New Jersey
Filed Apr. 12, 1965, Ser. No. 447,505
3 Claims. (Cl. 198—1)

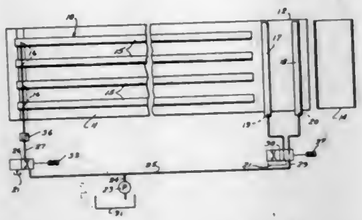


1. A link chain comprising a first link including laterally spaced apart link plate means interconnected at their opposite longitudinal ends by cross pins to second and third links respectively, each of said second and third links including laterally spaced link plates having ends overlapping and disposed between the respective ends of the link plate means of said first link, one of said spaced link plate means of said first link including a separate laterally outwardly positioned auxiliary plate, each of said cross pins having a press fit in the plate means of said first link, and the cross pin which is press fitted in said auxiliary plate extending through and outwardly substantially beyond said auxiliary plate.

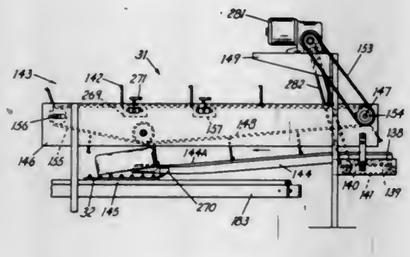
3,360,096
CONVEYING SYSTEM
Lawrence A. Moore and William R. Hilliard, King of Prussia, Pa., assignors to Beloit Eastern Corporation, Downingtown, Pa., a corporation of Delaware
Filed Apr. 18, 1966, Ser. No. 543,209
8 Claims. (Cl. 198—1)

1. In a conveying apparatus particularly adapted for mill rolls,
a stationary platform,
an expansible track supporting and moving mill rolls along said platform comprising,
at least two flat tubes extending along said platform,
each having an inby and an outby end and being expansible from a flat to a distended condition,
means admitting fluid under pressure to said tubes at the inby ends thereof and behind a roll thereon, to distend said tubes and progress the roll therealong toward the outby ends thereof,

and other means on said platform spaced in advance of the outby end of said track for limiting travel of the roll and controlling advance thereof for a next succeeding operation to be performed thereon.



3,360,097
BREAD COOLING APPARATUS
Clayton D. Huffman, Albion, and Robert W. Hartung, Clarence Township, Calhoun County, Mich., assignors to Union Steel Products Company, Albion, Mich.
Original application Mar. 20, 1964, Ser. No. 353,463, now Patent No. 3,240,316, dated Mar. 15, 1966. Divided and this application Feb. 9, 1966, Ser. No. 538,884
6 Claims. (Cl. 198—20)



1. A conveyor construction, particularly for cooling loaves of bread, comprising:

an endless chain movable through a path having at least one horizontally elongated, vertically spiralled reach located between a loading reach and an unloading reach;

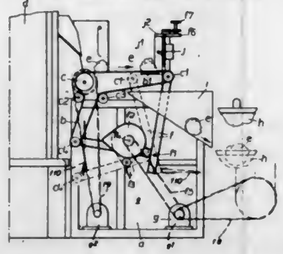
a plurality of pallets connected along corresponding inner side edges thereof to said chain and projecting outwardly from said chain so that said pallets are moved in succession through said path, said pallets each having a rigid, foraminous, generally planar, horizontal upper surface onto which objects can be slid in precisely spaced side-by-side relation so that the objects are exposed to the ambient air on all sides thereof, said pallets being substantially horizontally arranged in said loading reach of said path;

a loading conveyor having a substantially horizontal object-supporting surface of at least substantially the same width as said pallets and extending away from said loading reach at substantially the same vertical level, and horizontally movable pushers for engaging groups of objects on the loading conveyor and sliding same onto said pallets;

exterior rail means extending in spaced relation to said interior rail means for movably supporting said pallets at positions spaced outwardly from said inner side edges thereof; and

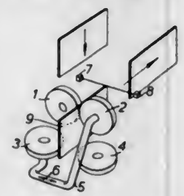
driving and idler sprockets for moving and guiding said chain in the spiralled reach.

3,360,098
APPARATUS FOR TRANSFERRING LUMPS OF DOUGHY MATERIAL FROM ONE PROCESSING MACHINE TO ANOTHER
Kate Kemper, 8–10 Langestrasse, 4833 Neuenkirchen uber Gutersloh, Germany
Filed Nov. 10, 1965, Ser. No. 507,171
Claims priority, application Germany, May 31, 1965, 56,272
5 Claims. (Cl. 198—21)



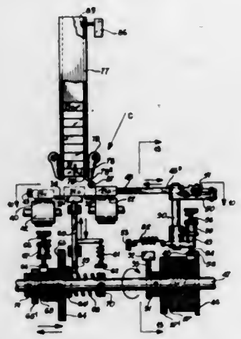
1. In combination, apparatus for transferring lumps of doughy material from one processing machine to another, comprising, conveyor belt means having one end positioned in proximity to said one processing machine for sequentially receiving lumps of dough therefrom, said conveyor belt means comprising a frame, a bell-crank lever, means pivotally connecting said bell-crank lever to said frame, idler rollers mounted on the ends of the arms of said bell-crank lever and on said frame, a drive roller rotatably mounted on said frame, an endless belt extending around said drive roller and idler rollers and means operatively connected to the drive roller for periodically stopping said endless belt, discharge means operatively connected to the bell-crank lever to cause said bell-crank lever to periodically oscillate about said pivot means after said endless belt has been stopped to thereby withdraw the endless belt from below a lump of dough carried thereon; said another processing machine including a conveyor having a plurality of lump-receiving pockets, drive means operatively connected to said pocket conveyor for sequentially positioning each pocket in proximity to the opposite end of said conveyor belt means, and transmission means operatively connected between said drive means, and said discharge means, whereby the discharge means is actuated to discharge a lump of dough from the conveyor when a lump-receiving pocket is positioned adjacent the opposite end of the conveyor belt means.

3,360,099
CONVEYING EQUIPMENT
David John Barr, Harrow Weald, England, assignor to Her Majesty's Postmaster General, London, England
Filed Mar. 10, 1966, Ser. No. 533,193
Claims priority, application Great Britain, Mar. 16, 1965, 11,170/65
7 Claims. (Cl. 198—21)



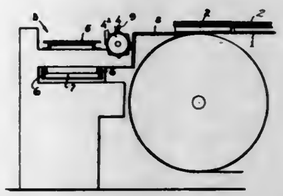
1. Transferring equipment for changing the direction of movement of flat postal articles comprising in combination a first conveyor for moving the articles in turn in a first direction to a predetermined location in a predetermined orientation, first conveyor control means adapted to cause said first conveyor to terminate movement of each article in turn in said predetermined location, a second conveyor for moving each article in turn from the predetermined location in a second direction different from the first direction without changing the orientation of the articles, and first to second conveyor linking means adapted to commence movement of an article by the second conveyor from the predetermined location not earlier than termination of the movement of said article by the first conveyor, wherein each conveyor comprises two parts between which the article is moved, the linking means including means for bringing together and separating the two parts to move and terminate movement of the article respectively, and the linking means include a movable carriage upon which one part of each conveyor is mounted.

3,360,100
TRANSFER MECHANISM FOR ARTICLES TRAVELLING FROM A DELIVERY MACHINE TO A RECEPTION MACHINE
Ariosto Seragnoli, Bologna, Italy, assignor to G.D. Societa in Accomandita Semplice di Enzo Seragnoli e Ariosto Seragnoli, Bologna, Italy
Filed May 2, 1966, Ser. No. 546,969
5 Claims. (Cl. 198—24)



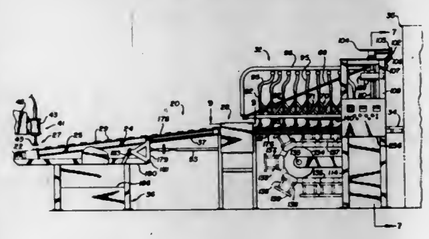
1. Transfer mechanism for articles travelling from a delivery machine to a reception machine and having a high capacity for automatic storage of articles comprising the combination of a conveying belt for moving the articles from said delivery machine, a subsequent transfer belt arranged in a side-by-side manner with said conveying belt and laterally spaced therefrom, a transfer station between said conveying belt and said transfer belt, a vertical storage magazine having a width sufficient to contain sets of articles charged together, releasable means on said magazine to selectively release said sets of articles, said storage magazine being arranged above said transfer station, a pusher member positioned at said transfer station, drive means to reciprocate said pusher member transversely of said belts to transfer a set of articles from said conveying belt to said transfer station underlying said storage magazine and from said transfer station to said transfer belt, an elevator positioned at said transfer station and aligned with said storage magazine, power means to reciprocate said elevator with a vertical reciprocating motion to move a set of articles from said transfer station into said storage magazine, whereby a set of articles may be selectively supplied to and withdrawn from said transfer station by said releasable means and said elevator, respectively, to maintain the flow of articles from said delivery machine to said reception machine substantially constant.

3,360,101
APPARATUS FOR TRANSFERRING A ROW OF BAKERY PANS
Willem de Ridder, Bachlaan, Voorschoten, Netherlands
Filed Feb. 28, 1966, Ser. No. 530,284
Claims priority, application Netherlands, Mar. 3, 1965, 65—2,726
2 Claims. (Cl. 198—25)



1. An apparatus for transferring a row of bakery pans, comprising a first conveyor, and a second conveyor adjacent the delivery end of the first conveyor and extending transversely to the first conveyor, wherein the improvement comprises a roller between the two conveyors having its upper side substantially level with the conveying surface of the first conveyor, which is mounted to rotate freely on an axis substantially parallel to the second conveyor, and which has regularly spaced longitudinal projections the spacing and height of which are such that a row of pans advancing from the first conveyor will slide upon the edges of two adjacent projections, the conveying surface of the second conveyor being lower than that of the first conveyor by an amount such that the dumping which occurs when the roller is overbalanced by a row of bakery pans will cause the bakery pans to slide onto the second conveyor.

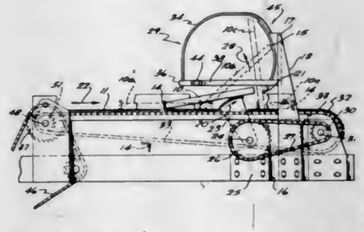
3,360,102
KILN LOADER AND UNLOADER
Howard B. Cummings, New Castle, Pa., assignor to Shenango Ceramics, Inc., New Castle, Pa., a corporation of Pennsylvania
Filed June 17, 1964, Ser. No. 375,832
9 Claims. (Cl. 198—31)



1. Apparatus for loading ware to be fired in a kiln in which ware is conveyed therethrough on a moving conveyor ebd comprising a conveyor for conveying ware from a loading station to a delivery station adjacent the entrance of the kiln, said delivery station comprising a portion of the run of said conveyor parallel to said kiln conveyor bed, means between said loading station and said delivery station to locate said ware on equally spaced centers on said conveyor at said delivery station, a transfer arm, means to swing said transfer arm cyclically from a position parallel to said conveyor at said delivery station to a position over said bed at an angle not exceeding 90° with respect to its movement of said bed and thence to its original position parrallel to said conveyor, a plurality of aligned ware pick-up means movably mounted on said transfer

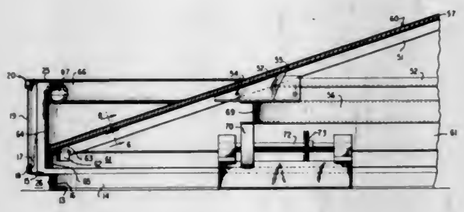
arm, said pick-up means, when said transfer arm is parallel to said conveyor being centered above said conveyor at said delivery station and spaced from each other a distance equal to the spacing between ware at said delivery station, means to selectively activate a number of said pick-up means equal to the number of pieces of ware which may be spaced equal from each other over said bed when said arm is swung over said bed, means to activate said selected number of pick-up means when pieces of ware of a group of equal number are brought toward a position beneath said pick-up means at said delivery station, whereby said group will be picked up by said pick-up means to move said pick-up means equally with respect to each other as said arm is swung over said bed, means to deactivate said pick-up means and deposit the group of pieces of ware on said bed when said arm reaches its ultimate position of swing over said bed, the spacing of said pick-up means during the swinging movement of said arm being such as to space said ware equally along a line across said bed.

3,360,103
TURN-OVER APPARATUS
Harvey C. Johnson, Sheboygan, Wis., assignor to Curt G. Joa, Inc., Sheboygan Falls, Wis., a corporation of Wisconsin
Filed July 7, 1966, Ser. No. 563,580
10 Claims. (Cl. 198—33)



1. The combination with an article conveyor, of article turn-over apparatus comprising a fixed fulcrum spaced above the conveyor, an article elevator beneath the fulcrum and elevator actuator means timed with the conveyor to lift the article into contact with the fulcrum whereby conveyor movement will turn the article about the fulcrum.

3,360,104
PARCEL DISTRIBUTION AND DISPLAY SYSTEM
Herbert Sutcliffe Winfield, Port Hope, Ontario, Canada, assignor to Rex Chainbelt Inc., a corporation of Wisconsin
Continuation of application Ser. No. 123,171, July 11, 1961. This application May 17, 1965, Ser. No. 456,337
19 Claims. (Cl. 198—103)



1. In a parcel distribution system having linear transport means feeding at one end thereof to a rotary distributor including a central axis of rotation and a generally conical distribution surface mounted rotatably thereabout arranged to radially transport parcels deposited thereon from said linear transport means, an idler roller having a parcel supporting surface aligned substantially with said end of the linear transport means, said supporting surface being elevated sufficiently above a line joining said end of the transport means and the proximate portion of said distribution surface to substantially eliminate simultaneous contact of said parcels both with the linear transport means and the rotary distributor surface.

3,360,105
CONVEYER BELT INSTALLATION
Hans Pelzer, Krefeld, Germany, assignor to Beteiligungs- und Patentverwaltungsgesellschaft mit beschrankter Haftung, Essen, Germany
Filed June 8, 1966, Ser. No. 556,044
Claims priority, application Germany, July 24, 1965, B 82,984; Oct. 13, 1965, B 84,092; Dec. 9, 1965, B 84,900
11 Claims. (Cl. 198—129)

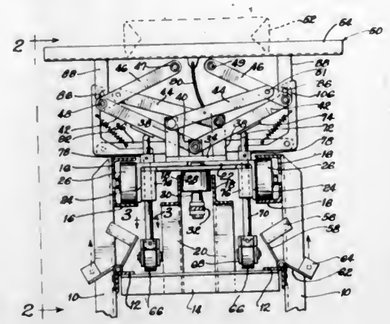


1. A conveyor system which includes: frame means, a conveyor belt, a plurality of sets of supporting roller means supported by said frame means for continuously supporting said belt, driving means operatively connected to said belt for selectively moving the same over said sets of supporting roller means, and a plurality of auxiliary supporting means respectively arranged between and in spaced relationship to adjacent successive sets of supporting roller means, the top surfaces of said auxiliary supporting means being located at a lower level than the top surfaces of said sets of supporting roller means, the distance by which adjacent supporting roller means are spaced from each other in the direction of movement of the conveyor belt and the prestress to which said conveyor belt is subjected while being at a standstill and the difference in the level of the top surfaces of said supporting roller means on one hand and of said auxiliary supporting means on the other hand being such that the loaded conveyor belt when in normal operation is lifted off said auxiliary supporting means and is supported by said belt supporting roller means only, whereas said belt when at a standstill and while being loaded is in addition to being supported by said supporting roller means also supported by said auxiliary supporting means to thereby prevent said belt from unduly hanging through between successive sets of supporting roller means.

3,360,106
ARTICLE CONVEYOR CONSTRUCTION
Walter G. Harrison, Westchester, Leo A. Gary, Chicago, and Allan C. Audet, Arlington Heights, Ill., assignors to The Spra-Con Company, Chicago, Ill., a corporation of Illinois
Filed July 21, 1966, Ser. No. 566,804
15 Claims. (Cl. 198—155)

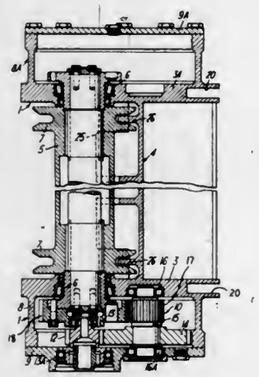
1. In a conveyor apparatus adapted to ride on track means along a predetermined path, said apparatus including carriage means for transporting articles, and means for tilting said carriage means for discharging said articles, the improvement in said carriage and discharge means comprising trays for holding said articles, cam followers, means connecting said cam followers to said trays, cam means located at spaced points along said path adapted to be selectively interposed in the path of movement of said

cam followers, and a linkage assembly attached to said trays and operable in response to movement of said cam followers for tilting of said trays, said assembly comprising a first link means having one end pivotally connected to the supporting frame of said tray, a second link means



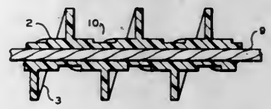
pivotally connected at one end of the other end of said first link means, the opposite end of said second link means engaging the under side of said tray for imparting tilting movement thereto, and a third link means interconnecting said second link means and said tray frame.

3,360,107
ENDLESS BAND CONVEYORS
Peter Lockwood, Acycliffe Industrial Estate, near Darlington, England, assignor, by mesne assignments, to Mining Progress Inc., Highland Mills, N.Y., a corporation of New York
Filed June 7, 1966, Ser. No. 555,761
Claims priority, application Great Britain, July 22, 1965, 31,163/65
2 Claims. (Cl. 198—203)



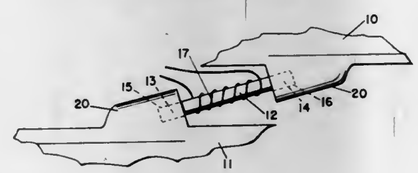
1. A drive head for a scraper chain conveyor of the type that operates in a trough, said drive head being adapted for quick conversion to suit necessary power requirements comprising two side plates, a transverse vertical plate integrally connecting the side plates to form an integral rigid frame therewith, a drive shaft extending parallel to said frame and journalled for rotation in the side plates, a pair of sprocket wheels mounted on said drive shaft between and respectively adjacent to said side plates for receiving said chain conveyor, a horizontal plate spanning said frame and mounted by said side plates so as to form an extension of said trough and reinforce said frame, a gearbox formed integrally with and on the outside of each side plate so as to further reinforce said frame, a reduction gearing unit being mounted in at least one gearbox and drivingly connected to said drive shaft, a motor for driving said shaft through said reduction gearing unit, and a replaceable cover plate for enclosing each gearbox for easy removal and replacement of said reduction gearing unit in accordance with said power requirements.

3,360,108
FLEXIBLE CONVEYING APPARATUS
Raymond G. Voss, Bartlesville, Okla, assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Aug. 29, 1966, Ser. No. 575,876
1 Claim. (Cl. 198—213)



A flexible conveying apparatus comprising
(a) a flexible cylindrical casing of substantially constant internal diameter,
(b) a continuous flexible helical conveyor flight within said casing mounted on a flexible driving axle, said axle being substantially aligned with the axis of said casing and the diameter of said flight being substantially equal to the diameter of said casing,
(c) said helical flight further comprising a continuous flexible integral reinforcing flange along one side thereof, the face of said flange opposite said flight being fixedly attached to said axle and the width of said flange being less than the axial spacing of said helical flight, there being a continuous helical portion of said axle not covered by said flange whereby the flexibility of said axle and said flights are uninhibited.

3,360,109
BOWL FEEDER
Ernest James Bryner and Joseph N. Ianuzzi, Bradford, Pa., assignors to Sigma Engineering Service, Inc., Custer City, Pa., a corporation of Pennsylvania
Filed Mar. 21, 1966, Ser. No. 535,970
3 Claims. (Cl. 198—220)

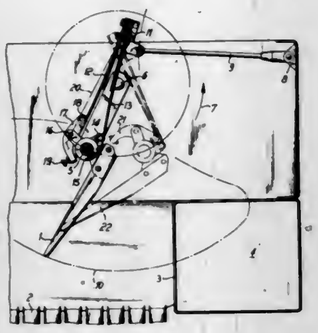


1. A conveyor for moving articles comprising
a generally spiral shaped track,
means connected to said track for oscillating it in a generally arcuate path,
said means to oscillate said track comprising an elongated member having two ends,
one said end being attached to said track,
the other said end of said elongated member being attached to a relatively fixed member,
said elongated member being made of a material having magnetostrictive properties,
said elongated members extending upwardly at an angle of less than right angles to said base,
and means to intermittently magnetize said elongated member whereby the length thereof is intermittently increased and decreased.

3,360,110
OVERLOAD SAFETY DEVICE FOR CONVEYING RAKE FOR HARVESTING MACHINES

Wolfgang Eder and Jürgen Simonis, Wolfenbuttel, Germany, assignors to Gebruder Welger, Wolfenbuttel, Germany

Filed Nov. 23, 1966, Ser. No. 596,609
Claims priority, application Germany, Nov. 25, 1965, W 40,379
10 Claims. (Cl. 198—222)

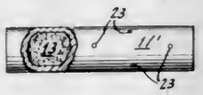


1. Conveying rake means, for agricultural harvesting machines and the like, comprising, in combination, a frame; a pivot; a conveying rake swingably mounted on said pivot; means cyclically moving said pivot in a conveying direction; and means, including toggle joint means, connecting said rake to said frame; said toggle joint means including a pair of pivotally interconnected links and spring means biasing said links to a nearly fully extended position holding said rake angularly oriented in an operative position; said links, when said pivot is moving in the conveying direction and the moment on said rake exceeds a predetermined value, swinging toward each other to a contracted position in which said rake is angularly displaced rearwardly of its direction of movement to an inoperative position; said spring means, when said pivot moves said rake in a retracting direction, again biasing said links to such nearly full extended position to angularly displace said rake to said operative position.

3,360,111
TONER FEED CARTRIDGE

Russell R. Ulary, Willingboro, N.J., assignor to Radio Corporation of America, a corporation of Delaware

Original application Feb. 20, 1963, Ser. No. 259,930, now Patent No. 3,242,902, dated Mar. 29, 1966. Divided and this application Dec. 20, 1965, Ser. No. 514,990
4 Claims. (Cl. 206—.5)

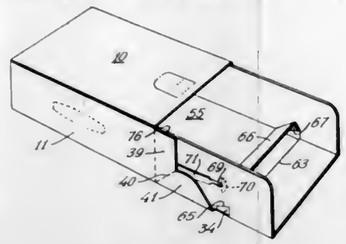


1. A toner cartridge for feeding controllable amounts of toner particles into the developer applicator system of an electrostatic printing apparatus of the liquid developer type, comprising a container at least partially filled with a mass comprising a dispersion of a relatively high proportion of electroscopic toner particles in a soluble host material, said container having at least one aperture communicating with the interior thereof through which said toner particles can be extracted from said container at a controlled rate by dissolving said host material.

3,360,112
SHOE BOXES

Ronald V. Johnson, Bloomington, Minn., assignor to Hoerner-Waldorf Corporation, St. Paul, Minn., a corporation of Delaware

Filed Feb. 15, 1966, Ser. No. 527,616
6 Claims. (Cl. 206—7)



1. A shoe box including:
an outer carton of rectangular form having tubularly connected top, bottom, and side walls,
closure flaps at opposite ends of at least certain of said walls foldable to provide end closures,
a liner in said carton having a base panel inwardly of, and substantially coextensive with, said bottom wall, and side panels hingedly connected to the side edges of said base panel and lying inwardly of said carton side walls,
a cut line extending across said base panel intersecting the lines of hinge connecting said base panel to said side panels and terminating in said side panels,
a fold line extending across said base panel in spaced parallel relation to said cut line and terminating at said lines of hinge,
fold lines connecting the ends of said cut line to the corresponding ends of said fold lines, providing substantially triangular gusset flaps in said side panels, whereby
when said gusset flaps are folded inwardly into face contact with adjoining portions of said side panels, the portion of said base panel between said cut line and said parallel fold line may be hinged out of the plane of said base panel to form a heel engaging abutment.

3,360,113
GARMENT CONTAINER

Thomas E. Bower, Long Beach, Calif., assignor to Owens-Illinois, Inc., a corporation of Ohio

Filed Sept. 26, 1966, Ser. No. 581,799
13 Claims. (Cl. 206—7)

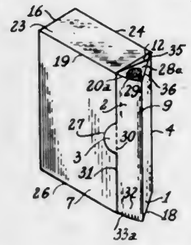


1. A container for suspended garments comprising, in combination: four walls defining an upright tubular structure of rectangular horizontal cross-section; a pair of end closure flaps located at the upper end of said tubular structure, each of said flaps being integrally foldably secured to one of an opposed pair of said walls; first and second slots each extending, respectively, from a location in one of said opposed pair of said walls to a location in the end closure flap attached to said wall and generally at right angles to the juncture between said wall and said flap; a suspension bar received in said slots and spanning the distance therebetween, said suspension bar comprising reversely foldable extension portions at each end thereof; said flaps being inwardly folded to overlie said suspension bar; said reversely foldable extension portions at each end of suspension bar being inwardly folded to overlie said flaps; and attachment means securing said reversely folded extension means to the flap which said extension means overlies.

3,360,114
DISPENSER PACKAGE FOR CIGARETTES OR ARTICLES OF SIMILAR SHAPE

Fred Blum, 43—10 Kissena Blvd., Flushing, N.Y. 11355

Filed Dec. 3, 1964, Ser. No. 415,669
10 Claims. (Cl. 206—41,2)

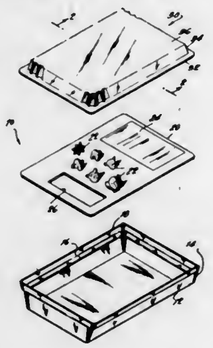


1. Container for compactly packed articles such as cigarettes and the like, comprising a walled enclosure of predetermined volume, one of the walls of said enclosure being hinged at one side to an adjacent wall thereof, a panel hinged to a side of said one wall opposite said one side thereof and slidingly received in said enclosure, and a flap extending substantially at right angles to said one wall from a side thereof transverse to said opposite sides and also slidingly received in said enclosure, said one wall, panel and flap being swingable outwardly as a unit for expanding the volume of said enclosure and simultaneously exposing an opening opposite said flap for discharging therethrough an article disengageable from the compactly packed articles in said enclosure and receivable in the expanded volume defined by said unit.

3,360,115
PACKAGING OF FOOD STUFFS

Roland D. Joffe, 39 Carwall Ave., Mount Vernon, N.Y. 10552

Filed Apr. 5, 1966, Ser. No. 540,316
2 Claims. (Cl. 206—45.31)

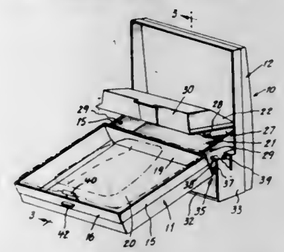


1. A display package comprising a container having peripheral side walls, said side walls being contoured to form a peripheral shoulder downwardly spaced from the uppermost portion of said side walls, a transparent cover on said container, said cover including a peripheral flange, a display card disposed within said container, said cover overlying said display card, and means for maintaining said display card and said transparent cover removably secured to said container, said container being provided with food storage means, said transparent cover being adapted to overlie said food storage means, said display card having a cutout therein allowing for the visual observation of food stored beneath said display card and said transparent cover, and non-toxic 3-dimensional display ornaments removably secured to said display card.

3,360,116
STORAGE AND DISPLAY DEVICE

Raymond A. Somers, Fairfield, and Robert J. Tolmie, Bridgeport, Conn., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed July 1, 1966, Ser. No. 562,396
3 Claims. (Cl. 206—45.2)



1. A storage and display device comprising, a container portion having a base, a rear wall, a front wall and spaced vertical sidewalls defining therebetween an article storage area; a cover member for said container; said cover member including a depending rear wall and spaced depending sidewall portions arranged to overhang said container portion in the closed position of said cover member on said container portion; hinge means integrally formed on adjacent portions of said cover sidewall portions and said container sidewalls to interconnect said cover to said container; said hinge means comprising bearing means and trunnion means with said trunnion means adapted to swivel within said bearing means to permit movement of said cover between closed and open positions with respect to said container portion; said cover member being pivotal on said hinge means in movement to open position to raise said container to a selected position inclined to said cover member and to displace said cover rear wall beneath said base of said container; and stop means provided on adjacent portions of said cover sidewalls and container sidewalls for limiting movement of said cover and container beyond said selected inclined position; said stop means comprising projections formed on the container sidewalls and flanges formed on said cover sidewalls adjacent said hinge means, said flange portions being pivotal about said hinge means during movement of said cover to open position to engage said projections in said open position of said cover.

3,360,117
CARTON ASSEMBLY FOR THE DISPLAY PACKAGING OF ARTICLES

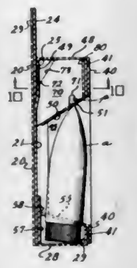
Robert J. Powers, Pelham, and Felix Transport, New York, N.Y., and Wallace E. Hanson, Springfield, and William F. Trauschke, Westfield, Mass., assignors to Sample-Durick Incorporated, Chicopee, Mass., a corporation of Ohio

Filed June 1, 1966, Ser. No. 554,386
7 Claims. (Cl. 206—45.14)

1. In a carton assembly for the display packaging of articles having front, back, side and end panels in which

the front panel wall construction is formed with an article display opening intermediate the ends of said panel and provided with wall portions angled inwardly from the side and end edges of the opening, the said angled portions of the end edges being apertured to provide openings for receiving opposite ends of an article; the improvement which comprises

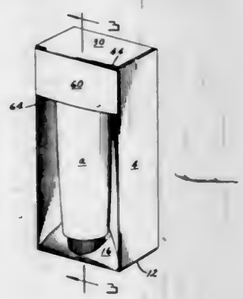
a bracing panel member secured to and extending between the front and back panels of the carton centrally thereof beyond one end edge of said display opening and having



an inner edge of said member extending angularly inwardly from said one end edge of the display opening and supporting the adjacent inwardly angled front wall portion thereagainst

said inner edge of the bracing member having a recessed notched portion therein registering with the article receiving opening of said supported angled panel portion for positionally anchoring one end of an article having its opposite end held in the article receiving opening of said angled portion at the opposite end of the opening.

3,360,118
DISPLAY PACKAGING CARTON
Wallace E. Hanson, Springfield, Mass., and Tarlton C. Pittard, Chicago, Ill., assignors to Sample-Durick Incorporated, Chicopee, Mass., a corporation of Ohio
Filed Jan. 24, 1967, Ser. No. 611,387
10 Claims. (Cl. 206—45.14)



1. In a carton assembly for the display packaging of capped squeeze tube containers and the like, said assembly having back, side, and end panels, and a front panel in which is formed a tube display opening extending from a first end thereof to the inner edge of a flat front wall at the other end, said opening having side shadow panels cut from the plane of the front panel and bent inwardly from each side of the opening, and at said first end with a centrally apertured end shadow panel bent inwardly from the adjacent end panel;

the improvement which comprises said side shadow panels adjacent said first end of the display opening having a pair of oppositely registering V-shaped notched areas in the mating edges thereof,

the adjacent carton end panel being joined to said back panel and having an extension thereof providing said apertured end shadow panel,

said latter extension having its lateral edges converging from the outer corners of said carton end panel and then sharply divergent to form notched ears engageable behind said notched areas of said side shadow panels and securely holding the three so-joined shadow panels positionally braced by the interlocking engagement thereof at said first end of the display opening,

said assembly at its other end having

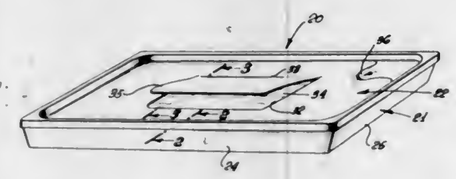
a carton end closure panel with tucker flap and

a reversely turned interiorly positioned tube supporting flap means

extending from the outer end edges of said flat front wall and said back panel,

said interiorly positioned flap means having a support portion angularly disposed relative to said front wall and forming therewith a pocket in which an end of a tube container may be engaged for bracing the same forwardly against said flat front wall with the other end of the tube being engaged by the aperture of the aforesaid end shadow panel.

3,360,119
DELUXE BACON PACKAGE
Charles D. Mullinix, 465 Golden Road, Fallbrook, Calif. 92028
Filed Sept. 8, 1964, Ser. No. 406,647
23 Claims. (Cl. 206—45.31)

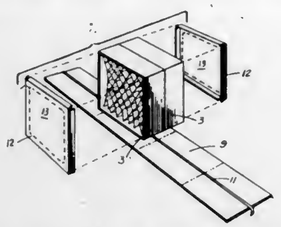


1. A cover for a package tray having a marginal resilient rim formed with a latching element, said cover comprising a generally flat section bordered by a hollow flange adapted to register with the tray rim, said flange having a cross-sectional form including retaining means to yieldably interlock with the latching element of the tray, and the cover being thermoformed from a laminated web comprising an upper sheet of non-transparent printable high impact styrene and a lower sheet of clear transparent oriented polystyrene, the high impact styrene having a window cutout therein exposing a protective window provided by the oriented polystyrene.

3,360,120
PLEATED FILTER ELEMENT PACKAGE
Allan R. Getzin, Jeffersontown, Ky., assignor to American Air Filter Company, Inc., Louisville, Ky., a corporation of Delaware
Filed Nov. 22, 1965, Ser. No. 509,139
3 Claims. (Cl. 206—56)

1. A filter assembly comprising at least two substantially identical unit filter members, each including a border frame means defining an open upstream and downstream end to permit fluid flow therethrough and having pleated filter medium disposed transverse the direction of fluid flow between said upstream and downstream ends

of said border frame means with the pleats extending beyond said downstream end of said border frame means, said unit filter members having their border frame means positioned in faced, downstream end-to-downstream end, abutting relationship to each other with the pleated filter medium of said end-to-end filter members being disposed in internesting relationship; a binder strip having a breadth substantially equal to the additive breadth of said



border frame means of said faced, downstream end-to-downstream end positioned unit filter members, said binder strip surrounding and fastened to said border frame means to hold said unit filter members together for shipping purposes; and tear means on said binder strip substantially adjacent the plane of abutment of said end-to-end positioned unit filter members to permit separation of said unit filter members for individual use.

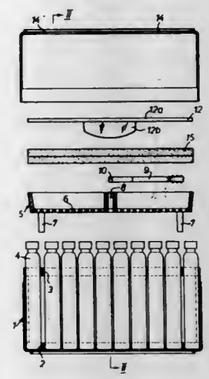
3,360,121
SPOON-SHAPED PACKAGE ELEMENT
Richard J. Zoeller, Murrysville, Frank S. Lazure, New Kensington, and Robert L. Walker, Apollo, Pa., assignors to Aluminum Company of America, Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 22, 1966, Ser. No. 567,121
4 Claims. (Cl. 206—56)



1. A spoon-shaped package element formed from sheet-like material and comprising a bowl having a flange completely around its periphery and a handle integrally connected with said bowl through said bowl flange, said bowl flange being adapted to have a cover over said bowl sealed thereto, and having an elongated depressed portion on each side of the longitudinal centerline of said handle and said bowl flange extending substantially throughout the length of said handle and overlapping the length of said bowl for a substantial distance, an elongated undepressed portion centrally of and extending substantially throughout the length of said handle which is substantnially narrower than said depressed portions and lies therebetween, and a flange around the outer periphery of said handle disposed laterally and outwardly along said depressed portions and merging into said bowl flange, said undepressed portions being substantially coplanar with said handle flange and said bowl flange and extending from said bowl flange to said handle flange at the end of said handle opposite said bowl.

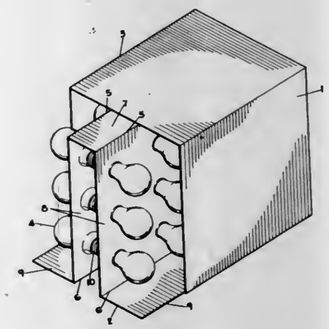
3,360,122
DUAL-PURPOSE CONTAINER
Karl-Heinz Rückert, Tessin, Switzerland, assignor to Pharmaton S.A., Tessin, Switzerland
Filed June 3, 1966, Ser. No. 555,167
Claims priority, application Switzerland, June 4, 1965, 7,918/65
7 Claims. (Cl. 206—63.5)

1. Dual-purpose container for medical use, comprising in combination a lower member having a bottom and four sidewalls for holding an expendable medical material, a cover removably mounted on said lower member, a separate part for insertion in and for removal from said lower member, said part overlying said expendable material beneath said cover when said container is filled with said expendable material and said cover is placed on said lower member, said part having a pervious portion defining a substantially horizontal support area removably positionable in spaced relationship from said



bottom of said lower member when the latter is emptied of said expendable material, said support area when placed in spaced relationship from said bottom being adapted to receive small medical tools and instruments thereon for keeping same retractably immersed in a cleaning and/or disinfecting agent, said emptied lower member serving as a storage container for said agent.

3,360,123
PACKAGE AND HOLDER FOR LIGHT BULBS
J. B. Oswalt, Jr., 404 Crosstimber, Hurst, Tex. 76053
Filed May 1, 1967, Ser. No. 635,123
2 Claims. (206—65)



1. In a combined package and holder for light bulbs which includes a holder and a tubular wrapper therefor which forms with the holder a package suitable for use as an original container for marketing a predetermined number of light bulbs of selected size, as desired, the holder being receivable bodily in the tubular wrapper therefor and consisting of a single sheet of comparatively stiff plastic sheet material having a pair of right angular bends, closely spaced relative to each other, extending

transversely of the material near the middle thereof, and having two other right angular bends, bent right angularly in the opposite direction, extending transversely of the material near its ends, and the holder having a comparatively narrow, upstanding portion, of inverted U shape, having a top panel and two opposite side panels, and having a pair of oppositely extending base portions, which are defined by the right angular bends, the improvement which comprises a plurality of individual, threaded receptacles, each adapted to receive a correspondingly threaded end portion of a light bulb, formed on the side panels of the holder, the receptacles being arranged in pairs, the receptacles of the respective side panels being arranged in uniformly spaced rows and the receptacles of one of the side panels being positioned opposite the corresponding receptacles of the other of the side panels, in mutually opposing, end to end relationship therewith.

3,360,124
STERILE ALKYL ESTER OF 2-CYANOACRYLATE

Albert A. Stonehill, Plainfield, N.J., assignor to Ethicon, Inc., a corporation of New Jersey

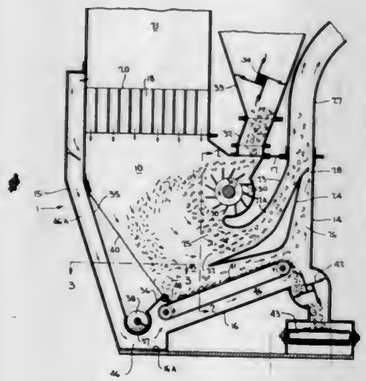
No Drawing. Filed May 18, 1966, Ser. No. 550,949
7 Claims. (Cl. 206—84)

1. A hermetically-sealed tin container having therein a sterile alkyl ester of 2-cyanoacrylate.

3,360,125
TOBACCO-LEAF SEPARATOR

William C. Horsey, Towson, Md., assignor to The John B. Adt Company, Timonium, Md., a corporation of Maryland

Filed Feb. 9, 1965, Ser. No. 431,338
14 Claims. (Cl. 209—12)

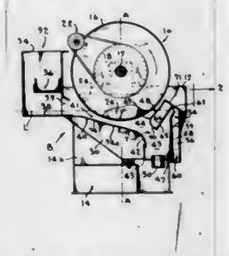


1. The process of classifying a mixture of relatively heavy and relatively light particles of matter comprising the steps of flowing a stream of air downwardly at a substantially uniform velocity throughout the horizontal cross-section of said stream, projecting said mixture horizontally in a given direction across said downwardly flowing stream so as to be acted on in unison by gravity and said airstream while flowing downwardly to produce a transverse separation of the heavier particles at maximum radii from the lighter particles at minimum radii arising from their different trajectories, sharply diverting said downwardly flowing airstream in a generally horizontal direction counter to said given direction to produce a graduated velocity curving airstream across a radial cross section thereof, said curving airstream ranging from maximum velocity at its minimum radii to minimum velocity at its maximum radii corresponding respectively to said minimum and maximum radii of the trajectories of said particles, whereby said velocities further act on said particles to enhance said transverse separation by accelerating said lighter particles and decelerating said heavier particles to achieve a final separation by centrifugal force, and collecting the classified particles at said minimum and maximum radii.

3,360,126
MAGNETIC DRUM SEPARATOR AND TANK THEREFOR

Raymond L. Watts, Mukwonago, and Donald E. Brzezinski, Brookfield, Wis., assignors to Wehr Corporation, Milwaukee, Wis., a corporation of Wisconsin

Filed Mar. 17, 1965, Ser. No. 440,512
6 Claims. (Cl. 209—223)



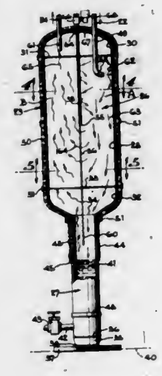
2. A magnetc drum separator comprising, in combination,
a drum,
means supporting said drum for rotation,
a magentic circuit supported adjacent to and limited generally to an arcuate portion of said drum,
tank wall means arranged in opposed relation with a portion of said arcuate portion of said drum and extending at an angle to the horizontal to and beyond the vertical centerline of said drum, said wall means spaced from said drum but disposed in the magnetic field of said magnetic circuit to define, with said drum, a passage for confining a liquid media within the magnetic field said tank wall including a portion extending from said centerline generally downwardly and away from said drum with said portion being curved on a radius located below said portion to form a gradually downwardly curved lip,
said portion and at least 10 degrees of the surface of said drum forming a divergent nozzle type contour to effect a physical separation of the magnetic and non-magnetic portions of said liquid media while controlling the flow of said liquid media and through said point of physical separation to increase its exposure to said magnetic field and reduce the amount of turbulence at the point of physical separation,
and means spaced vertically above said tank wall adjacent the termination of said magnetic circuit and said drum to receive said magnetic portions as they leave the influence of the magnetic field of said magnetic circuit and separate from said drum.

3,360,127
OIL SEPARATOR FOR REFRIGERATION SYSTEMS

Charles P. Wood, Jr., Cincinnati, Ohio, assignor to C. P. Wood and Company, Cincinnati, Ohio, a corporation of Ohio

Filed Nov. 23, 1964, Ser. No. 413,000
4 Claims. (Cl. 210—86)

1. An oil separator adapted to be interposed in the liquid refrigerant supply line of a refrigeration system, said liquid refrigerant being subcooled to a temperature below the freezing point of water, said oil separator adapted to separate entrained lubricating oil from the liquid refrigerant, said oil separator comprising:
an upright cylindrical oil separator chamber having an upper end wall and a lower end wall,
a vertical baffle in the form of a solid flat plate extending transversely in said separator chamber and bisecting the said cylindrical separator chamber, the opposite side edges of said baffle being secured to the internal surface of the cylindrical oil separator chamber,
said baffle extending vertically from the upper end wall of the separator chamber downwardly to an intermediate plane along the length of the separation chamber, thereby dividing the chamber into a first section and a second section which are sealed relative to one another,
an inlet fitting communicating with the upper end wall of said first section,
said inlet fitting extending vertically through the upper end wall of the oil separator and including a horizontal nozzle projected toward the internal surface of the separation chamber,
said nozzle adapted to project the incoming liquid refrigerant against the internal surface of the separation chamber in the upper portion of said first section, whereby droplets of entrained oil impinge against



said surface and collect thereon to flow by gravity along said surface to the bottom portion of the separation chamber,
an outlet fitting communicating with the upper end wall of the second section,
the area of the inlet fitting being a fraction of the transverse area of said first and second sections, whereby the liquid refrigerant passes downwardly through the first section and upwardly through the second section to the outlet fitting at a retarded rate of flow sufficiently slow to cause a portion of the enrained oil to precipitate by gravity from the liquid refrigerant to the lower portion of the separation chamber,
a flat vertical screen extending downwardly from the lower edge of said baffle to the lower portion of the separation chamber and forming a continuation of said first and second sections, whereby the liquid refrigerant passing from the first section to the second section is forced through said screen,
said screen adapted to entrap residual lubricating oil entrained in the refrigerant passing through said screen, causing the entrapped oil to adhere to the screen and to flow by gravity along said screen to the lower portion of the separation chamber.

3,360,128
CONNECTION AND FILTER

Charles Donald Federline, 124 Westmont Ave., Haddonfield, N.J. 08033

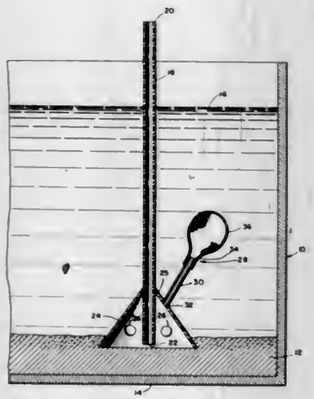
Filed Oct. 13, 1964, Ser. No. 403,584
1 Claim. (Cl. 210—94)



A connection assembly comprising: an adapter including a tubular body portion having external threads formed on one end and a flange formed on the other end, said flange having a tubular cavity formed in its end face, a porous filter disc seated in said cavity, said adapter body portion having a smaller bore extending along the center thereof and having one end opening into said cavity, said adapter body portion having a larger bore coaxial and communicating with said smaller bore, the threaded end of said body portion having a counterbore formed around the mouth of said larger bore; a smaller glass tube having its end portion received in said larger bore, the radial end surface of said smaller glass tube abutting the radial end surface of said larger bore, the bore of said smaller glass tube communicating with said smaller bore, said smaller glass tube having an annular ridge formed thereon and positioned opposite said counterbore; said ridge having a radial surface nearest said tube end and a frusto-conical portion; a flexible O-ring positioned in said counterbore and abutting said ridge; a packing nut threadedly engaging the threaded end of said adapter body portion, said packing nut having a threaded bore and a flange extending inwardly at its outer end and forming a hole receiving said smaller glass tube, the inner diameter of said nut flange being greater than the outer diameter of said glass tube ridge to permit said nut flange to pass over said glass tube ridge; a flexible split ring received in the bore of said packing nut and positioned between the nut flange and said glass tube ridge, the cleft in said split ring permitting said split ring to be placed around said smaller glass tube from the side, said split ring having a frusto-conical inner surface mating with the frusto-conical surface of said glass tube ridge, the outer surface of said split ring being stepped with a radial shoulder abutting the inner radial surface of said nut flange, a smaller portion received in the hole formed by said nut flange, and a larger portion received in said nut bore; a coupling for connecting said adapter to a larger glass tube, said coupling including a sleeve internally-threaded for mating with external threads on a larger glass tube, said coupling further including a collar extending inwardly at one end of said sleeve and engaging the inner radial surface of said adapter flange; whereby, advancing the threaded engagement of said packing nut on said adapter causes said split ring to exert a thrust on said tube ridge to press said radial end surface of said smaller glass tube into sealing engagement

with the radial end surface of said larger bore in said adapter, and compresses said O-ring to form a seal between said ridge and the surface of said counterbore, and advancing the threaded engagement of said coupling on a larger glass tube moves the lip of the larger glass tube into sealing engagement with the outer radial surface of said adapter flange.

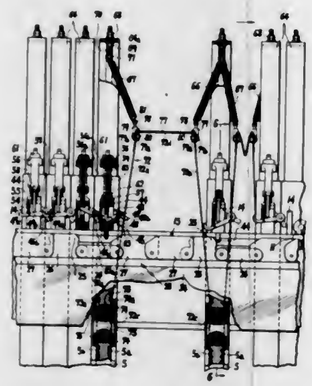
3,360,129
GRAVEL CLEANER FOR AQUARIUMS
Edgar A. Powers, 104 Church St., Lake Ronkonkoma, N.Y. 11779
Continuation of application Ser. No. 426,510, Jan. 19, 1965. This application Apr. 9, 1965, Ser. No. 447,030
11 Claims. (Cl. 210—169)



4. For use in an aquarium tank having a particulate bed and containing water, a water-treating means comprising a hollow base member having an open lower end adapted to be seated in the bed in the tank, a substantially vertical air tube extending air-tightly into the base member and terminating in an open lower end disposed within the interior of the base member above the lower end thereof and through which air under pressure is adapted to be passed directly into the bed underlying the lower end of the base member to agitate the bed and dislodge impurities therefrom and to create a vacuum in the interior of the base member, said base member being formed above the lower end of the air tube with apertures to permit water to enter into the interior of the base member under the vacuum conditions existing therein, said base member having an opening provided above the apertures through which the water in the interior of the base member can return back into the tank and filtering means connected to the opening to entrap the impurities as the water leaves the tank through the opening, said filtering means including a tubular member connected to the opening and terminating in an outer outlet and disposed within the water in the tank and a porous, displaceable bag-like element removably secured on the outer end of the tubular member and submerged within the water in the tank.

3,360,130
FILTER PRESS
Fumio Kaga, Osaka, Japan, assignor to Noritake Iron Works Co., Ltd., Osaka, Japan
Filed Sept. 9, 1964, Ser. No. 395,218
3 Claims. (Cl. 210—225)

1. A filter press comprising a fixed first head, a fixed rear head, a movable head disposed therebetween, a plurality of plate elements and filter cloths alternately arranged in parallel between said first head and said movable head, said plate elements and said movable head having hangers protruding horizontally from both sides thereof, side rails extending between both sides of said first head and both sides of said rear head and on which said hangers are slidable, drive chains having feed pawls at fixed intervals parallelly arranged below said hangers on the outer sides of both side rails, said hangers each being provided with a longitudinal slot and a recess that extends from the rear part to the front part, an engaging piece in said longitudinal slot, a reverse L-shaped hook depressing bar on the outer lateral side of the engaging piece, the engaging piece having a transverse slot in the middle, said engaging piece being arranged to be stopped at the upper edge of the longitudinal slot when the engaging piece is lowered, a lever shaft on the rear part of each of said hangers, a lever having a front arm and a rear arm at an obtuse angle to each other is swingably fitted on the lever shaft, the front arm of said lever extending into the transverse slot of the engaging piece

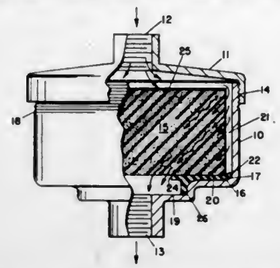


and engageable with the edge of said transverse slot, the rear arm of said lever protruding behind the hanger and engageable with the next adjacent plate so as to raise the engaging piece to its highest point when the adjacent plates are abutting, a reverse U-shaped spring receptacle having an outer vertical part with a longitudinal slot therin, the hook depressing bar having a horizontal part movable up and down in the upper part of the longitudinal slot of the hanger and operatively connected to the engaging piece, a push spring between the lower surface of the top part of said spring receptacle and the upper surface of the engaging piece, the hook depressing bar of the engaging piece protruding outwardly from said spring receptacle, a hook loosely fitted at the end of the lever shaft, a pull spring extending between said hook and the upper end of the lateral side of each of the hangers, said pull spring being weaker than the said spring pushing against the engaging piece so that the hook catches the lever shaft of the next adjacent plate element when the engaging piece is raised by he lever, the hook depressing bar of the engaging piece being above the upper surface of said hook.

3,360,131
FILTER WITH POLYURETHANE FOAM ELEMENT
Henry J. Witkowski, 3934 Davenport Ave., Erie, Pa. 16509
Filed June 15, 1964, Ser. No. 375,064
3 Claims. (Cl. 210—456)

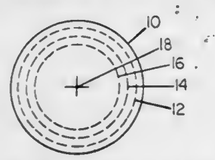
1. A filter comprising
a generally cylindrical open cup like member with a removable top thereon,

said cup like member having an outlet opening in the bottom and an inlet opening in the top thereof,
a base made of a disk like member having outer edges sealingly engaging the outer periphery of the bottom of said cup like member,
a filter element made of an organic foam material bonded to said base and spaced inwardly from the



inner wall of said cup like member providing a space therebetween whereby fluid may enter said inlet and flow through said filter element to said outlet the bottom of said member having a recess around said outlet and said base having a flange having an outer surface defining an intaglio of said bottom and said flange extending into said recess.

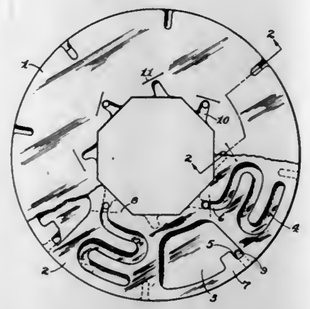
3,360,132
COFFEE FILTER ELEMENT
Erwin Harvith, Southfield, Mich., assignor to Star Filter Company, Detroit, Mich., a corporation of Michigan
Original application Oct. 19, 1966, Ser. No. 586,264, now Patent No. 3,343,682, dated Sept. 26, 1967. Divided and this application June 5, 1967, Ser. No. 643,235
5 Claims. (Cl. 210—477)



1. A filter element adapted for use with ground coffee holding baskets of different sizes, said filter element comprising:
(a) a circular planar section of a fluid pervious material;
(b) a circular pattern defined in said planar section formed by a series of arcuate incisions forming a circular line of separation adjacent the outer periphery thereof and corresponding to the lower portion of the ground coffee holding basket so that the perimetric edge of said planar section may be separated along said weakened line of separation to form a circular body section to accommodate the ground coffee holding basket.

3,360,133
FILTER CARTRIDGE
Eugene H. Proulx, Elmira, N.Y., assignor to The Hilliard Corporation, Elmira, N.Y., a corporation of New York
Filed Sept. 3, 1965, Ser. No. 485,055
5 Claims. (Cl. 210—492)

1. A filter cartridge comprising a plurality of filter discs and a plurality of separator discs,
the filter discs and separator discs being stacked alternately,
said separator discs having circumferentially arranged cut-out portions forming, with the contiguous filter discs, inlet and outlet cells,
said outlet cells having outlet passages,
said outlet cells and passages being walled in by overlying portions of said contiguous filter discs,
and stiffening inserts bridging said outlet passages for preventing the pressure of the fluid in the inlet cells



from forcing the portions of the filter discs, which overlie said outlet passages, down into said passages and thereby forming escape channels from said inlet cells.

3,360,134
CARBON-COATED ALUMINA AND PROCESS FOR MAKING SAME
Joseph B. Pullen, Alexandria, Va., assignor to Chem-Seek, Inc., Alexandria, Va., a corporation of Virginia
No Drawing. Filed Dec. 2, 1966, Ser. No. 598,596
11 Claims. (Cl. 210—502)

1. A composition of matter for use as an adsorbent, catalyst and catalyst support consisting essentially of discrete carbon-impregnated particles of an activated alumina hydrate, said hydrate being a partially dehydrated alumina trihydrate containing a trihydrate phase and at least one transition product which includes a monohydrate phase, said particles exhibiting a surface area of at least 100 square meters per gram due to the presence of a plurality of fine pores in the particles, said carbon being present from about 2% to about 15% by weight of the composition in the form of activated carbon impregnated in said particles and as a tightly bound coating on the pore walls and exterior surfaces of each hydrate particle.

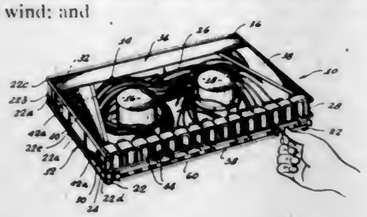
6. A process of preparing the composition of claim **1** which comprises: contacting finely divided discrete particles of an activated alumina hydrate with a liquid containing a carbonaceous material capable of thermal degradation to activated carbon so as to impregnate said discrete particles with said carbonaceous material; heating said discrete particles in an atmosphere substantially free of oxygen to a temperature sufficient to degrade said carbonaceous material to activated carbon and to volatilize the remainder of said material and insufficient to convert said activated alumina hydrate to anhydrous alumina, while maintaining the discrete nature of said particles; removing the volatilized degradation products during said heating step; and cooling the resulting discrete, activated-carbon-impregnated particles.

3,360,135
STORAGE AND DISPENSER DEVICE FOR CUT WIRE AND THE LIKE
Walter R. Horecki, Downey, Calif., assignor to Pendleton Tool Industries, Inc., Los Angeles, Calif., a corporation of Delaware
Filed June 29, 1965, Ser. No. 468,036
7 Claims. (Cl. 211—49)

1. A storage and dispenser device for lengths of cut wire and the like, comprising:
a receptacle for storing lengths of cut wire and the

like, said receptacle having an opening through which the ends of said wires extend:

a hub within said receptacle around which said wire may wind; and

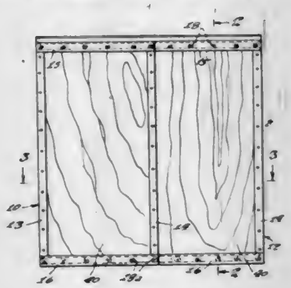


a clamp member stationed adjacent said opening for releasably holding the ends of said wires to allow the wires to be individually drawn from said receptacle.

3,360,136
DISPLAY PANEL FRAME WORK

Herbert Ain, Rockville Centre, N.Y. (% City Line Lumber Co., 241—02 Francis Lewis Blvd., Rosedale, N.Y. 11422)

Filed Jan. 3, 1966, Ser. No. 518,206
6 Claims. (Cl. 211—162)



4. A display panel structure comprising:

(a) a rectangular vertical frame having upper and lower horizontal sides and vertical sides rigidly connected together to form a panel frame unit;

(b) means on said panel frame unit sides for supporting a flat object to be displayed;

(c) a plurality of horizontally spaced rollers mounted on at least the upper horizontal side of said panel frame unit;

(d) a track element supporting said rollers for movement thereon;

(e) a rail mounting said track element;

(f) hanger means securing said rail to a supporting surface; and

(g) said track element and associated rollers lying wholly to one side of said panel frame unit and being wholly concealed by the horizontal side of said panel unit carrying said rollers;

(h) said means on said panel frame unit sides comprises flat panel means hingedly connected to said panel frame unit for outward swinging movement relative thereto.

3,360,137
ADJUSTABLE STORAGE RACK

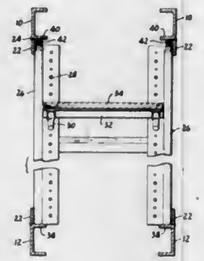
William H. Novales, P.O. Box 8364, Oakland, Calif. 94608

Filed Jan. 14, 1966, Ser. No. 520,688
2 Claims. (Cl. 211—175)

1. An arrangement for use as a storage rack with a plurality of front openings which are adjustable to permit insertion or withdrawal of merchandise units of different dimensions while preventing loss of storage capacity, which comprises:

(a) a pair of upper and lower elongated beams positioned in superimposed spaced relationship and held in such relationship by end frame structures;

(b) each of said beams having a horizontal surface and a vertical flange, said upper beams having said flanges on the outside thereof extending downwardly and said lower beams having said flanges on the outside thereof extending upwardly;



(c) a plurality of movable, normally vertical posts extending between the horizontal surfaces of said beams and being prevented from movement outwardly by said flanges;

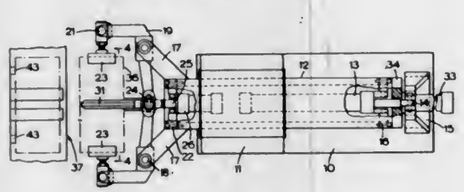
(d) shelf supports extending between a mating front and back vertical post and preventing movement of said vertical posts toward each other;

(e) a resilient member on one end of each of said posts, said resilient members engaging one of said beams when said post is in an upright position between the said beams.

3,360,138
APPARATUS FOR LOADING WORKPIECES INTO WELDING MACHINES

Patrick Hunter Gordon and Jack Nortcliffe, Inverness, Scotland, assignors to A.I. Welders Limited, Inverness, Scotland

Filed Sept. 7, 1965, Ser. No. 485,371
Claims priority, application Great Britain, Sept. 4, 1964, 36,376/64
6 Claims. (Cl. 214—1)

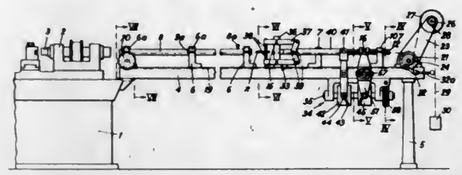


1. A loading machine for inserting a pre-curved metal band into a flash-butt welding machine for forming a welded joint between the ends of said band, said loading machine comprising a supporting structure, a slide member movable in said supporting structure, a locating bar carried by said slide member and having a projection directed radially inwardly with respect to said band to space and position said ends in the plane of said band, and clamping means carried by said slide member and adapted to act externally on the band to hold it in said position.

3,360,139
BAR-FEED AND CHANGE ATTACHMENT FOR AUTOMATIC LATHES

André Bechler, 4 rue Centrale, Moutier, Switzerland

Filed Feb. 23, 1966, Ser. No. 529,402
Claims priority, application Switzerland, Mar. 25, 1965, 4,144/65
3 Claims. (Cl. 214—1.2)

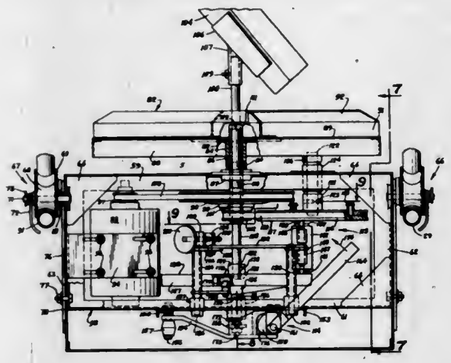


1. In a bar-feeding and changing attachment for automatic lathes, having a plunger movable by motor means for the bar being machined, which plunger is equipped with a collet pivoted thereto to grip the bar rear end and to permit withdrawal of the bar remnant; the improvement comprising a stationary chucking appliance clampable to the withdrawn bar remnant and then to a freshly inserted bar when said plunger has been entirely withdrawn, and an actuating appliance comprising a control shaft, three cam members fixed to said shaft, and a plurality of transfer members actuable by said cam members; the cam members being so adapted and constructed that in the course of a complete revolution of said shaft the first member causes the chuck to be clamped to the bar remnant, the second member operatively engages a lever belonging to said transfer members with the plunger, and the third cam member by means of this lever withdraws the plunger to disengage the collet thereof from the retained bar remnant, the first cam member causes disengagement of the chuck from the bar remnant and then a renewed clamping engagement of the chuck on a freshly introduced bar, the third cam member advances the plunger to set up the collet thereof on the rear end of the fresh bar, and finally the third cam member separates said lever from the plunger and also the first cam member disengages the chuck from said bar.

3,360,140
FORAGE DISTRIBUTOR

Floyd E. Buschbom, Long Lake, Minn., assignor to Vandale Corporation, Wayzata, Minn., a corporation of Minnesota

Filed Oct. 22, 1965, Ser. No. 500,927
24 Claims. (Cl. 214—17)

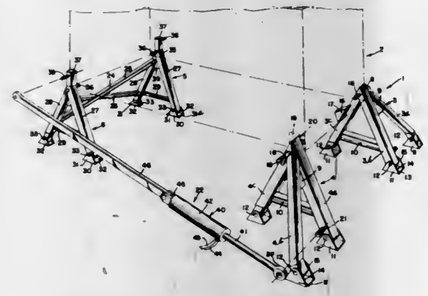


1. An apparatus for distributing forage material discharged from a conveyor into a silo having an upright wall comprising rail means mounted on the silo wall and projected into the interior of the silo, frame means adjustably mounted on the rail means for movement relative to the silo wall, spreader means mounted on the frame means for rotation about an upright axis, means for tilting the spreader means about a substantially horizontal axis, chute means mounted on the frame means for rotation about said upright axis, said chute means positioned to receive forage material discharged by the conveyor and to direct said material onto the spreader means, and drive means for rotating said spreader means and said chute means whereby said forage material is deposited onto said spreader means in a circular path and directed outwardly by the rotating spreader means, said drive means having means for rotating the chute means at an increasing rate of speed during a part of the angle of rotation thereof and at a decreasing rate of speed during the remainder of said angle of rotation.

3,360,141
CONTAINER LIFTING MEANS AND METHOD

John J. Martin, Weatherly, Pa., assignor to Pullman Incorporated, Chicago, Ill., a corporation of Delaware

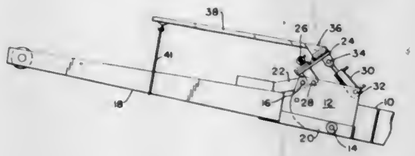
Filed Jan. 10, 1966, Ser. No. 519,590
14 Claims. (Cl. 214—38)



1. A container lift and storage assembly comprising a first pair of separable stands for supporting one end of a container, a second pair of stands for supporting the other end of a container, each first stand being in the shape of a tripod, said tripod being defined by two divergingly longitudinally inner and outer spaced legs to define a generally inverted V-shaped structure and a third outer leg laterally spaced outwardly of the structure, each tripod leg having a free end portion and feet means pivotally connected to each of said leg end portion for allowing pivoting of the two legs about their feet, each of the legs merging into an apex portion having pin means for engaging the corners of the container, an overtravel stop being mounted on said inner leg for engagement with the under side of the container, said second pair of stands having lateral brace means inter-connecting one stand with the other stand to define a unified structure, each rear stand being in the form of a generally inverted V-shaped frame and having a pair of downwardly extending inner and outer inter-connected supports that merge upwardly to define an apex support portion, feet pivotally connecting the free end of the inner support, each apex support portion having pin means for engaging the corners of the container, means for coupling the first and second stands together comprising an extendible and contractable unit having free ends, said outer leg of the said first stand having a couple means approximate its lower end and said apex support portion having a couple means cooperative with said first named couple means in receiving the free ends of said extendible and contractable unit

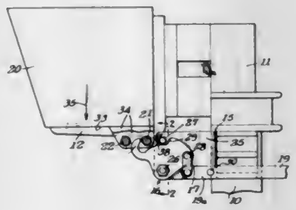
whereby upon contraction of said extendible and contractable unit the inner supports of the second pair of stands and said outer legs of said first pair of stands are allowed to pivot about their respective feet attendant to increasing the vertical extent thereof for raising the container.

3,360,142
UTILITY BOOM GIN
Lee A. Jamison, Port Huron, Robert H. Kapanka, St. Clair, and Jarvis D. Webster and Raymond J. Masserant, Port Huron, Mich., assignors to The Detroit Edison Company, Detroit, Mich., a corporation of New York
Filed Aug. 23, 1965, Ser. No. 481,490
10 Claims. (Cl. 214—130)



1. Apparatus for use in rigging an extension to a boom provided at its end with a platform tiltable relative to said boom about a horizontal axis, the boom and extension having a plurality of laterally spaced sets of horizontal alignable pin-receiving openings, said apparatus comprising an elongated gin having at one end means for removably affixing it to said platform for tilting movement therewith relative to said boom, and means at its opposite end for suspending the boom extension substantially at its midpoint.

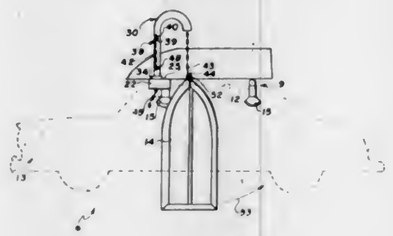
3,360,143
FORKLIFT DUMPING MEANS
William A. Allen, 603 S. Arrowhead Ave., San Bernardino, Calif. 92408
Filed June 6, 1966, Ser. No. 555,611
3 Claims. (Cl. 214—317)



1. In a forklift for raising and dumping a container having a bottom and a rearwardly directed face and provided with aligned pivot pins at the rear corners between said bottom and face, said forklift having a vertical guide, a lift component operable in said guide, and lift forks extending forwardly from said component,

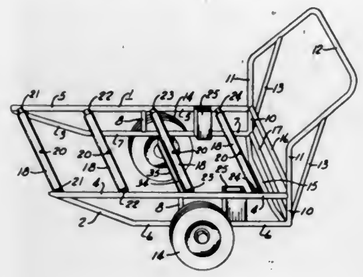
(a) forwardly extending brackets affixed to the opposite sides of the upper end of said guide,
(b) an arm pivotally mounted on each bracket and movable between retracted and projected positions,
(c) spring means to bias the arms to retracted position,
(d) means to move the arms to projected position against the bias of said spring means,
(e) each arm being provided with a hook portion that is rearwardly clear of the rearward part and of the pivot pins of the container supported by the lift forks when the arms are retracted during lifting of the later, each said hook portion being in the path of lowering movement of a container supported on the lift forks and of said pivot pins, when the arms are projected, to pivotally engage said pins when the lift component and the container are lowered, and
(f) retainer members forwardly spaced from the pivot pins and between which and said pivot pins said hook portions are disposed when in hooking engagement with the pivot pins,
(g) the container, upon continued lowering movement of the lift component and the lift fingers thereof, being released for forward tiltable dumping movement around said hook-engaged pins as a fulcrum, the retainer members moving to hook-retaining position during such tilting movement,
(h) said forwardly directed brackets being provided with forwardly directed walls on which the arms are pivotally mounted, and stop pins on said walls to limit the projected and retracted positions of the hook-provided arms.

3,360,144
CAR TOP BOAT LOADING AND CARRIER APPARATUS
Pierre Francois d'Estrubé, 1542 Athlone Drive, Victoria, British Columbia, Canada
Filed Oct. 23, 1965, Ser. No. 503,292
1 Claim. (Cl. 214—450)



A car top boat carrier comprising, when positioned on a car top, a rack having fore and aft transversely extending support members, a socket member having an upwardly opening vertical bore secured to the forward support member adjacent a side of the car, a tubular davit member having a vertically extending elongated leg rotatably received at its lower end in the bore of the socket member and having an arcuate arm extending laterally from the upper end of the leg, said davit member being freely rotatable with respect to the socket member so as to permit the arm to be moved between a position in which it extends over said side of the car top and a position in which it extends substantially over the centre line thereof, said leg having an aperture formed therein spaced above its lower end, a chain slidably extending through the davit member with one end thereof extending outwardly of the arm and the other end extending outwardly through the aperture, means for releasably securing one end of a boat to said one end of the chain, so as to permit the latter to be operated to position the boat in an upright position adjacent the side of the car with the said one end of the boat extending above the rack, said davit member automatically swivelling to its last mentioned position when the other end of the boat is lifted and positioned on the after support member so as to position said one end of the boat substantially centrally over the forward support member, said aperture being of inverted key hole shape so as to permit releasable engagement of the leg and chain.

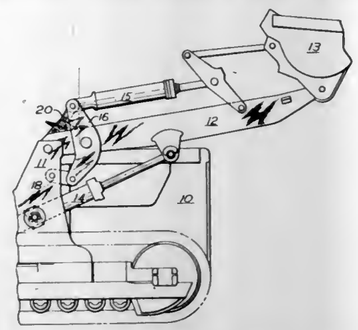
3,360,145
ROOF BUGGY
Jack O. Bloxsom, 765 S. Airport Road, Traverse City, Mich. 49684, and Tracy R. Mariage, Rapid City, Mich. 49676
Filed Sept. 16, 1965, Ser. No. 487,671
4 Claims. (Cl. 214—506)



1. A roof buggy for distributing roofing materials including a mobile unit carried by wheels and tiltably supporting a frame including sled-shaped parallel side members each having an upper rail connected by vertical posts to a lower rail that slopes upwardly at the front to meet the upper rail and is secured thereto, a transverse stringer connecting the rear ends of said bottom and said top rails, a plurality of stringers parallel to said end stringers connecting said top rails with one stringer adjacent the front end to form a deck, roller means on said deck stringers, said vertical posts at the rear of each side member and extending above said deck to form a stop, said roller means extending above said top rails to allow a load supported on said deck of said frame to slide as a unit load over said roller means to the roof and be removed from said deck of said mobile unit by withdrawing the wheeled buggy when said frame is tilted, a tongue frame extending to an apex behind said deck, trailer hitch means on said apex, axle means secured transverse of the front of said tongue frame to receive said wheels, sleeve means fastened transversely on said tongue frame above said axle means, transverse pivot means secured to said bottom rails operating in said sleeve means and tiltably supporting said dump frame and positioned to bias said dump frame to dump the same when unloaded, delatchable spring latch means to releasably retain said dump frame in load carrying position, and a stop on said tongue frame to limit the dumping movement of said dump frame and prevent said sled shaped side members from striking the roof when in dumping position to slide the unit load from said rollers on said deck.

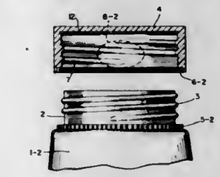
3,360,146
LOADER LIFT ARM LATCH
Herbert W. Borer, Naperville, and Michael D. Ream, Aurora, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed June 29, 1966, Ser. No. 561,533
3 Claims. (Cl. 214—776)

1. In a tractor mounted loader which comprises lift arms supporting a loader bucket, and bucket tilt linkage which includes a lever operatively connected to the bucket and pivoted to a lift arm and movable relative to the lift arm upon raising and lowering thereof to maintain the bucket in a desired position relative to the ground, latch means comprising a strut pivoted to swing to and away



from a position blocking relative movement between the lever and lift arm to prevent lowering of the lift arm.

3,360,147
SAFETY CLOSURE FOR FLEXIBLE CONTAINER
Robert B. Schaefer, Malvern, Pa., assignor to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania
Filed June 21, 1966, Ser. No. 559,324
4 Claims. (Cl. 215—9)



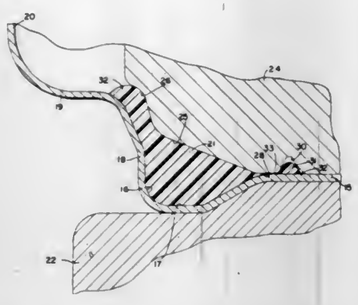
1. In a container assembly comprising a container member having a neck and having a threaded screw top opening enclosed by a flexible screw-cap closure member, a safety container and closure combination, said combination comprising:

(a) a pair of sets of locking teeth consisting of at least one tooth per set, each set being positioned substantially diametrically opposite the other set on the closure circumference of the screw-cap closure member below screw threads on said member,
(b) a plurality of circumferentially spaced opposing locking teeth positioned below screw threads on the closure circumference of the container member and arranged to mesh lockingly with the teeth of said screw-cap closure member when the members are fully engaged by screwing down on the threads thereof,
(c) a pair of pressure areas on the screw-cap closure member and associated with said member's teeth and being positioned about 90° away from each set of the locking teeth of the screw-cap closure member so that when the members are fully engaged and pressure is applied on the pressure areas the screw-cap closure member is distorted, causing the meshed teeth to unlock and to permit the members to be unscrewed from one another.

3,360,148
CLOSURE WITH A MOLDED RING GASKET
Ronald C. Owen, Harwood Heights, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Oct. 23, 1965, Ser. No. 502,999
2 Claims. (Cl. 215—40)

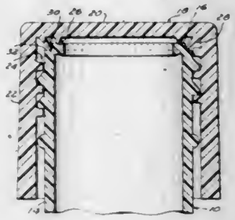
1. A closure cap having a molded gasket formed in a flash free manner, said closure cap including a shell

having a top panel joined to a skirt portion to form a gasket area, a layer of gasket material deposited in said area and overlying a portion of said skirt portion and said top panel, said gasket material having a flash free margin formed by the main body of said gasket material being joined to a flash film portion which is thin relative



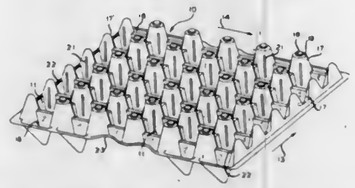
to said main body and said thin flash film portion terminating in an axially raised bead forming a sharp cutoff of said gasket material which is free of flash and the weight of which bead does not exceed 5% of the total weight of said gasket material.

3,360,149
CAP CONSTRUCTION
Robert A. Roth, 120 E. 34th St., New York, N.Y. 10016
Filed Dec. 22, 1965, Ser. No. 515,597
1 Claim. (Cl. 215—40)



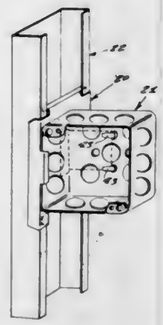
A cap in combination with a container having a neck defining an opening to the interior of the container and the neck of the container being reduced at the upper end thereof with the reduced upper end of the neck defining with the remaining portions of the neck an external annular shoulder at the bottom of the reduced neck, said cap being on the container and sealing the opening of the neck, said cap comprising a top disc portion having a substantially circular periphery and an annular skirt depending downwardly from the periphery of said top disc portion and having an inner face, means for temporarily securing the cap to the neck of the container, sealing means presented by surfaces of the cap for engaging the neck of the container for sealing the container and an annular radially extending sealing lip for sealingly engaging surfaces of the neck of the container to provide a supplemental seal between the cap and the container which will seal the container independent of said sealing means, said sealing lip extending both downwardly and inwardly from the juncture between the top disc portion and skirt, said sealing lip being substantially flexible and being in sealing engagement with the reduced upper end of the neck substantially at the shoulder when the cap is fully on the neck of the container and the sealing lip being adapted to remain in engagement with the reduced upper end for a predetermined period following the breaking of the seal presented by said sealing means when the cap is only partially on the neck of the container and short of being fully on the neck of the container.

3,360,150
PACKING OR SUPPORTING TRAY
Alfred Schechter, New Rochelle, N.Y., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Mar. 22, 1963, Ser. No. 267,121
2 Claims. (Cl. 217—26.5)



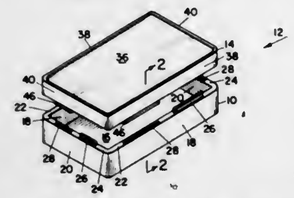
1. An egg supporting and washing tray comprising: a sheet of stiff material; a plurality of cavities formed in said sheet, each of said cavities extending downward below the plane of said sheet; an opening provided in the bottom of each cavity; a plurality of tapered posts, four spaced about each of said cavities, extending upward above the plane of said sheet and downward below said plane of said sheet to define a portion of the wall of the said cavities which are adjacent thereto, each said cavity and the four posts adjacent thereto forming an egg receiving pocket; at least two of said posts spaced about each of said cavities terminating at their upper ends in a knob having a transverse area smaller than the area in said openings in the bottoms of said cavities and surrounded by a shoulder having a transverse area larger than said openings; and an elongated ridge starting above the plane of said sheet and projecting from the surface of each of said posts which faces one of said pockets and extending downward along said surface from a point near the top of the post into said cavity.

3,360,151
BOX-CLAMP
Anthony J. Yznaga, 1638 Clower, San Antonio, Tex. 78201
Filed Dec. 6, 1965, Ser. No. 511,795
10 Claims. (Cl. 220—3.9)



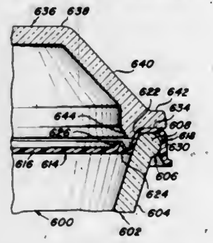
1. In a box-clamp, the combination of a chassis comprising a flat rectangular main panel, a perpendicular narrow side panel adjacent each longitudinal edge of said main panel, and means for securing said chassis to a wall stud including a head bar along one transverse edge of said main panel, an open slot on each side of the main panel adjacent said head bar and a notch in the opposite end edge of said main panel to form both a stiffening break and clamp tabs, a link adjustably secured to said chassis, and means for securing an electric outlet box to said link, said main panel also having a plurality of parallel spaced apart slots therein, said link comprising a link main panel and a link base panel perpendicular to said link panel, said link main panel having a pair of extending ears formed on one edge, said extending ears each having a stiffening depression therein, said link base panel lying against one face of said chassis and said link main panel projecting through one of said spaced apart slots in the chassis for securing said chassis and link together.

3,360,152
PLASTIC HOUSINGS
Robert S. Leers, 48 Englewood Road, Longmeadow, Mass. 01106
Filed Aug. 27, 1965, Ser. No. 483,087
1 Claim. (Cl. 220—4)



A container comprising two identical, separable, flexible, resilient molded plastic trays fitting together in mutual telescopic relation, each tray having a continuous main wall and pairs of side and end walls at right angles thereto, the side and end walls of said trays being in aligned abutting relation, the ends of said side and end walls being provided with tongues and grooves in aligned abutting relation with the corresponding tongues and grooves of the complementary tray when the trays are fitted together for locking said trays together, said tongues and grooves being invertibly complementary on either side of perpendicular center lines through said trays diagonally across the corners of said trays whereby said tongues and grooves interlock when one of said trays is rotated relative to the other about their common vertical central axis to any one of four positions 90 degrees apart.

3,360,153
CONTAINER ASSEMBLY
Frank H. Wheaton, Jr., Millville, N.J., assignor to Wheaton Glass Company, Millville, N.J., a corporation of New Jersey
Filed Jan. 19, 1966, Ser. No. 521,668
5 Claims. (Cl. 220—4)



2. In combination, a three-piece container assembly for use in preparing, storing, cooking or serving food comprising:

(a) a container open at the upper end and terminating in a rim;

(b) an intermediate snap-on cover of flexible material detachably engaging the open upper end of said container in sealing relation thereto and including a peripheral rim having radially inner and outer rim walls connected by a top rim wall;

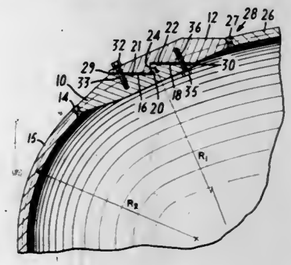
(c) said snap-on cover including a flat center wall portion lying radially inwardly of said inner rim wall;

(d) said snap-on cover including a bellows-like flexible wall portion of less thickness than and connecting both inner rim wall and said flat center wall portion, along substantially the entire length of the respective peripheries thereof;

(e) a top cover member detachably interengageable with the upper surface of said snap-on cover member;

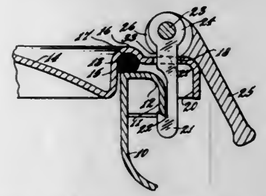
(f) complementally formed means on the top cover, intermediate snap-on cover and on said container rim to maintain said three pieces in an assembled relationship to facilitate merchandising and storage as a unitary assembly.

3,360,154
LOCK SCARF CLOSURE
Harlan Turner, Jr., Waterford, Conn., assignor to General Dynamics Corporation, New York, N.Y., a corporation of Delaware
Filed Dec. 22, 1965, Ser. No. 515,623
6 Claims. (Cl. 220—46)



1. Apparatus for closing an opening in a curved pressure vessel comprising means forming along the periphery of the opening a pair of generally coaxial conical surfaces, a cylindrical surface connecting said conical surfaces, a closure plate having a pair of conical surfaces and a cylindrical surface along its periphery complementary to and fitting said conical surfaces and cylindrical surface of the ring, and means to fasten the closure plate to the periphery of the opening.

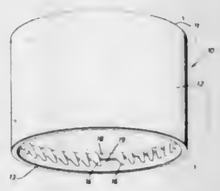
3,360,155
RAPID SEAL CLOSURE FOR CONTAINERS
Angelo Colonna, 2114 Bowler St., Philadelphia, Pa. 19115
Filed Jan. 4, 1966, Ser. No. 518,718
4 Claims. (Cl. 220—46)



1. A closure member for containers having an outwardly and downwardly extending flange, in combination with a closure lid for the container having a plurality of rectangular shaped apertures therein spaced about the

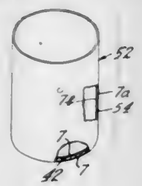
periphery of the lid, with resilient sealing means disposed between the lid and the container, the closure member comprising a square shaped shaft adapted for loose engagement through the aperture in the direction of the long side of the rectangular apertures, the shaft having a notch on one side adapted to engage the flange of the container, the notch extending upwardly beyond the flange thereby permitting the shaft to slide past the flange at an angle to the closure lid, a bifurcated cam lever rotatably mounted about the shaft above the lid having a cam surface and a flat surface adjacent the point of maximum radius of the cam surface, whereby rotation of the cam lever toward maximum radius pulls the notch up into engagement with the flange of the container and forces the lid down against the resilient sealing means, the flat surface subsequently locking the lid with respect to the container.

3,360,156
CLOSURE CONTAINERS
Lothar Eric Bohlman, Don Mills, Ontario, Canada, assignor to Plasticap Limited, Richmond Hill, Ontario, Canada
Filed Dec. 5, 1966, Ser. No. 599,162
6 Claims. (Cl. 220—60)



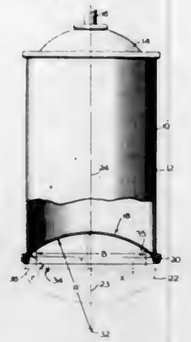
1. A cap for a dispenser having a top wall with a shoulder, said cap being formed from a resilient flexible material and comprising a top wall with a peripheral skirt depending therefrom, said skirt having a lower edge, and an inner surface, and a plurality of spaced apart projections having free ends extending inwardly from said inner surface, said projections being characterized in that they are inclined downwardly toward said lower edge of said skirt at a compound angle with respect to a radius of said cap and an axis normal to said radius which axis extends through plane of the skirt.

3,360,157
METHOD OF FORMING A COATED METAL CONTAINER AND ARTICLE PRODUCED THEREBY
Richard Robert Bolt, Lake Villa, and Delbert Edmund Wobbe, Cary, Ill., assignors to American Can Company, New York, N.Y., a corporation of New Jersey
Filed May 4, 1965, Ser. No. 453,017
4 Claims. (Cl. 220—64)



4. A drawn and ironed one-piece tin plated steel container comprising:
an end having a coating of tin of matte finish;
a seamless side wall, said side wall having a thickness substantially thinner than said end, and coating of specular tin on the outer surface thereof and an interior coating of matte tin.

3,360,158
CONTAINER END WALL CONSTRUCTION
Albert Joseph Klein, Arlington Heights, Ill., assignor to American Can Company, New York, N.Y., a corporation of New Jersey
Filed Feb. 16, 1966, Ser. No. 527,970
5 Claims. (Cl. 220—66)



1. A circular concave end wall for a container adapted to withstand high internal pressure, said end wall having a conformation substantially that of a portion of an ellipsoidal shell which is a surface of revolution generated by an ellipse having its vertical axis coincident with the axis of the container, wherein the equations for the approximate dimensional limits, in inches, of the ellipse are: for minimum dimensions

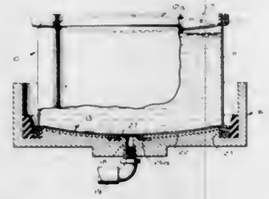
$$\frac{x^2}{(1.471K)^2}+\frac{y^2}{(.675K)^2}=1$$

and for maximum dimensions

$$\frac{x^2}{(1.570K)^2}+\frac{y^2}{(1.614K)^2}=1$$

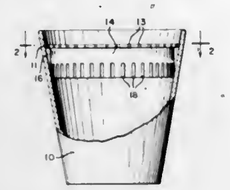
where x is the horizontal distance in inches from the axis of the container to any point on the ellipse, y is the vertical distance in inches from the horizontal axis of the ellipse to any point on the ellipse, and K is the ratio of end wall diameter in inches to 2.545.

3,360,159
FILLED CAN WITH HEAD SPACE
Earl R. Anderson, Los Gatos, Calif., assignor to Philip Harper Allen, Saratoga, Calif.
Original application June 11, 1962, Ser. No. 201,711. Divided and this application Apr 17, 1967, Ser. No. 631,292
2 Claims. (Cl. 220—63)



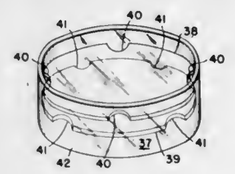
1. A can filled with a product comprising a peripheral side wall, a first end closure and a second end closure, both of said closures being connected to said side wall, said first closure being flexible and being dished in response to vacuum pressure in said can, said second closure comprising two parts, one part forming a closure for the can and being capable of flexing in response to pressure conditions within said can to either an inwardly dished condition or an outwardly dished condition, and second second part providing means for resisting inward dishing of said first part.

3,360,160
ANTI-SPLASH GUARD FOR DRINKING RECEPTACLE
Dean Spencer, 23615 Marine View Drive, Des Moines, Wash. 98016
Filed Dec. 21, 1965, Ser. No. 515,320
5 Claims. (Cl. 220—90.4)



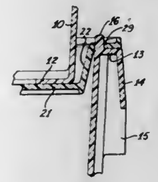
1. In a structure for the described purpose, in combination with a downwardly tapering receptacle open at the top and used for drinking a liquid contained in the receptacle, a disc fitting in said open end of the receptacle, the disc being formed with a head wall which bears by a rim portion thereof against the interior wall of the receptacle and having an annular skirt depending from the head wall in inwardly spaced relation to said bearing rim concentric and parallel with the axial line of the receptacle, thus converging toward the tapered wall of the receptacle and with the latter providing an upwardly expanding space exteriorly of the skirt, said space acting as a surge chamber through which liquid passes when a user tilts the receptacle incident to drinking therefrom, the disc being so formed that openings are provided along both the bottom and the top of the disc throughout the circumference thereof for the inflow of liquid to the chamber and the outflow therefrom to the user, the structure being characterized in that the amount of liquid which flows to the user upon a normal tilting of the receptacle has substantial volume but represents the accumulation of a considerable number of streams entering the chamber which individually supply only a miniscule fraction of such accumulation.

3,360,161
SPLASHPROOF DRINKING VESSEL
Marlin B. Smith, 743 Washington, Cumberland, Md. 21502
Filed Oct. 21, 1965, Ser. No. 499,730
1 Claim. (Cl. 220—90.4)



A converter for a drinking vessel comprising
(a) a plurality of spaced apart layers,
(b) a common vertical member enclosing the perimeter of each of said layers,
(c) said vertical member holding the layers in a spaced apart relationship,
(d) said space between said layers extending for more than one-half the area of the surface of each layer,
(e) a plurality of openings in the periphery of the lowermost layer,
(f) said openings providing access from the inside of a vessel in which the converter is used to the space between the layers,
(g) a plurality of openings in the periphery of the uppermost layer,
(h) said openings providing access from the space between the layers to the atmosphere,
(i) said openings in said uppermost layer being offset vertically from said openings in said lowermost layer so as to provide a circuitous path for any fluid travelling upwardly through said converter.

3,360,162
TOTE BOX
Robert F. Miles, Cincinnati, Ohio, assignor to MS Industries, Inc., Cincinnati, Ohio, a corporation of Ohio
Filed Dec. 23, 1966, Ser. No. 604,251
3 Claims. (Cl. 220—97)

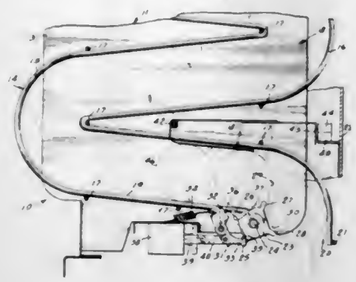


1. A tote box of generally rectangular shape in horizontal cross section, having side and end walls and a bottom, said side and end walls sloping inwardly from top to bottom, said box at the top of its opposed side walls having upstanding stacking elements and adjacent the top of each end wall having a central slot, said box being nestable with like boxes, and a lid for said box, said lid being flat and having an upstanding peripheral flange interrupted in the central portion of one end of said lid, and having in said central portion an outwardly extending tongue, and having a peripheral flange extending outwardly from the upper edge of said upstanding flange, said outwardly extending flange having slots adapted to mate with said stacking elements, said extending tongue being engageable at the central slot at either end of said box, said upstanding flange being nestable within said box and said outwardly extending flange adapted to rest on top of the box, said box being stackable on a like box with lid in place.

3,360,163
VENDING MACHINE
Herman S. Fessler, Coon Rapids, Minn., assignor to The Cornelius Company, Anoka, Minn., a corporation of Minnesota
Filed June 27, 1966, Ser. No. 560,683
3 Claims. (Cl. 221—152)

1. A vending machine comprising in combination:
(a) a rack for supporting articles to be vended which includes a downwardly sloping ramp on which the articles may roll;
(b) a rotatable star-wheel disposed adjacent to said ramp, and having a series of angularly spaced radially projecting portions for extending into the path of the articles supported on said ramp, each of said projections having a leading article surface facing in the direction of star-wheel rotation, and a trailing article-engaging surface facing in an opposite direction;

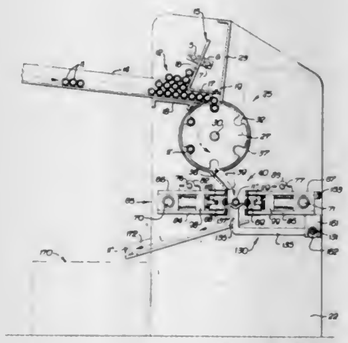
(c) a pawl pivoted intermediate its ends, a first of such ends being normally biased against the leading article-engaging surface of a first of said projections to block rotation of said star-wheel, and the other of such ends being engageable with the trailing article-engaging



surface of a second of said projections in response to pivoting of said pawl to positively rotate said star-wheel; and

(d) a solenoid connected to said pawl for pivoting it.

3,360,164
FEEDING SYSTEM FOR A SWAGING OR TAPERING APPARATUS
Leonard E. Zerlaut, Santa Ana, Calif., assignor to Manuel Izen, Los Angeles, Calif.
Filed Mar. 11, 1966, Ser. No. 533,593
5 Claims. (Cl. 221—239)



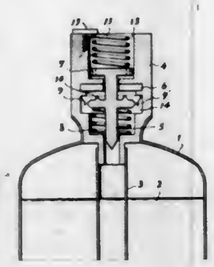
3. A work piece feeding apparatus for automatically feeding individual work pieces from a supply thereof to a jaw assembly of a machine to act upon such work pieces, said apparatus comprising:

feed means for delivering individual work pieces from a supply thereof separately into a zone between said jaws;

support means for receiving each of said work pieces separately delivered into said zone between said jaws and for supporting each of such work pieces in a position in which said jaws may close thereon; and

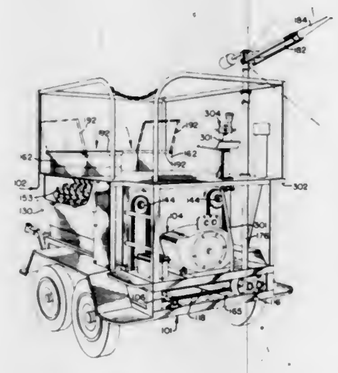
switch means placed in a path of travel of work pieces discharged from said jaws for actuating said feed means to deliver a next successive work piece to said zone as soon as it is engaged by a prior work piece discharged from said machine jaw assembly.

3,360,165
DEVICE FOR AUTOMATICALLY AND INTERMITTENTLY SPRAYING PRESSURIZED PRODUCTS
Taisho Iketani, 41–6 4-chome Nogata, Nakano-ku, Tokyo-to, Japan
Filed July 14, 1965, Ser. No. 471,931
Claims priority, application Japan, July 28, 1964, 39/42,453
11 Claims. (Cl. 222—54)



1. A dispenser for pressurized fluids, comprising, in combination, a receptacle defining a plenum chamber for a supply of coolant fluid; and a thermostatic valve communicating with said chamber for escape of fluid therefrom, said valve comprising a thermo-responsive element arranged in the path of escaping coolant fluid for closing said valve in response to cooling resulting from such escaping fluid, and said element being in the closed condition of said valve sealed from the coolant fluid and exposed to the ambient atmosphere so as to open said valve in response to heating to the temperature of such atmosphere.

3,360,166
APPARATUS FOR MIXING AND DISPENSING, BY HYDRAULIC PRESSURE, AN AQUEOUS SOLUTION CONTAINING PLANT LIFE
Sigurd J. Andreasen and Owen A. Meyer, both of P.O. Box 630, Bowie, Tex. 76230
Continuation of abandoned application Ser. No. 441,405, Mar. 4, 1965. This application June 10, 1966, Ser. No. 558,197
11 Claims. (Cl. 222—136)



1. In a hydraulic planting apparatus for dispensing hydraulic material onto the terrain, which material contains plant life and fiber,

(a) a frame,

(b) a reservoir mounted on said frame,

(c) a first shaft extending into said reservoir and being journaled therein for rotation,

(d) longitudinally and circumferentially spaced apart, spirally arranged impeller blades on said first shaft, within said reservoir, along a portion of the length thereof,

(e) radially extending blades forming an impeller, which impeller is mounted on said first shaft near one end of said reservoir to receive hydraulic material thereinto from said spirally arranged blades,

(f) a power plant mounted on said frame,

(g) a pump mounted on said frame,

(h) an outlet pipe connecting the lower portion of said reservior with said pump,

(i) a discharge pipe extending outwardly from said pump to discharge hydraulic material onto the terrain,

(j) transmission drive means connecting said power plant and said pump to selectively drive said pump,

(k) a second transmission drive means connected to said power plant and to said first shaft, which mounts said impeller mixing blades to rotate said first shaft with said impeller mixing blades thereon,

(l) a second shaft extending into said reservoir near the upper end thereof, which shaft is parallel to said first shaft,

(m) pointed fingers secured to and extending outward from said second shaft,

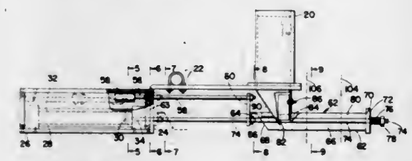
(n) a third transmission means connecting said power plant in driving relation with said second shaft for rotation of said second shaft, with said pointed fingers thereon,

(o) a support plate mounted longitudinally in said reservoir, near the top thereof, said support plate being in close proximity to said second shaft, having said outwardly extending pointed fingers thereon,

(p) downwardly extending fingers mounted on the lower side of said support plate and being spaced in close proximity to the outer ends of said pointed fingers on said second shaft,

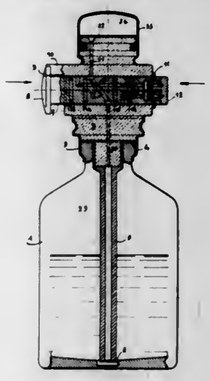
(1) said fingers on said second shaft being adapted to rotate in close proximity to said pointed fingers on said support plate so as to disintegrate compressed fiber and to direct the disintegrated fiber into said reservoir.

3,360,167
APPARATUS FOR CONTROLLING THE FLOW OF FINELY DIVIDED MATERIAL
Paul O. Berg, 2217 Indian Village Blvd., Fort Wayne, Ind. 46807
Filed Oct. 18, 1965, Ser. No. 497,047
8 Claims. (Cl. 222—199)



1. Apparatus for controlling the flow of material comprising means for storing a quantity of flowable material, a material-supply conduit connected to said means and having a delivery end, a material-feeding device disposed adjacent to said delivery end for receiving material from said conduit, means for moving said device with respect to said delivery end of said conduit, said device being movable between two different delivery positions respectively corresponding to different rates of flow from said device, means for stopping the movement of said device in a selected one of said two delivery positions, gate means for terminating the flow of material from said device, said gate means alternatively being movable with respect to said device into positions respectively closing-off and permitting flow of material from said device, means for actuating said moving means to vibrate said device in a selected one of said delivery positions and for moving said gate means into said flow-permitting position substantially concurrently therewith, and means, including said last-mentioned means, for deactuating said moving means to terminate the vibration of said device and for substantially concurrently therewith moving said gate means into said closing-off position whereby accurate quantities of material can be delivered from said device.

3,360,168
FLUID-DISPENSING SYSTEMS
Pierre Bret, 27 Ave. Saint-Exupery, Meudon-la-Foret, (Seine-et-Oise), France
Filed Dec. 1, 1965, Ser. No. 510,774
Claims priority, application France, Jan. 8, 1965, 1,238
17 Claims. (Cl. 222—335)



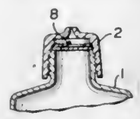
10. A fluid-dispensing system for a container, said fluid dispensing system comprising a stopper member for the container, a hollow cap member on the stopper member defining therewith a chamber of fixed extent and predetermined volume, a resilient diaphragm secured to one of said members and freely movable between a relaxed position on the stopper member and a stretched position in conformity with the cap member, distributor means mounted for slidable movement in the stopper member and having three positions in which pressure fluid can be respectively supplied to the container; supplied beneath the diaphragm to displace same into the stretched position and charge a volume of pressure fluid equal to that of said chamber between the stretched diaphragm and the stopper member; and discharged externally of the container.

3,360,169
CONTAINER WITH AN IMPROVED DISPENSING CLOSURE
Rinnosuke Susuki, Tokyo, Hiroshi Hoshi, Chiba, Masao Suzuki, Tokyo, and Masaru Morozumi, Nagano, Japan, assignors to Lion Fat & Oil Co., Ltd., Tokyo, Japan, a corporation of Japan
Filed Apr. 7, 1966, Ser. No. 541,020
Claims priority, application Japan, Jan. 19, 1966, 41/4,238
5 Claims. (Cl. 222—482)

1. A dispensing closure for a discharge opening of a container, comprising:

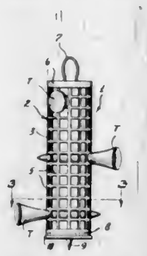
two parallel layers arranged in superimposed contacting relation and adapted to be sealingly engaged

with the container, each layer comprising a synthetic resin sheet, one of said layers having a pair of openings therethrough, one of said openings being adapted for discharging the contents of said container and the other opening being adapted for admitting air into the container, the other layer having an integral elastically deformable valve member elastically engaging said one layer and overlying and closing one of said openings, said valve member being responsive to a difference of pressures acting



on opposite sides thereof to open said one opening when the pressure on one side of said layers is greater than the pressure on the other side thereof, integral deformable means for normally maintaining the other opening closed at least one end thereof and responsive to a difference of pressures acting on opposite sides thereof to deform said integral means and open said other opening when the pressure on the other side of said layers is greater than the pressure on the one side thereof.

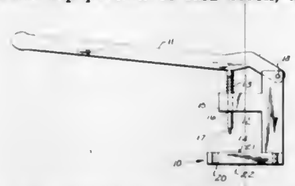
3,360,170
GOLF TEE HOLDER
William R. Scannell, 7901 Kreeger Drive, and Harold A. Gardner, 200 Erie St., both of Hyattsville, Md. 20783
Filed Oct. 16, 1964, Ser. No. 404,327
4 Claims. (Cl. 224—5)



1. A golfing accessory comprising an elongated tubular body member having a hollow central area, said body member being formed of resilient mesh-like material having a plurality of closely spaced resiliently expansible perforations provided therethrough, a golf tee removably mounted in said body member with its pointed end projected through randomly selected ones of said perforations, said perforations being normally smaller than the shank of said golf tee when in unexpanded position for yieldably gripping said golf tee adjacent said pointed end and adjacent said head and means for securing said body to a golf bag whereby a plurality of said golf tees may be inserted at random positions along the periphery and length of said body member without precise alignment, having their heads exposed.

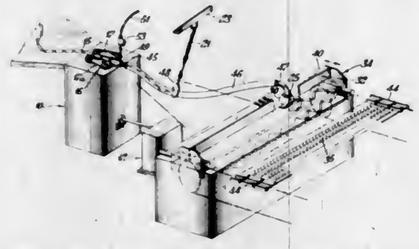
3,360,171
CHAIN BREAKER
James L. Richardson, Perote, Ala. 36061
Filed Mar. 14, 1966, Ser. No. 536,182
5 Claims. (Cl. 225—103)

1. A chain breaker comprising, a base, a block provided with a laterally extending arm, said block being secured to said base, and elongated lever pivotally connected to the top portion of said block, a rod secured to said lever and extending outwardly therefrom, resilient means for actuating said rod and said lever, said arm having a hole therein for admitting said rod, a cutting tool secured to the bottom end of said rod, a pair of alignment pins secured to the top portion of said block, a guide mem-



ber having an elongated slot therein removeably secured on said block through said alignment pins, said elongated slot adapted to admit at least one chain link therein while said lever is in a depressed position thereby causing said cutting tool of said rod to break said chain link.

3,360,172
FRANKFURTER STRAND FEEDER
Paul H. Frey, La Grange, Ill., assignor to Union Carbide Corporation, a corporation of New York
Filed Nov. 26, 1965, Ser. No. 509,858
8 Claims. (Cl. 226—97)

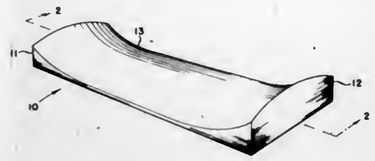


1. In an apparatus consisting essentially of, in combination;
   (a) a conveyor means in which a continuous strand of encased meat emulsion is deposited and carried therein for subsequent processing; and
   (b) a metering means for feeding said continuous strand of encased meat emulsion from a source of supply;
   the improvement comprising, in combination;
   (c) a flexible tubular feed unit of constant length having an inside diameter of a size sufficient to permit a strand of encased meat emulsion to be freely guided and fed therethrough without interference, obstruction and jamming and having an inlet end and an outlet end through which said continuous strand of encased meat emulsion is transported from said metering means to said conveyor means, said inlet end being equipped with means to accept said continuous strand of encased meat emulsion from said metering means and said outlet end being attached to means capable of reciprocating said outlet end relative to successive portions of said conveyor means.

3,360,173
WEB GUIDANCE DEVICE
John W. Miller, Smyrna, Ga., assignor to Lockheed Aircraft Corporation, Burbank, Calif.
Filed Jan. 4, 1965, Ser. No. 422,963
2 Claims. (Cl. 226—196)

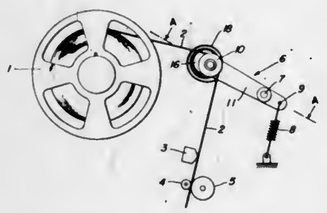
1. A web guidance device comprising: a stationary body member having a contoured surface across which a web to be guided may be drawn; said contoured surface

as seen in a direction of web travel having a central portion providing subjacent support to a web drawn over said contoured surface; said contoured surface further having an end portion disposed on each side of said central portion so that said contoured surface comprises an effectively unitary surface made up of said central portion and both of said end portions, each of said end portions being contoured to displace the web from the nominal plane of travel thereof to enable the application to the displaced portion of the web through the face thereof in contact with said contoured surface of a force tending to laterally displace the web toward said central



portion when the web deviates laterally therefrom; a cross section of said central portion as viewed in a direction of web travel defines a contoured surface line being nearly flat with a relatively small amount of concavity, the degree of concavity gradually increasing as a function of distance from the center of the nominal path of web travel; and a cross section of each of said end portions as viewed in a direction of web travel defines a contoured surface line having a relatively great amount of concavity, the degree of concavity increasing in an approximately exponential manner as a function of distance from the center of the nominal path of web travel.

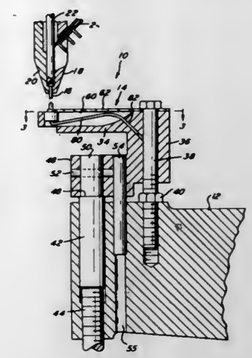
3,360,174
WEB FOLLOWER ARM
Donald A. Evert, Littleton, Colo., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Oct. 11, 1965, Ser. No. 494,674
4 Claims. (Cl. 226—190)



4. A web follower arm comprising an arm means, means for pivoting said arm means, resilient means arranged to resiliently bias said arm means toward said web, second arm means associated with said first arm means, second means for pivoting said second arm means, and second resilient means arranged to resiliently bias said second arm means against said web.

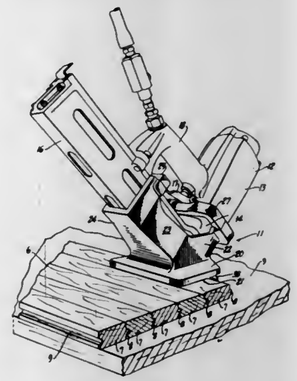
3,360,175
RIVET SETTING FIXTURE
Raphael Stein, 1000 Barbeck Ave., Philadelphia, Pa. 19111
Filed Mar. 23, 1966, Ser. No. 538,174
8 Claims. (Cl. 227—62)

1. A rivet setting fixture comprising a body, said body having a channel means, an anvil and pilot pin supported by said body, said pilot pin being concentrically disposed with respect to the anvil, a leaf spring means in said channel means, said leaf spring means biasing said pilot pin



to a position so that the pilot pin is in an operative disposition wherein it may extend through aligned holes on elements to be riveted.

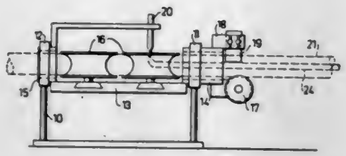
3,360,176
LOCATING AND POSITIONING FIXTURE FOR NAILING MACHINES
Edwin M. Gehl, 3100 W. Sheridan, Milwaukee, Wis. 53209, and Fred B. Adamson, Milwaukee, Wis.; said Adamson assignor to said Gehl
Filed Apr. 7, 1966, Ser. No. 540,913
9 Claims. (Cl. 227—148)



1. A locating fixture to support and properly position a portable power driven, trigger controlled nailing machine having a nozzle from which nails are forcibly projected along a path coinciding with the axis of the nozzle, when the machine is triggered, for blind nailing matched tongue and groove flooring strips to a sub-floor, said fixture comprising:
   A. a base having a bottom surface adapted to rest upon a flooring strip to be nailed in place and having a port through which nails may pass;
   B. structure projecting up from said base and forming a cradle to receive and hold the nailing machine with the axis of its nozzle passing through said port in the base at substantially a 45° angle to the bottom of the base;
   C. means on said structure to detachably secure the nailing machine in the cradle; and

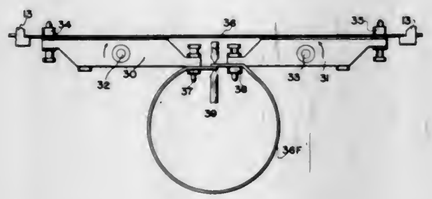
D. shoulder means depending from the underside of the base adjacent to said port to engage the tongued edge of a flooring strip which is to be nailed in place, and by such engagement so locate the fixture that the axis of the nailing machine nozzle passes through the engaged edge of the flooring strip.

3,360,177
TUBE WELDING APPARATUS
Sven Holger Göthe Enkvist, Sandviken, Sweden, assignor to Sandvikens Jernverks Aktiebolag, Sandviken, Sweden, a corporation of Sweden
Filed Apr. 13, 1965, Ser. No. 447,623
Claims priority, application Sweden, Apr. 16, 1964, 4,675/64
6 Claims. (Cl. 228—9)



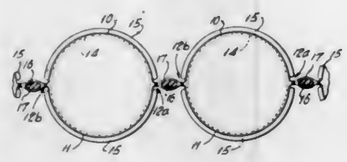
1. In a jointing device for progressively welding the longitudinally extending slit in a tube following formation of the tube from flat strip material to establish a longitudinal seam as the tube moves longitudinally of itself from the tube forming means, the combination comprising pressure rolls and welding means mounted on a frame which in turn is rotatably mounted about the axis of said tube, the torque for rotating said frame being less than that required to rotate the tube, a feeler means located in advance of said frame and which is arranged to follow any lateral deviation of said tube slit as the tube comes from the tube former, and means interconnecting said feeler means and frame to effect a corresponding rotary adjustment of said frame and welding means thereon thereby to maintain said welding means in alignment with the tube slit.

3,360,178
APPARATUS FOR MAKING METAL RINGS
Melvin Max Seeloff, Warren, Ohio, assignor to The Taylor-Winfield Corporation, Warren, Ohio, a corporation of Ohio
Original application July 2, 1962, Ser. No. 206,603, now Patent No. 3,241,347, dated Mar. 22, 1966. Divided and this application Mar. 14, 1966, Ser. No. 534,015
4 Claims. (Cl. 228—15)



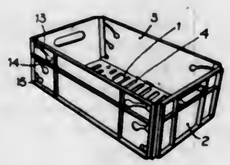
1. Apparatus for making rings from straight lengths of bendable workpieces comprising a pair of arms swingably mounted on a spaced pair of parallel axes in such manner that the arms are spaced but longitudinally aligned with respect to each other and swingable from such aligned positions through 180° whereby said arms are inverted, clamps mounted on the top and bottom surfaces of each of said arms symmetrical about the axis of the arm and diagonally related as the arm is viewed in side elevation, the arrangement being such that when said arms are so aligned they collectively mount a spaced pair of clamps on the outer ends of the arms and an adjacent pair of clamps on the inner ends of said arms, and the arrangement being further such that while a formed ring is held in the adjacent pair of clamps a straight workpiece may be inserted in the spaced pair of clamps.

3,360,179
CELLULAR PACKING FOR BOTTLES AND THE LIKE
Bernt Carstens, Neustadt an der Weinstrasse, Germany, assignor to Sektkellerei Carstens KG., Neustadt an der Weinstrasse, Germany, a German firm
Filed July 13, 1965, Ser. No. 471,694
6 Claims. (Cl. 229—15)



1. In cellular packing for bottles and the like articles comprising in combination:
(1) a pair of webs of flexible material placed face to face,
(2) means fastening said webs together at intervals and along a multiplicity of spaced and parallel pairs of transverse connecting lines,
(3) the spacing distance between the lines of each of said pairs being a submultiple of the spacing distance between adjacent pairs, to provide packing cells alternating with relatively smaller auxiliary cells enclosed by said webs, said packing cells adapted to receive the bottles or the like articles to be packed, and
(4) flexible cushioning means disposed within said auxiliary cells.

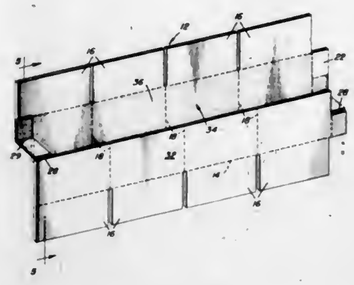
3,360,180
COLLAPSIBLE PLASTIC CONTAINER
Emilio Venturi, Via Roma, Concesio, Brescia, Italy
Filed Aug. 13, 1965, Ser. No. 479,703
Claims priority, application Italy, Dec. 23, 1964, 744,482
3 Claims. (Cl. 229—30)



1. A collapsible container of synthetic palstic material comprising four vertical walls connected to a bottom floor and hingeably foldable along the edges connecting them to said bottom floor, characterized in that two opposite walls of said container have a plurality of concentric, arcuated apertures therein and two other

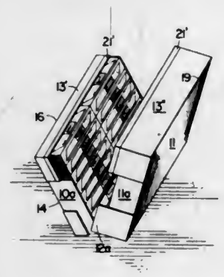
opposite walls have an equal plurality of headed rimers protruding therefrom for insertion into said arcuated apertures; said apertures having a common center of curvature, a first larger and circular terminal, a second narrower and circular terminal, and a restricted section intermediate said terminals in the arcuated portion of said aperture.

3,360,181
REINFORCED CARTON
Thomas M. Wilson III, Western Run Road, Cockeysville, Md. 21030
Filed June 17, 1966, Ser. No. 558,415
5 Claims. (Cl. 229—37)



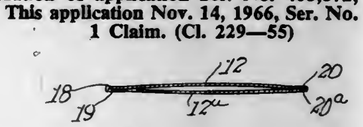
1. In a carton comprising panels, one of said panels having a side flap overlapping another of said panels for securement thereto to form said panels into the sides of said carton, and top flaps and bottom flaps extending from said panels for forming the top and bottom closures, respectively, of said carton, the improvement comprising said panels being of two-ply material and said top and bottom flaps being of single-ply material, with said side flap having a single-ply portion and a multi-ply portion to form a first key step and with said another of said panels having a single-ply portion and a multi-ply portion to form a second key step which is complementary to said first key step.

3,360,182
EASY OPENING CONTAINER
Charles L. Gunn, Cincinnati, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
Filed Aug. 30, 1966, Ser. No. 576,154
6 Claims. (Cl. 229—51)



1. An easy opening tray-forming container having in combination:
(A) two pairs of marginally connected and alternating end walls and side walls, and bottom and top closures, said side walls having a width which substantially exceeds the width of said end walls, the widths of said side walls being substantially identical and the widths of said end walls being identical whereby said container is rectangular in cross section;
(B) the ends of the blank forming said container lying within the confines of one of said end walls and thereby dividing said one end wall into two portions, each of which has a pair of oppositely disposed end flaps connected therewith, the end flaps extending from the other said end wall being slotted in the central portion thereof;
(C) means securing the two end wall portions in juxtaposed position with the distal ends thereof adjacent one another to thereby form said one end wall;
(D) a plurality of layers of packages in said container, said layers being substantially parallel to the planes of said side walls, an interface of adjacent layers of packages occurring along a plane substantially centered between said side walls; and
(E) each of said closures comprising substantially rectangular and full width side flaps hinged to and extending from the said side walls, respectively, said side flaps having a dimension from hinge line to free edge which is equal to about one-half the width of an end wall and being inwardly folded toward one another so that the free edges thereof come into substantially abutting relationship in the same plane, and similarly dimensioned rectangular end flaps hinged to and extending from the end walls, respectively, inwardly folded and secured in overlapping relationship with said side flaps.

3,360,183
PACKAGE CONSTRUCTION
Robert L. Stahl, Wilmette, Ill., assignor to Plastic Packaging Company, Wheeling, Ill., a corporation of Illinois
Continuation of application Ser. No. 403,872, Oct. 14, 1964. This application Nov. 14, 1966, Ser. No. 594,271
1 Claim. (Cl. 229—55)

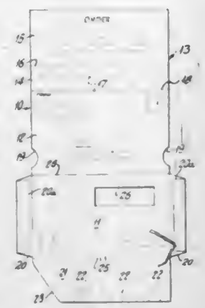


A bag construction comprising an open-ended envelope constructed of flexible plastic material, said envelope including a pair of substantially coextensive opposed panels having aligned edges defining said open end, a strip member composed of substantially stiffer material than said envelope secured on one side thereof to the outer surface of one of said panels adjacent said open end and thereby extending in overlapping relation with said one panel, said strip member being generally rectangular and having a substantial dimension transverse to said envelope open and in relation to the length of said aligned edges, the overlap of said strip member relative to said one panel constituting (a minor portion) of said dimension whereby said strip member is adapted to be flexed parallel to said dimension to arcuately deform the same and develop a mouth between said aligned edges without applying excessive stress to the area of securement of said envelope to said stiffener member.

3,360,184
ENVELOPE
Craig P. Greason, Berry Hill Road, Syosset, N.Y. 11791
Filed Dec. 13, 1966, Ser. No. 601,465
9 Claims. (Cl. 229—73)

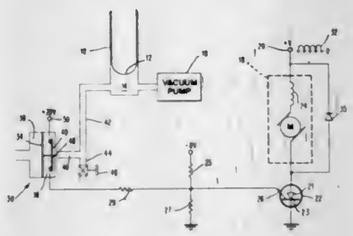
1. A two-way envelope comprising a first sealing flap, a first pocket portion integral with said first sealing flap along a first fold line and adapted to carry the first mailing address, a second pocket portion integral with said first pocket portion along a second fold line and adapted

to carry the return mailing address, sealing ears laterally integral with said first pocket portion along lateral fold lines and carrying gummed areas on the outer surface to seal from the inside said first and second portion into an envelope pocket, a third portion integral with said second



pocket portion along a third fold line and adapted to cover said return address during first mailing, said second pocket portion having lateral cut-off portions to expose gummed areas of said lateral sealing ears in engagement with said third portion.

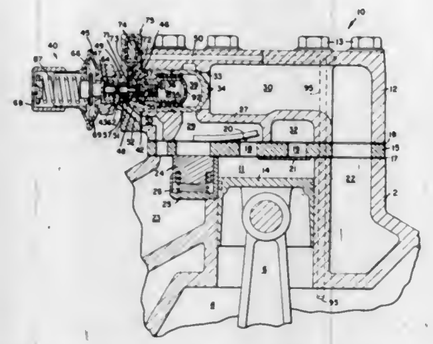
3,360,185
VACUUM PUMP CONTROL
Robert S. Wooldridge, Norristown, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Apr. 23, 1965, Ser. No. 450,434
5 Claims. (Cl. 230—12)



1. In combination, a tape loop control box, a tape loop formed in said control box so that one surface of said tape loop is exposed to the atmosphere and the other surface thereof forms a vacuum chamber with said control box, means for regulating the vacuum in the vacuum chamber of said box comprising vacuum producing means for producing vacuum in said box, control means for controlling the operation of said vacuum producing means to control the amount of vacuum in said box, and switching means responsive to the vacuum in said box to actuate said control means, means communicating with both the switching means and the control box for adjusting the vacuum applied to said switching means to maintain a desired vacuum in said loop box.

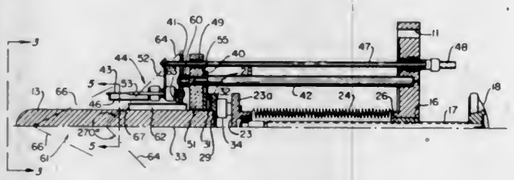
3,360,186
COMPRESSOR CAPACITY CONTROL
David N. Shaw, Liverpool, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed Sept. 27, 1965, Ser. No. 490,612
6 Claims. (Cl. 230—24)

1. In a multi-cylinder compressor including a cylinder head having an unloading port between suction and discharge sides of at least one cylinder, the combination of a hollow piston-like valve having a head portion and a depending skirt portion, said valve being movably supported by said cylinder head for relative movement to open or close said port, the interior of said valve including said depending skirt portion cooperating with said cylinder head to form a first chamber, the dimension of said first chamber varying in accordance with movement of said piston-like valve; passage means communicating said first chamber with relatively high pressure gas discharged from said compressor to move said valve to close said port and load said cylinder; bias means



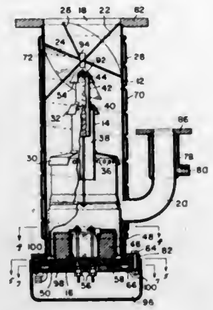
urging said valve in a port opening direction; bleed means for reducing gas pressure in said passage means to reduce pressure in said first chamber and permit said bias means to move said valve to open said port and unload said cylinder; means forming a second closed chamber of fixed dimension within said first chamber; and an orifice communicating said first chamber with said second chamber to permit flow of pressure gas between said first and second chambers to dampen chatter inducing pressure pulsations on said piston-like valve.

3,360,187
HIGH VACUUM PUMP APPARATUS
Jack H. Burthe, Mountain View, Calif., assignor, by mesne assignments, to The Perkin-Elmer Corporation, Norwalk, Conn., a corporation of New York
Filed June 4, 1965, Ser. No. 461,427
7 Claims. (Cl. 230—69)



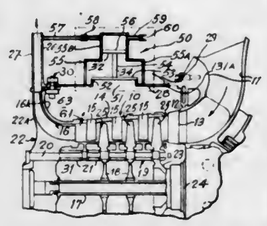
1. In a high vacuum system, pump apparatus for sublimating an elongated rigid charge of getter material, said apparatus comprising means for supporting an elongated rigid charge of getter material on a predetermined axis within the vacuum system, means forming an electron source disposed laterally of and around the axis of the charge and adapted to bombard an end portion of the charge with a diffused application of electrons, means operatively coupled to move the first named means to dispose the inner end of said charge variously within the shower of into and out of range of the bombarding electrons to sublimate the material of the charge, and means adapted to apply a sufficiently high positive potential to the charge with respect to said source to cause electrons from the source to sublimate the charge material into the vacuum system to trap gas.

3,360,188
OIL DIFFUSION PUMP WITH COOLED BAFFLE
Rowen Stuffer, 20 Glenview Lane, Willingboro, N.J. 08046
Filed Feb. 2, 1966, Ser. No. 524,513
10 Claims. (Cl. 230—101)



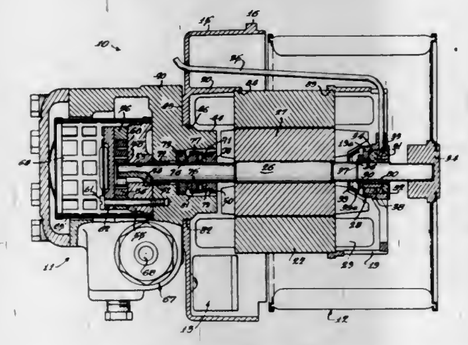
1. In an oil diffusion pump utilizing oil and including a pump body having a vacuum inlet and a discharge foreline comprised of a wall of a material of good thermal conductivity, said pump body housing a boiler and a vapor jet assembly to convert said oil to oil vapor, said boiler vaporizing oil through said vapor jet assembly and toward said pump body, the improvement comprising providing cooling means in gool thermal communication with said wall and positive overlapping condensing means in said pump body extending above said vapor jet assembly to prevent oil backstreaming, said condensing means including at least three inclined planar overlapping heat conductive baffles each having edges in actual good thermal contact with said wall and said cooling means in order to convey the effect of said cooling means through said baffles, said overlapping baffles intersecting at the center of said pump body and extending across said upper inlet to collectively close off substantially said entire upper inlet to prevent direct upward escape of said oil vapor and also to exert a condensing action across said upper inlet, but said baffles being at least in part spaced from one another to permit without substantial hindrance the flow of gases through said upper inlet and downwardly through said pump body while blocking upward backstreaming of said oil vapor and exerting the condensing action on said oil vapor across substantially said entire upper inlet.

3,360,189
BLEED ARRANGEMENT FOR GAS TURBINE ENGINES
David L. Cook, St. Lambert, Quebec, Canada, assignor to United Aircraft of Canada Limited, Longueuil, Quebec, Canada
Filed Oct. 11, 1965, Ser. No. 494,816
12 Claims. (Cl. 230—115)



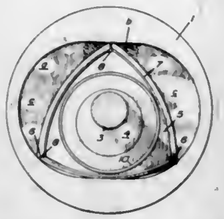
1. An air bleed arrangement for an intermediate pressure stage of the compressor of a gas turbine engine, the arrangement including piston means having first and second faces, the piston being disposed in a cylinder, discharge port means for permitting bleed of air from said intermediate stage, the effective area of the discharge port means through which bleed occurs being dependent on the position of said piston means and being progressively increased from zero to maximum and vice-versa by forward and return motions respectively of said piston means, conduit means defining a first flow path for conveying air at high pressure from said compressor to an inlet in said cylinder in communication with the first face, a flow restricting orifice in said conduit, means defining a second flow path for conveying air at a lower pressure than said high pressure from the compressor to said second face of the piston whereby forces derived from the pressures of said high pressure and lower pressure air are opposed and utilized to determine the position of said piston means and hence the effective area of said port means, a further conduit, an outlet from said cylinder leading to said further conduit and through which the high pressure air is discharged from the cylinder, and a convergent-divergent nozzle in said conduit.

3,360,190
FUEL PUMP ASSEMBLY
Robert W. Erikson and Nils E. Swedberg, Rockford, Ill., assignors to Sundstrand Corporation, a corporation of Illinois
Filed Aug. 9, 1965, Ser. No. 478,248
6 Claims. (Cl. 230—139)



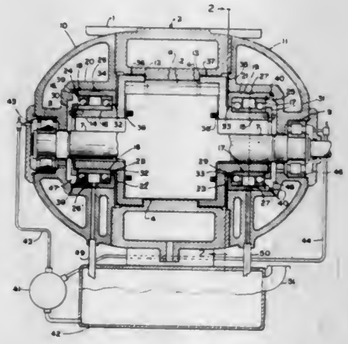
1. An oil burner pump and motor assembly, comprising: a mounting flange adapted to be connected to an air duct, a motor housing connected to said mounting flange and extending on the side thereof adapted to be inserted into the air duct, a motor in said housing including a stator and a rotor, a separate pump housing mounted outside of the motor housing on one end thereof and extending on the other side of the mounting flange, relatively rotatable pumping elements in said pump housing, a unitary drive shaft extending centrally through said rotor and connected to be driven thereby, said drive shaft extending from both ends of said motor housing, bearing means in the other end of said motor housing for supporting one end of said shaft, said shaft having a portion extending outwardly beyond said bearing means, a blower fan connected to said outwardly extending portion and surrounding said motor stator and rotor to provide a compact assembly, single bearing means in said pump housing for receiving and supporting the other end of said shaft, both of said bearing means providing the sole support for said shaft, said other end of the shaft being directly connected to drive one of the relatively rotatable pumping elements, and means for accurately locating the pump housing with respect to the motor housing to thereby align each of said bearing means with respect to the other.

3,360,191
ROTARY PISTON AND HOUSING THEREOF
Kenichi Yamamoto, Hiroshima-shi, Japan, assignor to Toyo Kagyo Company Limited, Hiroshima-ken, Japan
Filed Oct. 4, 1965, Ser. No. 492,614
Claims priority, application Japan, Oct. 22, 1964, 39/82,924
4 Claims. (Cl. 230—145)



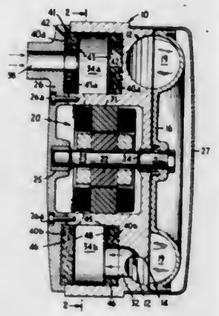
1. In a rotary piston internal combustion engine, the combination comprising an annular center casing having an elliptically and trochoidally shaped internal peripheral wall defining the periphery of an elliptically shaped working chamber, side walls closing the opposite ends of said annular casing, each of said side walls having a main bearing bore opening through the center thereof, a crankshaft rotatably mounted in said main bearing bores, a triangular rotary piston having flat end faces at the opposite ends thereof and eccentrically, rotatably mounted on said crankshaft within said working chamber, sealing members fixed on the opposite flat end faces of the piston and at the apexes thereof for sealingly engaging said internal peripheral wall and said side walls and defining working chambers between the piston and the casing and side walls during the rotation of the piston, and said side walls each having the entire area thereof having at least the surface of reinforcing material, and further having portions thereof coated with additional reinforcing material in the regions where the paths of said sealing members come into close proximity with each other, so that said sealing member can trace said close paths on said side walls, during the rotation of the piston, without uneven wear thereon.

3,360,192
DRY COMPRESSOR
Adrian Van Hees, Harksheide, Holsatia, Germany, assignor to Claudius Peters, AG., Hamburg, Germany
Filed Aug. 24, 1965, Ser. No. 482,108
5 Claims. (Cl. 230—152)



1. A compressor having a casing, fluid inlet and discharge means for the casing, a rotating member, bearing means, lubricating means for the bearing means, a source supplying a lubricant to the bearing means, a shroud positioned between the rotating member and the bearing means, said shroud being mounted for engagement with and rotating with the rotating member, a stationary member surrounding a portion of said shroud and closely spaced therewith to form a passageway therebetween from the rotating member to the bearing means, the remainder of said shroud being sized to provide a running clearance with adjacent stationary members, a lubricant drain for the bearing means, said lubricant drain communicating with a zone of a pressure lower than the pressure about the shroud and means for directing gas escaping said rotating member adjacent said shroud to pass through said passageway in a direction away from the rotating member and shroud.

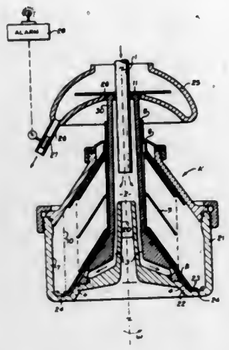
3,360,193
REGENERATIVE COMPRESSORS WITH INTEGRAL MUFFLERS
Dwight E. Harris, Woodstock, and Gunther Zoehfeld, West Hurley, N.Y., assignors to Rotron Manufacturing Company, Inc., Woodstock, N.Y., a corporation of New York
Filed Dec. 29, 1965, Ser. No. 517,412
7 Claims. (Cl. 230—232)



1. In a regenerative fluid compressor of the type having a rotary impeller and an integral motor coaxial with the impeller, the combination of a housing member having a compressor chamber and a second chamber surrounding the motor, the housing providing inlet and outlet ports between the compressor and second chambers, and sound absorbent means in said second chamber to attenuate sound generated by variations in the pressure of the fluid passing therethrough.

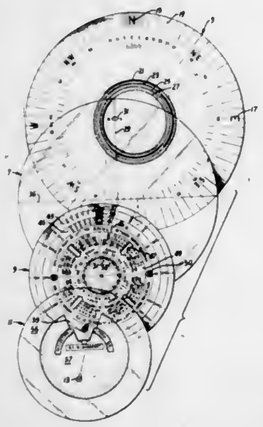
3,360,194
APPARATUS AND METHOD FOR AUTOMATIC OVERLOAD PROTECTION IN CENTRIFUGE EQUIPMENT
Wilhelm Wilsmann, Oelde, Westphalia, Germany, assignor to Westfalia Separator A.G., Oelde, Westphalia, Germany, a corporation of Germany
Filed Jan. 25, 1965, Ser. No. 427,805
2 Claims. (Cl. 233—19)

1. A method of resolving a liquid mixture into individual components thereof by means of centrifugation in a centrifuge comprising a rotatable drum, an axially disposed inlet chamber, a plate stack having means to permit removal of the lightest component of said liquid therethrough, inlet conduit means from said inlet chamber into said drum having an exit aperture communicating with said drum interior proximate the drum interior bottom surface and radially disposed a greater distance from the axis of said centrifuge than the outer periphery of said plate stack, and an overflow collector to receive the discharge from said inlet chamber when said aperture is obstructed; which process comprises feeding said liquid to said centrifuge, rotating said centrifuge during said feeding, resolving said liquid into its components on a specific



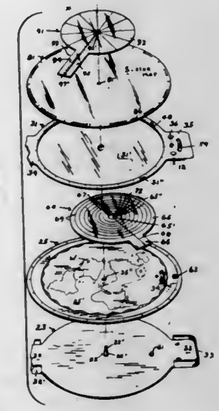
gravity basis within the said drum of sad centrfuge, increasing the thickness of the layer of the heaviest component of said liquid from the periphery of said drum inwardly until the inside diameter of said heaviest liquid reaches said orifice, and thereupon causing said input liquid to flow into said overflow collector.

3,360,195
BEARING-ANGLE DEVICE
William J. Fisher, 745 Martin St., Monterey, Calif. 93940
Filed Aug. 19, 1966, Ser. No. 573,606
1 Claim. (Cl. 235—78)



A bearing angle calculating device comprising in combination a series of four concentric dials of decreasing size pivoted together at the centers thereof whereby the dials can rotate relative to each other, said dials comprising from the bottom dial up: a quadrant dial, a backsight dial, a deflection dial, and an indicator dial, said quadrant dial having outer and inner sets of indicia, said outer set consisting of compass points adjacent the periphery and degree markings therebetween, said inner indicia comprising four concentric rows of four sets of indicia, each of which extend for 90 degrees and each of which are staggered with respect to the indicia on the adjacent 90 degrees sectors; said backsight dial being transparent and having a line completely across the face thereof and passing through the center, one end of said line having an arrow to indicate a backsight; said deflection dial having an indicating arrow indicating a foresight; and which is adapted to line up with the outer indicia on said quadrant dial, said arrow having a right indicator and a left indicator and two rows of angle markings namely, a counterclockwise row opposite the right indicator and a clockwise marking opposite the left indicator, said deflection dial further including four apertures which are spaced 90 degrees, said apertures being positioned over and revealing the four rows of indicia on said quadrant dial, said deflection dial also carrying formulas adjacent the apertures and in line with the four rows of indicators and eight pairs of concentrically arranged markers to indicate which of the formulas to use depending on which indicia shows up through the aperture, and said indicator dial being opaque with the exception of a sector of about 45 degrees, and revealing therethrough, in one position, only one of said pairs of markers along with only one of said apertures which in turn reveal the indicia on said quadrant applicable thereto.

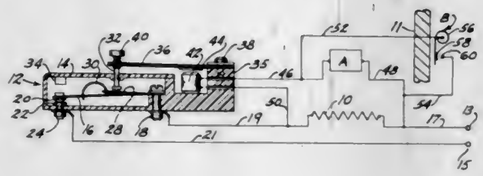
3,360,196
TIME AND SPACE CHART
Mike Grega, 3243 Fairview, Alameda, Calif. 94501
Filed July 8, 1965, Ser. No. 470,534
5 Claims. (Cl. 235—88)



1. In a navigation chart, a unitary base structure comprising a planar outer annular opaque portion providing the delineation at its outer face of a siderial twenty-four hour circle bounding a full circular axial viewing zone through the hour circle of the outer base portion, an inner base portion opposite said outer base portion in fixed opposed spaced relation thereto, an element-positioning spindle member extending rigidly from said inner base portion and directed axially through and beyond said hour circle, an Earth disc element providing for reference at its outer face a polar asimuthal map projection of the Earth including means indicating the Earth hour time zones, means supportedly and rotatively mounting the Earth disc on the spindle between the said base portions for its rotative adjustment for a selective referencing to said hour circle of points in the different Earth map time zones for ascertaining the clock time in a referenced time zone of the Earth disc with respect to a referencing Earth time of the hour circle, the international date line of the Earth disc is arranged for its registration with the intermediate

midnight hour of the hour circle, separate indicator discs are respectively carried on said Earth disc and the upper base portion for changeably and simultaneously displaying the same two successive days of the week with reference to the international date line at overlying sight openings provided in the respective base and disc portions, and means are provided whereby simultaneous rotative adjustments of said indicator discs in either possible direction of movement of said international date line meridian to opposite sides of said midnight point of the hour circle is operative to correspondingly change the displayed pair of indications of both indicator discs.

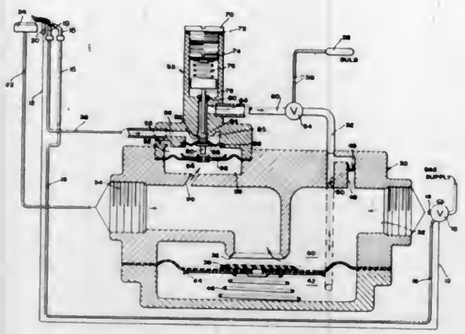
3,360,197
THERMOSTATIC CONTROL DEVICE
Leonidas K. Stringham, Clayton, Mo., assignor to Emerson Electric Co., St. Louis, Mo., a corporation of Missouri
Filed Nov. 23, 1964, Ser. No. 413,161
7 Claims. (Cl. 236—68)



1. In a thermostatic control device for controlling the temperature of a space being heated, a normally closed snap-acting switch, a thermostatic element operative to actuate said switch to an open position in response to an increase in the temperature of the space being heated, an electromagnet having a winding and which when energized applies a force acting to move said switch toward its open position and said electromagnet winding being operative when energized to slightly heat said thermostatic element, an energizing circuit for said electromagnet including said snap-acting switch, a time switch in said circuit operative when said snap-acting switch is closed to alternately complete and break said energizing circuit at a predetermined frequency and for predetermined periods, circuit connections forming a shunt across said time switch, and a temperature responsive switch in said shunt responsive to the temperature ambient to the space being heated and operative to complete said shunt when the ambient temperature is above a predetermined point and to break said shunt when the ambient temperature falls below said predetermined point, whereby said electromagnet is operated constantly during the time said snap-acting switch is closed and the ambient temperature is relatively high and is operated intermittently when the ambient temperature is relatively low.

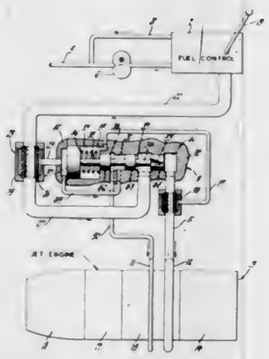
3,360,198
PRESSURE REGULATOR FOR DIAPHRAGM GAS VALVES
Jay R. Katchka, Long Beach, Calif., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware
Filed May 27, 1966, Ser. No. 553,558
10 Claims. (Cl. 236—80)

1. In a control system for supplying a fuel flow to burner apparatus, the combination comprising
a casing having inlet and outlet means for passing fuel flow therethrough,
pressure operated diaphragm valve means operatively disposed between said inlet and said outlet means in said casing to control the fuel flow,
bleed line means for effecting operation of said diaphragm valve means,
control means movably disposed in said bleed line means for controlling a bleed flow therethrough,



pressure regulator means in said bleed line means for varying the bleed flow therethrough, and
means acting on said pressure regulator means and buffing its operation to eliminate surging of said diaphragm valve means.

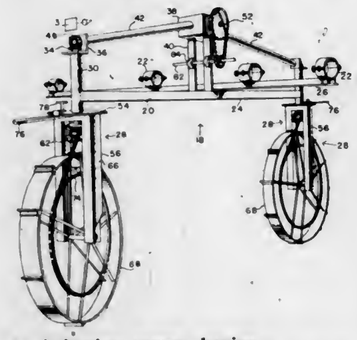
3,360,199
FUEL NOZZLE FUEL PROPORTIONING SYSTEM UTILIZING A FUEL PRESSURE RESPONSIVE VALVE
Cecil H. Sharpe, Brownsburg, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed May 4, 1965, Ser. No. 453,059
2 Claims. (Cl. 239—66)



1. A fuel system including means for supplying fuel under pressure at a variably controlled flow rate, a primary fuel outlet for connection to fuel nozzle means adapted to handle relatively small fuel flows, and a secondary fuel outlet for connection to fuel nozzle means adapted to handle relatively large fuel flows,
characterized by means for distributing fuel between the outlets comprising, in combination,
an inlet conduit connected to the supplying means,
a pressure responsive motor being energized by fuel pressure in the inlet conduit against a counteracting fuel pressure in said secondary outlet,
a primary fuel valve operated by the motor so as to move progressively to a closed position as pressure in the inlet conduit increases progressively above a predetermined value,
a primary fuel conduit supplied from the inlet conduit through the primary fuel valve and connected to the primary outlet,
a secondary fuel valve operated by the motor so as to open progressively from a closed position as pressure in the inlet conduit increases progressively above a predetermined value lower than the first-mentioned value,
and a secondary fuel conduit supplied from the inlet conduit through the secondary fuel valve and connected to the secondary fuel outlet.

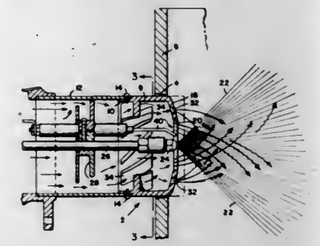
2. A fuel system including means for supplying fuel under pressure at a variably controlled flow rate, a primary fuel outlet for connection to fuel nozzle means adapted to handle relatively small fuel flows, and a secondary fuel outlet for connection to fuel nozzle means adapted to handle relatively large fuel flows,
characterized by means for distributing fuel between the outlets comprising, in combination,
an inlet conduit connected to the supplying means,
a branch conduit,
a filter washed by flow through the inlet conduit connected to supply filtered fuel from the inlet conduit to the primary outlet through the branch conduit,
a pressure responsive motor energized from the branch conduit,
a primary fuel valve operated by the motor so as to move progressively to a closed position as pressure in the branch conduit increases progressively above a predetermined value,
a primary fuel conduit supplied from the branch conduit through the primary fuel valve and connected to the primary outlet,
a secondary fuel valve operated by the motor so as to open progressively from a closed position as pressure in the branch conduit increases progressively above a predetermined value lower than the first-mentioned value,
and a secondary fuel conduit supplied from the inlet conduit downstream from the filter with an unfiltered washing flow of fuel through the secondary fuel valve and connected to the secondary fuel outlet.

3,360,200
IRRIGATION APPARATUS HAVING DIRIGIBLE WHEELS
Rufus J. Purtell, Brownfield, Tex., assignor to The J. B. Knight Co., Inc., Brownfield, Tex., a corporation of Texas
Filed Oct. 4, 1965, Ser. No. 492,608
4 Claims. (Cl. 239—213)



4. In an irrigation system having
(a) a pipe adapted to carry sprinklers thereon,
(b) means connected to the pipe for supplying water under pressure to the pipe,
(c) a plurality of vehicles movingly supporting the pipe,
(d) a line shaft rotatably connected to the pipe extending along the pipe,
(e) power means on one of the vehicles for rotating the line shaft,
(f) each vehicle having a frame,
(g) clamp means on the frame for clamping the pipe to the frame, and
(h) bearing on the frame through which the line shaft is journalled;
the invention comprising in combination with the above:
(j) at least two brackets on the frame journalled for rotation about a vertical axis,
(k) a ground engaging wheel journalled to each bracket about a horizontal axis,
(m) two frame shafts extending from the center of the frame to the brackets,
(n) right angle gear means on the center of the frame for rotating the frame shafts responsive to rotation of the line shaft, and
(o) means on each bracket for rotating said wheel responsive to rotation of said frame shaft regardless of the rotational position of said bracket on said frame.

3,360,201
OIL BURNER COMBUSTION HEAD
William W. Popyk, Allentown, Pa., assignor to General Machine Company, Inc., Emmaus, Pa., a corporation of Pennsylvania
Filed Oct. 13, 1965, Ser. No. 495,633
4 Claims. (Cl. 239—400)



1. A combustion head for use in an oil burner utilizing secondary aeration which is introduced externally of the burner and comprising:
a substantially cylindrical wall having one end thereof adapted to be connected to a burner blast tube, an end wall contiguous with the other end of the cylindrical wall, said end wall having a relatively large central opening coaxial with the cylindrical wall through which a substantially conical spray of fuel-primary air is delivered to a combustion zone and having a plurality of substantially smaller openings circularly disposed between said central opening and the cylindrical wall with the axis of each opening being directed towards the axis of the central opening and making an acute angle therewith for the introduction of secondary air external of the oil burner.

3,360,202
UNIFORM THIN FLUID SHEET TYPE SPRAY DEVICE
Harold L. Taylor, Hammond, Ind., and John M. Marshall, South Holland, Ill., assignors to Inland Steel Company, Chicago, Ill., a corporation of Delaware
Filed Sept. 2, 1965, Ser. No. 484,616
4 Claims. (Cl. 239—455)

1. A fluid spray device for discharging a uniform thin sheet of fluid comprising:
an elongated box-like structure having end closures and two pairs of longitudinally extending, oppositely

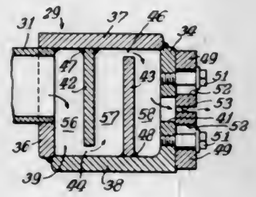
spaced, parallel walls defining an enclosure with a rectangular transverse cross-section,

a plurality of fixed internal baffles rigidly mounted within said enclosure and comprising elongated rectangular plate portions extending the full length of said enclosure between said end closures, each of said plate portions having an elongated, straight, uninterrupted, free edge,

said plate portions being disposed in parallel transversely spaced relation with respect to each other and with respect to and between the walls of one of said pairs of walls,

the interior of said enclosure being substantially free of fluid flow obstructions except for said baffles, whereby said plate portions divide the interior of said enclosure into a plurality of elongated parallel chambers extending uninterruptedly between said end closures,

the free edge of one of said plate portions being spaced uniformly from one of the walls of the other of



said pairs of walls, and the free edge of an adjacent plate portion being spaced uniformly from the opposite wall of said other pair of walls, thereby defining restricted fluid passages interconnecting the chambers at opposite sides of the respective plate portions, said fluid passages extending uninterruptedly between said end closures and being arranged alternately adjacent the oppositely spaced walls of said other pair of walls,

fluid inlet means in one of the walls of said one pair of walls, and

means defining an elongated, narrow, substantially rectangular discharge orifice at the opposite wall of said one pair of walls, said orifice extending uninterruptedly along substantially the entire length of said enclosure,

whereby fluid introduced at said inlet means flows in a tortuous path through said chambers and through the interconnecting fluid passages and is discharged from said orifice as a uniform thin fluid sheet.

3,360,203
PREREACTED RAW MATERIALS TECHNIQUE FOR ATTAINING HIGH QUALITY CERAMICS
Edward J. Smoke, Metuchen, N.J., and Nicholas H. Snyder, deceased, late of Trenton, N.J., by Wilma E. Snyder, administratrix, Trenton, N.J., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed June 28, 1965, Ser. No. 467,791
4 Claims. (Cl. 241—15)

1. The method of preparing high quality alumina ceramic compositions, comprising the steps of

dry mixing an alumina composition;

wet mixing the composition with a solution of a water retaining agent;

extruding the composition hydraulically to form rods;

drying the rods;

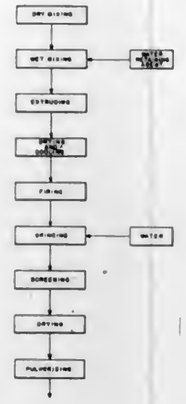
breaking the rods into short lengths;

firing the broken rods;

cooling the rods to room temperature;

grinding the rods with water to form a slurry;

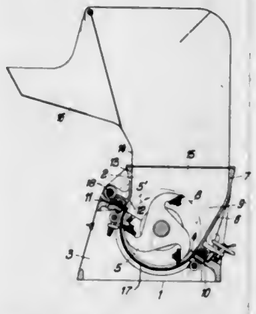
screening the slurry;



drying the slurry; and

pulverizing the resulting mixture to form the alumina body composition.

3,360,204
ROTARY CUTTER FOR BULK MATERIALS
Herbert Alfred Merges, 1 Werkstr., 6451 Wolfgang, Germany, Hans Georg Krestin, 3 Feldstrasse, Osthelm, Germany, and Karl Hofmann, 59 Gartenstr., 6369 Heldenbergen, Germany
Filed Oct. 13, 1964, Ser. No. 403,595
Claims priority, application Germany, Oct. 17, 1963, C 31,172
3 Claims. (Cl. 241—73)

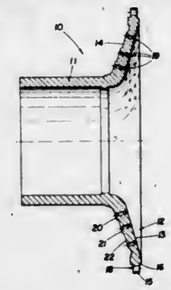


1. In a cutting mill, the combination of a housing consisting of complemental upper and lower housing members separably connected together along a plane of abutment, the upper housing member defining a downwardly directed channel therein and having respective pairs of opposite spaced walls in an upper portion and in a lower portion of said channel, said pairs of walls being angularly offset relative to each other and the spacing of said walls in the upper channel portion being greater than in the lower channel portion, a rotary cutter journalled in said housing for rotation in a predetermined direction about a horizontal axis lying substantially in said plane of abutment of said housing members with at least one diametric half of the cutter disposed in said channel of the upper housing member, said walls in the lower channel portion being disposed at opposite sides of the cutter axis perpendicularly to said plane of abutment and being spaced apart by a distance at least as great as the effective

diameter of said cutter, the entire diametric half of the cutter in said channel of the upper housing member being exposed to access by material to be cut inserted in the channel, and a stationary cutting element mounted on one of said walls of the lower channel portion for cutting cooperation with said rotary cutter, said one wall and said rotary cutter defining a cutting space tapering in said direction of rotation from said upper channel portion toward said stationary cutting element.

3. The mill as defined in claim 1 together with a second stationary cutting element mounted on the other wall of the lower channel portion for cutting cooperation with said rotary cutter, said first mentioned and second mentioned stationary cutting elements being substantially coplanar with said plane of abutment to which said walls of the lower channel portion are perpendicular as aforesaid, said walls of the upper channel portion each defining with said plane of abutment an angle of approximately thirty-five to forty degrees, and screening means extending between said stationary cutting elements around the lower diametric half of said rotary cutter.

3,360,205
ROTARY MILL HEAD
Thomas E. Harris, Valois, Jacques Cartier, Quebec, Canada, assignor to Dominion Engineering Works, Limited, Lachine, Quebec, Canada, a corporation of Canada
Filed Feb. 16, 1966, Ser. No. 527,671
2 Claims. (Cl. 241—182)



1. A mill head for use with a cylindrical mill shell as part of a grinding mill, comprising; a casting having a substantially conical portion with generally radially outwardly convergent inner and outer surfaces defining a variable thickness casting, a plurality of apertures, arranged on substantially concentric pitch circles, extending through the head from said inner to said outer surface substantially normal to said inner surface to receive lining attachment bolt means, and annular portions of said outer surface adjacent said pitch circles having a radial width in excess of the diameter of said apertures extending substantially parallel with corresponding annular zones of said inner surface adjacent said apertures to provide plane surfaces surrounding said apertures extending normal to the axis of said apertures whereby said apertures may be satisfactorily drilled without preliminary spot facing, and said bolt means may be seated thereagainst.

3,360,206
ROCK CRUSHER
Karl Fritz Eilers, Rte. 2, Box 63, Hayden Lake, Idaho 83835
Filed Aug. 9, 1965, Ser. No. 478,052
6 Claims. (Cl. 241—265)

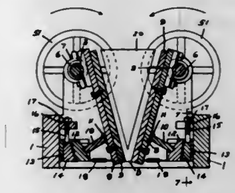
1. A crusher comprising:

a frame;

a pair of crushing jaws mounted thereon and converging downwardly to form a restricted bottom outlet;

means to cause relative movement of the jaws toward and away from each other to crush large pieces of material therebetween to a size that can pass through said outlet;

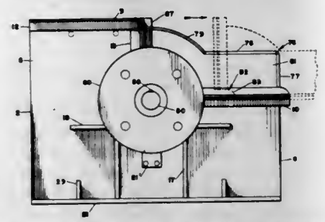
cheek plates interposed between said jaws at the ends thereof;



each cheek plate being supported on the frame independently of the jaws whereby relative movement between a jaw face and cheek plate edge can take place;

said cheek plates having edges between the jaws and normally spaced from the jaws an amount less than the distance across the outlet.

3,360,207
HAMMERMILLS
Harry J. Shelton, Jr., 2915 N. Market St., Ladue, Mo. 64758
Filed Apr. 21, 1965, Ser. No. 449,828
19 Claims. (Cl. 241—285)

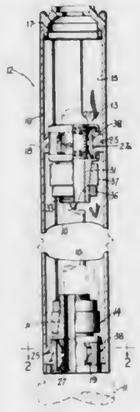


14. A hammermill comprising a housing having a pair of side walls and a pair of end walls, said side walls having upper margins which partially define an upwardly presented opening, rails secured to said side walls, said rails having vertical flanges which project upwardly beyond said upper margins where said side rails are provided with outwardly projecting horizontal flanges, a rotor carried by said housing and being partially exposed through said opening, said housing being provided with an inlet disposed in upwardly spaced relation to said rotor, a top section provided with side walls which are co-planar to said housing side walls, said top section side walls having lower margins, and outwardly projecting flanges secured to said top section side walls in upwardly spaced parallel relation to said lower margins, said top section side walls being adapted to fit slidably between said vertical flanges of said rails, said top section outwardly projecting flanges being adapted to rest slidably on said housing outwardly projecting flanges, whereby to support the weight of said top section and to permit it to slide from a closed position to an open position, said top section when in the closed position being in closure-forming relation to said opening, over and around said exposed portions of said rotor.

3,360,208
APPARATUS FOR WINDING TEXTILE THREADS
Juan L. Winkler, Dufourstrasse 51, Zurich, Switzerland
Filed July 26, 1965, Ser. No. 474,603
11 Claims. (Cl. 242—46.5)

1. A thread winding apparatus including a spindle having couplings mounted thereon for centering and driving

a hollow bobbin having a cylindrical inner surface, wherein at least one of said couplings comprises a cylindrical body having an axial bore receiving the spindle and a plurality of radial recesses opening outwardly to the outer pheriphery of said body and being coextensive with said body in the direction of the axis of said body at least at radially outer portions of said recesses, each of said recesses being elongated in the direction of said axis and having opposite side walls and an inner end wall substantially parallel to said axis, movable clutch elements contained by and projecting radially from said recesses to engage and effect rotation of said bobbin, said clutch elements being substantially coextensive in axial length with

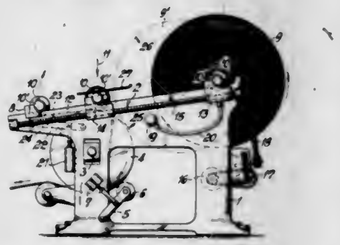


said outer portions of the recesses, said recesses containing spring means respectively bearing against the inner end walls of said recesses and exerting radially outwardly directed force on said clutch elements, annular members secured on the ends of said body and extending across said outer portions of the recesses to retain said clutch elements therein in said direction of the axis, said annular members having outer peripheral flanges extending toward each other at said outer periphery of the body for limiting outward radial movement of said clutch elements when said elements are not engaged by the bobbin, and means on one of said members disposed symmetrically relative to said axis for removably securing said coupling on the spindle.

3,360,209
WITHDRAWING DEVICE FOR WEB MATERIAL WOUND ON ROLLERS

Carl de Rochi, St. Polten, Austria, assignor to Joh Kleinewefers Sohne, Krefeld, Germany

Filed Apr. 8, 1966, Ser. No. 541,224
Claims priority, application Germany, Apr. 12, 1965, K 55,790
11 Claims. (Cl. 242—58)

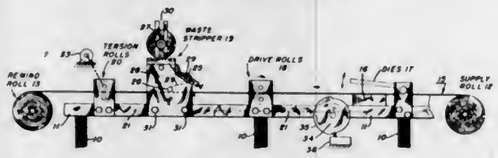


1. An apparatus for unwinding web material from rollers in a continuous manner, especially for use in connection with calenders, which includes: a pair of laterally spaced roller guiding means for receiving and guiding a roller carrying web material to be unwound from said roller, driving drum means rotatably arranged between said roller guiding means and operable when guiding a web material carrying roller to unwind web material therefrom, the respective uppermost portion of the circumferential surface of said driving drum means being located at a level lower than the level of said guiding means so as to permit a web material carrying roller only in nearly empty condition to roll over said driving drum means from the roller contacting side of said drum means to the opposite side thereof, and abutment means associated with said guiding means and arranged in spaced relationship to said drum means and on said opposite side in the path of said roller after the latter has rolled over said drum means for arresting said roller.

3,360,210
WASTE STRIPPER FOR LABEL-MAKING MACHINES

Edward C. Frisbie, Oakland, N.J., assignor to Charles D. Ingraham & Sons, Inc., Nutley, N.J., a corporation of New Jersey

Filed June 22, 1965, Ser. No. 465,991
5 Claims. (Cl. 242—65)



1. A waste stripper comprising,
(a) a pair of vertical, spaced mounting plates,
(b) a horizontal plate spanning said mounting plates for supporting a web of label-making stock,
(c) a rewind roller carried by a shaft journaled for rotation within aligned, vertical slots formed at the upper ends of the mounting plates,
(d) a drive roller rotatably carried by the mounting plates and positioned to support said rewind roller,
(e) a first idler roller having a surface proximate to said horizontal plate,
(f) bearing means supporting said first idler roller for rotation about an axis parallel to the plane of said horizontal plate,
(g) adjustable spring-biasing means for positioning said bearing means in a predetermined position while affording linear movement thereof parallel to the horizontal plate,
(h) a second idler roller, and
(i) spring-biased bearing means carried by the said vertical mounting plates and supporting said second idler roller for rotation about an axis spaced a greater distance from the horizontal plate than that of the said first idler roller.

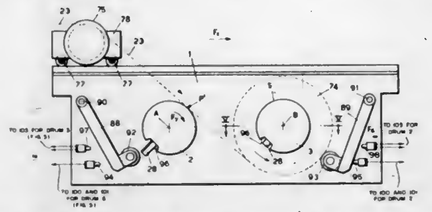
3,360,211
MACHINES FOR COILING CONTINUOUSLY SUPPLIED TAPE

Ilario Properzi, Via Cosimo del Fante 10, Milan, Italy

Filed May 5, 1964, Ser. No. 365,022
Claims priority, application Italy, May 11, 1963, 9,837/63, Patent 695,588
13 Claims. (Cl. 242—80)

1. A machine for coiling continuously supplied tape comprising, in combination, support means; two drums on which portions of the continuously supplied tape are to be alternately coiled, said drums being rotatably mounted on said support means spaced from each other in a direction transverse to their axes; guide means over which the tape passes to one or the other of said drums, said guide

means being mounted on said support means movable between two end positions in each of which a portion of the tape between said guide means and one drum on which said tape is coiled is tangent to the peripheral surface of the other drum when the diameter of the coiled tape on said one drum reaches a predetermined diameter; combined shearing and clamping means carried by each of said drums for rotation therewith and movable between an open position and a closed position cutting transversely through the tape and clamping the leading end of the tape on the respective drum; moving means for each of

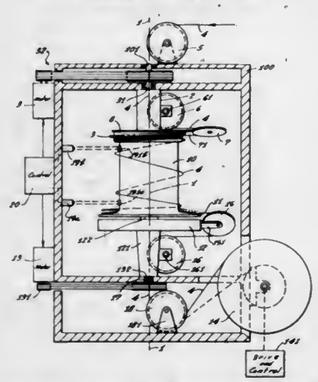


said combined shearing and clamping means for moving the same between said positions thereof; sensing means for each drum for sensing the diameter of the coil wound thereon, the sensing means of one drum cooperating with the moving means of the combined shearing and clamping means on the other drum to actuate said moving means, when the diameter of the coil on said one drum has reached said predetermined diameter, so as to move the combined shearing and clamping means on said other drum from said open to said closed position to cut the tape at the point of tangency with said other drum and to clamp the leading end of the cut tape to said other drum; and drive means for rotating said drums about their axes.

3,360,212
DEVICE FOR HANDLING WIRE AND STRANDS

Hans Frisch, Dusseldorf, Germany, assignor to Frisch Kabel- und Verseilmaschinenbau, Ratingen, Germany, a corporation of Germany

Filed June 9, 1966, Ser. No. 556,517
Claims priority, application Germany, June 12, 1965, F 46,318
11 Claims. (Cl. 242—82)

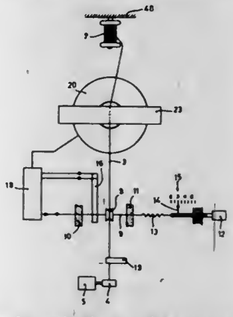


6. A temporary store for interconnection between a continuous supply source of wire, cord, thread or strand like reeling material and a discontinuous process device for the material, comprising:
a stationary cylinder having a vertically oriented axis and a flange on its lower end;
a disc on the upper end of the cylinder having a diameter larger than the cylinder but smaller than the flange;
first means for rotating about said axis in the vicinity of said disc for winding the material onto the disc in sequential loops, the loops sequentially dropping from the disc onto the flange;
second means for rotation about said axis for unwinding the material from the flange; and
means for driving the first and second means in a particular relationship of dependency.

3,360,213
WINDING MACHINE

Max Hetzel and Remy Fossard, Breguet, Neuchatel, Switzerland, assignors to Centre Electronique Horloger S.A., a company of Switzerland

Filed Dec. 7, 1965, Ser. No. 512,081
Claims priority, application Switzerland, Dec. 9, 1964, 15,890/64
7 Claims. (Cl. 242—149)



1. A machine for winding a thread comprising:
(i) a bobbin on which the thread is to be wound;
(ii) a motor connected to the bobbin and adapted to drive the bobbin;
(iii) and means for regulating the mechanical tension on the thread;
(iv) said last-named means comprising:
(a) a braking device for braking the thread;
(b) a device electrically responsive to the mechanical tension on the thread;
(c) and electronic means controlled by said electrically responsive device and controlling the braking device;
(v) said electrically responsive device comprising:
(a) a capacitor having two plates adapted to be connected to a source of alternating voltage;
(b) and a probe, insulated from ground, resiliently mounted between the plates, the probe forming a support for the thread to be wound whereby the position of the probe between the plates is controlled by the tension on the thread;
(c) the probe being connected to said electronic means, said electronic means controlling the braking device according to the capacitive voltage on the probe.

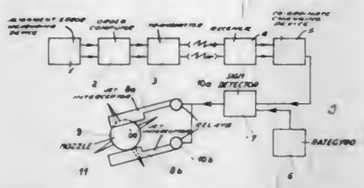
3,360,214
LINE-OF-SIGHT GUIDANCE SYSTEM FOR MISSILES

Georges Stcherbatcheff, Paris, France, assignor to Nord-Aviation Société Nationale de Constructions Aeronautiques, Paris, France

Filed Mar. 8, 1966, Ser. No. 532,699
Claims priority, application France, Mar. 16, 1965, 9,361, Patent 1,458,137
6 Claims. (Cl. 244—3.14)

1. An installation comprising a missile which, in flight, is in autorotation about its longitudinal axis and a remote control station for the remote control of the missile, the missile having flight control means, operable so as to generate a constant pitch control torque either in a positive

or a negative direction with respect to an axis at right angles to the said longitudinal axis, receiver means for receiving remote control order signals from the remote control station, said receiver means having an output; a co-ordinate changing device connected to the output of the receiver means, said co-ordinate changing device having an output; measuring means for generating a gyrometric signal which is a function of the angular velocity

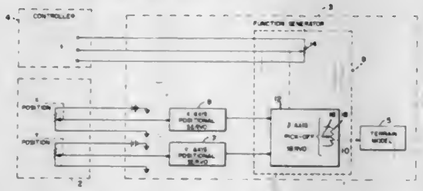


of the missile, as measured in a plane at right angles to its longitudinal axis, said measuring means having an output; a sign detector having an input connected to the output respectively of the measuring means and of the co-ordinate changing device, said sign detector having an output connected to the flight-control means; and the remote control station comprising means for measuring the deviation of the position of the missile in flight with respect to the line of sight, computer means for generating order signals as a function of the said deviation, and means for transmitting the said order signals to the missile.

3,360,215
MISSILE CONTROL SYSTEM FUNCTION GENERATOR

Donald Cohen and Edward Voight, Columbus, Ohio, assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Army

Filed Aug. 8, 1966, Ser. No. 571,145
4 Claims. (Cl. 244—3.14)



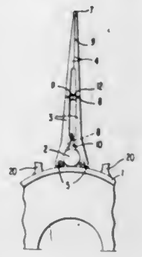
1. A missile control system comprising: a missile; means for tracking said missile; means responsive to said tracking means for determining a desired altitude for said missile at any point in the flight of said missile, said altitude determining means comprising a terrain model, a readout probe disposed adjacent to said terrain model, and a first and second servo positioning motor connected to and responsive to said tracking means for positioning said readout probe on said terrain model in accordance with the real-time position of said missile; and a controller for controlling said missile in response to said altitude determining means.

3,360,216
FLEXIBLE ROCKET TAIL ASSEMBLY

Reinhold Schwesig, Gerzen-Buchenbrink, assignor to Dynamit Nobel Aktiengesellschaft, Troisdorf, Germany

Filed July 19, 1966, Ser. No. 566,284
Claims priority, application Germany, Aug. 3, 1965, D 47,883
20 Claims. (Cl. 244—3.29)

1. A fin tail assembly for a rocket having a central thrust nozzle, comprising: a plurality of fins having an axial central fin plane mounted within the area of the central thrust nozzle on the outer wall of the rocket; each of said fins being subdivided in the axial central fin plane into two essentially mirror symmetrical fin halves; each of said fin halves being subdivided into an inner portion and an outer portion approximately in the center of the radial extension thereof in the direction substantially parallel to the rocket axis; each of said fin halves including first hinge means having an axis substantially parallel to the rocket axis for pivotally connecting said inner and said outer portions together; each of said fins including second hinge means having an axis substantially parallel to the rocket axis for pivotally connecting together said

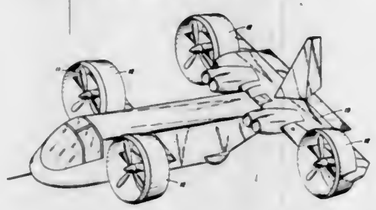


outer portions; each of said inner portions including third hinge means for connecting the respective inner portion to the outer nozzle wall of the rocket at substantially identical distances from its central axial plane for pivoting the inner portions of each fin in opposite directions away from their axial central fin plane about axes substantially parallel to the rocket axis from an erected position to a collapsed position; and each of said fins having spring means for constantly urging said fin halves together toward the erected position.

3,360,217
DUCT ROTATION SYSTEM FOR VTOL AIRCRAFT

John C. Trotter, Williamsville, N.Y., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed May 26, 1965, Ser. No. 459,128
4 Claims. (Cl. 244—12)



1. In a vertical take-off and land airplane, having turbine gas engines and propellers housed in two forward and two aft ducts, a system of controlling the rotation of the propeller housing ducts comprising:

a plurality of hydraulic pumps operated by the turbine gas engines;

a plurality of hydraulic motors operated by the pressure of the hydraulic fluid generated by said pumps;

a motion transmitting mechanism connected to each of the hydraulic motors and to each of the ducts to transmit the rotation of the motors to a partial rotation of the ducts, said rotation of said ducts being limited to 91° of arc;

means connecting all of the ducts to synchronize the rotation thereof;

means associated with said connecting means to prevent rotation of the connecting means and consequently rotation of the ducts;

means connecting the forward ducts to operate in synchronism;

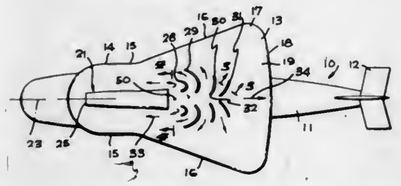
means connecting the aft ducts to rotate in synchronism;

means for adjusting the relative rotation of each of the forward ducts to each other to originally synchronize the rotational movement of the forward ducts.

3,360,218
VERTICAL TAKE-OFF AIRCRAFT

Wendell S. Miller, 1341 Comstock Ave., Los Angeles, Calif. 90024

Filed June 14, 1965, Ser. No. 463,533
9 Claims. (Cl. 244—12)

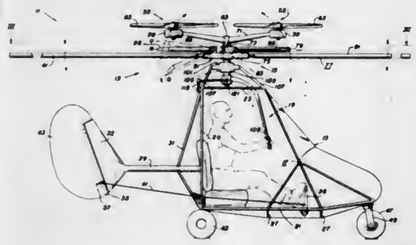


1. An aircraft including a fuselage having wing means and constructed to travel horizontally in a predetermined forward direction, jet engine means extending generally horizontally and having compressor means and turbine means turning about a generally horizontal front to rear axis, said engine means having air inlet means, and having gas outlet means facing essentially rearwardly for directing high velocity gases rearwardly to cause forward movement of the aircraft, deflector means retractably positionable in the path of said rearwardly moving discharge gases and operable to deflect said gases so that different portions of the gases flow along the upper surfaces of said wing means in different horizontal directions having generally opposed horizontal components in a relation such that said gases apply lift to the craft but the horizontal reaction forces of said different portions at least partially counteract one another, and means for actuating said deflector means between an active position for deflecting said gases and a retracted position for forward travel.

3,360,219
AIRCRAFT HAVING AIR BLAST POWERED LIFTING ROTOR

Voorhis F. Wigal, 909 Highland Ave., Jackson, Tenn. 38301

Filed July 11, 1966, Ser. No. 570,108
9 Claims. (Cl. 244—17.23)

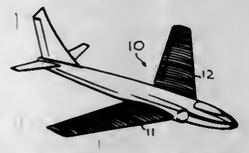


1. In an aircraft having a body, the means for lifting and sustaining said body in flight comprising an upright mast supported from said body; a rotor journalled on said mast including hub structure, a primary blade set secured to and radiating from said hub structure, and a secondary blade set secured to and radiating from said hub structure; and means supported at least in part from said mast for generating a strong steady downwardly directed blast of air under pressure above said rotor and for directing the blast of air downwardly through the circular paths of said primary and said secondary blades.

3,360,220
MAGNETOHYDRODYNAMIC METHOD AND APPARATUS

Rudolf X. Meyer, Pacific Palisades, Calif., assignor, by mesne assignments, to Space-Technology Laboratories, Inc., El Segundo, Calif., a corporation of Delaware

Filed Jan. 26, 1959, Ser. No. 789,200
11 Claims. (Cl. 244—42)

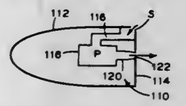


1. In a boundary layer control system, an aerodynamic surface arranged for relative movement with respect to an air mass which flows in a boundary layer adjacent said surface, means for rendering the air within said layer electrically conductive, and means for generating a magnetic field within and for interaction with the electrically conductive air to alter the boundary layer air flow pattern.

3,360,221
FLUID DYNAMICS OF A BLUFF BODY

Gunnaro Heskestad, Piscataway, N.J., assignor to American Standard Inc., a corporation of Delaware

Filed Feb. 25, 1966, Ser. No. 529,984
10 Claims. (Cl. 244—42)

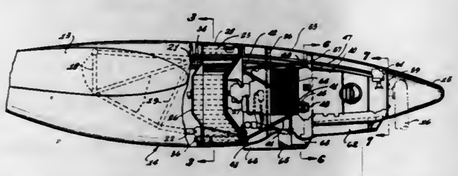


1. The method of generating a lateral force on a bluff body having a substantially flat rear wall with an opening therein and a side wall angularly connected to said rear wall and defining a continuous slotted corner between said walls, comprising moving said body through a viscous fluid, applying suction to said fluid at said slotted corner, and discharging said fluid through said opening in said rear wall.

3,360,222
TURBO-PROP ENGINE MOUNT FOR AIRCRAFT

Edward S. West, Jr., Pasadena, Calif., assignor to American Turbine Aircraft Corporation, Long Beach, Calif., a corporation of California

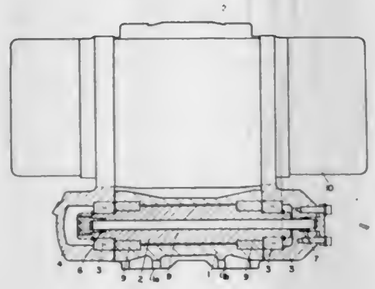
Filed Oct. 21, 1965, Ser. No. 500,033
11 Claims. (Cl. 244—54)



1. In a turbo-prop engine mount for fixed wing aircraft, a streamlined nacelle enclosure for said engine mounted to and extending forwardly of the aircraft wing;

an aircraft structural part; rear mounting means extending forwardly from said aircraft structural part into said nacelle; a generally cylindrical fuel tank supported on the forward end of said rear mounting means within said nacelle with the axis of the tank aligned with the nacelle axis and with said tank occupying substantially the entire cross-section of the nacelle; forward mounting means connected to and extending forwardly of said fuel tank within said nacelle; and a turbo-prop engine within the forward portion of said nacelle and mounted on said last-mentioned mounting means.

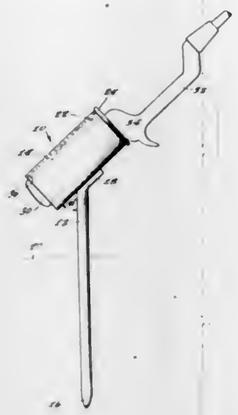
3,360,223
DEVICE FOR PRODUCING DIRECTIONAL VIBRATION IN ECCENTRIC VIBRATORS
Horst Mattern, Munich, Germany, assignor to Hermann Wacker and Peter Wacker, Munich, Germany
Filed Oct. 21, 1965, Ser. No. 499,968
Claims priority, application Germany, Nov. 14, 1964, W 37,960
2 Claims. (Cl. 248—20)



1. A device for producing directional vibrations in eccentric vibrators where the centrifugal forces developed at the eccentric shaft are divided into two components, one of said components being effective as a directional vibration by way of a pendulating bearing and the other of said components being directed perpendicularly to said one component and absorbed by elastic elements causing a pendulum swing of the vibration generator, thereby becoming ineffective, said device comprising a support structure having opposite ends, first bearings in said opposite ends, a hollow shaft anchored to said support structure by way of said first bearings, a vibrator having bearing housings disposed endwise of said hollow shaft, second bearings in said housings for said hollow shaft, a torsion rod disposed in said hollow shaft, tension elements disposed intermediate said torsion rod and one end of said hollow shaft and tension elements intermediate the other end of said torsion rod and the adjacent end of said support structure.

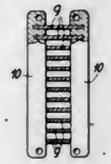
3,360,224
HOLDER FOR FISHING ROD HANDLE
Erwin A. Baumann, Jr., 9928 Slevin Lane, Affton, Mo. 63123
Filed July 28, 1965, Ser. No. 475,420
1 Claim. (Cl. 248—44)

A holder for a fishing rod having a handle, comprising:
(a) a cylindrical member for receiving said handle open at each end and of a length such as to substantially contain the entire handle,
(b) a molded soft rubber sleeve lining the inside surface of said cylindrical member,
(c) a single circular bead on one end of said sleeve having a groove receiving one terminal edge portion of said cylindrical member,
(d) a ground penetrating stake having a lower end portion tapering to a point,
(e) the upper end portion of said stake being bent to have an angular inclination of at least 40° relative to the axis of said stake,
(f) the length of said bent portion being less than the length of said cylindrical member and said bent portion being longitudinally rigidly secured to said cylin-



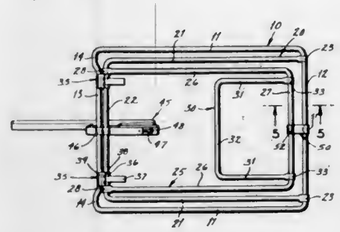
drical member intermediate its ends at substantially the medial portion thereof,
whereby in the vertical position of said stake when inserted into the ground said cylindrical member will be inclined at least 40° relative to the axis of the stake with the rubber beaded terminal end thereof uppermost and said rubber liner providing a frictional gripping engagement with the handle of the fishing rod.

3,360,225
PROCESS FOR MANUFACTURING ISOLATORS OF SHOCK ABSORBERS BASED ON THE PRINCIPLE OF DAMPING VIBRATIONS AND/OR SHOCKS BY MEANS OF MULTISTRAND CABLES
Carlo Camossi, Viale San Michele del Carso 13, Milan, Italy
Filed June 11, 1963, Ser. No. 287,125
Claims priority, application Italy, Apr. 11, 1963, Patent 691,254
3 Claims. (Cl. 248—358)



1. A vibration and shock isolator comprising, in combination, at least a pair of spaced relatively rigid anchoring blocks of die-cast synthetic resin; and at least one relatively flexible stranded bare metal cable section extending between and interconnecting each pair of blocks; each block being integral with and in intimate configuration-conforming contact with the bare metal surface of the strands of a substantial length of the connecting cable section at a respective end of the latter, whereby each cable section has its opposite ends integrally embedded in and anchored in respective blocks of the interconnected pair.

3,360,226
PORTABLE EASEL FOR ARTISTS AND THE LIKE
Clemens Nicholas, 801 Sudbury, Clayton, Mo. 63105
Filed July 15, 1966, Ser. No. 565,591
3 Claims. (Cl. 248—455)



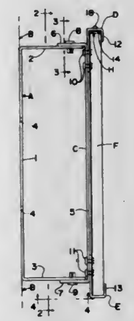
1. A folding easel comprising
a plurality of planar frames of successively smaller size, both in length and width,
the largest of said frames having an end element defining its width and side elements extending perpendicularly therefrom,
a second, smaller frame of said plurality having a hinged attachment to said end element of the first frame, side elements extending therefrom, and an end element perpendicular to said side elements and disposed parallel to and remote from the end element of the first frame,
a third frame smaller than the second frame and having a hinged attachment to said end element thereof,
means to hold the second frame out of planar alignment with the first frame,
and means to hold said third frame out of planar alignment with the second frame and at a greater angle of elevation,
whereby said hinged attachments of the frames to each other permit them to be folded into planar alignment with each other and erected out of such planar alignment.

3,360,227
EASEL
Charles F. Overton and Lawrence J. Nook, South Haven, Mich., assignors to S. E. Overton Company, South Haven, Mich., a corporation of Michigan
Filed Oct. 21, 1965, Ser. No. 500,009
1 Claim. (Cl. 248—463)



An easel back including a back plate and a prop; a connection assembly between said back plate and prop including a first link affixed to said back plate, and a second link affixed to said prop; said first link being generally flat but curled on its upper end portion into a cylindrical socket having a slot along its underside; said second link being generally flat but curled on its upper end portion into a cylindrical element having an outer diameter about the same as the inner diameter of said socket; said element being axially slidably fitted into said socket, with the flat portion of said second link protruding down through said slot; stop means on both ends of said socket to control the axial relationship of said socket and element, and at least one of said stop means being temporarily resiliently deformable with insertion force of said element into said socket, to allow sliding connection and disconnection of said socket and element; said stop means being spaced from each other slightly more than the length of said cylindrical element on said second link; and said slot having a greater breadth than the thickness of said protruding second link portion to allow limited pivotal movement between said links within an acute angle, to form a prop support connection.

3,360,228
SWINGABLE SUPPORT FOR A MIRROR
Colin D. Murdoch, Walnut Creek, Calif., assignor to Jacob E. Rhodes and Mary L. Rhodes
Filed Mar. 21, 1966, Ser. No. 535,943
2 Claims. (Cl. 248—480)

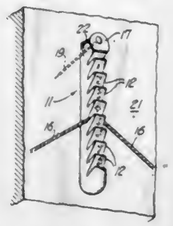


1. A mirror supporting bracket having a base swingable about a vertical axis;
(a¹) means for mounting the bracket for pivotal adjustment about said axis;
(a) upper and lower mirror supporting clips secured to said base;
(b) said upper mirror supporting clip having a channel-shaped portion for slidably receiving the top of a mirror carrying frame for permitting lateral adjustment of the frame in said clip; and
(c) a double looped leaf spring having its central portion secured to said upper clip and the double looped portion received to said channel and bearing against the mirror frame and said channel at two spaced apart points from the point where the spring is connected to said channel so that the double looped portions will be self-compensating.

3,360,229
HANGER FOR PICTURE AND MIRROR FRAMES
Gerhard R. Beyer, 511 5th Ave., New York, N.Y. 10017
Filed Dec. 3, 1965, Ser. No. 511,393
2 Claims. (Cl. 248—496)

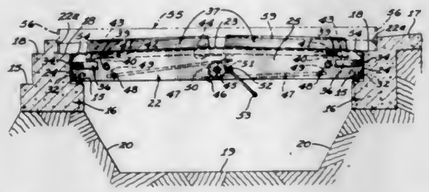
1. A frame hanger comprising a unitary, elongated element, a plurality of spaced apart means integrally formed on the front side of said element in vertical array, any of

said means being selectable for hanging a frame thereon, means on said hanger for attaching the latter to a wall, a head formed at the top of said element and at least one



recess in said head removably accommodating an implement for exerting force on said head to remove said element from said wall.

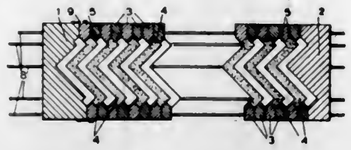
3,360,230
APPARATUS FOR CONSTRUCTING CATTLE FEEDING PENS
Aaron Boyd Clements and William E. Homes, Jr., Phoenix, Ariz., assignors of twenty percent to E. S. Erwin, twenty percent to Cynthia C. Tubbs and twenty percent to J. S. Francis, all of Phoenix, Ariz.
Filed July 26, 1965, Ser. No. 474,842
2 Claims. (Cl. 249—10)



1. An apparatus for constructing cast-in-place floor gratings between supporting curb portions comprising:
(a) a pair of laterally spaced prefabricated curb portions having horizontal upper surfaces,
(b) a frame,
(c) means movably mounted on said frame and engaging said horizontal surfaces of said laterally spaced parallel curb portions for raising and lowering said frame relative to said curb portions,
(d) a concrete supporting top on said frame to support plastic concrete poured thereon,
(e) means cooperating with said top to define a mold box,
(f) a series of laterally extending core forms vertically movably mounted on said frame including,
(g) means on said frame engaging said core forms for raising and retracting said core forms above and below said top of said frame, and
(h) said raising and lowering means including hitch means connected to cam means for automatically lowering said frame and longitudinally moving said frame along said curb portions to a new casting location.

3,360,231
MOULD FOR MAKING A NUMBER OF BODIES OF CONCRETE
Adrianus E. Q. van Hezik, Staringstraat 11, Nijmegen, Netherlands
Filed Dec. 3, 1964, Ser. No. 415,677
Claims priority, application Netherlands, Dec. 4, 1963, 301,323
2 Claims. (Cl. 249—129)

1. A mould for casting a plurality of bodies of concrete, comprising a pair of end members and a plurality of pairs of side members disposed between said end members, the side members of each pair being disposed in spaced relation to each other and connected together by a bottom plate, connecting means for releasably connecting said end and side members to each other so that said mould may be of selected length providing a selected number of mould cavities, each pair of side members having mutually spaced, angularly disposed inner side faces



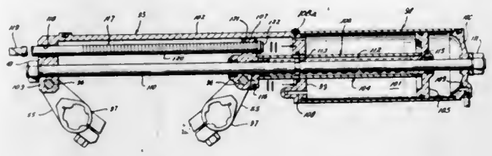
with such faces of adjoining side members defining a recess along their lengths, and partitions spanning certain of said pairs of side members and having opposite side edges removably positioned in said recesses to define a mould cavity between adjacent partitions, the partitions being positively located but removably held by said recesses, said partitions consisting of precast bodies formed in said mould.

3,360,232
RETAINER FOR CONCRETE FORM PANELS
Edward F. Vandenheuvel, 2412 Grandview W., Tacoma, Wash. 98466
Filed June 10, 1965, Ser. No. 462,844
5 Claims. (Cl. 249—191)



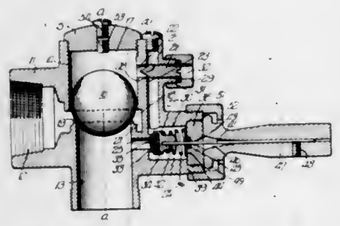
1. A panel retainer for use in demountably assembling a plurality of panels in parallel, spaced, edge-abutting, concrete form-creating relation, the panels being apertured at spaced intervals, at least some of the apertures being adjacent the margins of edge-abutting panels, the apertures in opposite panels being disposed in aligned pairs, each aperture pair being adapted to receive a tierod, the tierod comprising a stem having a head on each end and a radial abutment spaced from each head, the tierod being dimensioned to extend outwardly a spaced distance on each side beyond the planes of the panels with the abutments bearing against the inner face surfaces thereof, the panel retainer comprising:
(a) a plate dimensioned to overlie one of the aperture pairs and the margins of the adjacent abutting panels, the plate bearing against the outer surfaces thereof,
(b) wedge means projecting angularly outward from the plane of the plate,
(c) the wedge means having on its outward portion an aperture for releasably receiving the tie rod; and
(d) securing means for securing the plate to the edge abutting panels which it overlies.

3,360,233
BLOWOUT PREVENTER ACTUATOR
Herbert Allen, Houston, Tex., assignor to Cameron Iron Works, Inc., Houston, Tex.,
Application Nov. 15, 1963, Ser. No. 323,949, now Patent No. 3,215,393, dated Nov. 2, 1965, which is a division of application Ser. No. 778,342, Dec. 5, 1958, now Patent No. 3,132,662. Divided and this application Apr. 6, 1965, Ser. No. 445,900
9 Claims. (Cl. 251—1)



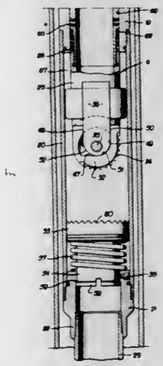
1. For use in a blowout preventer having a body with a bore therethrough and a pair of guideways therein intersecting the bore, and a ram movable within each of said guideways between bore opening and closing positions; an actuator comprising hydraulically extendible and retractable members adapted to connect said rams for movement between opened and closed positions, a rod carried by one member, a lock part on the rod, and means for moving the lock part longitudinally into abutment with the other member to hold the rams in closed position.

3,360,234
VALVE
David H. Thorburn, Oak Park, Ill., assignor to The Powers Regulator Company, Skokie, Ill., a corporation of Illinois
Filed Feb. 25, 1965, Ser. No. 435,270
6 Claims. (Cl. 251—44)



1. A valve comprising: a casing having an inlet port and an outlet port and defining a vertical cylindrical valving chamber; a spherical valve member disposed in said valving chamber so as to effectively separate said cylindrical valving chamber into top and bottom portions having restricted intercommunication; a valve seat disposed in the bottom of said cylindrical valving chamber for cooperating with said spherical valve member to provide valved communication between said bottom portion of said valving chamber and said outlet port; means providing communication between said inlet port and said bottom portion of said cylindrical valving chamber; a restricted passageway interconnecting said top portion of said cylindrical valving chamber and said outlet port; a trip valve serially disposed in said restricted passageway; means biasing said trip valve normally closed; and means connected to said trip valve for opening said trip valve in response to the application of external force, said means for opening said trip valve comprising a handle member having an annular flange at its inner end and a flexible rod interconnecting said trip valve and said handle member such that said handle member is biased into a quiescent position by said means for biasing said trip valve and such that the application of external force in a direction substantially normal to the axis of said handle member in its quiescent position causes said handle member to pivot on said annular rounded flange so as to draw said rod outwardly whereby said trip valve is opened.

3,360,235
SUBSURFACE TUBULAR FLOW CONTROL APPARATUS
William D. Myers, Houston, Tex., assignor to Baker Oil Tools, Inc., Los Angeles, Calif., a corporation of California
Filed Mar. 5, 1965, Ser. No. 437,374
12 Claims. (Cl. 251—95)

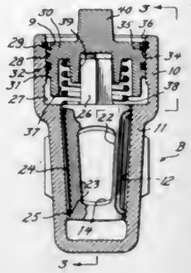


1. In valve apparatus: a housing member having a fluid passage; a tubular member in said housing member and having a fluid passage communicable with said housing member passage; said members having attachment means for securing said members to adjacent tubular devices adapted to extend from said members; said members being rotatable with respect to each other; one of said members having a valve seat; a valve head; means pivotally mounting said valve head on said one member for movement relative to said seat; first gear means on said valve head; and second gear means on said other of said members meshable with said first gear means to shift said head along said seat between open and closed relation to said seat in response to relative rotation between said members; said tubular member being shiftable longitudinally relative to and within said housing member to effect selective meshing or disengagement between said first gear means and second gear means.

3,360,236
PLUG VALVE WITH FLOATING SEAL
William L. Hulslander, Bradford, Pa., assignor to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
Filed Mar. 16, 1965, Ser. No. 440,101
12 Claims. (Cl. 251—184)

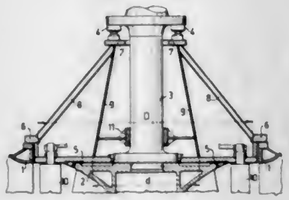
11. In a plug valve, the combination comprising a valve body having a valve with a conical bore intermediate a pair of spaced ports defining an inlet and an outlet, a conical plug rotatably received in said bore and having a transverse passageway alignable with said ports, at least one floating sealing element movably carried by said plug displaced from the passageway therein and comprising a closure plate of an extent at least equal to the outlet of said ports and a sealing material secured thereto, means

for urging said plug into said well, and means operable to effect rotational displacement of said plug to a position



wherein a sealing element is supported opposite the outlet of said ports for effecting closure thereof.

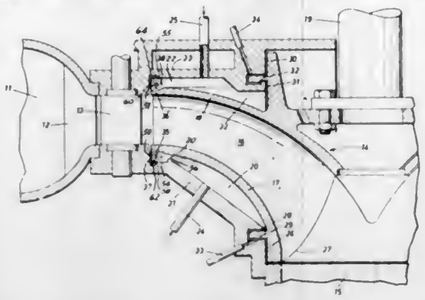
3,360,237
WATER TURBINE COVER
Albert Surber, Zurich, and Helmut Pirchl, Mutschellen, Switzerland, assignors to Escher Wyss Aktiengesellschaft, Zurich, Switzerland, a corporation of Switzerland
Filed July 18, 1966, Ser. No. 565,992
Claims priority, application Switzerland, Sept. 17, 1965, 12,915/65
3 Claims. (Cl. 253—26)



1. In a vertical axis water turbine having a stay ring, a vertical shaft and a thrust bearing for supporting said shaft: a turbine cover comprising a closure part consisting of a flat annular plate arranged coaxially with said shaft and having an outer edge provided with an annular flange adapted to be fixed to said stay ring, and an inner edge; an annular bearing bracket for supporting said thrust bearing, arranged coaxially with said shaft at a distance above said closure part; and two bracings for connecting said thrust bearing bracket with said closure part, issuing from said thrust bearing bracket and arranged co-axially with said turbine shaft; one of said bracings terminating at said flange and the other bracing terminating on said annular plate at a distance from said inner edge on a circle, the diameter of which is substantially half the flange diameter.

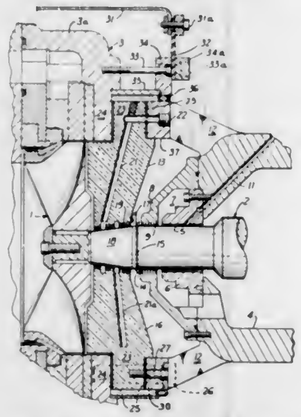
3,360,238
SHROUD SEAL FOR HYDRAULIC MACHINES
Paul Koeller, Dorval, Quebec, and Johann H. Lang, Beaconsfield, Quebec, Canada, assignors to Dominion Engineering Works, Limited, Quebec, Quebec, Canada, a corporation of Canada
Filed Feb. 13, 1967, Ser. No. 615,581
7 Claims. (Cl. 253—26)

1. In a rotary hydraulic machine having a bladed runner rotatably mounted within a stationary housing, said housing having wall portions forming a flow path for the main flow of working liquid therethrough; at least one annular shroud secured to the blades of the runner and defining with an adjacent portion of the housing an annular shroud space external to the runner, having aeration means connected thereto, the improvement comprising a seal at the radially outer portion of said aerated shroud space, having an annular narrow edged axial lip extending from said shroud, said lip inner surface bounding said aeration space and forming a seal water energizing surface therein, and a seal recirculation surface



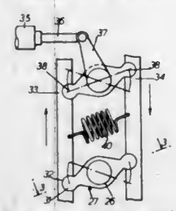
within said areation space adjacent the end of said lip extending inwardly towards the axis of the runner and providing in operation a liquid flow conforming surface to maintain vortical flow of sealing liquid from said lip inner surface under the influence of pressurized aeration fluid within said aeration space whereby a stable liquid-gas sealing interface is maintained in stable sealing relation with the aerated shroud space.

3,360,239
OIL FREE TURBINE ASSEMBLY
Judson S. Swearingen, 500 Bel Air Road, Los Angeles, Calif. 90024
Filed Dec. 4, 1964, Ser. No. 415,877
12 Claims. (Cl. 253—39)



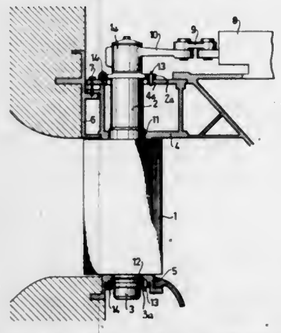
1. In a cryogenic turbo-expander including a turbine case having a detachable heat insulating and wall with a shaft opening therethrough, a turbine wheel in the case, a shaft carrying the turbine wheel extending through said opening in the heat insulating wall in clearance type sealed relationship therewith and a bearing mounting the shaft for rotation about its axis, that improvement which comprises: the relatively sealed surfaces on said shaft and wall being of different diameters at axially spaced points respectively, and one of the opposed relatively sealed surfaces on said shaft and wall being tapered whereby axial movement of said heat insulating wall relative to said shaft will vary the clearance therebetween, means for attaching the heat insulating wall of the case adjustably with respect to the longitudinal axis of the shaft; means for supporting said bearing spaced from said heat insulating wall; and means attaching said bearing supporting means rigidly to said insulating wall with a portion of said shaft exposed to the ambient atmosphere pressure therebetween.

3,360,240
VANE OPERATING MECHANISM
Douglas Herbert Williamson and James Alexander Petrie, Derby, England, assignors to Rolls-Royce Limited, Derby, England, a British company
Filed Dec. 19, 1966, Ser. No. 602,932
Claims priority, application Great Britain, Jan. 10, 1966, 1,134/66
8 Claims. (Cl. 253—78)



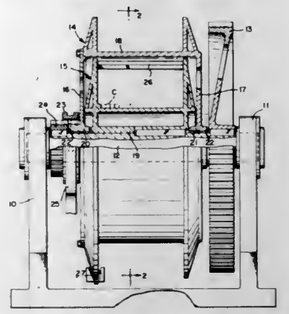
1. A vane operating mechanism comprising: two axially spaced rings rotatable in opposite directions about a common axis; a set of angularly spaced apart vanes arranged about said axis; a lever fixedly secured to each of said vanes for effecting pivotal movement thereof; ball-shaped portions on opposite ends of each of said levers, each of said ball-shaped portions having an axis coinciding with the longitudinal axis of the respective lever to which it is attached; part-spherical recesses in facing surfaces of said rings for rotatably receiving the respective ball-shaped portions on the opposite ends of the respective levers; and means for rotating said rings simultaneously in opposite directions to apply couples to the levers so as to effect pivotal movement of the vanes without subjecting said ball-shaped portions to a bending moment about the longitudinal axis of the levers.

3,360,241
METHOD OF MOUNTING WICKET GATES IN WATER-TURBINE PLANTS
Arne Herman Lindquist, Trollhattan, Sweden, assignor to Nydqvist & Holm Aktiebolag, Trollhattan, Sweden, a corporation
Filed Apr. 5, 1966, Ser. No. 540,298
Claims priority, application Sweden, Apr. 12, 1965, 4,778
4 Claims. (Cl. 253—122)



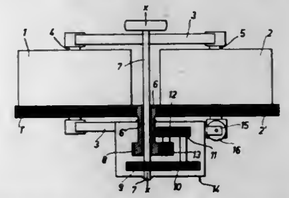
1. A mounting assemblage for a wicket gate of a water turbine, said assemblage comprising, in combination, a wicket gate having a bearing trunnion at each end, an upper bearing box and a lower bearing box rotatably seating said trunnions, a head cover and a bottom ring each including a short guide for adjustably receiving said bearing boxes, and locating means for securing said bearing boxes in selected adjusted positions in reference to said head cover and bottom ring, respectively.

3,360,242
DUAL-DRUM WINCH STRUCTURE
Frank L. Lawrence, Suite 803, 1835 Morton Ave., Vancouver, British Columbia, Canada
Filed July 5, 1966, Ser. No. 562,763
1 Claim. (Cl. 254—184)



In a dual-drum winch structure, in combination: a live arbor, an inner spooling drum locked to the arbor and providing a spooling surface guarded by side flanges, an outer spooling drum journaled upon the arbor and likewise p.oviding a spooling surface guarded by side flanges and journal-mounted for rotation about the center of the arbor as an axis in a position placing its spooling surface in surrounding relation to the inner drum with space therebetween to accommodate multiple lays of cable, the outer drum having a transverse slot extending the full width of its spooling surface for the access of cable being spooled on the inner drum, and means for driving the arbor while holding the outer drum in an arrested condition to spool multiple lays of cable upon the inner drum and then establishing a driving couple from the arbor to the outer drum for spooling multiple following lays of cable upon the outer drum, the outer drum providing end walls acting with an annular wall on which the spooling surface is formed to wholly enclose the inner drum, one of the end walls being bolted in place.

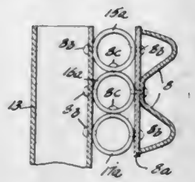
3,360,243
APPARATUS FOR CHECKING THE PULL ON CABLES IN TENSION
Walter Betta, Bergamo, Italy, assignor to C.R.F. Officine Meccaniche di Precisione S.p.A., Milan, Italy
Filed Sept. 23, 1966, Ser. No. 581,596
Claims priority, application Italy, Oct. 1, 1965, 729,760
2 Claims. (Cl. 254—184)



1. An apparatus for continuously checking the pull on cables under tension, particularly for the stringing of high voltage electric power lines, comprising at least one adhesion drum on which is wound at least one cable under tension, a toothed ring fixedly attached to said drum, a pinion engaging said toothed ring, a main shaft and a main control assembly, for selectively imparting driving

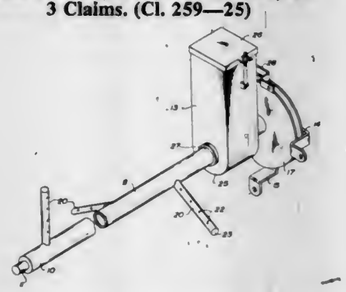
and braking couples to said drum through said main shaft, said main shaft and said pinion being coaxial, and means for transmitting motion between said main shaft and said pinion including a member for sensing the couple applied to said shaft.

3,360,244
PROTECTIVE DEVICE ON ROADS
Edwin Bucher, Muhlegasse 22, Zurich, Switzerland
Filed Feb. 26, 1964, Ser. No. 347,489
Claims priority, application Switzerland, Feb. 28, 1963, 2,600/63
1 Claim. (Cl. 256—13.1)



A protective device for roadways comprising a vertically arranged post adapted to be secured along the edge of the roadway, a rail extending parallel with the highway and secured on a base plate, and a plurality of rings one above the other and secured as to adjacent rings and also to the post and the plate, said rings being permanently deformable to produce a damping effect when the rail is struck by a vehicle.

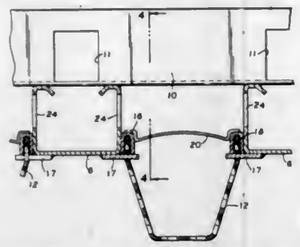
3,360,245
APPARATUS FOR TREATING SEED GRAIN IN A SEED DRILL
James P. Peach, Peers, Alberta, Canada
Filed Feb. 28, 1966, Ser. No. 530,705
3 Claims. (Cl. 259—25)



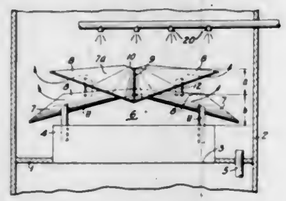
1. Apparatus adapted to treat seed grain in the box of a seed drill comprising, in combination:
A pipe adapted to be rotated within the box;
Means connected into the pipe at one end thereof for supplying air under pressure thereto;
Means, adapted to contain chemical, connected into the pipe for admitting chemical thereto;
Said pipe defining openings therein for the discharge of chemical under pressure.

3,360,246
DISTRIBUTOR WITH BED-LEVEL LIMITER
John S. Eckert, Silver Lake, Ohio, assignor, by mesne assignments, to U.S. Stoneware, Inc., a corporation of Massachusetts
Filed Feb. 25, 1966, Ser. No. 530,153
8 Claims. (Cl. 261—98)

1. A tower including a bed of normally static packing elements suitably supported therein; a distributor supported in said tower and above said bed, comprising a plurality of conduits spaced from each other by a distance large enough to permit the passage of packing elements; and a plurality of foraminous limiter members, of undulant cross-section, each supported by adjacent conduits and bridging the space therebetween, whereby upon temporary expansion of said bed, said packing elements are contained by the combined surface provided by said conduits and said limiter members.



3,360,247
COUNTERCURRENT WASHER
Reinhard Waldhofer, Essen, Germany, assignor, by mesne assignments to Koppers Company, Inc., Pittsburgh, Pa., a corporation of Delaware
Filed Apr. 9, 1965, Ser. No. 446,811
Claims priority, application Germany, Apr. 16, 1964, K 52,691
2 Claims. (Cl. 261—111)

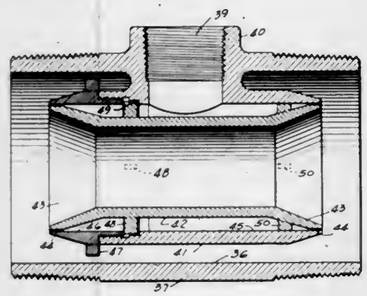


1. A countercurrent gas washer comprising:
(a) a first vertical conduit wherein there is a flow of gas in an axial upward direction;
(b) a transverse diaphragm in said conduit having therein an axial aperture;
(c) a second vertical conduit disposed in said aperture;
(d) a plurality of sectors arranged radially about a central axial point in said first vertical conduit, each said sector including
(i) first and second edge abutting portions that form a trough, said first portion being larger in area than said second portion with
(ii) the first portion of one sector overlapping in spaced apart relation the second portion of an adjacent sector;
(e) means to introduce washing liquid into said first conduit at a level above said sectors whereby said washing liquid contacts said gases flowing via said passages and impinges upon said sectors and is directed outwardly and downwardly via said troughs onto said diaphragm; and
(f) means to conduct said moisture through said diaphragm.

3,360,248
THIN STREAM DIRECT CONTACT FLUID HEATER
Arnold N. Lindeman, Sterling, Kenneth C. Bowman, Prophetstown, and Bernabe S. de la Torre, Harvard, Ill., assignors to Houdaille Industries, Inc., Buffalo, N.Y., a corporation of Michigan
Filed Oct. 23, 1964, Ser. No. 405,995
7 Claims. (Cl. 261—117)

1. In a direct contact fluid heater,
a heater body,

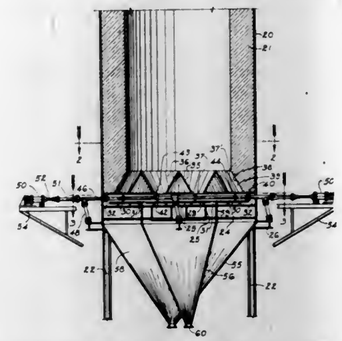
a fluid inlet into said body through one end thereof,
a fluid outlet from said body through the opposite end thereof,
said body having a generally cylindrical wall between said inlet and said outlet,
a hollow boss extending into said body through the wall thereof and forming a steam inlet,
a hollow cylindrical support in the inner end of said boss and having an exterior wall spaced radially inwardly of the cylindrical wall of said body and a generally interior cylindrical wall having communication with said hollow boss for the passage of steam therealong,
a nozzle extending along said support and having an interior wall portion forming a fluid flow conduit,
an exterior wall portion in communication with the steam inlet and spaced inwardly of the interior wall of said support and with the interior wall of said support forming an annular steam flow passageway,



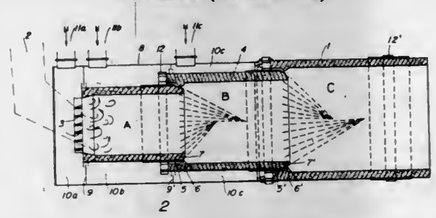
the exterior wall of said nozzle diverging adjacent the discharge end thereof and terminating into a cylindrical end wall portion parallel with and cooperating with the interior cylindrical wall of said support to form a thin annular orifice,
a hollow nut threaded in the opposite end of said support from said orifice and retaining said nozzle to said support,
said nut being spaced from the end of said nozzle to accommodate limited freedom of movement of said nozzle with respect to said support,
spacer means maintaining a predetermined spacing between the cylindrical end wall portion of said nozzle and the interior cylindrical wall portion of said support in all positions of said nozzle relative to said support,
and vibration damping means interposed between said nut and the upstream end of said nozzle, damping vibration of said nozzle and thereby deadening the sound caused by vibration of said nozzle.

3,360,249
DISCHARGE GRATE AND HOPPER FOR SHAFT KILN
Phillip W. Trumbo, Montrose, John H. Carpenter, Englewood, and Thomas A. Hendrickson, Golden, Colo., assignors to Cameron and Jones, Incorporated, Denver, Colo., a corporation of Colorado
Filed Apr. 7, 1965, Ser. No. 446,340
2 Claims. (Cl. 263—29)

2. In a shaft kiln, the combination comprising, a tubular shell adapted to confine a charge of particulate solid material for continuous gravity flow therethrough, a grate structure including deflectors defining spaced concentric annular throats and subjacent retarder plates defining spaced concentric openings spaced subjacent and radially offset relative to said throats, said deflectors and plates transversely obstructing a lower portion of said shell to inhibit flow of material directly therethrough, means for continuously discharging solids material collected by said fixed structure through said spaced, concentric openings, and at least two concentric discharge hopper means for selectively collecting materials discharged through respective ones of said openings, the outermost hopper having an upper rim portion secured to said tubular shell, and the inner of said hoppers having a rim extending upwardly through an opening defined between two of said retarder plates, whereby particulate solid material treated in the zone of the kiln adjacent the wall thereof is collected in the outermost hopper and thereby separated from the balance of material from said kiln.



3,360,250
MULTIPLE-CHAMBER ROTARY KILN
Magnus Malmberg, Mosbach, Baden, Germany, assignor to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen am Rhine, Germany
Filed Aug. 26, 1965, Ser. No. 482,731
3 Claims. (Cl. 263—32)

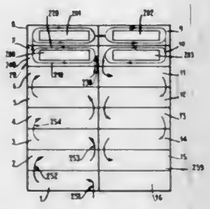


1. A multi-chamber rotary kiln for the chemical reaction of solid materials which comprises: a plurality of overlapping pipe sections of different diameter arranged in series, annular gaps between the ends of said sections, a rigid jacket arranged around the sections of relatively small diameter, movable seals between said jacket and said sections, and means for separately supplying air to each of said sections, the ends of said sections being cone-shaped at least on the side of the combustion chamber, the surfaces of said cone-shaped ends defining said annular gaps and forming acute angles with the axis of said kiln.

3,360,251
REVOLVING FLAME ROASTING FURNACE
Gerard Prache, Chedde, France, assignor to Pechiney-Compagnie de Produits Chimiques et Electrometallurgiques, Paris, France
Filed Apr. 15, 1965, Ser. No. 448,535
Claims priority, application France, May 22, 1964, 975,505
6 Claims. (Cl. 263—36)

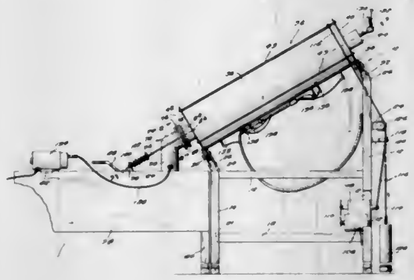
1. A revolving frame roasting furnace comprising a plurality of separate roasting chambers, each of said chambers being rectangular in shape to thereby define

large surfaces on their side walls and smaller surfaces at their ends, the chambers being disposed in at least two rows, each of said rows comprising the same number of chambers with said larger surfaces of adjacent chambers in a particular row being disposed in contact with each other and with said smaller surfaces of the chambers of one row being in contact with the smaller surfaces of the chambers of the other row, the assembly of said chambers defining a large rectangular configuration with each chamber in the assembly being located between two adjacent chambers, each of said chambers defining a single roasting compartment, heating partitions surrounding said compartment, a combustion shaft and an



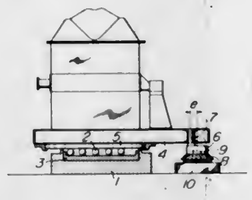
admission flue common to the heating partitions of each chamber and located at one end of said partitions, and a discharge flue common to the heating partitions of each chamber located at the other end of said partitions whereby the partitions of each chamber interconnect the flues of that chamber, the respective flues of the adjacent chambers being interconnected whereby a gas flow circuit is provided throughout the furnace, means for individually closing each of said chambers with respect to said circuit for unloading and recharging of a chamber, an inlet opening and an exhaust opening for each of said chambers, and means for selectively opening and closing said inlets and exhausts with respect to the outside atmosphere.

3,360,252
FURNACE CONSTRUCTION HAVING STEP-BY-STEP GRAVITATIONAL FEED
Herbert W. Westeren, Barrington, R.I., assignor to C. I. Hayes, Inc., Cranston, R.I., a corporation of Rhode Island
Filed Oct. 13, 1965, Ser. No. 495,661
11 Claims. (Cl. 266—4)



3. In a furnace construction for heat treating a plurality of workpieces, an elongated housing mounted in an inclined position, a retort fixed in said housing and having a plurality of baffles positioned therein, said baffles being disposed in spaced relation in said retort to define a plurality of heating areas therein each of said baffles having a generally semi-circular configuration, the diametrical edge thereof being angularly disposed with respect to the diametrical edges of the adjacent baffles so as to define a circuitous heating path in said retort, means for oscillating said housing about the longitudinal axis thereof for advancing said workpieces downwardly along said circuitous path and through said heating areas, and means for heating said heating areas for heat treating said workpieces as they advance therethrough.

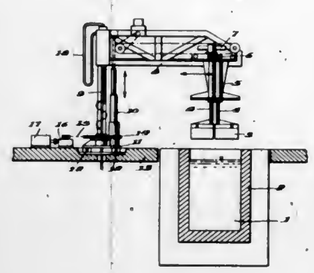
3,360,253
MOLTEN METAL SWINGING DEVICE
Genzo Mori and Hiroshi Takagi, Amagasaki-shi, Japan, assignors to Amagasaki Iron & Steel Mfg. Co., Ltd., Osaka, Japan, a corporation of Japan
Filed Dec. 4, 1964, Ser. No. 416,070
Claims priority, application Japan, Dec. 6, 1963, 38/65,796; Dec. 30, 1963, 38/3,999
3 Claims. (Cl. 266—34)



1. A molten metal swinging device comprising a swinging plate for securing and supporting a container containing a molten metal and having at least a flat horizontal lower surface constituting a planar upper race, a stationary base supporting said swinging plate and having at least a flat horizontal upper surface constituting a planar lower race cooperating with the upper race, a plurality of spherical bodies disposed between the upper and lower races, at least one of the cooperating upper and lower races having a peripheral wall surrounding the flat surface of its race, driving means comprising a source for imparting horizontal eccentrically swinging motion about a vertical axis to the swinging plate, said driving means comprising at least two eccentric shaft means rotatable in the same phase and eccentrically coupled to the swinging plate respectively to impart circular-type motion to at least two different portions of said swinging plate while precluding said swinging plate from rotating, and said driving means further comprising transmission means connecting the eccentric shaft means with the driving source to assure that said eccentric shaft means rotate in the same phase, said spherical bodies being distributed substantially uniformly and being freely rotatable accompanying the horizontal eccentrically swinging motion of the swinging plate.

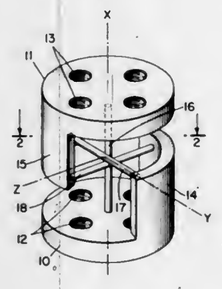
3,360,254
APPARATUS FOR SLAG REMOVAL
Karl-Heinz Hellmund, Dortmund, Germany, assignor to Aktiengesellschaft Brown Boveri & Cie, Baden, Switzerland, a joint-stock company
Filed Sept. 9, 1965, Ser. No. 486,105
Claims priority, application Germany, Oct. 2, 1964, B 78,761
7 Claims. (Cl. 266—34)

1. Apparatus for removing slag from the melt in a smelting furnace of an open top crucible type which comprises a pair of vertically disposed parallel operating shafts arranged for rotation about their axes, a shovel secured in a generally horizontal attitude at the lower end of each said shaft, whereby to enable the slag engaging edges of said shovels to be brought together or separated dependent upon the rotational direction of their respective operating shafts, means for lowering and raising said shafts and shovels secured thereto into and out of the mouth of said crucible for lateral scooping up and re-



moval of the slag on the melt, and means for moving said shafts and shovels laterally of the crucible mouth when in a raised position.

3,360,255
UNIVERSAL FLEXURE UNIT
Alfred N. Ormond, 11969 Rivera Road, Santa Fe Springs, Calif. 90670
Filed June 11, 1965, Ser. No. 463,094
8 Claims. (Cl. 267—1)

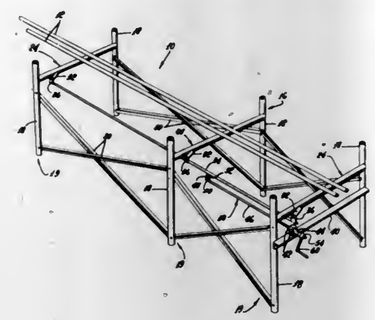


1. A universal flexure unit comprising, in combination: first and second spaced securing members; a first flexure rod having its opposite ends secured to first portions of said members respectively, said first rod lying along a first axis; a second flexure rod having its opposite ends secured to second portions of said members respectively, said second rod extending perpendicular to said first rod at a location intermediate the ends of the latter; and a third flexure rod having its opposite ends secured to third portions of said members respectively, said third rod extending perpendicular to said first and second rods at locations intermediate the ends of the latter two rods, said second and third rods being respectively parallel and adjacent to reference axes mutually perpendicular to and intersecting each other and said first axis.

3,360,256
ADJUSTABLE PIPE RACK
Robert Kirby, 1500 Broadway, San Pablo, Calif. 94806
Filed July 30, 1965, Ser. No. 476,040
5 Claims. (Cl. 269—296)

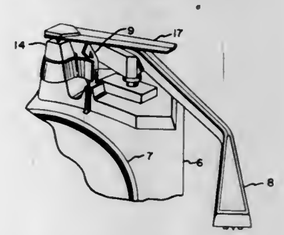
3. An adjustable pipe holder comprising a supporting frame, at least two generally parallel horizontal shaft members pivotally mounted on said frame, an elongated work engaging clement eccentric with respect to and substantially parallel to each said shaft for supporting a

plurality of pipes in side by side relationship, an arm connected jointly to each said shaft member and adjacent work engaging element and having free ends extending substantially radially with respect to said shaft, said arms being substantially in alignment with each other in a direction normal to said shafts, means of fixed length con-



necting said free ends of said arms, and a crank assembly on said frame directly connected to said means having an operating drive in a direction substantially in alignment with said free ends of said arms whereby to tilt said work engaging members up and down to desired positions of adjustment.

3,360,257
RECORD REPEATING DEVICE
Edgar Kelley, Jr., 6623 Simson St., Oakland, Calif. 94605
Filed Oct. 12, 1965, Ser. No. 495,146
6 Claims. (Cl. 274—1)



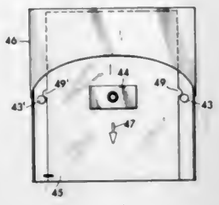
1. A device for an automatic record changer designed to play, in automatic sequence, a stack of intermixed larger and smaller records and having a base, a turn table mounted for rotation on said base for receiving said records, means for storing said records above and for selectively dropping said records upon said table, a pick-up arm, an indexing lever mounted for movement from a first position to an actuated second position by the dropping of the larger of said records to said table, said indexing lever having an exposed part extending above said base, means connecting said indexing lever and said pick-up arm for selectively causing said arm to land at the beginning of the smaller record when said indexing lever is in first position and at the beginning of the larger record when said indexing lever is actuated, and means for continuously repeating the cycle of movement of said tone arm from the end to the beginning of said records, the improvement comprising:

a support;

a foot connected to said support for engaging the exposed part of said indexing lever and thereby holding said indexing lever in said second position; and

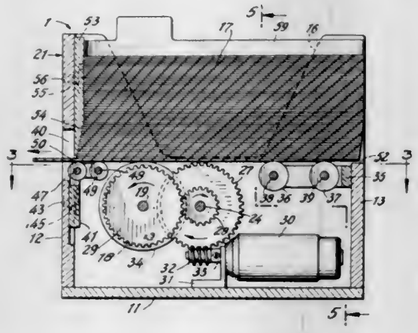
means carried by said support for removably connecting said support to said record changer.

3,360,258
PHOTOCOPY PAPER PACKAGE
George F. Nix, 9 Springdale Road, Scarsdale, N.Y. 10583
Filed Nov. 25, 1966, Ser. No. 597,009
9 Claims. (Cl. 271—18)



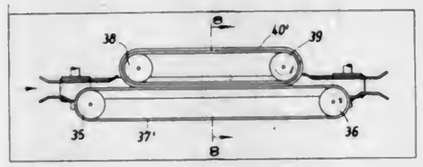
1. A package of photocopy paper comprising:
(a) a container for holding said photocopy paper,
(b) a stack of photocopy paper sheets positioned in said container,
(c) a resisting structure positioned within said container,
(d) said photocopy paper sheets having a modified structure adapted to move against said resisting structure to provide an incremental resistance to lateral feeding movement of the top sheet of said stack,
(e) the top portion of said container being adapted to permit access of an external feeding element of a photocopy machine to the top sheet of said stack of photocopy paper, said package in cooperation with said photocopy machine feeding element thereby causing a single sheet at a time of photocopy paper to be fed to said machine without requiring an operator to handle said photocopy paper.

3,360,259
TABULATING CARD FEED
Alfred W. Stewart, New Paltz, N.Y., assignor to Datron Systems, Inc., Mountain Lakes, N.J., a corporation of New Jersey
Filed Sept. 21, 1964, Ser. No. 397,880
3 Claims. (Cl. 271—41)



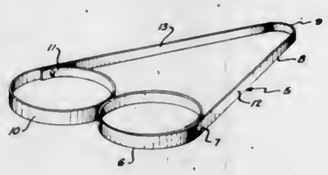
1. A device for feeding in sequence a plurality of tabulating cards from a stack comprising a drive means under the lowermost card of said stack, the surface of said drive means in frictional engagement with the lowermost card of said stack, said drive means being a roller driven continuously and unidirectionally by a motor, throat plate means forming an emission slot in said device through which the lowermost card in frictional engagement with said roller can be emitted, a predetermined weight adapted to be placed on the top card of the stack, said weight moving the card above said lowermost card in said stack into engagement with saiad roller upon emission of the lowermost card, said weight substantially covering the top card of the stack, with the center of gravity of the weight located vertically in line with said roller, and front and rear support means provided for supporting the card stack with the roller therebetween.

3,360,260
CONVEYOR DEVICE
Hans Rapparlie, Rudolf Mielert, and Eberhard Ernst, Constance, Germany, assignors to Telefunken Patentverwertungsgesellschaft mbH., Ulm (Danube), Germany
Filed Aug. 20, 1965, Ser. No. 481,296
Claims priority, application Germany, Aug. 22, 1964, T 26,868



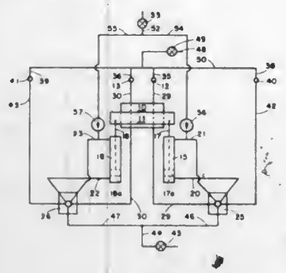
1. In a device for producing a uniform conveying flow with a uniform direction of overlap from flat items which arrive at random in an edgewise conveyor trough system, such as items of mail in particular, and including two conveyor means situated opposite one another, one at each side of the conveying channel, the improvement wherein the conveying means are free of structural surface discontinuities in their direction of conveyance and are disposed opposite one another along a conveying path which is longer than about the length of one item, both conveying means being frictional conveying means, both conveying means being driven in the direction of conveying but with different conveying speeds, and the two conveying means forming a single outlet at one end of said conveying channel.

3,360,261
UNCOILING AND RECOILING TOY
Morton D. Smolensky, % Paul W. Wommack, 1300 Houston Club Bldg., Houston, Tex. 77002
Filed Dec. 23, 1964, Ser. No. 420,723
1 Claim. (Cl. 272—67)



A single elongated strip of flexible metal, said strip including a central connecting means arranged in a generally V-shape and closed hoops formed at the free ends of the arms of the "V," said hoops being in the same plane, said strip including self retracting coil means normally coiled around said hoops and held in yielding abutment by said connecting means, said coil means being adapted to be unrolled to extended positions with said hoops in peripheral contact by flexing of the arms of said connecting means toward each other.

3,360,262
APPARATUS FOR MOVING AND ALIGNING LIMP PIECES OF MATERIAL
Gregory C. Kekopoulos, Ipswich, and Arthur H. Buckley, Salem, Mass., assignors, by mesne assignments, to the United States of America as represented by the Secretary of Commerce
Filed June 16, 1966, Ser. No. 558,021
10 Claims. (Cl. 271—63)



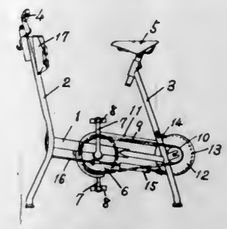
1. An apparatus for moving and aligning a limp piece of material over a horizontal plane, comprising in combination
(a) a smooth surface defining said horizontal plane over which said limp piece may be caused to slide;
(b) movable pad means adapted to make contact with said limp piece and in moving to move said limp piece in a flat unwrinkled condition;
(c) a plurality of sensing means located in positions corresponding to the positions of selected points of the leading edge of said limp piece when it has attained its predetermined alignment, said sensing means being capable of developing a signal which is responsive to the arrival of said leading edge;
(d) a plurality of separately actuatable pad moving means adapted to move said pad means in said horizontal plane;
(e) signal transmitting means connecting each of said sensing means with an associated pad moving means and being adapted to control the motion of said pad moving means; and
(f) means for lowering said pad means into contact with a limp piece delivered to said surface for moving and alignment and for raising said pad means subsequent to the attainment of the alignment of said limp piece.

ERRATUM

For Class 272—67 see:
Patent No. 3,360,261

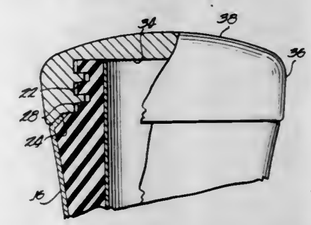
3,360,263
EXERCISING CYCLE WITH ECCENTRIC BRAKE DRUM
Takato Tsuru, Ageo, Japan, assignor to Bridgestone Cycle Kogyo Kabushiki Kaisha, Chuo-ku, Tokyo, Japan
Filed Feb. 12, 1965, Ser. No. 432,125
1 Claim. (Cl. 272—73)

In an athletic or exercising device of the stationary cycle type comprising a cycle frame means including a rearwardly disposed upstanding seat-supporting portion, a forwardly disposed upstanding handle bar supporting portion and an intermediate pedal crank shaft supporting portion, pedal crank shaft means rotatably mounted on said pedal crank shaft supporting portion and carrying pedals adjacent its extremities; a driving sprocket wheel mounted on said intermediate portion, and a driven sprocket wheel mounted on said rearwardly disposed portion, said driving and driven sprocket wheels having a sprocket chain trained over them, the diameter of the driven sprocket wheel being one-half that of said driving sprocket wheel, an eccentric brake drum fixed coaxially to said driven sprocket wheel, brake means for frictional engagement by said drum, said driving and driven sprocket wheels being so engaged that when the pedals are positioned vertically the center of said eccentric drum lies at the nearest position to said



crank shaft to diminish the frictional resistance by said brake drum but when said pedals are positioned horizontally the center of said eccentric brake drum lies at the farthest position from said crank shaft to increase the frictional resistance by said brake drum, thus varying the resistance to the rider's driving legs throughout every position of the pedals automatically.

3,360,264
GOLF CLUB GRIP FOR SHAFTS WITH DIAMETRAL VARIATIONS
Elver B. Lamkin, Chicago, Robert E. Lamkin, Downers Grove, and Frederick G. Rest, Chicago, Ill., assignors to Lamkin Leather Company, Inc., Chicago, Ill., a corporation of Illinois
Filed Nov. 2, 1964, Ser. No. 408,192
5 Claims. (Cl. 273—81)

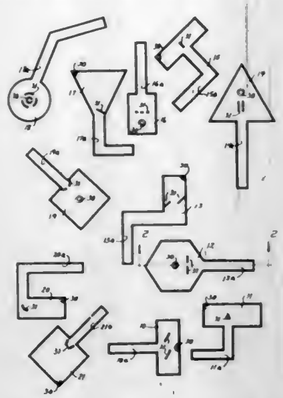


1. A grip for golf club shafts having normal diametral variations comprising, in combination: an elongated open-ended tube of an elastically expandable material adapted to be force-fitted on said shafts' ends and having a reduced diameter portion at its one end which has threads formed thereon; a gripping surface material formed about said tube; and a cap having a cavity formed therein which substantially corresponds in size with said reduced diameter portion and which is correspondingly threaded, the threads having sufficient depth and the diametral clearance between the threads on the cap and the tube being sufficient to accommodate shaft diametral variations. said cap being threaded onto said reduced diameter portion of said open-ended tube to close the open end thereof and to close the end of said golf club shaft.

3,360,265
SIMULATED GOLF COURSE OF BILLIARD-LIKE TABLES
Robert M. Yabroudy, 2300 E. Morgan Ave., Evansville, Ind. 47711
Filed Feb. 7, 1964, Ser. No. 343,328
3 Claims. (Cl. 273—87)

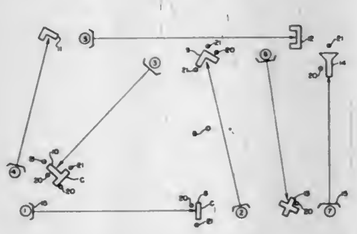
1. A game comprising, in combination, a striking implement, a ball, and a plurality of tables arranged in a preselected playing pattern, the shapes of said tables in

plan view being different from each other, said striking implement having an elongated body with a ball striking surface at an end thereof, and said tables each having a playing surface including a driving area, an approach area, and a hole, said driving area being elongated and opening onto said approach area, said approach area being enlarged in relation to said driving area and containing said



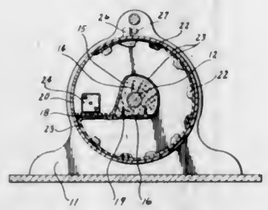
hole, the height of each of said tables corresponding to the height of a conventional billiard table and said playing pattern approximating the layout of a golf course, whereby a player may propel said ball from the driving area on a first of said tables with said implement, hole out thereon as in playing golf, proceed to a next table and repeat the shooting procedure followed on said first table, to thereby play a simulated game of golf.

3,360,266
BALL AND ADJUSTABLE PADDLE GAME
Alphonsus J. Wathen, Rte. 1, Floyds Knobs, Ind. 47119
Filed Jan. 21, 1965, Ser. No. 426,806
4 Claims. (Cl. 273—95)



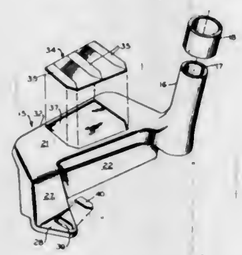
1. Game apparatus for use in a game course comprising:
(1) a set of paddles, a set of balls and a series of boxes in which
(a) each of said paddles contains an elongated handle and a blade, said blade being tilted tangentially from its vertical axis to provide lift,
(1) said blade being angularly adjustable between at least two positions so as to provide a driving position and a chipping position;
(b) each of said balls being light and relatively non-resilient so as to react to impact with a governed speed of travel,
(c) each of said boxes being closed at the side and end being open at the top and bottom,
(i) each of said boxes being so constructed so as to provide at least one easy approach and at least one difficult approach relative to the playing position of a ball;
(a) said easy approach presenting the long axis of at least a portion of the box in alignment with said ball, and
(b) said difficult approach presenting the short axis of at least a portion of the box in alignment with said ball;
(d) mounting means for elevating the bottom of said boxes from a position level with the ground up to a height from the ground less than the diameter of one of said balls so as to maintain the top of each box in a substantially horizontally level plane.

3,360,267
DICE AGITATION AND CASTING APPARATUS
Ernest M. Johnson, 926 E. Culver St., Phoenix, Ariz. 85006
Filed May 13, 1965, Ser. No. 455,385
7 Claims. (Cl. 273—145)



1. A dice agitation and casting apparatus comprising:
(a) a closed, hollow body rotatable about a substantially horizontal axis,
(b) an inner surface of said body having a roughened portion,
(c) a dice-supporting shelf positioned in said body extending from the inner surface of said body to said axis,
(d) said shelf substantially co-extensive with said body in the direction of the axis of rotation,
(e) at least one die disposed in said body,
(f) leg members rotatably supporting said body,
(g) rotation means co-operating with said body to impart rotational movement thereto,
(h) means for arresting rotation of said body member to less than 360°.

3,360,268
GOLF SWING TRAINING DEVICE
James J. Molinari, 55 Chumasero Drive, San Francisco, Calif. 94132
Filed Apr. 26, 1965, Ser. No. 450,802
3 Claims. (Cl. 273—186)

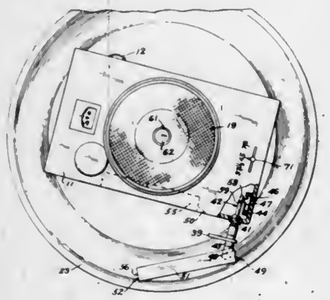


1. In combination with a golf club head having a hosel, a ball engaging face and a sole intersecting said face in a bottom edge, a golf instruction device comprising:
a body of semirigid resilient material releasably secured to said golf club head,
said body including a generally tubular split portion surrounding the hosel of said club head and an end portion opposite said tubular portion engaging the toe of said club head,
the distance between said portions being such that said club head is gripped between said portions by the inherent resiliency of said material,
said body including an upper face extending rearwardly from the face of said club head and provided with an indicium indicating a path of travel at right angles to said bottom edge, said body including an integral extension extending outwardly from said end portion in a forward direction relative to said club head face and spaced downwardly from the upper edge of said ball engaging face for indicating a path of travel perpendicular to said bottom edge.

ERRATUM

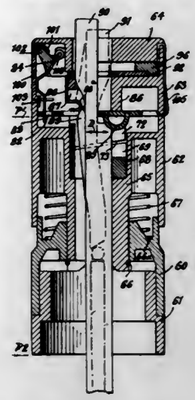
For Class 274—1 see:
Patent No. 3,360,257

3,360,269
MINIATURIZED PHONOGRAPH
John K. Dunn, Livermore, Calif., assignor, by mesne assignments, of eighty-five percent to John K. Dunn, Berkeley, Calif., and fifteen percent to Morton J. Fried, Livermore, Calif.
Filed Aug. 25, 1964, Ser. No. 391,999
8 Claims. (Cl. 274—9)



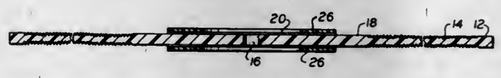
1. In combination with a grooved disc record, a phonograph comprising, in combination; a housing including an audio amplifier for amplifying electrical audio signals and a speaker to which the amplifier signals are fed, an arm assembly for a phonograph including a rotatable housing containing sound reproduction equipment comprising in combination;
an electrical connector non-rotatively secured to the housing coupled to said amplifier;
a support member;
a resilient connector joining said electrical connector and said support member in a manner which enables said support member to rotate about a horizontal axis relative to said electrical connector, said resilient connector comprising a piece of flexible resilient tubing with one end tightly surrounding a portion of said electrical connector and the other carrying said support member and urging the same downwardly; and
a transducer arm with a record groove urging element on the outer end thereof which is urged by said flexible resilient tubing, acting through said support member and the transducer arms, downwardly upon the grooved record hingedly joined to said support member whereby said arm is movable about a vertical axis.

3,360,270
RECORD SPINDLE ADAPTOR
Stephen Nester, Keyport, N.J., assignor to Duotone Company, Inc., Keyport, N.J., a corporation of New York
Filed Jan. 15, 1965, Ser. No. 440,654
2 Claims. (Cl. 274—10)



1. In a record adaptor for use with a spindle having a slot, a shelf and an actuating cam, a body having a spindle passage, a sleeve situated in the body and adapted to receive a spindle of either an offset or straight type, record-supporting feet arranged around the sleeve and spring-biased by spring means disposed between them and the sleeve, blades arranged above the feet and slidably mounted relatively thereto, a plate of cruciform shape mounted above the blades and slidable transversely of the body and having a passage through which the spindle extends, said plate having parts for engaging said blades, a thumb pad movable toward the spindle, a first spring engaging the plate and the thumb pad and operative to bias the thumb pad in one direction, the plate having an element for engaging with said slot, a fixed latching spring having a part adapted to straddle the cam, and a flexible reactance washer, which upon distortion tends to return to its original shape, arranged above the latching spring, said washer having a spindle receiving passage disposed in alignment with the spindle passage in said body and having a portion bounding the passage overlying the spindle passage in said body, said washer being distortable upwardly by engagement of said portion with said spindle when the adaptor is placed in the spindle and upon release of the adaptor placing force returning to its original position, thereby providing a lifting force which causes a predetermined amount of clearance between the plate and the shelf to allow for sliding movement of the plate.

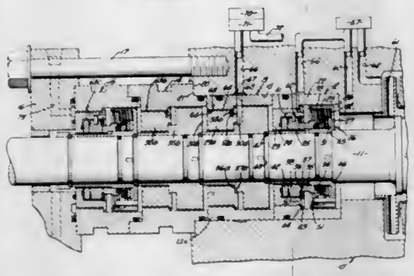
3,360,271
MEANS FOR PREVENTING RELATIVE SLIPPAGE BETWEEN PHONOGRAPH RECORDS
Stephen George, 247 Swinton Ave., Bronx, N.Y. 10465
Substituted for abandoned application Ser. No. 201,702, June 11, 1962. This application Dec. 16, 1966, Ser. No. 602,404
6 Claims. (Cl. 274—42)



1. A phonograph record of the disc type comprising a thin circular plastic body with a central hole therein and a spiral grooved track on each side surface thereof, said body having a smooth surface around the hole on each

side surface thereof, a preforated label superposed on each smooth surface and a ring on the label at the periphery of the label, said ring being composed of flexible vinyl plastic film having inherently sticky, highly polished outer surfaces adhered onto the label.

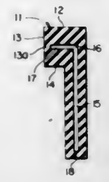
3,360,272
PRESSURE STAGING MECHANICAL SEAL
Carl J. Blom, San Marino, and Fernando G. Marrujo, La Habra, Calif., assignors to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed Aug. 17, 1964, Ser. No. 390,050
2 Claims. (Cl. 277—3)



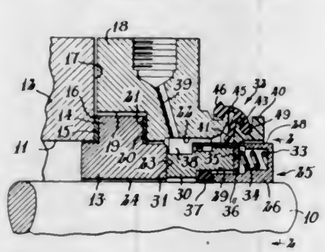
1. Apparatus for sealing a rotary shaft to a housing having a shaft opening through which the rotory shaft extends including a first mechanical seal having a rotary sealing ring connected to the shaft for rotation therewith and a relatively stationary sealing ring carried by the housing, the rings having sealing faces in opposed relationship, and a second mechanical seal axially spaced from the first mechanical seal to provide an enclosed chamber between the mechanical seals, the second mechanical seal having a second rotary sealing ring connected to the shaft for rotation therewith and a second relatively stationary sealing ring carried by the housing, the second rings having sealing faces in opposed relationship, wherein the improvement comprises a first pressure reducing cell bridging said first mechanical seal for direct fluid communication between one side of said first mechanical seal and said enclosed chamber, and a second pressure reducing cell bridging said second mechanical seal for direct fluid communication between the opposite side of said second mechanical seal and said enclosed chamber each of said pressure reducing cells comprising means providing an open, elongated fluid conduit having fixed dimensions, whereby a fluid pressure differential between said one side of said first mechanical seal and said opposite side of said second mechanical seal causes fluid from said one side to continuously flow through said first pressure reducing cell, thence through said enclosed chamber, thence through said second pressure reducing cell, and thence to said opposite side of said second mechanical seal, thus to establish in said enclosed chamber a fluid pressure that is intermediate the fluid pressure on said one side of said first mechanical seal and the fluid pressure on said opposite side of said second mechanical seal, each of said mechanical seals thereby being automatically sujected to a prescribed fluid pressure differential thereacross.

3,360,273
INFLATABLE GASKET FOR PIPE JOINTS
Donald D. Hundt, Arlington, Mass., and David G. Greenlie, deceased, late of Weston, Mass., by Marguerite G. Greenlie, administratrix, Wiscasset, Maine, assignors to W. R. Grace & Co., Cambridge, Mass., a corporation of Connecticut
Filed Nov. 30, 1965, Ser. No. 510,708
6 Claims. (Cl. 277—34)

1. A gasket for bell and spigot pipe joints which comprises an annular inflatable tube, a preformed circumferential rib segment projecting radially outwardly from a portion of the outer periphery of said tube, said rib segment comprising in vertical cross-section an upper wall, a side wall and a lower wall, the thickness of the side wall being less than the upper and lower walls taken individually, and a confined continuous circumferential channel forming a core within said tube, the upper extremity of said channel being directed radially outwardly to lead into the rib segment, the end wall of the upper extremity of said channel terminating a short distance from the side wall of said rib segment whereby the rib segment is forced to engage the inner surface of the bell end of a pipe and hold the gasket in place as the channel is filled with inflating material.



3,360,274
LIP SEAL WITH SUPPORTING LIP
James A. Grant, Chicago, Ill., assignor to Crane Packing Company, Morton Grove, Ill., a corporation of Illinois
Filed May 12, 1965, Ser. No. 455,152
9 Claims. (Cl. 277—58)

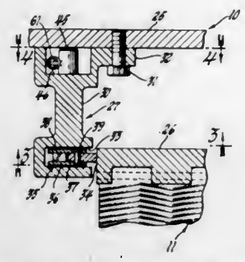


1. A mechanical seal for sealing an annular opening between relatively rotating machine elements, said seal comprising a ring of relatively hard material encircling one of said elements, a radially extending lip on said ring contacting the said one of said elements, said lip having slits therein to lend flexibility to said lip, each of said slits having two ends and being angularly disposed relative to the axis of the ring with one end of each of said slits circumferentially displaced from the other end thereof to accommodate expansion and contraction of said lip, an elastomeric ring encircling said one of said elements, means effecting a fluid-tight seal between the elastomeric ring and the other of said relatively rotatable elements, means effecting a fluid-tight seal between the elastomeric ring and the ring of relatively hard material, and means for effecting a seal across the slits in the ring of relatively hard material.

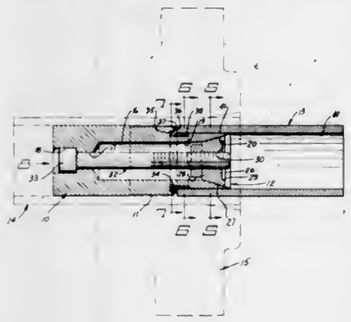
3,360,275
BY-PASS SEAL
Charles H. McCreary, Oak Park, Ill., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Jan. 25, 1966, Ser. No. 522,861
5 Claims. (Cl. 277—84)

1. A by-pass seal for a rotary regenerator having a housing and a matrix rotatable therein, the seal comprising, in combination,

an arcuate support mountable on the housing
the support defining a slot coaxial with and adjacent to the matrix
a plurality of seal shoes disposed end-to-end in the slot, each shoe having a face adapted to engage the matrix
means coupling the shoes to the support restraining the shoes against movement along the slot and providing freedom of movement outward from the slot to engage the matrix
two shafts rotatably mounted in the support for each shoe
arms fixed on the shafts bearing against the shoe at the side opposite the matrix-engaging face
a spring means for each shoe coupling the shafts and biasing the shafts to rotate so as to press the shoe against the matrix.

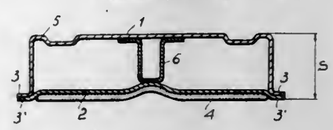


3,360,276
AUTOMATIC SCREW MACHINE TUBE STOCK EXTENSION MEANS
John J. Peffer, 3303 Grange Road, Trenton, Mich. 48183
Filed June 10, 1965, Ser. No. 462,957
3 Claims. (Cl. 279—2)



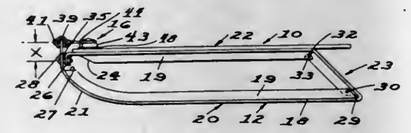
1. A holder for tubular workpiece comprising:
(a) an elongated body member;
(b) a collet integrally formed on one end of said body and extended axially therefrom;
(c) said collet including a plurality of spaced apart, radially disposed flexible members which are adapted to be moved radially outward into gripping engagement with the internal surface of a tubular workpiece for holding the tubular workpiece in place on the collet;
(d) an expander member mounted within said movable members;
(e) a fluid sealing means disposed in the spaces between each of said movable members and about the periphery of said collet at the junction with said body; and,
(f) means operatively mounted in said body engageable with said expander member for moving the expander member to move said collet movable members radially outward into gripping engagement with the internal surface of a tubular workpiece.

3,360,277
STRUCTURE FOR SNOW SKIS AND THE LIKE, OF PRESSED METAL PLATE, PREFERABLY OF STEEL
Mario Salvo, Via Pirelli 30, Milan, Italy
Filed Apr. 9, 1965, Ser. No. 446,837
Claims priority, application Italy, Apr. 28, 1964, 9,242/64
5 Claims. (Cl. 280—11.13)



1. A ski comprising two basic elements pressed from thin strong metal and spaced apart over most of their width, and a single reinforcing member pressed from sheet metal, both said basic elements having at both longitudinal edges thereof two flat horizontal marginal flanges that are disposed one on top of the other and welded together by continuous welds so as to constitute continuous and sharp side edges of the ski, said reinforcing member being U-shaped and being narrower than said basic elements and being disposed between said two basic elements and being welded to only one of said basic elements.

3,360,278
SNOW SLED
Joseph J. Lajack, 3446 Berkshire, Warren, Mich. 48091
Filed Sept. 27, 1965, Ser. No. 490,321
10 Claims. (Cl. 280—21)

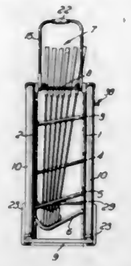


1. A steering sled comprising a horizontal deck, a pair of runners supporting said deck, each runner including a flat runner portion of substantial horizontal width, and means connecting said runner and deck in vertically spaced relation to one another, and manually operable steering means movably mounted on said sled, said steering means having operating connections to said runners adjacent the forward ends of the latter and said runner portions having rigid connections to said deck rearwardly of said operating connections, whereby operation of the steering means produces a substantial and rearwardly diminishing twist of said runners between the respective operating and rigid connections about axes substantially paralleling the length thereof.

3,360,279
GOLF CLUB CARRIER IN THE FORM OF A TROLLEY
Arthur John Hunt, 24 Chart Lane, Reigate, England
Filed Apr. 6, 1966, Ser. No. 540,708
Claims priority, application Great Britain, Apr. 9, 1965, 15,283/65
7 Claims. (Cl. 280—35)

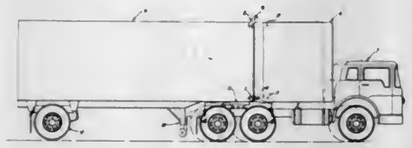
1. A golf club carrier comprising a shaft structure mountable on an undercarriage and including rungs through which iron clubs are threaded to be held thereby,

the rungs being spaced apart to engage the threaded clubs in the region of the heads and handles thereof as well as in the region of the middle of the club shafts, and a support rung on which the club heads are supported, the support rung being inclined towards the lower end



of the shaft structure and including an element arranged to arrest the head of a club sliding down the support rung thereby to ensure nesting of the club heads resting on the support rung and consequential separation of the shafts to make each shaft handle readily available.

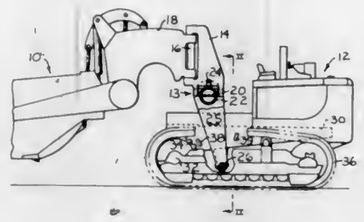
3,360,280
HORIZONTALLY AND VERTICALLY MOVABLE FIFTH WHEEL FOR TRUCK-TRACTORS
Frank L. Betchart, Fremont, Calif., assignor to Frank L. Betchart, James R. Cypher, and Thomas Rockwell Kerr
Filed Oct. 6, 1965, Ser. No. 493,416
8 Claims. (Cl. 280—407)



8. A fifth wheel assembly for a tractor comprising:
a carriage having first and second longitudinally spaced parallel axles each carrying a pair of spaced rollers;
said axles being mounted at right angles to the longitudinal axis of said trailer and being mounted for displacement longitudinally of said tractor relative to one another;
first rail means adapted for connection to the frame of said tractor for supporting said rollers and guiding said carriage longitudinally of said tractor;
a third axle mounted on said carriage intermediate and in elevated parallel relation to said first and second axles and carrying a pair of spaced rollers adapted for rolling movement on said tractor frame;
a pair of frames pivotally connected to and joining said first and third and said second and third axles respectively for elevating said fifth wheel upon movement of said first and second axles relatively closer to one another; and
means releasably connecting said carriage to said first rail means permitting free rolling movement of said fifth wheel assembly longitudinally of said tractor.

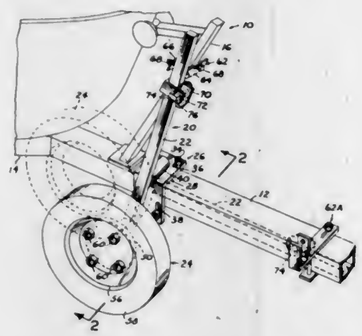
3,360,281
HITCH ASSEMBLY FOR TRACTOR-TRAILER UNIT
Andrew J. Allen, Washington, Ill., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Jan. 14, 1966, Ser. No. 520,728
1 Claim. (Cl. 280—423)

A tractor-trailer unit wherein the trailer is supported adjacent its rear end by wheels and adjacent its forward end by a hitch assembly with the tractor, said tractor having track-type ground engaging means and rear drive sprockets for moving the tracks, said hitch assembly having pivotal connections to the tractor forward of the rear drive sprockets and below the rotational axis thereof for supporting the weight of the trailer and lowering the center of gravity of the loaded tractor and to further distribute the trailer weight along the entire ground-engaging portion of the tracks to provide increased traction, said pivotal connections comprising a pair of horizontally disposed coaxial pivot pins each attached to one of a pair of spaced-apart, parallel longitudinally extending tractor frame members at an angle normal thereto, a pair of



vertically extending arms, each arm having a first end pivotally mounted on one of said pivot pins, stop blocks secured to the tractor frame on each side of said arms to limit the pivotal movement of the arms, a horizontally disposed tube interconnecting the second ends of said arms, a longitudinal pivot pin supported by the middle portion of said tube at an angle normal thereto, a frame member pivotally mounted on said longitudinal pivot pin and extending outwardly from said arms, stop means formed on said frame member for contacting said tube to limit pivotal movement of said frame member, said frame member having a vertically disposed pivot on which the forward end of said trailer is mounted.

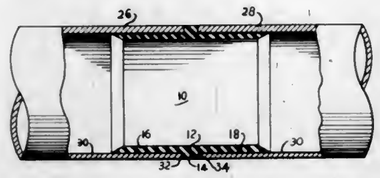
3,360,282
TRAILER TONGUE SUPPORT
Raymond O. Dugan, 1333 SW. 32nd St., Oklahoma City, Okla. 73119
Filed May 9, 1966, Ser. No. 548,579
5 Claims. (Cl. 280—475)



1. A support assembly for a two wheel trailer tongue having an upstanding boat anchor intermediate its ends, comprising: an elongated lever; means connecting said lever, intermediate its ends, to said tongue forwardly of said boat anchor and in laterally off-set relation with respect to the longitudinal axis of said tongue permitting

vertical pivoting movement of said lever about a horizontal axis; wheel means connected to one end portion and extending laterally of said lever opposite said tongue; and latch means connected with said boat anchor releasably securing the other end portion of said lever.

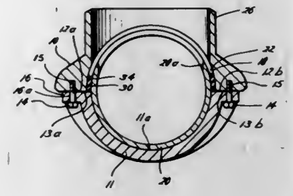
3,360,283
PIPE COUPLING
Alfred A. Guthrie, Tulsa, Okla., assignor, by mesne assignments, to Spiral Pipe Corporation, Oklahoma City, Okla., a corporation of Oklahoma
Filed July 30, 1965, Ser. No. 476,094
1 Claim. (Cl. 285—110)



In combination with a pair of joints of pipe of substantially rigid, unyielding material having smooth internal surfaces, a coupling for securing the joints in end-to-end relation to form a portion of a fluid circuit, comprising an elongated annular body of elastic material having a first end portion thereof inserted in the end of one of the joints and the other end portion thereof inserted in the end of the other joint, said body having:
an external circumferential flange formed on the central portion thereof between said first and other end portions sized to be engaged by the ends of the joints when the end portions of the body are inserted in the ends of the joints;
an outer diameter throughout the length of said first end portion substantially corresponding to the inner diameter of said one joint;
an outer diameter throughout the length of said other end portion substantially corresponding to the inner diameter of said other joint;
an outward taper formed on the ends of said first and other end portions, said tapers being formed at an angle of about 45° to the longitudinal axis of the body for a relatively small outer portion of the length of the taper and then being formed at an angle of about 20° to the longitudinal axis of the body for the remaining portion of the length of the taper;
a constant inner diameter throughout the length of said body between said end tapers, said inner diameter substantially corresponding to the inner diameter of said body at the axially innermost ends of said tapers; and
a plurality of external circumferential lips on each end portion sized to be distorted by the respective joint into said body and frictionally grip the inner surface of the respective joint.

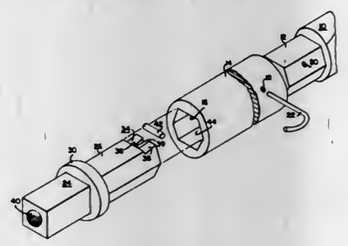
3,360,284
SPLIT T
Burton Ver Nooy, Broken Arrow, Okla., assignor to T. D. Williamson, Inc., Tulsa, Okla.
Filed Jan. 9, 1967, Ser. No. 607,937
3 Claims. (Cl. 285—110)

1. A split T adapted to be mounted on and to encircle a length of pipe, comprising a run having first and second run members, each of which has a semicircular internal surface with a radius of curvature substantially equal to that of the pipe the members are to encircle and longitudinal edge surfaces that substantially abut the longitudinal edge surfaces of the other member when the members are positoned to encircle a pipeline, means for holding the members mounted on a pipe with their longitudinal edges substantially abutting, the internal surface of the first run member having an outwardly enlarged recess extending from one longitudinal edge surface to another and intermediate oppositely facing surfaces at its ends to provide an arcuate cavity between the member and the pipe when the member is mounted thereon, said cavity being bounded on the ends by the end surfaces of the recess and on the sides by the longitudinal edge surfaces



of the second run member, said first run member further having a lateral opening intersecting the recess, a branch attached to the first member and connected to the interior of the run through the opening, means substantially filling the cavity for sealing between the pipe and first run, said sealing means including a back-up portion having outer edges engaging the end surfaces of said recess in the first run member and the longitudinal edge surfaces of the second run member, and a pressure energized seal portion having inner edges defining an opening aligned with the lateral opening in said first run, said sealing means being flexible from a substantially flat, rectangular shape, in which the opening therein is laterally elongated, into an arcuate shape for disposal within said cavity.

3,360,285
CONNECTORS
Elmer J. Huckshold, Mulkeytown, Ill., assignor to Allegheny Ludlum Steel Corporation, Brackenridge, Pa., a corporation of Pennsylvania
Filed Mar. 15, 1965, Ser. No. 439,899
5 Claims. (Cl. 287—2)



1. Apparatus for connecting first and second members for for concurrent rotation wherein said first member has wall means defining a polygonal opening extending inwardly from an entrance at one end thereof, and wherein said second member includes a shank portion having a cross section substantially identical to and slightly smaller than the cross section of said polygonal opening to permit said shank portion to slide freely into the opening of said first member, said apparatus comprising a cam surface formed on said shank portion of the second member, said cam surface having a planar portion

facing a flat surface of said wall means of the first member when the shank portion is disposed in said opening, the planar portion of said cam surface sloping toward said flat surface of the wall means it faces in a direction away from the entrance of the opening, roller means positionable in rolling contact with said cam surface and engageable therewith and with the flat surface of said wall means of the first member facing the cam surface, the planar portion of said cam surface being slotted, said second member having an axial bore intersecting said slot, said roller means being so positioned on said cam surface to permit free insertion of said shank portion into said opening while coacting with said cam surface and said wall means to prevent removal of said shank portion from said opening, said axial bore and said slotted cam surface being aligned for insertion of a tool for securing said roller against said cam surface to permit removal of said shank portion of the second member from the opening of the first member.

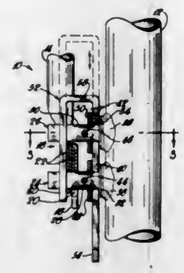
3,360,286
MOP HEAD CONSTRUCTION
Elbert D. Smyth, R.F.D. 1, Hebron, Ohio 43025
Filed Aug. 7, 1963, Ser. No. 300,530
10 Claims. (Cl. 287—14)



1. A universal joint for a mop frame comprising a base means including longitudinal and lateral axes; a handle attaching portion provided with handle receiving means at one end and downwardly extending flange portions having aligned lateral bores and a tapered outer surface at its other end; adjusting means for varying frictional resistance to pivoting of said handle attaching portion about said lateral axis, said adjusting means including a support member having an upraised arm portion provided with a lateral hole having a tapered inner surface frictionally engaging said tapered outer surface on said handle attaching portion, a fastener extended through said lateral bores and lateral hole, and a manual actuating means for varying the frictional engagement between said tapered surfaces; means mounting said support member on said base means for pivotal movement about said longitudinal axis and for varying the frictional resistance of the joint; and fastening means securing said longitudinal means to said base means.

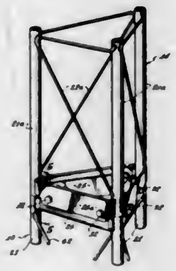
3,360,287
SCAFFOLDING
Wilbur M. Wyse, Archbold, Ohio, assignor to Bil-Jax, Inc., Archbold, Ohio, a corporation of Ohio
Filed June 3, 1965, Ser. No. 461,109
6 Claims. (Cl. 287—53.5)

5. A brace lock assembly comprising a vertical upright, a cross brace member, a pair of shanks affixed to said upright and extending outwardly in a common direction therefrom, said shanks being spaced apart a predetermined distance, said shanks having heads affixed to said upright with annular surfaces facing away from said upright, said shanks having transverse passages, pins received in said transverse passages, washer means between said pins and said annular head surfaces, a locking member comprising a first vertical wall having a closed end slot therein, said shanks being received in said slot with said vertical wall being located between said washer



means and said annular bolt head surfaces, said locking member also having a connecting wall integral with the vertical wall at the upper end thereof, and a second vertical wall at the outer end of said connecting wall and extending downwardly to prevent said cross braces from being removed from said lower shank when said locking member is in a lower position.

3,360,288
JOINT FOR MODULAR TOWER
Harold H. Holscher, Tulare, Calif., assignor to Tri-Ex Tower Corporation, Visalia, Calif., a corporation of California
Filed Jan. 13, 1966, Ser. No. 520,489
6 Claims. (Cl. 287—189.36)



1. A joint construction between sections of a modular tower having a plurality of connected sections each including a pair of laterally spaced, vertically extending legs in axial alignment with the respective legs of an adjoining section, comprising:

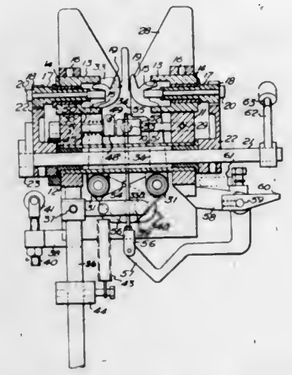
a first plate extending between and fastened at horizontally spaced positions to a pair of vertically extending legs on one section, said first plate having a substantially flat central section and end sections angularly disposed relative to said central section;

a second plate extending between and fastened at horizontally spaced positions to a pair of vertically extending legs on an adjoining section, said second plate also having a substantially flat central section and end sections angularly disposed relative to the central section of the second plate;

the two plates having at least portions thereof that are horizontally offset suffiicently with respect to each other that areas on vertical opposing side faces of the two plates are overlapping; and

clamping means bearing against exterior side faces of the plates and passing through the plates within said overlapping area.

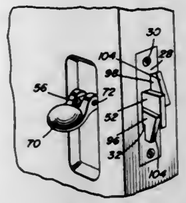
3,360,289
KNOTTERS
John K. Wain, Cheadle Hulme, England, assignor to Wildt Mellor Bromley Limited, a company of the United Kingdom, Northern Ireland, and Isle of Man
Filed Aug. 18, 1965, Ser. No. 480,563
Claims priority, application Great Britain, Aug. 19, 1964, 33,797/64
14 Claims. (Cl. 289—2)



1. A knotter comprising side plates formed with yarn guide slots, a pair of rotary tying heads between said plates, means for rotating such heads, means on the heads for cutting surplus yarn and holding the yarn ends, at least one set of crossers for positioning the yarn ends relative to at least one of the tying heads, and a stripper for pulling the yarn embryo knot convolutions over the yarn ends, held by at least one of the tying heads, to complete the knot, characterised by a frame on which the parts of the knotter mechanism are assembled as a unit and to which frame the side plates are detachably secured, means for mounting and dismounting a set of crossers adjacent to at least one of the side plates, means for enabling the tying heads to be moved axially to alternative positions relative to the yarn guide slots in the side plates, and means for moving the stripper to register with at least one of the tying heads in each said alternative position of the tying heads without otherwise dismantling the assembly whereby the parts may be assembled in the first instance and reassembled as a knotter for tying any one of a plurality of alternative knots.

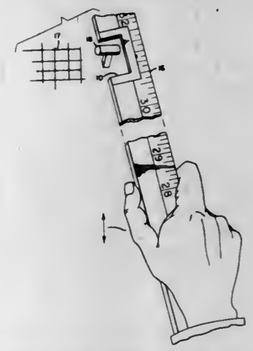
3,360,290
LOCK CONSTRUCTION
William G. De Gray, 900 25th St., West Palm Beach, Fla. 33407
Filed Jan. 6, 1966, Ser. No. 519,131
5 Claims. (Cl. 292—6)

1. A lock comprising, a casing, a main bolt slidably mounted in said casing, means in said casing for moving said main bolt longitudinally therethrough, a keeper, said main bolt movable from said casing by said moving means into said keeper, at least one auxiliary bolt in said casing, said auxiliary bolt being pivotally mounted at one end on the innermost end of said main bolt whereby said auxiliary bolt will be moved from said casing when said main bolt is so moved, hook means on said auxiliary bolt, said hook means being at the other end of said auxiliary bolt and extending substantially adjacent the outermost end of said main bolt, said moving means comprising an actuator member mounted in said casing for rotation about a fixed axis for selectively engagement with said main bolt and a longitudinal driving thereof, and means for resiliently biasing said other end of said auxiliary bolt



laterally outward of the path of travel of said main bolt, said actuator member including means thereon for limiting the lateral movement of said auxiliary bolt under the influence of said biasing means, and means on said actuator member permitting said biasing means to move said auxiliary bolt laterally outward as said actuator member is rotated into driving engagement with said main bolt.

3,360,291
REGISTER REGULATOR AID
Randall M. Barrett, 3033 Scarlet Oak Ave., Las Vegas, Nev. 89105
Filed Sept. 29, 1965, Ser. No. 491,350
1 Claim. (Cl. 294—19)



A register regulator aid insert implement used to regulate louver vents in heating and cooling systems in combination with an elongated notched stick, said insert being approximately U-shaped and formed with exterior channeled walls, knurls on the inner sides of the insert to prevent slippage when the inner side walls of the insert are engaged with a vent arm, said insert being mounted within said stick notch whereby the walls of the notch are received within the channeled walls of the insert.

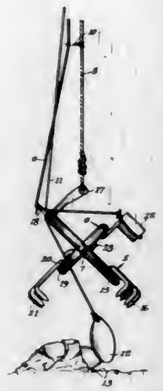
3,360,292
GRAPPLE
Durward M. Trammell, 5009 Genevieve St., San Bernardino, Calif. 92407
Filed Sept. 6, 1966, Ser. No. 577,359
4 Claims. (Cl. 294—66)

1. A grapple comprising:

(a) an outer ring element provided with grapple hooks suspended from a cord and formed to hang from said cord at an angle to the vertical with the diametrically opposite portions of the ring on opposite sides of said cord,

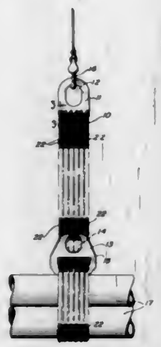
(b) an inner ring element with grapple hooks and pivotally connected to and loosely fitting in the outer ring and weighted to assume an angle intersecting the angle of the outer ring,

(c) the hooks of the rings extending from the lower portions of the rings and bent to be directed toward each other, the hooks of one ring being spaced offset from and inter-fitting with the hooks of the other ring, and



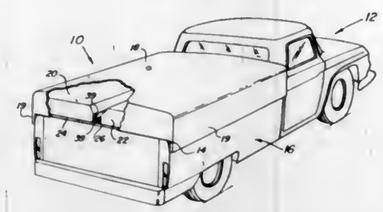
(d) a second cord connected to the weighted portion of the inner ring, passing through an eye in the outer ring, and extending in general parallelism to the first cord, the inner ring element, upon upward pull on the second cord relative to the first cord, swinging the latter ring on its pivot to pivot the rings in directions to bring the hooks thereof into grappling inter-engagement.

3,360,293
METAL WEB SLING
George Barthule, Wheeling, Ill., assignor to Liftex Slings, Inc., Libertyville, Ill., a corporation of Illinois
Filed Mar. 16, 1966, Ser. No. 534,784
7 Claims. (Cl. 294—74)



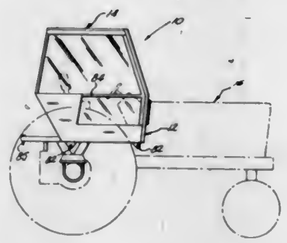
1. A sling comprising a plurality of metal chains of equal length placed in side-by-side parallel arrangement,
a metal terminal at each end of the sling, the ends of said chain lengths being connected thereto, and
a plurality of welds connecting adjoining links of adjacent chain lengths intermittently along their length.

3,360,294
COLLAPSIBLE CAMPER
Leo Cieslak, 1263 Church St. NE., Salem, Oreg. 97301
Filed Oct. 20, 1965, Ser. No. 498,664
6 Claims. (Cl. 296—27)



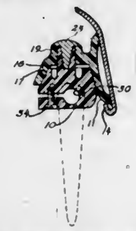
1. A collapsible cabin for mounting on a truck bed, comprising:
a lower section supported on the truck bed;
an upper section vertically movable over said lower section to form a roof for said cabin;
hydraulic means for raising and lowering said upper section, said hydraulic means comprising,
a pump,
a motor to actuate said pump, and
a piston and cylinder combination in each corner of said lower section, said cylinders being attached to said lower section, said pistons being attached to said upper section, extension and retraction of said pistons raising and lowering said upper section over said lower section, respectively; and
means for insuring uniform vertical movement of each of said pistons during raising and lowering of said upper section, said insuring means being connected to said hydraulic means and comprising:
a rotatable drum, and
a cable associated with each of said pistons, each of said cables being attached at one of its ends to the upper end of its associated piston and at its other end to said drum, each of said cables being wound around said drum,
whereby unwinding and winding of said cables causes uniform extension and retraction of said pistons, respectively.

3,360,295
TRACTOR CAB ASSEMBLY
Donald F. Reynolds, 4415 E. Textile Road, Ypsilanti, Mich. 48197
Filed June 13, 1966, Ser. No. 557,221
10 Claims. (Cl. 296—28)



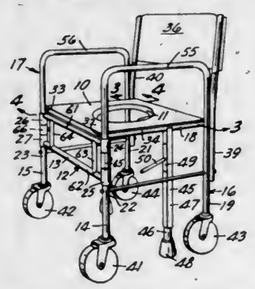
1. A cab construction for a conventional farm tractor comprising a frame assembly adapted to be mounted on the tractor and a cab body supported on said frame assembly and adapted to be moved to selected positions thereon, said frame assembly including horizontal tracks on its opposite sides and a stationary front closure structure, said front closure structure having a windshield and upright frame members connected to the forward ends of said tracks and supporting said windshield, said cab body including top, side and rear panel portions cooperating with said front closure structure when the cab body is in a closed position to define an enclosure for the driver of the tractor, said cab body being movable rearwardly on said tracks from its closed position to an open position, and releasable means for locking said cab body on said tracks in either its closed position or its open position, said tracks terminating at the rear of said frame assembly so that said cab body can be moved rearwardly off said frame assembly when the means for locking the cab body in position are released.

3,360,296
VISOR MOUNTING APPARATUS
Arthur R. Hatch, Plymouth, Mich., assignor to American Motors Corporation, Kenosha, Wis., a corporation of Maryland
Filed Mar. 9, 1966, Ser. No. 533,006
5 Claims. (Cl. 296—97)



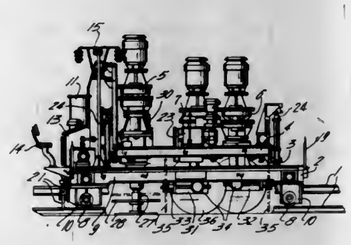
1. For use with an automotive vehicle having a body, a wind-shield mounted in an opening in the body and a sun visor: means for mounting the visor on the body, said means including a mounting bracket having a base portion secured to the body, a boss integral with the base and projecting outwardly therefrom, the underside of the boss having a surface formed as a portion of a cone; a hub portion above the conical surface and having a bore therethrough; a pivot bracket having a stem projecting through the bore and a frusto-conical external surface for engaging the conical surface on the boss; a rivet having a head engaging the upper end of the hub, whereby to establish a frictional loading between the mounting bracket and the pivot bracket; a rod fastened to the pivot bracket and the sun visor being carried on the rod.

3,360,297
COLLAPSIBLE CHAIR
Carl W. Oja, 2190 Marshall Ave., St. Paul, Minn. 55104, and Richard L. Scheuerman, Inver Grove, Minn.; said Scheuerman assignor to said Oja
Filed Oct. 24, 1965, Ser. No. 504,597
12 Claims. (Cl. 297—36)



1. A collapsible portable chair comprising, in combination, a seat member, a horizontally-extending vertically-oriented brace assembly including a horizontal brace member below the plane of said seat member and two brace legs operably attached to opposite ends of said brace member for support of said brace assembly in a vertical plane, a first horizontally-extending vertically-oriented rigid support unit operably attached to one end of said brace assembly, and a second horizontally-extending vertically-oriented rigid support unit operably attached to the other end of said brace assembly, each of said rigid support units comprising a seat-supporting member adapted to act in combination with said seat member to hold said seat member against horizontal displacement with respect to said rigid support units and a support leg spaced laterally remote from the attachment of the rigid support unit to said brace assembly, said chair being characterized further in that (1) each operable attachment of a rigid support unit to an end of said brace assembly is a pivotal attachment of cooperating metal parts including a vertically-extending metal pivot member which constitutes a said brace leg rigidly united with a rigid support unit, and a snug metal sleeve assembly of vertically-spaced parts about said pivot member and rigidly fixed to said horizontal brace member, with a guide collar rigidly fixed to said vertically-extending metal pivot member at a location between the vertically-spaced parts of said metal sleeve assembly, each said operable attachment being such that the rigid support unit is foldable to a position essentially adjacent said brace assembly, and (2) disengageable means to unite said rigid support units at the portion thereof remote from their pivotal attachment, whereby said seat member may be located in operative seat-use condition on said rigid support units, said means when separated with said seat member out of seat-use condition being such as to allow each of said rigid support units to be folded toward said horizontally-extending brace assembly to collapse said chair for transport from one place to another.

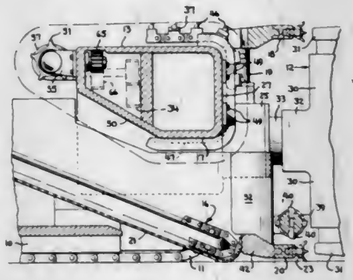
3,360,298
STONE-CUTTING MACHINE WITH MOBILE CARRIAGE AND TILTABLE SAWS
Alexei Markovich Stoljarov, Margarita Sergeevna Khorosheva, Igor Mikhailovich Matveev, and Alexandra Gavrilovna Konstantinova, Moscow, Vasily Vladimirovich Brjanov, Simferopol, and Galina Ivanovna Kovrigina, Moscow, U.S.S.R., assignors to Vsesojuzny Nauchno-Issledovatelsky Institute Novykh Stroitelnykh Materialov, Moscow, U.S.S.R.
Filed June 13, 1965, Ser. No. 471,566
4 Claims. (Cl. 299—41)



1. A stone-cutting machine for removing stone blocks from continuous rock, comprising a longitudinal carriage for moving along the face of the rock, a drive enabling the travel of said longitudinal carriage along the face, guides positioned on said longitudinal carriage at least substantially perpendicular to the direction of travel of said carriage, a sawing carriage travelling along said guides, a drive enabling the movement of said sawing carriage along said guides, at least one sawing unit for making horizontal cuts fixed on said sawing carriage, at least two sawing units for making vertical cuts also fixed on said

sawing carriage, each including two output shafts located in a horizontal plane at an angle of 90° in relation to each other, a means for one-sided lift of said sawing carriage for an initial cutting into the rock, and means for tilting said sawing units for making vertical cuts while cutting out wedge-shaped blocks.

3,360,299
BORING TYPE MINING MACHINE HAVING RIPPER CUTTER CHAINS GUIDED BETWEEN BORING HEADS
Charles J. Arndt, Harvey, Ill., assignor to Westinghouse Air Brake Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 11, 1965, Ser. No. 494,632
10 Claims. (Cl. 299—57)



1. In a continuous mining machine having a mobile main frame,
a cutter frame mounted at the front end of said main frame and projecting forwardly therefrom,
a pair of laterally spaced rotary boring heads mounted on said cutter frame for rotation about parallel axes extending longitudinally of said main frame,
a conveyor spaced between said boring heads and extending rearwardly along said main frame from a position adjacent the ground in advance of the forward end of said main frame,
said cutter frame having a front face facing said boring heads and a throat extending along and opening toward said conveyor,
a plurality of parallel spaced ripper cutter chains guided for movement about said cutter frame coincident with the space between the cutting paths of said boring heads, downwardly along said front face of said cutter frame and rearwardly along said throat,
and means driving said ripper cutter chains to move downwardly along the forward face of said cutter frame and rearwardly along said throat to dislodge and break up the unmined material projecting from the face between said boring heads.

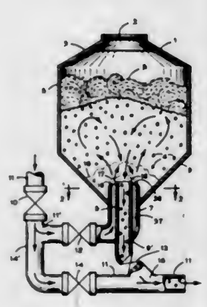
3,360,300
TOY TIRE WITH WHITE SIDE WALL INSERT RING
Joseph H. Carter, Rockford, Ill., assignor to Carter Machine & Tool Co., Rockford, Ill., a corporation of Illinois
Filed Oct. 22, 1965, Ser. No. 502,080
12 Claims. (Cl. 301—63)

12. A vehicle wheel comprising a one piece wheel body of resilient material having a central circular recess in the outer side to receive a hub cap and having a resilient tire portion in concentric relation to and forming a wall surounding said central hub cap recess, said tire portion having an annular opening in the outer side thereof in radially spaced concentric relation to said recess and defining radially flexible inner and outer annular portions, a hub cap press-fitted in said recess so as to be retained by the radially inner annular portion of said tire portion, and a white side wall ring insert of larger diameter than said hub cap entered with a press fit in and substantially



filling said annular opening, whereby the radially flexible inner and outer annular portions of said tire portion are spread apart and the ring insert and hub cap are assembled in mutually retaining relationship to one another.

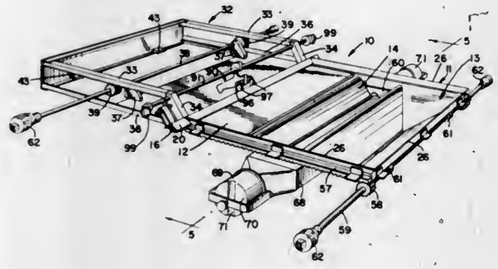
3,360,301
LOADING APPARATUS FOR BULK TRANSPORT SYSTEMS
Ruel M. Donaho, Jr., Houston, Tex., assignor to Hughes Tool Company, Houston, Tex., a corporation of Delaware
Continuation of application Ser. No. 298,185, July 29, 1963. This application July 11, 1966, Ser. No. 564,426
2 Claims. (Cl. 302—53)



1. In a sealable chamber for loading solids into a fluidized bulk transport system, the improvement comprising:
(A) a fluid inlet conduit having a terminal in communication with the chamber, and
(B) an outlet conduit for fluidized solids mounted coaxially with and inside the inlet conduit for parallel and opposed flows of the fluids carried therethrough, and also having a terminal in communication with said chamber, said outlet terminal being located adjacent and substantially coplanar with said inlet terminal, said terminals facing upwardly and the terminal lengths of said conduits extending downwardly from said terminals through the bottom of the chamber,
(C) said inlet and outlet conduits being respectively adapted for connection to means for admitting a flow of fluid to said chamber and means for asporting therefrom a flow of said fluid together with solids removed from said chamber, the said dispositions of said conduits relative to said chamber and to each other being the sole means preventing the formation

of flow-impeding bridges of solids adjacent the terminal of said outlet conduit and thereby increasing the rate at which such solids may be removed from the chamber by said fluid flow.

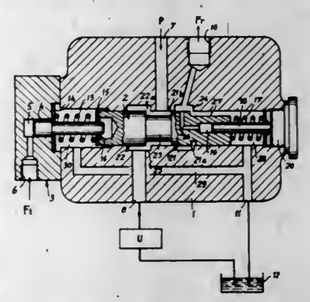
3,360,302
COMBINATION PNEUMATIC AND GRAVITY DISCHARGE HOPPER ARRANGEMENT
Robert D. Bagguley, Calumet City, Ill., assignor to Pullman Incorporated, Chicago, Ill., a corporation of Delaware
Filed Apr. 25, 1966, Ser. No. 545,091
10 Claims. (Cl. 302—52)



1. A combination pneumatic and gravity outlet arrangement for attachment to the open end of a hopper, said pneumatic and gravity discharge arrangement comprising an attachment frame attachable to the open end of said hopper, a supporting frame fixed to said frame and extending lengthwise from said frame, a gravity gate supported on said frame and movable from a position underlying said opening to a position on said supporting frame clear of said opening, a sanitary pan supported on said frame below and underlying said gravity gate and movable lengthwise of said frame from said underlying position to a position on said support frame, pneumatic discharge means fixed in said sanitary pan and extending transversely thereof, said pneumatic discharge means including a pair of lengthwise spaced hood members each having an outboard inclined leg and an inboard inclined leg intersecting at an apex at one end and spaced from the base of the pan at the other ends thereof, said inboard leg of one of said hoods being spaced from the inboard leg of the other of said hoods to define a central material inlet, and conduit means connected to said pan and communicating with both of said hoods.

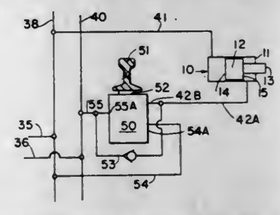
3,360,303
SYSTEM FOR CONTROLLING THE BRAKING OF A VEHICLE TRAILER BY A FLUID CIRCUIT WHICH IS INDEPENDENT OF THE TOWING VEHICLE BRAKE CIRCUIT AND UTILIZED FOR AT LEAST ONE OTHER FUNCTION IN ADDITION
Gaetan de Coye de Castelet, Billancourt, France, assignor to Regie Nationale des Usines Renault, Billancourt, France
Filed May 9, 1966, Ser. No. 548,671
Claims priority, application France, May 22, 1965, 18,066
2 Claims. (Cl. 303—7)

1. A system for controlling the braking of a vehicle trailer by means of an open-centre type pressurized fluid circuit which is independent of the towing vehicle braking system and includes at least one additional servo unit, said towing vehicle braking system comprising an element which is movable as a function of the towing vehicle braking control pressure and operates a slide-valve type distributor supplying the trailer braking system and said additional servo unit, characterized in that said distributor includes a slide cooperating through one of its ends with a thrust spring subjected to the action of said movable element of the towing vehicle braking system and through its other end, with a second spring urging it into contact with said thrust spring, said slide having two valve faces separated by an annular groove into which said open-centre circuit pressurizing source has continuous port, the first of said valve faces being disposed on the same side as said second spring and cooperating with a first groove formed in the distributor valve body and continuously communicating with the trailer braking circuit, the second of said valve faces being disposed on the same side as said thrust spring and cooperating with a second groove in the valve body communicating with said servo unit, said valve faces being devised so that when the distributor slide is



inoperative (no pressure on said thrust spring) said first valve face cuts off communication between said annular groove and said first groove but allows the latter to communicate with a discharge passage, said second valve face allowing said annular groove to communicate with said second groove, and so that when said slide shifts responsively to said thrust spring upon braking of the towing vehicle said first valve face masks said discharge passage and then places said annular groove in communication with said first groove while said second valve face positions itself to constrict fluid flow between said annular groove and said second groove, said slide being additionally formed with a reaction area which is subjected to the fluid pressure applied to the trailer braking system and which biases said slide oppositely to said thrust spring, whereby the braking pressure applied to the trailer is made dependent upon that applied to the towing vehicle brake circuit.

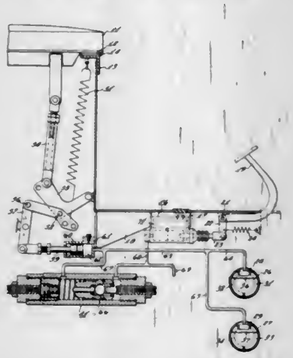
3,360,304
RETARDER SYSTEMS
Cecil E. Adams and Gerald E. De Villers, Columbus, Ohio, assignors to Abex Corporation, a corporation of Delaware
Filed Nov. 9, 1964, Ser. No. 409,856
11 Claims. (Cl. 303—18)



1. A control system for a retarder mechanism for selectively applying at least two distinct levels of retarding forces to car wheels of a railroad car in said retarder mechanism, said control system comprising:
a load cell means operable to generate at least two distinct weight indicating signals indicative of at least

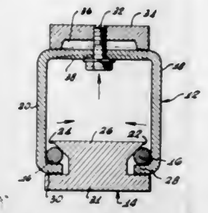
two different weight classifications of railroad cars;
fluid cylinder means having piston means adapted to operate said retarder mechanism, said piston means having first and second faces with different effective areas;
a source of pressurized fluid of a single pressure for exerting of force on either said first or said second piston face or to both said piston faces simultaneously;
valve means connected to said load cell means and operable in response to said weight-indicating signals, for applying said pressurized fluid to said first side of said piston means when said valve is in one position, and to apply said pressurized fluid to both faces of said piston when said valve means is in another position to produce a second retarding force;
a controlling valve means operable to return said piston means to one of said force applying positions by directing fluid only against said second face of said piston means;
and speed sensing means for sensing the speed of a railroad car, said speed sensing means having a comparing circuit for comparing the speed of the car against predetermined standards, said speed sensing means being connected to said controlling valve means to operate said controlling valve means and return said piston means when the railroad car is retarded to a predetermined release speed.

3,360,305
DEAD MAN SEAT BRAKE USING SEPARATE HYDRAULIC ACTUATOR
Nell J. Ryskamp, Markham, Ill., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed May 10, 1966, Ser. No. 548,957
4 Claims. (Cl. 303—19)



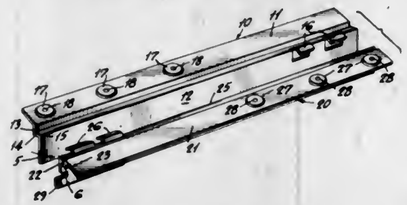
1. A seat actuated braking system for a vehicle having hydraulic operated wheel brakes, comprising:
a master cylinder,
a brake pedal connected to said master cylinder,
a brake line connecting the output of said master cylinder to said wheel brakes,
a hydraulic actuator having relatively movable piston and cylinder components defining a fluid displacement chamber connected to said brake line,
a vertically movable seat,
linkage connecting said seat to one of said components and operable to actuate said actuator to expel fluid from said fluid chamber on upward movement of said seat, and
check valve means in the portion of said brake line between said actuator and master cylinder preventing flow of fluid to said master cylinder when said hydraulic actuator is actuated by upward movement of said seat.

3,360,306
SLIDE BEARING ASSEMBLY
Leslie O. Vargady, Covina, Calif., assignor to Davidson Optronics, Inc., West Covina, Calif., a corporation of California
Filed Mar. 11, 1965, Ser. No. 438,845
2 Claims. (Cl. 308—3)



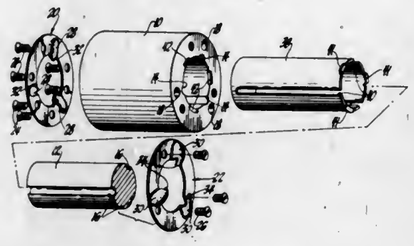
1. A slide bearing assembly comprising:
a resiliently deformable channel having a base and opposing sides with inwardly turned lips along the marginal edges thereof;
a slide having a dovetail portion stationed within said channel between said opposing sides;
a pair of straight, cylindrical rods each trapped between a dovetail surface of said slide and a side and lip of said channel to mount said slide for longitudinal sliding movement relative to said channel;
a backing plate substantially longitudinally coextensive with said channel having a correspondingly longitudinally extended recess in one of its sides; and
means connecting said base of said channel to said backing plate over said recess including a plurality of screws connected to a plurality of longitudinally spaced center points of said base and passing through said recess into said backing plate such that tightening of said screw resiliently deforms said base of said channel into a transverse curve and thereby displaces said opposing sides inwardly toward each other thereby varying the pressure on said rods against said dovetail surfaces of said slide.

3,360,307
EXTENSION TABLE SLIDE ASSEMBLIES
Henry Mutchnik and Melvin Mutchnik, both of 5804 Gist Ave., Baltimore, Md. 21215
Filed June 25, 1965, Ser. No. 466,970
3 Claims. (Cl. 308—3.6)



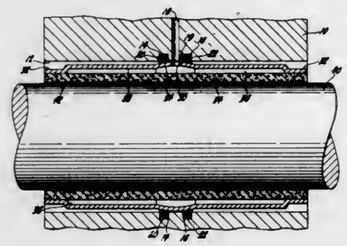
1. A metallic slide assembly for an extension table comprising a pair of juxtaposed sheet metal slides of identical construction, each one of said slides having a horizontal flange adapted to be affixed at one end thereof to the bottom of a table-stop section, with the ends adapted to be fixed disposed remotely from each other, integral vertical webs extending from said horizointal flanges through the intermediary of inset Z-shaped channels, each channel being formed by the upper portion of the vertical web, a vertical flange extending downwardly from the inner edge of the corresponding horizontal flange adjacent to said last-mentioned web and an inclined base extending from the base of said vertical flange to the top of said web, and at least one tongue member stamped from a portion of the upper part of each vertical web remote from the end of the respective slides adapted to be fixed, said tongue member being bent into nesting position in the Z-shaped channel of the other sheet metal slide, for guiding the relative reciprocable movement between said slides.

3,360,308
ACTUATOR ASSEMBLY
Leonard R. Grabowski, Bay City, and Dan R. Rowland, Saginaw, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 23, 1964, Ser. No. 420,747
14 Claims. (Cl. 308—6)



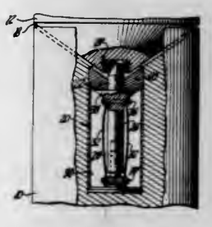
3. In a ball spline assembly the combination of male and female spline members having complementary, longitudinally extending ball grooves providing raceways, ball return means carried by one member, said ball return means having return passages operatively connecting the opposite ends of said raceways providing endless ball passages, trains of balls mounted in said endless ball passages providing driving connections in said raceways between said members, said members having an annular space therebetween, ball retaining means mounted in said annular space and operatively connected to said one member, said ball retaining means comprising elongated hollow cylindrical means of constant radial thickness slightly smaller than the radial dimension of said annular space, said cylindrical means having longitudinally extending slots receiving said balls. said slots having widths sufficiently large to permit said balls to operate in said raceways and sufficiently narrow to retain the balls in the ball grooves of said one member so that said trains of balls are retained on said one member when said members are disconnected.

3,360,309
SELF-ALIGNING ETERNALLY PRESSURIZED FLUID BEARING
Donald A. Voorhies, West Hartford, Conn., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed May 11, 1966, Ser. No. 549,419
4 Claims. (Cl. 308—9)



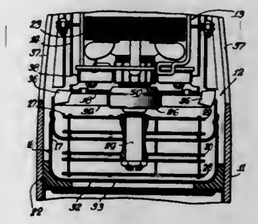
1. An externally pressurized gas bearing comprising, in combination, a housing having a bore, a pair of axially spaced resilient O-rings mounted in said bore, an annular shell disposed in said bore having a central partispherical portion seated in said O-rings, a porous sleeve disposed in and spaced from said shell, inturned flanges on said shell in sealing engagement with said sleeve to form a chamber therebetween, and inlet means for said chamber whereby said porous sleeve is universally and resiliently mounted to provide self-alignment and inhibit half-speed whirl.

3,360,310
AUXILIARY SUPPORT MEANS FOR A GAS BEARING
Arthur B. Hiatt, 186 Indian Head Drive, Newark, Ohio 43055, and Joseph D. Koch, Milwaukee, Wis.; said Koch assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Jan. 14, 1966, Ser. No. 520,808
6 Claims. (Cl. 308—35)



1. In combination with a primary system for supporting a rotatable body for rotation about an axis relative to a stationary body, auxiliary support means comprising pivot means retractably mounted on the rotatable body along said axis and normally extending axially from the rotatable body, a race mounted on said stationary body for receiving the pivot means to maintain the rotatable and stationary bodies in spaced relation, and centrifugal force responsive means operatively associated with the pivot means to retract the pivot means from engagement with the race when the rotatable body rotates about the axis above a predetermined speed.

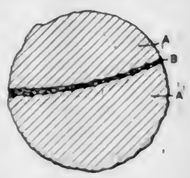
3,360,311
BEARING ASSEMBLY
Raymond G. Kroker, Normal, Ill., assignor to National Union Electric Corporation, Stamford, Conn., a corporation of Delaware
Filed June 26, 1964, Ser. No. 378,334
3 Claims. (Cl. 308—36.3)



1. In a motor-fan unit for a vacuum cleaner or the like, the combination of a motor having a rotatable shaft, a fan mounted on said shaft and rotatable therewith, a transverse support wall disposed between said motor and fan and having an aperture therein through which said shaft extends, said fan providing a low pressure zone adjacent the fan side of said support wall, the motor side of said support wall having a high pressure zone adjacent

thereto, and a bearing assembly mounted in said aperture for journaling said shaft, said bearing assembly comprising a housing having an annular side wall peripherally engaging said aperture in said support wall and spaced end walls having openings therein, one of said openings defining a bearing seat, and a porous, lubricant-impregnated, tubular bearing member within said housing and having spaced ends and an axial bearing bore therethrough in which said shaft is journaled, one end of said bearing member extending through the other of said openings in communication with said high pressure zone and the other end of said bearing member communicating with said low pressure zone and having means defining a bearing surface in swiveling engagement with said bearing seat, and said bearing member having at least one radial bore therethrough disposed closely adjacent said other end thereof and said bearing seat, said radial bore communicating at its inner end with said bearing bore and at its outer end with the interior of said housing and being effective to reduce the pressure gradient along the length of said bearing bore and thus substantially prevent loss of lubricant from said bearing bore due to the presence of said high and low pressure zones at the ends of said bearing member.

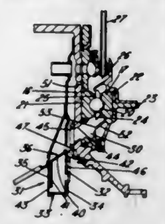
3,360,312
BEARING FOR EVACUATED SPACE
Cornelis Teunis de Wit, Petrus van Hoesel, and Gerardus Johannes Boon, Emmasingel, Eindhoven, Netherlands, assignors to North American Philips Company Inc., New York, N.Y., a corporation of Delaware
Filed Feb. 17, 1966, Ser. No. 528,265
Claims priority, application Netherlands, Mar. 30, 1965, 65—3,995
2 Claims. (Cl. 308—173)



1. A bearing for use in an evacuated space, said bearing having balls and races in which the balls can rotate, the balls and races having hardened porous surfaces obtained by nitrification of the material of the balls and races, said balls and races being coated with an extremely thin layer of a soft metal serving as a lubricant.

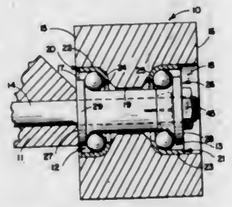
3,360,313
LUBRICATING SYSTEM FOR A BEARING OF A VERTICAL LIFT GAS TURBINE ENGINE
Leslie James Pratt, Allenton, Derby, and Arthur G. Goss, Barrow on Trent, near Derby, England, assignors to Rolls-Royce Limited, Derby, England, a British company
Filed Dec. 17, 1965, Ser. No. 514,634
Claims priority, application Great Britain, Jan. 7, 1965, 830/65
10 Claims. (Cl. 308—187)

1. A lubricating system suitable for a bearing of a vertical lift gas turbine engine comprising a bearing, means for supplying lubricant to the bearing, a sump chamber, at least one drain passage through which lubricant may drain from the bearing to the sump chamber, means for returning lubricant from at least one area disposed externally of the sump chamber to the bearing, the sump chamber having a rotatably mounted wall, a lubricant trap in the upper part of the sump chamber into which will drain at least some of the lubricant in the sump chamber if the latter should become inverted, and at least one groove in the internal surface of the rotatably mounted wall, which groove, when the sump chamber is upright



and rotation is effected of the rotatably mounted wall, will raise lubricant from the lower part of the sump chamber to said at least one area.

3,360,314
BEARING CONSTRUCTION
Edward G. Di Loreto, 10923 Little Lake Road, Downey, Calif. 90241
Filed Feb. 15, 1966, Ser. No. 527,428
8 Claims. (Cl. 308—191)

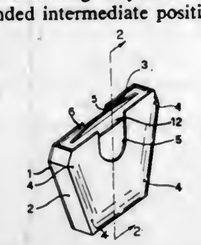


1. An inner bearing race assembly comprising
a first member,
and a second member in an axially aligned relationship,
said members having adjacent ends, each of said members having an annular exterior surface for engagement with a plurality of bearing members, said first member having a socket in said end thereof,
said second member having an extending portion at said end thereof received in said socket and retained thereby,
one of said members having inwardly extending slot means at said end thereof for permitting a thickness change to facilitate entry of said extending portion into said socket, the other of said members at said end thereof having a continuous annular wall.

3,360,315
CASE FOR STORING AND WITHDRAWING RIGID SHEETS IN A CONSECUTIVE ORDER
Eugenio Montanari, Via Albini N. 7/5, Bologna, Italy
Filed Feb. 7, 1966, Ser. No. 525,690
9 Claims. (Cl. 312—10)

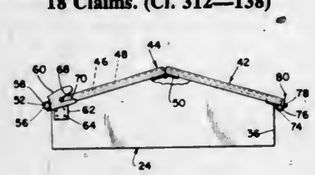
1. A rigid sheet-case, for at least two rigid sheets to be stored and withdrawn in consecutive order comprising
an upper means forming at least a portion of a lid and a sheet-insert slot,
an intermediate sheet-sliding and -storing means for a temporary suspension of the inserted sheets,
a base means including a ready-for-withdrawal sheet-positioning means with a withdrawal slot therefore,
said case including means to hold sheets inserted in an intermediate position while a sheet occupies a ready-for-withdrawal position on the base means,
said case being provided with means for integral assembly,

and means for freeing only one sheet at a time from the suspended intermediate position for gravitational



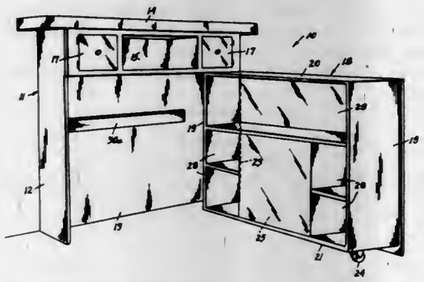
sliding into the ready-for-withdrawal position on the base means, while the bottom sheet is being withdrawn.

3,360,316
ADAPTABLE CLOSURE APPARATUS FOR PRODUCT CABINETS
Richard H. Swanson, Manitowoc, Wis., assignor to Manitowoc Company, Inc., Manitowoc, Wis., a corporation of Wisconsin
Filed July 30, 1965, Ser. No. 475,932
18 Claims. (Cl. 312—138)



1. Closure apparatus particularly adapted for use with a cabinet having a frozen product zone in which frozen products are disposed, said cabinet having an aperture providing access to said frozen product zone completely peripherally about which said closure apparatus is particularly adapted to be disposed to present a seal therebetween precluding drainage thereinto and the leakage of the effected atmosphere therewithin, said closure apparatus comprsing:
a frame: and
a plurality of closure members pivotally structurally operatively associated with one another;
one of said closure members being pivotally structurally operatively associated with said frame, enabling the one said closure member to be pivotally translatable between a plurality of positions with respect thereto, and another of said closures to be translatable along a compound path of movement comprising pivotal and generally linear movements between said positions;
said frame and said closure members being so constructed, configured and arranged as to enable said closure members to be self-positioning as they approach and are disposed in one of said plurality of positions, namely, in a closed position with respect to said frame, and self-retaining in another of said positions, namely, an open position with respect thereto;
said frame comprises:
a plurality of end walls;
said end walls being so configured and arranged as to define a plurality of inclined surfaces;
said closure members being particularly adapted to effect a seal with said inclined surfaces when disposed in the aforesaid one position;
bracket assemblies structurally operatively associated with said frame;
said one closure member being pivotally structurally operatively associated with said bracket assemblies;
said bracket assemblies comprising:
a groove, said groove being defined at least in part by:
an inclined wall disposed substantially in parallel relationship with respect to the inclined surfaces of said end walls;
enabling the location at which said closure members are pivotally structurally operatively associated with one another to be disposed generally outwardly of a plane at which the members are associated with said bracket assemblies in the manner aforesaid is located when said members are disposed in their aforesaid other position, and further enabling said closure members to be self-positioning at the aforesaid location of the operative association therebetween as said other closure member is translated in a direction towards said one position, and the angle of inclination of said inclined surfaces is overcome.

3,360,317
COMBINED SIMULATED FIREPLACE AND CABINET
Daniel G. MacLennan, 3808 Park Ave., Wilmington, N.C. 28401
Filed Apr. 15, 1966, Ser. No. 542,784
4 Claims. (Cl. 312—204)

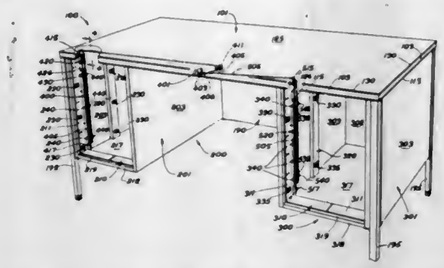


1. A combined simulated fireplace and cabinet, comprising a mantel having an open front defined by a pair of side walls, a facade section extending across the entire width of said mantel and closing the open front thereof, vertical hinge means connecting said facade section to one of said side walls whereby the facade section may be swung horizontally outwardly from the mantel, said facade section having a horizontal top wall affording a counter top when the facade section is in its outwardly swung position, a forwardly open simulated firebox provided in said facade section, rearwardly open compartments provided in the facade section around said firebox, said compartments being accessible when the facade section is swung outwardly from the mantel, and a fixed horizontal shelf provided in said mantel, said shelf being received in one of said compartments in said facade section when the latter is swung into the mantel.

3,360,318
DRAWER LOCKING SYSTEM AND LATCH THEREFOR
Robert A. Studinski, Aurora, Ill., assignor to Lyon Metal Products Incorporated, Aurora, Ill., a corporation of Illinois
Filed May 13, 1966, Ser. No. 549,979
24 Claims. (Cl. 312—217)

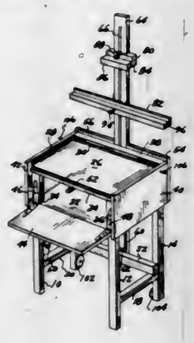
1. A drawer locking system for a desk comprising a desk top, a pedestal mounted below said desk top and including a body having drawer support structure therein, at least one drawer mounted in said pedestal on said support structure for movement inwardly and outwardly with respect thereto and having a keeper thereon, lock mechanism mounted on said top and movable between a locked position and an unlocked position, a cable extending through said pedestal adjacent to said drawer

and having one end connected to said lock mechanism, resilient means interconnecting the other end of said cable and said pedestal at a point below said drawer to hold said cable taut in all positions of said lock mechanism, and a latch mounted on said cable and spaced from the ends thereof and said resilient means and movable with said cable between a locking position wherein said latch is in



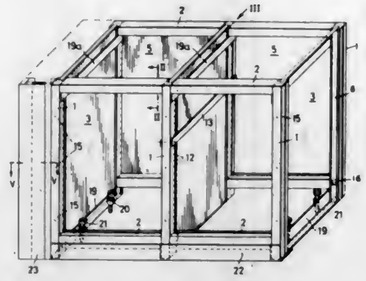
position to engage said keeper and a release position wherein said latch is out of the position to engage said keeper, whereby movement of said lock mechanism between the locked position and the unlocked position thereof moves said latch between the locking position and the release position thereof, said latch being vertically adjustable with respect to both said cable and said resilient means.

3,360,319
ARTIST'S STAND
Wilfred R. Hocking, 4101 Hayes, Wayne, Mich. 48184
Filed July 26, 1966, Ser. No. 568,033
8 Claims. (Cl. 312—231)



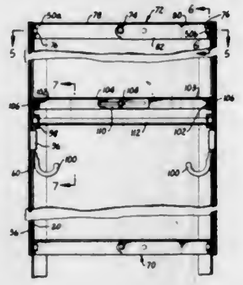
1. A combined taboret and easel support of the type described comprising: four vertical leg members disposed in a rectangular array with a greater distance existing between the legs on opposite sides than exists between the front and rear legs; a horizontal work surface fixed to the upper ends of the legs; a storage compartment supported below the work support surface; a vertical surface disposed between the rear legs and running downwardly from the top of the work surface; a pair of vertical side guide members projecting rearwardly from the rear support surface at a spaced distance with respect to one another; an elongated easel support member having a width approximately equal to the distance between the side guides disposed with one of its surfaces in opposition to the backing member and two of its other surfaces in opposition to the guides; means for adjustably positioning said easel support member with respect to the backing member so that a substantial portion of its length extends above the working surface; and a pair of horizontal support blocks adjustably positioned on the easel support member.

3,360,320
CUPBOARD
Ernst Adam Lust, Industriestrasse 13–15, Lampertheim, Hesse, Germany
Filed Dec. 29, 1965, Ser. No. 517,282
Claims priority, application Germany, Dec. 31, 1964, L 49,638
6 Claims. (Cl. 312—257)



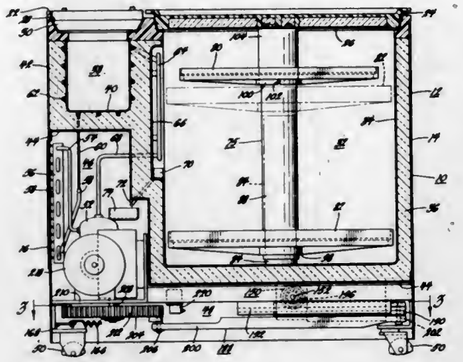
1. A cupboard comprising at least one compartment with four vertical edges, vertical posts at said edges and adapted to receive loads, horizontal batten-like spacers by which said posts are connected to one another to form a dimensionally stable frame, said spacers being provided with bores, span rods in the bores of the spacers, said span rods including threaded ends, and means including internal threads in the posts for engaging said threaded ends so that the spacers are supported between the posts.

3,360,321
KNOCKDOWN LOCKER STRUCTURE
William H. Novales, % Novarax Company, P.O. Box 8364, Oakland, Calif. 94608
Filed Feb. 1, 1966, Ser. No. 523,991
7 Claims. (Cl. 312—257)



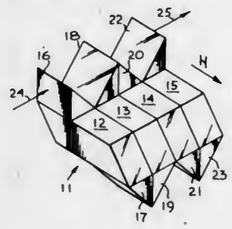
1. A locker assembly having a plurality of structural elements including a door frame with door hinged thereto, sides, a back, a top and a bottom wherein:
(a) said door frame and said back being attachable to said side members by means of studs having relatively narrow shanks and relatively large heads on one element mating with corresponding keyhole shaped openings on adjacent elements,
(b) at least one of the said top and bottom elements comprising a hinged structure which in its normal position forms an angle of 180 degrees but which can be folded into an angle of less than 180 degrees to permit said element to be inserted in place in said locker assembly,
(c) mating holes in said door frame and one of said hinged structures, and
(d) a single bolt passing through said mating holes, said single bolt being the sole means for bolting said members together, said bolt preventing the folding of said hinged structure.

3,360,322
REFRIGERATOR WITH ADJUSTABLE SHELF
William A. Hanifan, Southfield, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Feb. 1, 1966, Ser. No. 524,012
6 Claims. (Cl. 312—312)



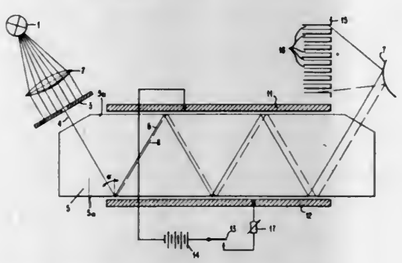
1. In a compact portable refrigerator or like unit, the combination of a shelf adjuster mechanism comprising, a cylindrical member, a movable cylinder telescopingly received on said cylindrical member, an elongated flexible drive member located within said cylindrical member, means for securing one end of said drive member to said movable cylinder, means secured to the opposite end of said flexible drive member for reciprocating said drive member relative to said cylindrical member to cause said movable cylinder to move into extended and retracted positions with respect to said cylindrical member, means within said cylindrical member to prevent buckling of said flexible member whereby said flexible member is maintained in compression between said movable cylinder and said drive means during movement of said movable cylinder into an extended position with respect to said cylindrical member, said flexible member including a plurality of link members joined by rollers, said guide means including an insert within said cylindrical member having side wall portions thereon slidably engaging said rollers for maintaining said link members colinearly with the axis of said cylindrical member.

3,360,323
TRANSVERSE MAGNETO-OPTICAL ROTATOR WITH COMPENSATION OF PHASE RETARDATION
David L. Weisman, Pasadena, and Paul C. Fletcher, Altadena, Calif., assignors to Electro-Optical Systems, Inc., Pasadena, Calif., a corporation of California
Filed Oct. 7, 1963, Ser. No. 314,290
3 Claims. (Cl. 350—151)



1. A non-ellipticizing optical rotator comprising: a rhomboid-shaped element, made of a material exhibiting the Faraday effect, that reflects light incident on either end surface thereof 90° to its other end surface along a path that is parallel to its longitudinal axis; means for producing a magnetic field through said rhomboid-shaped element parallel to the longitudinal axis thereof to rotate the plane of polarization of light travelling along said axis; and first and second triangular-shaped prisms respectively mounted on the ends of said element on opposite surfaces thereof, said first prism being mounted so that a ray of light entering it transversely to the magnetic field is reflected 90° in a plane perpendicular to the magnetic field from a surface thereof to said one end surface of said rhomboid-shaped element, said second prism being mounted so that a ray of light reflected from the other end surface of said rhomboid-shaped element is reflected 90° out of said second prism transversely to said magnetic field, each of said prisms imparting the same phase retardation to light polarized in the plane of reflection as the end surfaces of the rhomboid-shaped element.

3,360,324
LIGHT DISPLACEMENT CONTROL SYSTEM
Heinrich Hora, Boblingen, Wurttemberg, Germany, assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Oct. 16, 1962, Ser. No. 230,968
Claims priority, application Germany, Oct. 16, 1961, J 20,659
11 Claims. (Cl. 350—160)

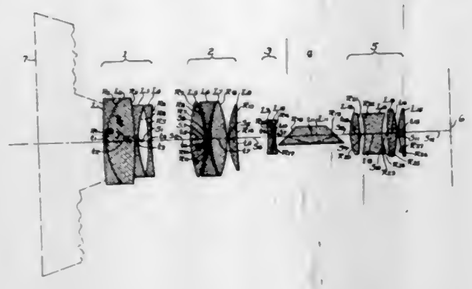


1. A light control system comprising
a body of material exhibiting the Kerr effect and having a limiting surface,
means for directing a light beam through said body so as to be repeatedly totally reflected at given points at said surface at substantially the limiting angle of total reflection and
means for providing a variable electric field in said body so as to vary the index of refraction thereof via said Kerr effect,
whereby said light beam is on the application of an electric field displaced in parallel to itself at said surface via the Goos-Hänchen effect on each reflection by an amount proportional to such field so that the beam emerging from said body is displaced by an amount equal to the sum of the displacement at each of said given points.

3,360,325
ZOOM LENS SYSTEM FOR MICROFILM PROJECTORS
Darryl E. Gustafson, Lincolnwood, Ill., assignor to Bell & Howell Company, Chicago, Ill., a corporation of Illinois
Filed May 27, 1964, Ser. No. 370,517
1 Claim. (Cl. 350—184)

A zoom lens system of the mechanical compensation type for imaging an object area onto an image plane at a fixed finite distance therefrom, comprising a movable positive zooming member in axial alignment with and

between a fixed rear positive member and a movable front negative compensating member, in which the zooming member consists of a biconvex triplet component in front of a single positive element convex to the front and the compensating member consists of a negative triplet concave toward the rear and in front of a single biconcave element, and in which the power of the front



surface of the biconcave element is greater than the power of the rear surface thereof and the power of the rear surface of the positive element is greater than the power of the front surface thereof, and in which detailed data is as follows:

Magnification = 20.0 (Telephoto), 28.3 (Median), 40.0 (Wide Angle)
Track Length = 35.5 inches

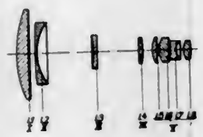
L_1	R_1 = +16.70	t_1 = .070		N_1 = 1.620	V_1 = 60.3
	R_2 = +1.516				
L_2	R_3 = +7.115	t_2 = .650		N_2 = 1.751	V_2 = 27.8
L_3	R_4 = +2.100	t_3 = .070		N_3 = 1.689	V_3 = 30.9
	R_5 = −2.894	s_1 = .220			
L_4	R_6 = +2.434	t_4 = .088		N_4 = 1.734	V_4 = 51.2
		s_2 = .885 (Telephoto), 1.912 (Median), 2.842 (Wide Angle)			
L_5	R_7 = +2.984	t_5 = .350		N_5 = 1.651	V_5 = 55.8
	R_8 = −2.434	s_3 = .005			
L_6	R_9 = −2.660	t_6 = .070		N_6 = 1.751	V_6 = 27.8
	R_{10} = +1.912	s_4 = .040			
L_7	R_{11} = +2.434	t_7 = .400		N_7 = 1.651	V_7 = 55.8
	R_{12} = −2.258	s_5 = .007			
L_8	R_{13} = +1.720	t_8 = .192		N_8 = 1.697	V_8 = 56.2
	R_{14} = +10.54	s_6 = .7038 (Telephoto), .2646 (Median), .0745 (Wide Angle)			
L_9	R_{15} = −2.434	t_9 = .135		N_9 = 1.751	V_9 = 27.8
L_{10}	R_{16} = −.775	t_{10} = .035		N_{10} = 1.697	V_{10} = 56.2
	R_{17} = +2.019	s_7 = .260			
L_{11}	R_{18} = ∞	t_{11} = 1.070		N_{11} = 1.751	V_{11} = 27.8
	R_{19} = ∞	s_8 = .326			
L_{12}	R_{20} = +1.280	t_{12} = .220		N_{12} = 1.697	V_{12} = 56.2
	R_{21} = −2.883	s_9 = .110			
L_{13}	R_{22} = −1.818	t_{13} = .400		N_{13} = 1.751	V_{13} = 27.8
	R_{23} = +1.190	s_{10} = .115			
L_{14}	R_{24} = +4.001	t_{14} = .230		N_{14} = 1.620	V_{14} = 60.3
	R_{25} = −1.664	s_{11} = .010			
L_{15}	R_{26} = +1.664	t_{15} = .190		N_{15} = 1.620	V_{15} = 60.3
	R_{27} = −12.85	BF = 1.03			

3,360,326

HIGH-SPEED VARIFOCAL OBJECTIVE

Rudolf Solisch, Gottingen, and Walter Wöltche, Bad Kreuznach, Germany, assignors to Isco Optische Werke G.m.b.H., Gottingen, Weende, Germany, a corporation of Germany

Filed Feb. 24, 1965, Ser. No. 434,765
3 Claims. (Cl. 350—184)



1. An objective system comprising a principal objective and an attachment forwardly of said principal objective, said attachment and said principal objective consisting each of four air-spaced components, the components of said attachment including a fixed positive first component, a negative second component, a negative single-lens third component and a fixed positive single-lens fourth component, said second and third components being jointly displaceable into two limiting positions defining extreme values for the overall focal length and an intermediate position defining a mean focal length; said first and second components being singlets, the lenses L1 to L4 of said attachment and the lenses L5 to L8 of said principal objective having radii *r*1 to *r*16 and thicknesses and separations *d*1 to *d*15 whose numerical values, based upon a numerical value of 100 for the mean focal length of the system, along with refractive indices n_d and Abbé numbers ν are substantially as given in the following table:

wherein L is the element; R is the radius of curvature of the optical surface; *t* is the axial thickness of the optical element; *s* is the space between elements; N is the index of refraction; and V is the conventional dispersive index.

Lens	Radii	Thicknesses and Separations	n_d	ν
L1	*r*1 = +291.94	*d*1 = 31.25	1.71615	53.7
	*r*2 = +1621.97	*d*2 = 131.58	Variable Air Space	
L2	*r*3 = +924.46	*d*3 = 6.25	1.64648	47.5
	*r*4 = +136.48	*d*4 = 50.20	Variable Air Space	
L3	*r*5 = −173.49	*d*5 = 6.25	1.62410	36.1
	*r*6 = ∞	*d*6 = 87.01	Variable Air Space	
L4	*r*7 = +587.81	*d*7 = 12.50	1.52010	65.0
	*r*8 = −225.62	*d*8 = 25.00	Air Space	
L5	*r*9 = +91.01	*d*9 = 11.69	1.68081	55.3
	*r*10 = +250.05	*d*10 = 0.50	Air Space	
L6	*r*11 = +57.13	*d*11 = 28.75	1.69400	54.6
	*r*12 = ∞	*d*12 = 0.81	Air Space	
L7	*r*13 = −424.87	*d*13 = 16.38	1.76846	26.8
	*r*14 = +32.67	*d*14 = 20.13	Air Space	
L8	*r*15 = +59.04	*d*15 = 18.07	1.67341	46.9
	*r*16 = −168.78			

3,360,327

ZOOM OPTICAL SYSTEM FOR MICROSCOPE

Harold E. Rosenberger, Brighton, Richard L. Seldenberg, Rochester, and John H. Small, Buffalo, N.Y., assignors to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York

Filed Jan. 4, 1965, Ser. No. 423,101
3 Claims. (Cl. 350—184)



1. A pancratic optical system for a microscope including a zoom type of objective for forming an image having a magnification range of at least 1:4, said objective comprising

a positive front group of lenses and a rearward negative corrector lens adjacent thereto, said group being moved as a unit simultaneously with movements of said negative corrector lens to form a virtual image of variable magnification,

a stationary positive relay lens which is spaced rearwardly of said corrector lens and forms a real image of constant magnification at the eyepiece focal plane of microscope,

said front group of lenses comprising

a positive meniscus singlet lens which is designated I and is spaced next rearwardly of the microscope cover glass at a variable distance S_1,

a first doublet lens spaced at an axial distance S_2 from lens I and being comprised of a front double concave lens element designated II which lies in contact with a rear double convex element designated III,

a second doublet lens spaced at an axial distance S_3 rearwardly from lens element III and comprised of a front double concave lens element designated IV which lies in contact with a rear double convex lens element designated V,

a singlet positive lens designated VI spaced from lens element V at an axial distance designated S_4,

said negative corrector lens being a doublet and being spaced rearwardly of lens VI at a variable axial distance designated S_5, said doublet being comprised of a front double concave lens element designated VII which lies in contact on its rear surface with a convex-concavo lens element designated VIII,

said relay lens being spaced at a variable distance designated S_6 rearwardly of said corrector lens and being comprised of a front double convex lens element designated IX which lies in contact with a rear concavo-convex element designated X,

the individual equivalent focal lengths of the lens element I to X being designated respectively F_1, $-F_2$, F_3, $-F_4$, F_5, F_6, $-F_7$, F_8, F_9 and $-F_{10}$ and having specific values substantially as given in the table herebelow, the minus (—) sign signifying negative focal lengths; the axial thickness of said lens elements being designated respectively t_1 to t_{10} and having specific values substantially as given in the table herebelow, the successive air spaces between said cover glass and said relay lens being designated respectively S_1 to S_6 and having specific values substantially as given in the table herebelow, the values for the variable spaces S_1, S_5 and S_6 being given for high, low and median magnifications of said system, said values being given in terms of D which represents the axial length of the objective from the specimen plane to R_{16},

F_1=.1768*D*	F_6=.4940*D*
$-F_2$=.2606*D*	$-F_7$=.1174*D*
F_3=.2265*D*	F_8=.2740*D*
$-F_4$=.3169*D*	F_9=.4170*D*
F_5=.2314*D*	$-F_{10}$=.9395*D*

S_1=.05160*D* (low magnification)
S_1=.02395*D* (median magnification)
S_1=.01505*D* (high magnification)
S_2=.01557*D*
S_3=.002740*D*
S_4=.001914*D*
S_5=.05040*D* (low magnification)
S_5=.27840*D* (median magnification)
S_5=.4320*D* (high magnification)
S_6=.4560*D* (low magnification)
S_6=.25740*D* (median magnification)
S_6=.11170*D* (high magnification)

t_1=.1086*D*	t_6=.0382*D*
t_2=.01911*D*	t_7=.01094*D*
t_3=.05461*D*	t_8=.01915*D*
t_4=.01911*D*	t_9=.06290*D*
t_5=.06019*D*	t_{10}=.02740*D*

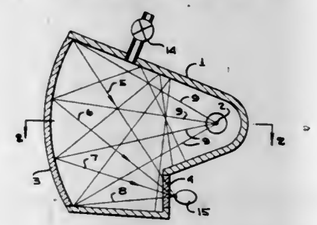
and an aperture plate located at a constant distance of substantially .00684D in front of lens I and having an aperture diameter of substantially .0128D.

3,360,328

EXPLODING WIRE HIGH-SPEED SHUTTER FOR PROTECTING A HUMAN VIEWER

Charles T. Pike, Teaneck, N.J., assignor to Isomet Corporation, Palisades Park, N.J., a corporation of New Jersey

Filed Jan. 4, 1963, Ser. No. 249,510
3 Claims. (Cl. 350—269)



1. A light valve adapted to undergo rapid transition from an open condition, wherein a light transmission path is provided therethrough, to a closed condition, wherein said light transmission path is interrupted, in response to an intense light flash along the light transmission path externally of said valve; said valve comprising:

an opaque housing having a pair of at least partially open ends disposed in light transmitting relationship to each other;

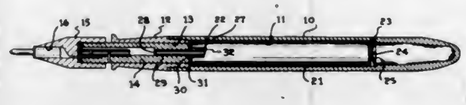
first and second transparent windows positioned respectively in said pair of open ends to provide a light transmission path through said housing;

a conductive wire composed of material which vaporizes upon application of high current thereto, and disposed within said housing relative to at least one of said first and second windows such that said material is deposited on said at least one of said windows in the form of an opaque coating upon

vaporization of said material which serves to stop the light transmission and so disposed relative to the other of said first and second windows that said opaque housing prevents light transmission from said wire to said other of said first and second windows;
means hermetically sealing said housing;
means for evacuating said housing; and
means responsive to said intense light flash for substantially instantaneously applying said high current to said wire, said means for applying including an electrical power supply,
an electric circuit coupling said power supply to said wire in normally open circuit relationship,
and photoelectric means to energize said electric circuit in response to said intense light flash so that current derived from said power supply is substantially instantaneously applied to said wire.

3,360,329
PEN
Keith T. Bleuer, 1042 Kalfahs St., Neenah, Wis. 54957
Filed Oct. 18, 1965, Ser. No. 496,749
12 Claims. (Cl. 401—156)

1. A pen comprising an exterior barrel adapted to be grasped by the writer in writing with the pen, a cartridge for liquid ink within said barrel, a pen tip which carries a ball rotatively mounted therein for contact with a writing surface during use of the pen and which is mounted for slight longitudinal movement within said barrel, means providing an ink duct connecting the interior of said cartridge with said ball for providing ink to the ball for writing purposes, said cartridge comprising a barrel portion and a disc-like end remote from the end of said barrel carrying said pen tip and joined at its edges to said barrel portion, said disc-like end being of



thin, relatively flexible sheet material of substantially uniform thickness axially of said barrel portion for the entire internal cross sectional area of said barrel portion where the edges of said disc-like end are joined to said barrel portion, and thrust means carried by said barrel and effective on the center portion of said disc-like end for depressing said disc-like end when writing pressure is put on said ball by the user so that the inward movement of said disc-like end forces ink from said cartridge and through said duct to said ball.

CHEMICAL

3,360,330
TREATMENT OF COMBUSTIBLE WASTE PRODUCTS AND CATALYST THEREFOR
James Hoekstra, Evergreen Park, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
No Drawing. Filed Aug. 28, 1964, Ser. No. 392,918
8 Claims. (Cl. 23—2)

1. A method of catalyst preparation which comprises commingling a solution of a catalytically active metal component with a refractory inorganic oxide support, drying the resultant mixture and impregnating the same with a barium hydroxide solution, drying the thus impregnated mixture and then impregnating the same with a chromic acid solution to form barium chromate on the composite of said metal component and oxide support, and drying and calcining the composite.

3,360,331
PROCESS FOR PREPARING A LEAD TITANATE CATALYST
William H. Manogue, Newark, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Oct. 15, 1963, Ser. No. 316,461
1 Claim. (Cl. 23—51)

A process for preparing a lead titanate catalyst which comprises:
(a) heating a mixture of lead oxide and titanium dioxide at a temperature of about from 350° to 750° C. to form lead titanate;
(b) contacting the resulting product with an aqueous acid solution selected from the group consisting of aqueous solution of phosphoric acid of concentration in the range of about 0.001% to about 0.1% by weight and aqueous solution of hydrochloric acid of concentration in the range of about 0.001% to about 0.5% by weight to saturate said product with said solution; and
(c) drying said product.

3,360,332
MIXED-CATION PHOSPHATE GLASSES
Robert J. Fuchs and Charles W. Lutz, Clark, N.J., assignors to FMC Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Feb. 15, 1965, Ser. No. 432,890
4 Claims. (Cl. 23—106)

1. In the process of producing phosphate glasses consisting essentially of P_2O_5, Na_2O, CaO and Al_2O_3 values and having P_2O_5 values of from about 45 to about 50 mole percent, wherein a precursor aqueous slurry containing said values is heated in a furnace to fusion temperatures to obtain clear, molten masses and said molten masses are rapidly chilled to obtain said phosphate glasses, the improvement which comprises making up said precursor aqueous slurry by adding calcium oxide values to an acidic phosphate having an effective concentration of from about 50 to about 75% by weight phosphoric acid, subsequently adding sodium oxide values to the phosphate mixture, and subsequently adding aluminum values to said phosphate mixture whereby a smooth, uniform, free-flowing, non-viscous mixture is produced as the precursor aqueous slurry of said phosphate glasses which can be readily pumped to said furnace.

3,360,333
FLUOR-MICAS AND FLUOR-AMPHIBOLES AND METHODS FOR MAKING SAME
Kenneth H. Ivey, Norris, Tenn., assignor to the United States of America as represented by the Secretary of the Interior
No Drawing. Filed Mar. 31, 1965, Ser. No. 444,473
1 Claim. (Cl. 23—110)

A method for producing large non-water-swellable fluor-phlogopite crystals comprising:
(a) heating a mixture of a water swellable lithium fluor-hectorite material and a non-water-swellable potassium- and aluminum-containing fluor-phlogopite material to a temperature of at least 1365° C., said hectorite having a lower fusion point than said fluor-phlogopite, said materials being present in a weight ratio of about 0.5 to 2 parts fluor-phlogopite per part hectorite;
(b) slowly cooling said heated mixture to produce a mixture of said large fluor-phlogopite crystals and said water-swellable hectorite crystals;
(c) contacting said mixture with aqueous fluid to swell said hectorite crystals; and
(d) separating said large fluor-phlogopite crystals from said swelled hectorite.

3,360,334
METHOD OF PREPARING A DRY PLASTIC BY CALCINATION AND COMPRESSION
Rupert Allister Nottle, Glen Iris, Victoria, and Bernard B. Brown, Maroubra Junction, New South Wales, Australia, assignors to Imperial Chemical Industries of Australia and New Zealand Limited, Melbourne, Victoria, Australia, a company of Australia
No Drawing. Filed Sept. 4, 1964, Ser. No. 394,613
Claims priority, application Australia, Sept. 11, 1963, 35,272/63
4 Claims. (Cl. 23—122)

1. In a process wherein dry calcium dihydrate is calcined to form a dry plaster selected from the group consisting of calcium sulphate hemihydrate and $CaSO4.xH_2O$, wherein x is between 0 and about 0.65, the improvement comprising compressing under a pressure between 10,000 and 200,000 p.s.i., the dihydrate or the plaster resulting from the calcining of the dihydrate.

3,360,335
PROCESS FOR PREPARING HYDROGEN CYANIDE
William R. Jenks, Memphis, Tenn., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Mar. 12, 1964, Ser. No. 351,532
4 Claims. (Cl. 23—151)

1. In a process for preparing hydrogen cyanide by heating a hydrocarbon, ammonia and oxygen in the presence of a catalyst said catalyst being in the form of a gauze consisting of platinum or a platinum-rhodium alloy containing up to about 20% rhodium, the improvement which comprises treating the catalyst by contacting the surface thereof with concentrated aqua regia at a temperature from about 10° to about 50° C.

3,360,336
MANUFACTURE OF NITROUS OXIDE
William T. Curless, Overland Park, and Glenn A. Terry, Prairie Village, Kans., assignors, by mesne assignments, to Gulf Oil Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
No Drawing. Filed Feb. 4, 1964, Ser. No. 342,520
10 Claims. (Cl. 23—158)

1. In the method of production of nitrous oxide by thermal decomposition of molten ammonium nitrate within a temperature range of about 170 to 300° C., the improvement comprising conducting the thermal decomposition in the presence of a sulfur-containing anion selected from the group consisting of sulfate ion, bisulfate ion, and mixtures of sulfate and bisulfate ions in solution in said molten ammonium nitrate in a catalytic amount up to 10% by weight sufficient to increase the rate of said thermal decomposition.

3,360,337
INDICATOR TAPE
Martin I. Edenbaum, Somerset, and Merle I. Hampton, Highland Park, N.J., assignors to Johnson & Johnson, a corporation of New Jersey
No Drawing. Filed Dec. 24, 1964, Ser. No. 421,078
7 Claims. (Cl. 23—253)

1. In a steam sterilization indicating device of the type comprising a base containing a marking thereon which changes color when exposed to the conditions of steam sterilization, the improvement comprising: said marking comprising a steam permeable carrier film containing an intimate mixture of zinc sulfide and lead chloride, said zinc sulfide and lead chloride being present in amounts sufficient to provide in said carrier film at least 3 parts by weight of equal molar equivalents of zinc sulfide and lead chloride for each part by weight of said carrier.

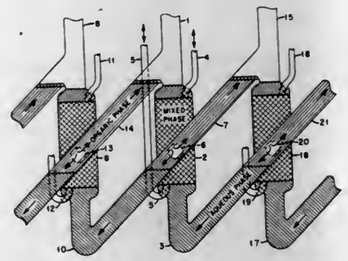
3,360,338
INDICATOR TAPE
Martin I. Edenbaum, Somerset, N.J., assignor to Johnson & Johnson, a corporation of New Jersey
No Drawing. Filed Dec. 24, 1964, Ser. No. 421,079
14 Claims. (Cl. 23—253)

1. In a steam sterilization indicating device of the type comprising a base and containing markings thereon which change color when exposed to the conditions of steam sterilization, the improvement comprising: said marking comprising a steam permeable carrier film containing an intimate mixture of selenium dimethyldithiocarbamate with at least one material of the group consisting of bismuth citrate, bismuth oxychloride, bismuth subcarbonate, bismuth subgallate, bismuth subsalicylate, bismuth trioxide, bismuth subnitrate and lead chromate.

3,360,339
INDICATOR TAPE
Martin I. Edenbaum, Somerset, N.J., assignor to Johnson & Johnson, a corporation of New Jersey
No Drawing. Filed Dec. 28, 1964, Ser. No. 421,605
6 Claims. (Cl. 23—253)

1. In a steam sterilization indicating device of the type comprising a base and containing a marking thereon which changes color when exposed to the conditions of steam sterilization the improvement comprising: said marking comprising a steam permeable carrier film containing copper sulfite monohydrate.

3,360,340
DOUBLE PULSED MIXER-SETTLER LIQUID-LIQUID EXTRACTION SYSTEM
Raymond E. McHenry, Oak Ridge, and John C. Posey, Knoxville, Tenn., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed Jan. 12, 1965, Ser. No. 425,093
3 Claims. (Cl. 23—270.5)



1. In a mixer-settler system for contacting and separating two immiscible liquids having different densities comprising a plurality of interconnected mixer-settlers, a mixer-s ttler unit comprising:
(a) a vertically disposed elongated mixing vessel having an upper zone, an intermediate zone, and a lower

zone, light liquid inlet means in said upper zone, heavy liquid inlet means in said lower zone, first and second gas pulsing means in said upper and lower zones, respectively disposed to introduce pulses toward and communicating with said intermediate zone for intermixing said liquids, and mixed fluid outlet means in said intermediate zone; and

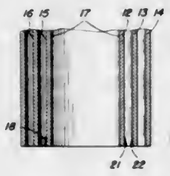
(b) an elongated settling vessel angularly disposed to said mixing vessel at an angle of 30 to 60 degrees from vertical, and said settling vessel having an upper zone provided with light fluid outlet means, a lower zone provided with heavy fluid outlet means, and an intermediate zone provided with mixed fluid inlet means in hydraulic communication with the mixed fluid outlet means in said mixing vessel.

3,360,341

MEANS FOR THE PRODUCTION OF FINE PARTICLE SIZE TITANIUM DIOXIDE

Peter Tillmann, deceased, late of Leverkusen, Germany, by Margarete Tillmann, sole heir, Cologne-Deutz, Germany, and Achim Kulling and Gerhard Hitzemann, Leverkusen, Germany, assignors to Titangesellschaft m.b.H., Leverkusen, Germany, a corporation of Germany

Filed Mar. 20, 1964, Ser. No. 353,622
Claims priority, application Germany, Mar. 21, 1963, T 23,670
1 Claim. (Cl. 23—277)



A multi-tube burner for use in the manufacture of fine particle size TiO_2 by combustion of gaseous $TiCl_4$ with oxygen, of oxygen containing gases, in a reaction chamber in the presence of an auxiliary flame for maintaining combustion said burner comprising at least three tubular members arranged coaxially and with their walls spaced radially with respect to each other thereby providing annular gas passages between the respective tubes, the gaseous $TiCl_4$ being fed through the innermost tube of the burner, and the oxygen or oxygen containing gases and the combustible gas being fed through the annular gas passages surrounding the innermost tube of the burner; and peripheral means for forming a restricted orifice in said oxygen gas passage comprising a pair of rings constructed and arranged to be mounted on the opposed walls respectively of two of said burner tubes at the exit ends thereof and to extend radially into the said oxygen gas passage.

3,360,342

SODIUM TRIPOLYPHOSPHATE

Raimond Pals, Farmingdale, N.J., assignor to FMC Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed May 28, 1965, Ser. No. 459,948
1 Claim. (Cl. 23—293)

A method of reducing the tendency of granular sodium tripolyphosphate particles larger than 100 mesh to break down on handling into fine particles smaller than 100 mesh, comprising contacting said granular sodium tripolyphosphate particles with a striker element at a velocity of from 2,300 to 10,000 ft./min.

3,360,343

LEACHING CALCIUM AND MAGNESIUM IMPURITIES FROM SOLAR SALT USING DILUTE MINERAL ACID

Grant A. Mickelson, Cary, and Gino Baseggio, Crystal Lake, Ill., assignors to Morton International, Inc., a corporation of Delaware

No Drawing. Filed June 8, 1964, Ser. No. 373,557
8 Claims. (Cl. 23—312)

1. In a process for purifying solar salt obtained by the evaporation of brine, the improvement which comprises separating crude impure crystalline sodium chloride salt from the aqueous brine in a moist, undried condition, containing as impurity compounds calcium in an amount of up to 3000 p.p.m. and magnesium in an amount of up to about 2000 p.p.m. comminuting said impure salt to a particle size of less than about 400 microns, contacting said comminuted impure salt with a dilute aqueous acid selected from the group consisting of hydrochloric, sulfuric, phosphoric, nitric and acetic acids to form a slurry of salt crystals in supernate brine, said dilute acid having a concentration of ½ or more percent and at least a concentration which is stoichiometrically equivalent to the sum of the concentration of the calcium and magnesium compounds in the form of carbonates, oxides and hydroxides present in the impure salt, the dilute acid dissolving said calcium and magnesium impurities while not substantially dissolving the sodium chloride whereby to reduce the calcium and the magnesium content of said salt, and recovering, washing and drying said purified undissolved salt.

3,360,344

EXTRACTION OF THE SULFURIC ACID COMPLEXES OF BERYLLIUM USING PRIMARY AMINES

Guy Bourat, Paris, France, assignor to Commissariat à l'Energie Atomique, Paris, France

No Drawing. Filed Aug. 11, 1964, Ser. No. 388,930
Claims priority, application France, Aug. 30, 1963, 946,214
4 Claims. (Cl. 23—312)

1. Process for liquid-liquid extraction of beryllium from its aqueous sulphuric-acid solutions, said process comprising intimately contacting an aqueous solution containing sulfuric-acid anionic complexes of beryllium with a water inmiscible liquid organic phase containing at least one organic compound selected from the group consisting of compounds carrying a primary nitrogen and a carbon chain corresponding to the general formula:

$$R-CH_2-CH_2-\underset{\displaystyle NH_2}{\underset{|}{CH}}-CH_2-R'$$

wherein R and R′ are either hydrogen or a hydrocarbon group, the combination of the two constituents R and R′ being chosen so as to confer on the anionic exchanger a total molecular weight which is sufficient to ensure that its free basic form and its various salts are either insoluble or very little soluble in water, said organic compound being in solution in an organic solvent which is immiscible with water, adjusting the pH of the aqueous phase prior to contact to a pH of between 1 and 5, allowing the mixed phases to separate, decanting off the organic phase containing the extracted sulfuric-acid anionic complexes of beryllium, and recovering the extracted beryllium from the organic phase.

3,360,345

DRY HEATING PROCESS FOR PREPARATION OF ANTACID COMPOUNDS

Seymour Z. Lewin, Bayside, N.Y., assignor to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware

No Drawing. Filed Mar. 22, 1963, Ser. No. 268,512
7 Claims. (Cl. 23—315)

1. A process for preparing buffering compositions which

comprises heating in the solid state and in the absence of free water at a temperature of 80° to 180° C. a mixture of finely-divided aluminum hydroxide and at least one finely-divided salt selected from the group consisting of the alkali metal and ammonium bicarbonates, the mol ratio of the total amount of said bicarbonates to aluminum hydroxide being in the range of about 0.05:1 to about 8:1 and recovering the desired reaction product.

6. A buffer composition comprising a hydrated or anhydrous compound having, on the anhydrous basis, the empirical formula:

$$2Na_2O \cdot Al_2O_3 \cdot 4CO_2$$

3,360,346

PROCESS OF SEPARATION OF URANIUM AND THORIUM STARTING FROM A SOLUTION CONTAINING THESE TWO ELEMENTS

Henri Huet, Saint-Vrain, Christian Lorrain, Ballancourt, René Mahut, Volx, René Mariette, Ballancourt, and Paul Vertes, Antony, France, assignors to Commissariat à l'Energie Atomique, Paris, France, an organization of France

Filed Feb. 12, 1965, Ser. No. 432,231
Claims priority, application France, Feb. 14, 1964, 963,769
9 Claims. (Cl. 23—341)

1. In a method for the separation of uranium and of thorium from an aqueous feed of their nitrates which comprises subjecting said aqueous feed to an extraction by a solution of tributylphosphate in an organic medium the improvement comprising selective extraction of the uranium by controlling the respective volumes of the organic solution and said aqueous feed in such manner that the concentration in uranium of the organic solution is close to its theoretical saturation, scrubbing said organic solution with an aqueous solution selected from the class of a solution of nitric acid, a solution of uranyl nitrate acidified by nitric acid and mixtures thereof, and recovering the uranium from said organic phase.

2. In a method for the extraction of uranium and thorium from an aqueous feed which comprises subjecting said aqueous feed to an extraction with a solution of tributylphosphate in an organic medium, the improvement comprising selective extraction of the uranium by controlling the respective volumes of said organic phase and said aqueous feed in such manner that the concentration in uranium of the organic phase is close to its theoretical saturation, scrubbing said organic phase with an aqueous solution selected from the class of a solution of nitric acid, a solution of uranyl nitrate acidified by nitric acid, and mixtures thereof, said aqueous solution containing complexing ions for the thorium in an amount sufficiently small to maintain the organic phase substantially saturated with uranium and recovering the uranium from said organic phase.

3,360,347

PRODUCTION OF POROUS MATERIALS

Hoyt H. Todd, La Habra, Calif., assignor to Electro-Optical Systems, Inc., Pasadena, Calif.

Filed July 24, 1964, Ser. No. 384,957
10 Claims. (Cl. 29—182.1)

1. A method for producing a stable porous structure having a selected pore size and concentration and large surface portion area comprising:

(a) forming a porous structure of desired configuration from a coarse powder, said structure having a larger pore size and lower pore concentration than a selected pore size and concentration;

(b) etching said porous structure to increase the pore concentration; and,

(c) impregnating and joining a fine powder to said porous structure to reduce the pore size.

3,360,348

COMPOSITE STRUCTURE OF INTER-BONDED METALS FOR HEAVY-DUTY ELECTRICAL SWITCH CONTACTS

Horst Schreiner, Nurnberg, Germany, assignor to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, a corporation of Germany

Filed May 11, 1965, Ser. No. 454,921
Claims priority, application Germany, May 15, 1964, S 91,084
4 Claims. (Cl. 29—182.1)

1. In a composite and internally bonded body with a plurality of layers for electrical switch contacts comprising a body one side of which is most compressed and has the highest content of spark-resistant high-melting metal and the smallest content of impregnating metal, the remote side of said body being least compressed and having the lowest content of high-melting metal and the highest content of impregnating metal, said spark-resistant high-melting metal consisting of an alloy formed preponderantly of tungsten with a remainder substantially of copper and nickel, and said impregnating metal being formed substantially by metal selected from the group consisting of copper and silver and their alloys, the concentration of the high-melting metal and of the impregnating metal which fully impregnates the intermediate layers gradually merging into each other at values between the border layers without a concentration leap and the concentration varying in the direction of compression.

3,360,349

COPPER LAYER BONDED TO A NON-CONDUCTIVE LAYER BY MEANS OF A COPPER ALLOY

Alfred A. Adomines, Wayne, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 1, 1965, Ser. No. 444,849
8 Claims. (Cl. 29—195)

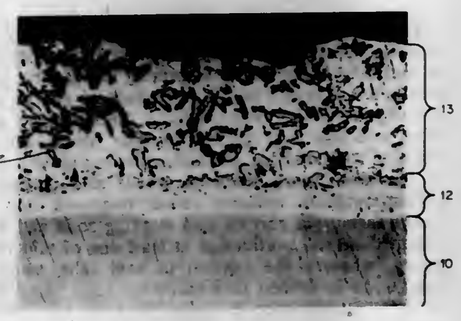
1. A structure comprising an inert, non-conductive substrate, copper alloy material analyzing 20–95% copper and 80–5% of a metal selected from the group consisting of aluminum and chromium deposited on the surface of said substrate and copper electrodeposited on said copper alloy material.

3,360,350

REFRACTORY METAL COMPOSITE AND COATING COMPOSITION

Lawrence Sama, Seaford, N.Y., assignor to General Telephone and Electronics Laboratories, Inc., a corporation of Delaware

Filed Nov. 29, 1963, Ser. No. 327,135
8 Claims. (Cl. 29—197)



5. An article comprising a refractory metal substrate having a coating thereon consisting essentially of between 15 and 50 weight percent aluminum, between 5

and 15 weight percent of a refractory metal additive selected from the group consisting of molybdenum, tantalum, tungsten and columbium, and 35 to 80 weight percent tin, said coating having a first layer affixed to said substrate consisting essentially of an aluminide of said refractory metal substrate, and a second layer affixed to said first layer consisting essentially of said 35 to 80 weight percent tin, dispersed particles of an aluminide of said 5 to 15 weight percent refractory metal additive, and the balance aluminum.

3,360,351
METHOD FOR FABRICATING MULTIPLE GLAZING UNITS

Donald W. Murray, Cheswick, and Larry K. King, Natrona Heights, Pa., assignors to Pittsburgh Plate Glass Company, Pittsburgh, Pa., a corporation of Pennsylvania

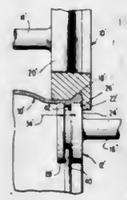
No Drawing. Filed Sept. 3, 1964, Ser. No. 394,322
5 Claims. (Cl. 65—24)

1. In a method of treating a pair of glass sheets which are subsequently fused together around the edges thereof to form a welded multiple glazing unit, the improvement comprising, depositing a finely-divided refractory material between the facing surfaces of said pair of glass sheets, said refractory material being of a quantity and size that would not be objectionable if present between the facing surfaces of a completed double glazing unit, and heating the glass sheets and fusing the edge portions of said sheets together without removing said refractory material from between said facing surfaces.

3,360,352
APPARATUS FOR AND METHOD OF SHAPING THE OPEN END OF GLASS TUBES BETWEEN COOPERATING ROLLERS

Roy N. Sundstrom, Corning, and Arthur H. Wilder, Painted Post, N.Y., assignors to Corning Glass Works, Corning, N.Y., a corporation of New York

Filed Aug. 25, 1964, Ser. No. 391,960
6 Claims. (Cl. 65—109)



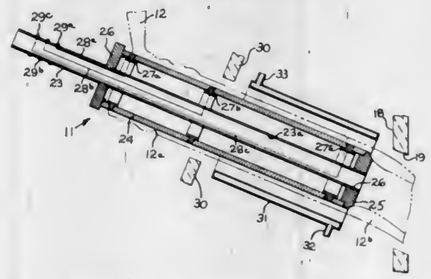
1. In an apparatus for forming the open end of a glass tube including means for positioning the malleable end of said tube in contact with forming means, first forming means for engaging the outer surface of a tube, second forming means for engaging the inner surface of said tube, said first and second forming means defining a working zone of fixed dimension for engaging a portion of the tube therebetween to reduce said portion to a circumferentially uniform radial thickness, and relief means forming a part of said working zone and formed intermediate end portions of at least one of said forming means, whereby the portion of said tube within said relief zone is defined longitudinally while being free to circumferentially vary in radial thickness as a result of non-uniformities in the tube wall thickness of said glass tube prior to shaping.

6. An improved method of forming the open end of a glass tube having non-uniform wall thicknesses to provide a shaped circumferentially-constant wall thickness which comprises, rotating a softened tube to be finished about its longitudinal axis, continuously rotating an end portion of said rotating tube through a confined work zone of fixed limits to reduce said end portion to a circumferentially uniform radial thickness, and flowing excess glass radially into a relief zone communicating with said confined zone to compensate for non-uniform wall thicknesses present in the tube prior to shaping while maintaining a desired longitudinal dimension.

3,360,353
APPARATUS FOR DRAWING GLASS IN CYLINDRICAL FORM

Julius J. Torok, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio

Filed May 27, 1964, Ser. No. 370,473
6 Claims. (Cl. 65—184)



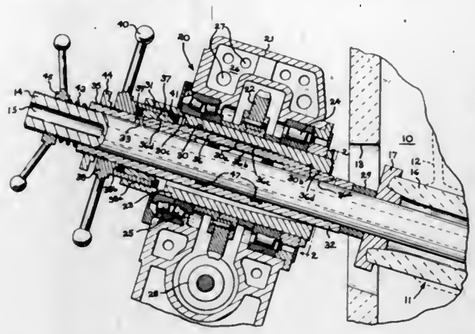
1. In an apparatus for drawing molten glass in cylindrical form,
a hollow chamber,
means for heating said chamber,
a rotary cylindrical mandrel mounted in downwardly-inclined relation within said chamber from which the cylindrical product of molten glass is drawn,
means for continuously flowing a stream of molten thermoplastic material onto and around said mandrel,
said mandrel having a circular cross-sectional contour, the major glass-contacting exterior surfaces of said mandrel being comprised of electrically-insulating refractory material,
at least a pair of exteriorly exposed annular electrodes mounted in spaced alignment smoothly integral with the exterior surfaces of said mandrel,
and means for supplying electrical energy to said annular electrodes to pass electrical current through the molten glass therebetween.

3,360,354
MANDREL SUPPORTING APPARATUS

Edward B. Bates, Elmer, N.J., assignor to Owens-Illinois, Inc., a corporation of Ohio

Filed Dec. 24, 1964, Ser. No. 420,963
10 Claims. (Cl. 65—184)

1. In apparatus for forming tubing or rod wherein molten material is wrapped about a rotating mandrel having a central supporting member and is drawn from the free end thereof in the form of a cylindrical article,
(a) a drive sleeve rotatable about a central axis and having an axial bore, said axial bore tapering to a reduced size at one end, the tapering bore at said one end defining an inwardly flaring camming surface,
(b) a chuck sleeve positioned in said axial bore and encircling said central supporting member, said chuck sleeve having at least three longitudinal slots,
(c) a finger loosely positioned in each of said slots, said fingers having inwardly facing grasping surfaces, a pair of outwardly facing camming surfaces at opposite ends of said finger, each of said camming surfaces in the direction approaching its respective end of said finger flaring inwardly toward said central axis, one of said camming surfaces engaging the drive sleeve camming surface,



(d) a wedge member engaging the other of said finger camming surfaces, and
(e) means for axially moving said wedge member toward said drive sleeve camming surface to urge both ends of said fingers radially inwardly into engagement with said supporting member.

3,360,355
METHOD OF SUPPLYING SULFUR AND NITROGEN TO SOIL

Franz A. Horsley, Danville, and Floyd H. Leavitt, Modesto, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 20, 1964, Ser. No. 361,240
7 Claims. (Cl. 71—61)

1. In the method of supplying fixed nitrogen, and sulfur, simultaneously to agricultural soil by introducing and disseminating a volatile liquid containing fixed nitrogen, and sulfur, into agricultural soil beneath its surface by means of apparatus in which the liquid flows through wholly enclosed passageways of restricted cross-sectional area, the improvement which avoids interference by solid matter with the flow of the liquid through the wholly enclosed passageways of restricted cross-sectional area in the apparatus used to introduce and disseminate the liquid into the soil, said improvement comprising employing as the liquid a solution formed by dissolving elemental sulfur in anhydrous liquid ammonia, the sulfur and ammonia each being free from contamination by water to the extent that the total amount of water introduced into the solution on their mixing does not exceed 500 parts per million of their combined weights, the proportions of sulfur and ammonia used being such that the nitrogen-to-sulfur weight ratio is maintained above 2.5-to-1, and passing and disseminating the solution into soil by means of apparatus in which the solution flows through wholly enclosed passageways of restricted cross-sectional area, without significant interference by solid matter, maintaining the solution free from contamination by more than 500 parts per million by weight of water until it has passed from the apparatus into the soil.

3,360,356
METHOD OF CONTROLLING UNDESIRABLE PLANT GROWTH

Joseph F. Vartiak, Naperville, Ill., assignor to Nalco Chemical Company, Chicago, Ill., a corporation of Delaware

No Drawing. Filed May 27, 1964, Ser. No. 370,691
3 Claims. (Cl. 71—65)

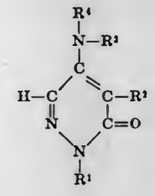
1. A method of controlling the growth of undesirable vegetation which comprises the steps of spraying aqueous solutions which contain:
(a) a phytotoxic amount of a herbicide, and
(b) dissolved therein at least 10 parts per million, but yet a substantially non-viscosity increasing amount of a water soluble polymer formed by the polymerization of at least one monoolefinic compound through an aliphatic unsaturated group and have a molecular weight of at least 100,000,
said liquid being characterized as having reduced misting tendencies when sprayed.

3,360,357
DERIVATIVES OF PYRIDAZONE AND A METHOD FOR THEIR USE AS HERBICIDES

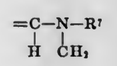
Franz Reicheneder and Franz Winter, Ludwigshafen (Rhine), and Adolf Fischer, Mutterstadt, Pfalz, Germany, and Karl Dury, deceased, late of Kirchheimbolanden, Pfalz, Germany, by Franz Winter, representative of the heirs, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed Aug. 3, 1966, Ser. No. 570,090
Claims priority, application Germany, Aug. 14, 1965, B 83,269
5 Claims. (Cl. 71—92)

1. Pyridazone derivatives having the formula

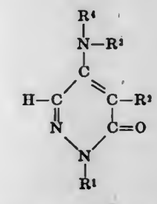


in which R^1 denotes cyclohexenyl cyclooctenyl, R^2 denotes chlorine, bromine, iodine, methoxy or thiomethyl, R^3 denotes hydrogen, R^4 denotes hydrogen, α-hydroxy-β-trichloroethyl, α-hydroxy-β-tribromoethyl, —NH_2 or —CO—R^5 in which R^5 denotes lower alkyl, chlorosubstituted lower alkyl, the —NH—C_6H_5, —$COOR^6$ or —CH=CH—$COOR^6$ in which R^6 denotes hydrogen, methyl or ethyl, or R^3 and R^4 together denote —CO—CH=CH—CO— or



in which R^7 denotes hydrogen or methyl.

2. A method of controlling unwanted plant growth which comprises treating the plants or the soil in which the plants are growing or are to grow with a phytotoxic amount of the pyridazone derivative

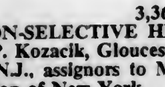


in which R^1 denotes cyclohexenyl cyclooctenyl, R^2 denotes chlorine, bromine, iodine, methoxy or thiomethyl, R^3 denotes hydrogen, R^4 denotes hydrogen, α-hydroxy-β-trichloroethyl, α-hydroxy-β-tribromoethyl, —NH_2 or —CO—R^5 in which R^5 denotes lower alkyl, chlorosubstituted lower alkyl, the —NH—C_6H_5, —$COOR^6$ or

—CH=CH—COOR^6 in which R^6 denotes hydrogen, methyl or ethyl, or R^3 and R^4 together denote

—CO—CH=CH—CO—

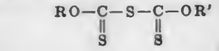
or



in which R^7 denotes hydrogen or methyl.

3,360,358
NON-SELECTIVE HERBICIDAL METHOD
Alfred P. Kozacik, Gloucester, and Herbert Myers, Camden, N.J., assignors to Mobil Oil Corporation, a corporation of New York
No Drawing. Filed Oct. 18, 1965, Ser. No. 497,549
3 Claims. (Cl. 71—102)

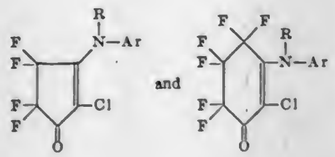
1. A method for killing plants that comprises contacting them with an herbicidal amount of a monosulfide having the formula:



wherein R and R′ are alkyl groups containing between 1 and about 18 carbon atoms; and substituted derivatives thereof.

3,360,359
3-ARYLAMINOPOLYHALOCYCLOALK-2-EN-1-ONES AS HERBICIDES
Everett E. Gilbert and Benjamin Veldhuis, Morris Township, Morris County, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed June 5, 1964, Ser. No. 373,036
17 Claims. (Cl. 71—121)

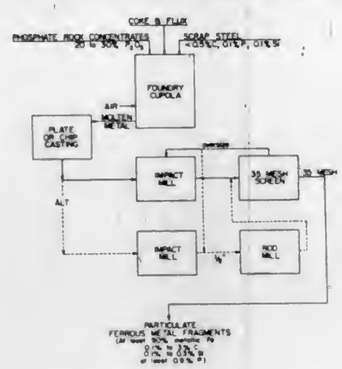
1. A method for the control of undesired vegetation comprising applying to the locus to be protected in an amount sufficient to exert herbicidal action, a member selected from the group consisting of compounds having the general formulas:



wherein Ar is a phenyl radical or a substituted phenyl radical selected from the group consisting of halophenyl, lower alkylphenyl, lower alkoxyphenyl, lower haloalkylphenyl, lower alkylhalophenyl, and lower haloalkylhalophenyl and R is a member selected from the group consisting of hydrogen and lower alkyl radicals.

3,360,360
FERROUS METAL PRODUCT USEFUL AS A PRECIPITANT AND PROCESS OF MANUFACTURING IT
Stuart R. Zimmerley and Russell R. Beck, Salt Lake City, Utah, assignors to Kennecott Copper Corporation, New York, N.Y., a corporation of New York
Filed Oct. 21, 1964, Ser. No. 405,449
8 Claims. (Cl. 75—.5)

1. A ferrous metal product having a high surface-to-weight ratio and useful as a precipitant for copper values in solution, said product being in the form of a mass of discrete and particulate fragments of metallic iron consisting essentially of metallic iron, except for minor impuri-

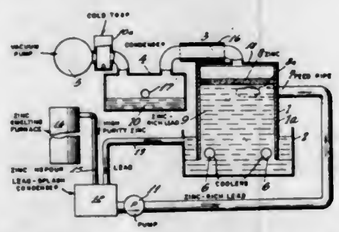


ties, not more than, by weight, about 0.3% silicon, and phosphorous in the range of from 0.6% to about 4% to make the metal brittle and easily fragmented.

3,360,361
METHOD OF MAKING FOAMED METAL
Denton M. Albright, Penn Hills Township, Allegheny County, and Walter R. Chilcott, Jr., Forest Hills Borough, Pa., and Themistocles P. Floridis, Blacksburg, Va., assignors to United States Steel Corporation, a corporation of Delaware
No Drawing. Filed Aug. 6, 1964, Ser. No. 387,982
5 Claims. (Cl. 75—20)

1. A process of making an improved foamed body of a metal from the group consisting of iron, aluminum, magnesium and titanium, comprising providing a melt of said metal, adding to said melt simultaneously a foam-promoter and a compatible, thermally-decomposable, gas-former while agitating to distribute said foam-promoter and gas-former within the melt, said foam-promoter comprising a substance alloyable with said metal and having a melting point higher than said metal, said gas-former being decomposed by the heat of the melt causing said metal to foam, and cooling to provide solidified, foamed metal.

3,360,362
DEZINCING OF LEAD
Thomas Ronald Albert Davey, Glen Waverley, Victoria, Australia, assignor to Metallurgical Processes Limited, Nassau, Bahamas, a company of Bahamas, and Imperial Smelting Corporation (N.S.C.) Limited, London, England, a British company, both doing business as Metallurgical Development Company, Nassau, Bahamas
Filed Oct. 14, 1964, Ser. No. 403,807
Claims priority, application Great Britain, Oct. 18, 1963, 41,194/63
9 Claims. (Cl. 75—78)



1. In the method of recovering high purity molten zinc from a body of molten lead, rich in zinc dissolved in the lead, by distilling the lower boiling point zinc from the higher boiling point lead while maintaining the lead in its molten form, and separately condensing the resulting zinc vapour to molten zinc, the improvement in combination therewith which comprises:

(a) a stream of the molten lead, rich in zinc, is passed into a confined lead-zinc separating zone to form an upright column;
(b) the stream of zinc-rich molten lead is fed into the upper portion of the column;
(c) the quiescent lower portion of the molten column is cooled to the point at which droplets of zinc separate from the molten lead;
(d) the droplets of separated zinc are permitted to rise upwardly in the column and to form a layer of molten zinc, lean in lead, on the top of the column;
(e) cooled molten lead, de-nuded of zinc, is withdrawn from the bottom of the column of molten lead;
(f) the layer of molten zinc, lean in lead, is subjected in situ to vacuum distillation to drive off high-purity zinc vapour while leaving the molten lead behind;
(g) the resulting high purity zinc vapour is passed to its own condensing zone and condensed to molten zinc; and
(h) the resulting high purity molten zinc is withdrawn as such from the condensing zone.

3,360,363
BERYLLIUM STRENGTHENED IRON BASE ALLOY
Robert B. Herchenroeder, Kokomo, Ind., assignor to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Feb. 1, 1965, Ser. No. 429,671
8 Claims. (Cl. 75—124)

1. A beryllium strengthened iron base alloy consisting essentially of in weight percents from about 20 to about 23.2% chromium, from about 10 to about 16% cobalt, from about 10 to about 16% nickel, from about 2.3 to about 5% molybdenum, from about .5 to about 1.1% beryllium, and from about .25 to about 1.5% carbon plus silicon, balance iron and impurities, said alloy being further characterized in that the chromium plus cobalt plus molybdenum content is at least about 33% but not more than about 42% of said alloy, and said cobalt and nickel contents are approximately equal to one another and equal to about 13%±3% of said alloy.

3,360,364
PROCESS FOR PRODUCING NODULAR GRAPHITE IN A METAL
Kenneth H. Ivey and Haskiel R. Shell, Norris, Tenn., assignors to the United States of America as represented by the Secretary of the Interior
No Drawing. Filed May 25, 1965, Ser. No. 458,793
9 Claims. (Cl. 75—130)

1. A method for preparing a metal containing graphite in nodular form comprising treating the graphite-containing molten metal with a nodularizing agent comprising a silicate from the group consisting of an amphibole and a humite.

3,360,365
PROCESS OF PRODUCING AN ALLOY STEEL FOR HOT-WORKING TOOLS
Norbert Eichler, Bohlerwerk an der Ybbs, Austria, assignor to Gebr. Bohler & Co. Aktiengesellschaft, Vienna, Austria
No Drawing. Filed Apr. 29, 1965, Ser. No. 452,000
Claims priority, application Austria, May 12, 1964, A 4,128/64
4 Claims. (Cl. 75—126)

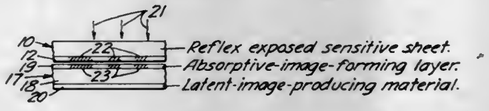
1. A hot-working steel, consisting essentially of 0.2–0.6% carbon, 1–7% chromium, 1–12% tungsten, 0.1–2% vanadium, traces to 5% molybdenum, traces to 5% cobalt, traces to 5% nickel, cerium and lanthanum in a total amount of 0.008–0.2%, balance iron and inevitable impurities.

3,360,366
METHOD OF GRAIN REFINING ZINC
Laszlo J. Bonis, Brookline, Mass., assignor to Ilikon Corporation, Natick, Mass., a corporation of Delaware
Filed Jan. 25, 1965, Ser. No. 427,982
4 Claims. (Cl. 75—178)



1. A method of reducing the grain size of zinc and zinc alloy products, said zinc alloys containing at least 80 weight percent of zinc said products being formed from a melt, which method comprises adding to the melt an amount of yttrium in the range of 0.001 to about 5.0 percent by weight.

3,360,367
COPYING OF GRAPHIC IMAGES
Buck Stricklin, St. Paul, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed Mar. 15, 1966, Ser. No. 536,571
12 Claims. (Cl. 96—1)



1. A master sheet including a thin dense paper-like carrier sheet having over one surface a thin uniform transfer coat comprising from about one-tenth to about one and one-half grams/sq. ft. of hard non-tacky fusible solid material melting within the range of approximately 70 to 170° C. and vaporizable at 150° C. with formation of a fluid metastable liquid condensate which remains in liquid form for at least about one-half minute on cooling to room temperature, and over the other surface a layer comprising a first reactant for inter-reaction with a second reactant when locally applied to said other surface and inter-reactive therewith on briefly heating the thus treated sheet to about 150° C. to form a corresponding infra-red-absorptive and visibly distinct image on said other surface.

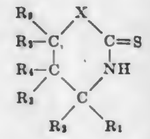
11. A master sheet including a thin dense paper-like carrier sheet having over one surface a thin uniform transfer coat comprising from about one-half to about one and one-half grams/sq. ft. of hard non-tacky fusible solid material melting within the range of approximately 70 to 170° C. and vaporizable at 150° C. with formation of a fluid metastable liquid condensate which remains in liquid form for at least about one-half minute on cooling to room temperature, and, uniformly blended therewith and in minor proportion thereto, an inert powder and a polymeric binder; and said carrier sheet having over its other surface a photoconductive layer suitable for recording a light-image.

3,360,368
SILVER COMPLEX DIFFUSION TRANSFER PROCESS

George Frans Van Veelen and Eric Maria Brinckman, Mortsel-Antwerp, and Jozef Frans Willems and Gerard Michiel Sevens, Wilrijk-Antwerp, Belgium, assignors to Gevaert Photo-Producten N.V., Mortsel, Belgium, a company of Belgium

No Drawing. Filed July 5, 1962, Ser. No. 207,816
Claims priority, application Belgium, July 6, 1961, 40,787
10 Claims. (Cl. 96—29)

1. A photographic silver complex diffusion transfer process comprising developing with a developing solution an image-wise exposed light-sensitive silver halide emulsion layer and image-wise diffusion of the non-developed and complexed silver halide from said emulsion layer into a non-light-sensitive image-receiving layer of an image-receiving material where the complexed silver halide is converted into a silver containing image in the presence of development nuclei and of at least one compound provided in at least one of said developing solution and said image-receiving material having the following general formula or tautomeric structure thereof:



wherein:

X is an atom selected from the group consisting of a sulfur atom and an oxygen atom, and

each of R_1, R_2, R_3, R_4, R_5 and R_6 is hydrogen or lower alkyl.

3,360,369
DIAZOTYPE REPRODUCTION MATERIAL

Luigi Amariti, Chicago, Peter Paulon, Jr., Berwyn, Carl Jones Marshall, Melrose Park, and Gerson E. Beauchamp, Chicago, Ill., assignors to Eugene Dietzgen Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed May 1, 1964, Ser. No. 364,271
12 Claims. (Cl. 96—75)

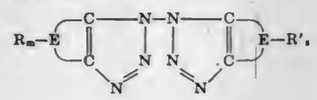
1. Reproduction material which comprises: a supported layer of an ultraviolet light-sensitive material, said material including a coupling diazo compound and dimethyl sulfoxide.

3,360,370
LEUCO DYE-AROMATIC BITRIAZOLE LIGHT-SENSITIVE DYE FORMER COMPOSITIONS

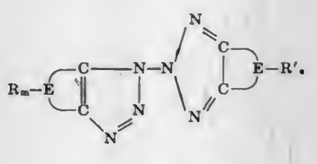
Charles Yembrick, Jr., Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Apr. 29, 1964, Ser. No. 363,626
8 Claims. (Cl. 96—90)

1. A light-sensitive composition comprising an intimate admixture of (a) the leuco form of a dye having one or two removable hydrogen atoms, the removal of which forms a differently colored compound, and (b) an aromatic bitriazole which is a member of the group consisting of a compound having a structure represented by one of the formulas



and



3,360,371
HEAT-DEVELOPABLE TWO-COMPONENT DIAZOTYPE REPRODUCTION MATERIAL

Johannes Munder, Wiesbaden-Biebrich, and Hellmut Ziegler, Wiesbaden-Schierstein, Germany, assignors, by mesne assignments, to Keuffel & Esser Company, Hoboken, N.J.

No Drawing. Filed Dec. 27, 1963, Ser. No. 334,029
Claims priority, application Germany, Dec. 29, 1962, K 48,608
9 Claims. (Cl. 96—91)

1. A heat-developable two-component diazotype reproduction material comprising a sheet-like support and a light-sensitive layer coated on said support, said layer comprising diazo compound, coupler and a finely divided heat-activatable alkaline developing agent, said agent consisting essentially of dry solid particles of low water solubility inorganic alkali enveloped by a water-insoluble organic substance melting between about 50 and 200° C.

3,360,372
BIS(BETA-ACYLOXYETHYL)KETONES AS GELATIN HARDENERS

Donald M. Burness and Burton D. Wilson, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed June 29, 1964, Ser. No. 379,018
12 Claims. (Cl. 96—111)

2. A gelatin-silver halide photographic emulsion containing a compound having the formula

$$XCH_2CH_2CO(ACO)_mCH_2CH_2X$$

X is selected from the group of acyloxy radicals consisting of acetoxy and chloroacetoxy,

$$m=0-1$$

A is a divalent linkage selected from the group consisting $—(CH_2)_{1-10}—$, —CH=CH—,

$$—CH_2CH_2OCH_2CH_2—$$

$—CH_2CH_2SCH_2CH_2—$, phenylene and cyclohexylene radicals.

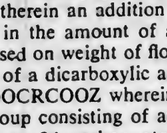
3,360,373
PROCESS FOR THE MANUFACTURE OF SILVER HALIDE EMULSIONS BY THE FLOCCULATION METHOD

Heinrich Schaller, Binningen, and Paul Schaefer, Riehen, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a Swiss company

No Drawing. Filed Dec. 3, 1963, Ser. No. 327,837
Claims priority, application Switzerland, Dec. 4, 1962, 14,200/62
14 Claims. (Cl. 96—114)

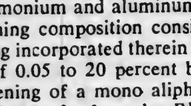
1. A process for the manufacture of a photographic silver halide emulsion by the flocculation method, which comprises adding to the gelatine silver halide emulsion at a pH of 3 to 5 as a flocculating agent a linear additive copolymer which consists mainly of polymer units of

(1) 15 to 70 mol percent of a member selected from the group consisting of N-vinylethylene urea, N-vinyloxazolidone and N-vinylpyrrolidone of the general formula



in which Y represents a member selected from the group consisting of a $—CH_2—$, —NH— and —O— radical and

(2) 30 to 85 mol percent of a water-soluble salt of an acid of the formula



wherein n is a whole number of at the most 2.

3,360,374
PROCESS FOR MAKING A DIETARY FOOD PRODUCT

Courtland H. Barr, Sr., Los Angeles, Courtland H. Barr, Jr., La Canada, and John W. Barr, Glendale, Calif., assignors to Courtland Laboratories, Los Angeles, Calif., a corporation of California

No Drawing. Filed July 27, 1965, Ser. No. 475,235
9 Claims. (Cl. 99—1)

1. A process for producing a dietary food product comprising preparing a mixture of a foodstuff and methycellulose, said foodstuff being substantially free from amino acid, adding an amino acid to said mixture and freeze drying said mixture, said amino acid being added in sufficient amount to substantially prevent said mixture from sticking to the mouth.

3,360,375
YEAST LEAVENED BAKERY PRODUCTS AND SHORTENING COMPOSITIONS

Bruce D. Buddemeyer and John R. Moneymaker, Overland Park, Kans., assignors to The Panlplus Company, Kansas City, Mo., a corporation of Missouri

No Drawing. Filed May 16, 1967, Ser. No. 638,724
49 Claims. (Cl. 99—91)

1. A yeast leavened bakery product containing flour having incorporated therein an addition agent comprising an effective amount in the amount of about 0.05 to 2.0 percent by weight based on weight of flour of a non-toxic, mono aliphatic ester of a dicarboxylic acid corresponding to the formula: $R^1OOCRCOOZ$ wherein R^1 is a member selected from the group consisting of an aliphatic substituent containing 12 to 24 carbon atoms and mixtures thereof; R is an aliphatic group containing up to and including 8 carbon atoms and Z is a member selected from the group consisting of hydrogen, alkali metal, alkaline earth metal, ammonium and aluminum.

23. A shortening composition consisting essentially of shortening having incorporated therein an effective amount in an amount of 0.05 to 20 percent by weight based on weight of shortening of a mono aliphatic ester of adipic acid corresponding to the formula: $R^1OOC(CH_2)_4COOZ$ wherein R^1 is a member selected from the group consisting of an aliphatic substituent containing 12 to 24 carbon atoms and mixtures thereof; and Z is a member selected from the group consisting of hydrogen, sodium, potassium, calcium and magnesium.

3,360,376
THIXOTROPIC SHORTENING

Robert D. Dobson, Greenhills, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

No Drawing. Filed Mar. 27, 1964, Ser. No. 355,438
7 Claims. (Cl. 99—118)

1. A method of making an opaque thixotropic shortening having the appearance of a normally plastic shortening at temperatures below about 90° F. when at rest and being pourable at temperatures above about 50° F. when worked comprising

(a) forming a mixture, at a temperature sufficiently high to eliminate all crystalline material, of from about 85% to about 90% by weight substantially completely liquid triglyceride base stock and from about 10% to about 15% by weight substantially completely hydrogenated triglyceride hardstock having an iodine value not exceeding about 12 and having a predominantly beta-phase crystallization tendency;

(b) rapidly cooling in less than about 10 minutes the hot liquid mixture with agitation to a temperature of from about 50° F. to about 70° F. to initiate fat crystallization;

(c) holding the chilled stock without substantial addition or removal of heat and without agitation until crystallization is substantially complete;

(d) converting the crystalline phase of the shortening stock to at least 95% beta-phase crystals;

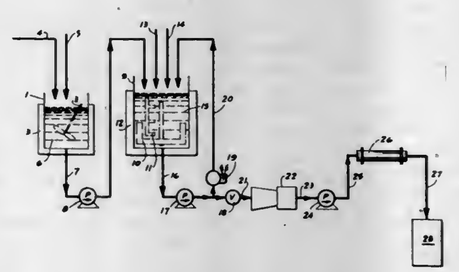
(e) heating the transformed stock over a period of a few minutes to about 1 hour to a temperature of from about 115° F. to about 120° F. without melting, and

(f) cooling over a period of a few minutes to about 1 hour the shortening stock to a temperature of from about 90° F. to about 105° F.

3,360,377
METHOD FOR PRODUCTION OF LOW-CALORIE MARGARINE SUBSTITUTE PRODUCTS

Joseph George Spitzer, East Mamaroneck, N.Y., and John J. Kearns, Lawrence Township, Trenton, and Owen Cooper, Princeton, N.J.

Filed Apr. 10, 1964, Ser. No. 358,696
11 Claims. (Cl. 99—123)



1. A novel method for the production of a stable plastic edible low-calorie margarine-substitute composition of good mouth feel and melt down properties, in the form of a water-in-oil emulsion, said method comprising: forming a low-calorie, liquid, water-in-oil coarse emulsion comprising a continuous oil phase containing an edible oil and an emulsifying system at an emulsifier level of .1 to .5% by weight of the total composition the emulsifying agent of the emulsifying system being selected from the group consisting of (a) the combination of a phospholipid and a compound selected from the group consisting of 12–22 carbon atom fatty acids, (b) the combination of a phospholipid and a hydroxyester of a C_{12}–C_{22} carbon atom fatty acid with a polyol selected from the group consisting of propylene glycol, glycerol, sorbitan, monosaccharides and oleosaccharides, and (c) hydroxyesters of a C_{12}–C_{22} carbon atom fatty acid with a polyol selected from the group consisting of propylene glycol,

sorbitan, monosaccharides and oligosaccharides, and a dispersed water phase of water droplets consisting of at least 45% and not more than 80% by weight of the total composition; the coarse and fine emulsion being maintained at a temperature not greater than 113° F., subjecting said coarse emulsion to appropriate forces to produce a fine emulsion; and converting the fine emulsion from a liquid to the plastic state by the quick-chilling thereof at satisfactory crystallization rate for the edible oil so that the resulting plastic emulsion is capable of being immediately packaged without causing emulsion breakdown, the temperature of the plastic emulsion emerging from the chilling operation being at a temperature of at least 52° F.

3,360,378
LOW CALORIE MARGARINE SUBSTITUTE PRODUCT

Joseph George Spitzer, Mamaroneck, and Lloyd I. Osipow, New York, N.Y.

No Drawing. Continuation of application Ser. No. 515,253, Dec. 20, 1965. This application July 12, 1967, Ser. No. 652,666

20 Claims. (Cl. 99—123)

1. A stable plastic edible low-calorie margarine-substitute composition substantially free of non-modified proteinaceous matter and in the form of a water-in-oil emulsion having a flow temperature in the range of 65 to 105° F. and a penetrometer reading at 40° F. of 20 to 250, said composition consisting essentially of at least 45% by weight of water and from 20 to 55% by weight of oleaginous ingredients consisting essentially of an edible oil as the predominant oleaginous material and an emulsifying system in an amount of 0.1 to 15% by weight of the total composition selected from the group consisting of (a) a phospholipid insoluble in both water and the oleaginous ingredients in combination with a compound selected from the group consisting of 12–22 carbon atom fatty acids and hydroxy esters of a polyol selected from the class consisting of propylene glycol, glycerol, sorbitan, monosaccharides and oligosaccharides with a 12–22 carbon atom fatty acid; (b) a 12–22 carbon atom fatty acid in combination with a hydroxyester of a polyol selected from the class consisting of propylene glycol, glycerol, sorbitol, monosaccharides and oligosaccharides with a 12–22 carbon atom fatty acid; (c) hydroxyesters of sorbitan with a 12–22 carbon atom fatty acid containing at least two hydroxy groups on nonadjacent carbon atoms; and (d) an hydroxy monoester of a polyol selected from the class consisting of propylene glycol, glycerol, sorbitan, monosaccharides and oligosaccharides with a 12–22 carbon atom fatty acid, said monoester being insoluble in both the oil phase and the water phase, and being in combination with an oil soluble hydroxyester of a polyol selected from the class consisting of propylene glycol, glycerol, sorbitan, monosaccharides and oligosaccharides with a 12–22 carbon fatty acid.

3,360,379
PROCESSES FOR MAKING WHOLE CRANBERRY SAUCE

Stanley I. Skelskie, Brockton, Mass., assignor to Ocean Spray Cranberries, Inc., Hanson, Mass., a corporation of Delaware

No Drawing. Filed Mar. 2, 1965, Ser. No. 436,635

3 Claims. (Cl. 99—129)

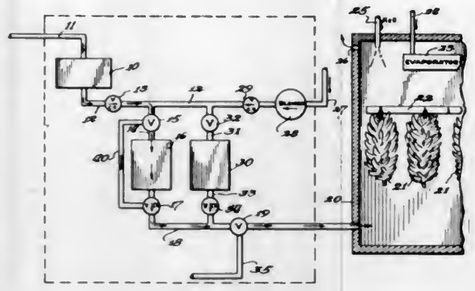
1. In the manufacture of whole cranberry sauce, the improvement which comprises treating pulp obtained from cold pressed cranberries with hot water to extract hot-soluble pectin, color, flavor and solids therefrom, adding said hot-soluble pectin, color, flavor and solids to a mixture of whole raw cranberries and a sugar syrup, and thereafter cooking the mixture.

3,360,380
METHOD OF STORING BANANAS

Karakian Bedrosian, St. Joseph, Mich., assignor to Whirlpool Corporation, a corporation of Delaware

Filed Apr. 20, 1964, Ser. No. 360,918

4 Claims. (Cl. 99—154)



1. The method of storing harvested bananas for a storage period during which said bananas consume oxygen and give off unsaturated hydrocarbon gases including ethylene having a ripening and destructive effect on said bananas during storage, comprising: subjecting said bananas to an atmosphere containing oxygen, the amount of oxygen being less than that found in normal air, whereby said atmosphere tends to become contaminated with said hydrocarbon gases; and removing said unsaturated hydrocarbon gases at such a rate as to limit the maximum unsaturated hydrocarbon gas in said atmosphere contacting said bananas to a safe level of about 0.5 p.p.m. maximum dependent upon the amount of oxygen in said atmosphere.

3,360,381
PRESERVATION OF MEAT COLOR

Basil G. Tarladgis, Fair Lawn, N.J., assignor to Lever Brothers Company, New York, N.Y., a corporation of Maine

No Drawing. Filed July 26, 1966, Ser. No. 567,836

Claims priority, application Australia, Apr. 30, 1962, 17,040

20 Claims. (Cl. 99—157)

1. A method for preserving the color of meat comprising treating a meat product with a composition consisting essentially of a compound selected from the group consisting of adenine, guanine, hypoxanthine, xanthine, uric acid, uracil, thymine, cytosine, methyl-cytosine, thiouracil, pyrazine, triazine, purine and pyrimidine, in a sufficient amount and for a sufficient time to stabilize the ferrous-porphyrin coordination complex in the meat product, thereby preserving its color.

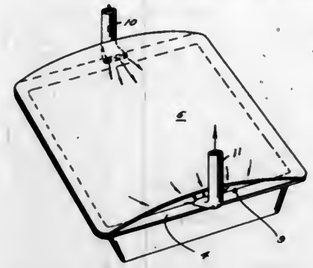
3,360,382
METHOD OF PACKAGING MEAT

Harmon B. Miller, Atlanta, Ga., assignor to Scientific-Atlanta, Inc., Atlanta, Ga., a corporation of Georgia

Filed Dec. 27, 1965, Ser. No. 516,295

3 Claims. (Cl. 99—174)

1. A method of packaging sliced luncheon meat and other perishable goods with a gas other than air in a container comprising a cup having a compartment surrounded by a sidewall, an outwardly extending flange on the upper rim thereof and a bottom, said method comprising the steps of placing said goods in said compartment, placing a closing lid on said flange over said goods, said lid being bowed outwardly so as to provide two openings on opposite sides of the cup between said lid and said rim whereby a tunnel is defined between said cup and said lid, introducing said other gas under pressure at one of said openings and into said tunnel while withdrawing air from said tunnel through said oppositely located opening, whereby said tunnel channels the flow of air and said other gas



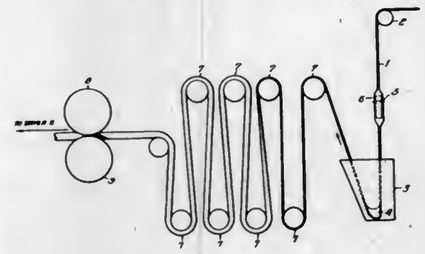
between said openings, and then forming a gas-tight seal between said lid and said flange to retain said other gas in said package.

3,360,383
CASING FOR PREPARATION OF DRY SAUSAGES

Henry J. Rose and Albin F. Turbak, Danville, Ill., assignors to Tee-Pak, Inc., Chicago, Ill., a corporation of Illinois

Filed Sept. 8, 1964, Ser. No. 394,817

7 Claims. (Cl. 99—176)



1. A synthetic tubular sausage casing for processing dry sausages, said casing having the inner surface thereof coated with 0.1–5% soluble protein, having a molecular weight above about 10,000 and an isoelectric point in the range from pH 2 to pH 6, and sufficient liquid smoke in the range from about 0.05–5.0% by weight of the casing, to substantially insolubilize the protein coating after drying, whereby the casing shrinks with and adheres to the surface of dry sausage therein.

3,360,384
PRODUCTION OF FROZEN FOODSTUFFS

Edward F. Kurzinski, Allentown, and Edward J. Kelly, Schuylkill Haven, Pa., assignors to Air Products and Chemicals, Inc., Philadelphia, Pa., a corporation of Delaware

Filed June 20, 1963, Ser. No. 289,186

24 Claims. (Cl. 99—192)

1. A method of increasing the freezing rate and improving the quality of an edible frozen product comprising the steps of:

(a) forming a predetermined first quantity of an edible material subcooled by heat exchange with a cryogenic refrigerant to a temperature below minus 100° F.,

(b) forming a predetermined second quantity of an edible material in a fluent condition at a predetermined temperature substantially warmer than said subcooled first quantity,

(c) combining said first and second quantities of edible material to form a mixture wherein said subcooled material is in substantially uniform heat exchange relationship with said second quantity of edible material, said predetermined first and second quantities and the temperatures thereof being selected such that said subcooled first quantity provides a substantial portion of the refrigeration necessary to freeze the final product.

3,360,385
METHOD OF MAKING FROZEN DINNER CRANBERRY COMPONENT

Stanley I. Skelskie, Brockton, Mass., assignor to Ocean Spray Cranberries, Inc., Hanson, Mass., a corporation of Delaware

No Drawing. Filed Sept. 9, 1964, Ser. No. 395,323

5 Claims. (Cl. 99—193)

1. In the preparation of a frozen TV dinner package containing a cranberry sauce serving, a method for maintaining the cranberry sauce in a gelled state upon thawing the frozen package, comprising adding an acid tolerant, quick-acting, freeze-surviving vegetable gelling agent to cooked cranberries, adding a sugar syrup, cooking the mix to form a sauce, placing an individual serving of the cooked sauce in the dinner package before freezing and then subjecting the contents of the package, including the cranberry sauce, to a freezing environment to freeze said sauce.

3,360,386
GLASS FIBER COMPOSITION

Lawrence W. Kelley, West Covina, Albert Lewis, Covina, and Jason D. Provance, Glendora, Calif., assignors to Aerojet-General Corporation, Azusa, Calif., a corporation of Ohio

No Drawing. Filed Oct. 10, 1963, Ser. No. 315,347

14 Claims. (Cl. 106—50)

1. A glass composition consisting essentially of:
About 67% to about 74% silica,
About 6.5% to about 10% aluminum oxide,
About 6.5% to about 10% sodium oxide,
About 6.5% to about 10% magnesium oxide,
About 3% to about 6% calcium oxide,
Up to about 2.5% antimony oxide.

3,360,387
MAGNESIA CHROME ORE REFRACTORY

Ralph C. Padfield, Bethlehem, Pa., assignor to Bethlehem Steel Corporation, a corporation of Delaware

No Drawing. Filed Aug. 9, 1966, Ser. No. 571,360

5 Claims. (Cl. 106—59)

1. A method of producing magnesia-chrome ore basic refractory bricks having high hot strength and good resistance to slag comprising:

(a) forming a basic refractory mix of 40% to 60% magnesia by weight and 60% to 40% chrome ore by weight, said mix containing from about 2.5% to about 8.00% silica by weight, lime not more than 15% iron oxide by weight, not more than 20.0% alumina by weight, the lime to silica weight ratio being not more than 0.26,

(b) forming the mix into basic refractory bricks,

(c) firing the bricks at a temperature of not less than 3050° F. for a time sufficient to form interstitial bonds substantially all of which are solid solution forsterite, and

(d) cooling the bricks at a rate sufficient to prevent the formation of low melting interstitial silicate bonds.

3,360,388
REFRACTORY

Joseph E. Neely, Los Gatos, Calif., assignor to Kaiser Aluminum & Chemical Corporation, Oakland, Calif., a corporation of Delaware

No Drawing. Filed May 3, 1965, Ser. No. 452,899
5 Claims. (Cl. 106—60)

1. A refractory composition adapted for use as a shovel mix consisting essentially of: from 0.5% to 6% by weight sodium silicate; from 0.25% to 3% by weight calculated as B_2O_3, of sodium tetraborate decahydrate; from 10% to 50% by weight finely divided magnesia; from 0 to 15% by weight of a ceramic bonding material; the balance of the composition being refractory grain.

3,360,389
HYDROGENATED CASTOR OIL-ORGANIC DIISOCYANATE RHEOLOGICAL AGENT

Fred M. Frank, 61—35 98th St., Rego Park, N.Y. 11374

No Drawing. Filed May 6, 1965, Ser. No. 453,816
11 Claims. (Cl. 106—245)

1. A composition comprising: (a) a hydrogenated castor oil-organic diisocyanate reaction product, said organic diisocyanate being selected from the class consisting of arylene diisocyanates, polyalkylene diisocyanates, alkylene diisocyanates, alkilidine diisocyanates and cycloalkylene diisocyanates, said diisocyanate comprising from about 2% to about 12% by weight of said reaction product, and (b) an emulsifiable polyethylene wax having a molecular weight from about 1500 to about 6000, an acid number from 0 to about 50, a saponification number from about 9 to about 25, a penetration hardness from about 1 to about 6, and a melting point from about 208° F. to about 221° F., said emulsifiable polyethylene wax being present in an amount up to about 80% by weight based on the total weight of the composition.

3,360,390
USE OF ALKYLAMINE BORATES AS CORROSION INHIBITOR FOR FERROUS METAL

Raymond Thompson Esher, Michael Peter Brown, East Molesey, Howard Bernard Silver, Hinchley Wood, and Anthony Edward Dann, London, England, assignors to United States Borax & Chemical Corporation, Los Angeles, Calif.

No Drawing. Filed May 6, 1964, Ser. No. 365,485
Claims priority, application Great Britain, June 19, 1963, Ser. No. 24,410/63
17 Claims. (Cl. 117—16)

1. The method of protecting ferrous metal articles from corrosion which comprises treating the surface of said articles with an alkylamine borate, in which the alkyl group contains from 4 to about 18 carbon atoms.

3,360,391
PROCESS FOR THE PRODUCTION OF CORROSION RESISTANT AND HIGHLY WEAR-RESISTANT COATED SURFACE AND THE COATED SURFACE

Hermann Richtzenhain, Cologne-Sulz, and Manfred Simon, Niederkassel, Troisdorf, Germany, assignors to Dynamit Nobel Aktiengesellschaft, Troisdorf, Bezirk Cologne, Germany, a corporation of Germany

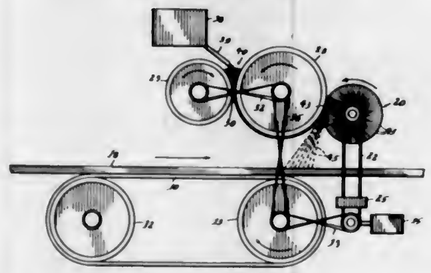
No Drawing. Filed July 29, 1963, Ser. No. 298,496
Claims priority, application Germany, Aug. 1, 1962, D 39,528
19 Claims. (Cl. 117—26)

1. Process for the production of a corrosion-resistant, highly wear-resistant coating, which comprises applying to the surface to be coated a mixture of epoxy resin, oxygen-containing flexibilizer compound, epoxy resin-hardening agent and a filler selected from the group consisting of corundum, silicon carbide, and mixtures thereof, and allowing the mixture to harden in situ, the epoxy resin being a polyepoxide which is liquid at room temperature and containing at least 2 epoxy equivalents per molecule, the flexibilizer compound being present in an amount of between about 1–20% by weight based on the resin quantity, the hardening agent being selected from the group consisting of polyethers of aliphatic oxyamines and polyvalent aliphatic alcohols, and mixtures thereof with cycloaliphatic polyamines, and the filler being present in the mixture in the form of dust having a particle size of between about 0–60 microns and in an amount of between about 10–200% by weight based on the resin quantity and in the form of granules having a particle size between about 0.07–2 mm. and in an amount between about 100–900% by weight based on the resin quantity.

3,360,392
APPARATUS AND METHOD FOR APPLYING SPATTER FINISH

George W. Mod, Mount Prospect, and Edward S. Czyzewski, Northbrook, Ill., assignors, by mesne assignments, to The Celotex Corporation, a corporation of Delaware

Filed July 9, 1964, Ser. No. 381,368
7 Claims. (Cl. 117—37)



2. An apparatus for applying a spatter coating finish to the surface of a panel comprising:
an axially rotatable roll for carrying a coating material on its surface;
a conveyor, and means to drive it at a predetermined linear speed, spaced from said roll for conveying a coating receiving panel past said roll at said predetermined linear speed;
a brush mounted for rotation adjacent said roll, said brush having bristles which are flexed against the surface of said roll; and
means connected to said brush and said conveyor drive means for rotating said brush at a linear surface speed having a ratio of between 1 to 1 and 5 to 1 with respect to said predetermined linear speed of said conveyor, whereby said flexed bristles of said brush hurl particles of said coating material upon the surface of said panel as said flexed bristles move away from contact with said surface of said roll.

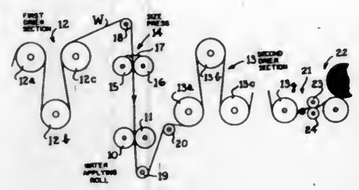
6. The method of applying a spatter coating finish to a surface comprising the steps of:
moving said coating receiving surface in a predetermined direction, and
hurling liquid particles of coating material against said surface in a direction such that a component of movement of said particles is in a direction parallel and opposite to said direction of movement of said surface.

3,360,393
METHOD OF MAKING COCKLED PAPER

Cecil R. Rhorer, Neenah, Wis., assignor to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware

Filed Apr. 30, 1964, Ser. No. 363,774
3 Claims. (Cl. 117—38)

1. In a method of making cockled paper, the steps which comprise, running a web of paper over the outer surface of a rotating roll that is provided on its surface with spaced depressions, preliminarily filling said depressions with water before application of the web to the



roll so that the water transfers onto the paper web from the depressions as the web travels over the roll, and then drying the paper web.

3,360,394
PROCESS FOR FORMING BREATHABLE POLYURETHANE COATING ON A TEXTILE FABRIC AND THE RESULTING PRODUCT

Thomas Franklin Griffin and Delbert Allen Davis, Kernersville, N.C., assignors to Burlington Industries, Inc., Greensboro, N.C., a corporation of Delaware

No Drawing. Filed Jan. 24, 1964, Ser. No. 339,881
12 Claims. (Cl. 117—63)

1. A process for preparing a breathable polyurethane coating on a textile fabric which comprises applying a polyurethane coating to at least one side of the fabric, immersing the coated fabric in hot aqueous caustic alkali and thereafter washing in water.

3,360,395
METHOD OF PRODUCING UREA-FORMALDEHYDE RESIN COATED SAND

Julius M. Bleuenstein, Taylor, Mich., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Apr. 22, 1964, Ser. No. 361,866
6 Claims. (Cl. 117—100)

1. The process for producing storable urea-formaldehyde resin coated sand which comprises mixing sand with a sufficient amount of molten urea and for a sufficient time to cover substantially each sand grain with urea, and mixing with the resulting mass sufficient nonresinous urea-formaldehyde concentrate having a formaldehyde to urea mol ratio of about 4.0:1 to 7.3:1 to give a calculated formaldehyde/urea mol ratio of about 1.25 to 1 to 2.0 to 1 until the resulting mixture has broken down to a mass of dry free-flowing resin coated particles.

3,360,396
POLYVINYL FLUORIDE COATING

Alexander W. Kennedy, Cleveland, and Michael E. Kucsma, Painesville, Ohio, assignors to Diamond Alkali Company, Cleveland, Ohio, a corporation of Delaware

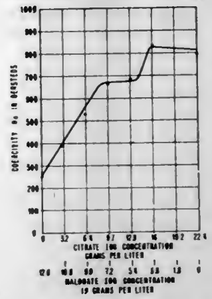
No Drawing. Filed May 25, 1964, Ser. No. 370,118
5 Claims. (Cl. 117—132)

1. A process of coating an unprimed substrate which comprises applying to said substrate a polyvinyl fluoride-latent solvent dispersion coating, heating said applied polyvinyl fluoride-latent solvent dispersion coating to a temperature in excess of 450° F. and maintaining said temperature for a period of time sufficient to effect adhesion of said coating to said substrate.

3,360,397
PROCESS OF CHEMICALLY DEPOSITING A MAGNETIC COBALT FILM FROM A BATH CONTAINING MALONATE AND CITRATE IONS

Herman Koretzky, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Apr. 29, 1964, Ser. No. 363,480
4 Claims. (Cl. 117—160)

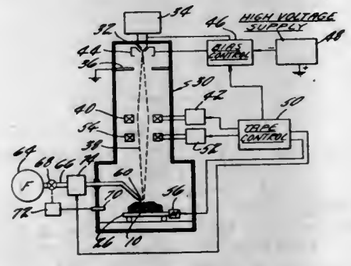


1. A chemical reduction process for depositing onto a catalytic substrate magnetic cobalt film having coercivity in the range of about 400 to 700 oersteds comprising:
subjecting said substrate to an aqueous solution of a cobalt salt, an alkaline hypophosphite, a material which produces malonate ion in solution selected from the group consisting of malonic acid and an alkaline malonate, and a material which produces citrate ion in solution selected from the group consisting of citric acid and an alkaline citrate;
wherein the total available concentration of cobalt ions is between about 5.7 and 8.7 grams per liter, the total available concentration of hypophosphite ions is between about 3 and 24.5 grams per liter, the total available concentration of malonate ions is between 5.1 and 10.4 grams per liter and the total available concentration of citrate ions is between 3.9 and 13.4 grams per liter; and
wherein the pH of the solution is maintained between about 8 and 11.

3,360,398
FABRICATION OF THIN FILM DEVICES

Domenick J. Garibotti, Longmeadow, Mass., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed Mar. 11, 1965, Ser. No. 438,935
4 Claims. (Cl. 117—212)

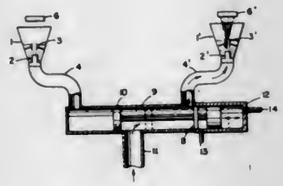


1. A method of fabricating a thin film electronic circuit component which comprises:
depositing at least a first layer of conductive material on a nonconductive substrate,
selectively removing a portion of the previously deposited layer with an energized beam, and
simultaneously providing an oxidizing atmosphere in the region being impinged upon by the energized beam.

3,360,399
METHOD OF REMOVING PHOSPHATE SCALE
John A. Knox and William E. Billings, Duncan, Okla, assignors to Halliburton Company, Duncan, Okla., a corporation of Delaware
No Drawing. Filed Apr. 15, 1966, Ser. No. 542,748
13 Claims. (Cl. 134—3)

1. A method of removing hydroxyapatite and other phosphate scales from boilers, heat exchanger tubes, and other equipment, comprising the steps of:
(a) Treating the phosphate scale with a sulfuric acid solution to thereby form a sulfate;
(b) Treating the sulfate formed by the action of the sulfuric acid on the scale with a solution selected from the group consisting of water soluble carbonates, water soluble hydroxides, anhydrous ammonia or mixtures thereof to thereby form an acid soluble salt; and,
(c) Treating the product formed by the previous step with an acid reactable with said product to form a water soluble salt.

3,360,400
METHOD FOR POWER WASHING, SURFACE REFORMING AND THE LIKE
Dewey M. Evans, Livonia, and Frederick W. Koepke, Detroit, Mich., assignors to Ajem Laboratories, Inc., Livonia, Mich.
Filed June 7, 1961, Ser. No. 115,407
6 Claims. (Cl. 134—34)



1. An industrial process for power washing a manufactured metal article with pulsed liquid jet blasts, which comprises applying a substantially constant large volume flow of liquid at high pressure, repeatedly rapidly diverting this flow to and from a fixed jet orifice to create intermittent, sudden, high impact, pulses of high velocity, high energy, scrubbing jet blasts and directing said series of blasts against the surface area of the article to be treated, which blasts occur at a rate timed to permit at least partial drainage of the spent liquid blocking the area of treatment on said article during the periods between said blasts to permit said blast more effectively to wash said article.

3,360,401
PROCESS FOR CONVERTING CHEMICAL ENERGY INTO ELECTRICAL ENERGY
Robert Grasselli, Cleveland, and Robert A. Rightmire, Twinsburg, Ohio, assignors to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio
Filed Sept. 29, 1965, Ser. No. 498,188
6 Claims. (Cl. 136—86)

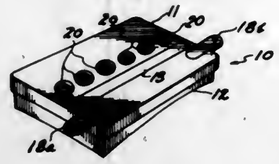
1. In a process for enhancing the conversion of chemical energy into electrical energy in an electrochemical reaction system having (A) a relatively reducible oxidant subsystem, including (A–1) gaseous oxidant reactant, and (A–2) an electron transfer species; (B) a relatively oxidizable fuel subsystem including (B–1) a gaseous fuel reactant, (B–2) an electron transfer species, said subsystems being electronically isolated from one another by an electrolyte, each of said subsystems including an electrode forming part of an electronic circuit, the electrodes being positioned in spaced relationship to one another and being permeable to said respective gaseous reactants, said electrodes having reactive surfaces including adjacent, spaced, internal surfaces, said liquid electrolyte being disposed in the space between said electrode internal surfaces and forming reactive interfaces at said electrodes, means for supplying a gaseous, reducible oxidant to said oxidation subsystems, means for supplying a gaseous, oxidizable fuel to said fuel subsystem, the steps of
matching the oxidation-reduction potential of (A–1) with (A–2) within the range of ±0.15 volt, (A–1) being an oxygen-containg gas having an oxidation-reduction potential of from −0.70 volt to 0.15 volt, and (A–2) being selected from the group consisting of PbO, PbO_2; PbO; Pb_3O_4; Pb_3O_4, PbO_2; Re_2O_7, Re_2O_8; 2RhO, Rh_2O_3; Cr_2O_3, CrO_2; V_2O_4, V_2O_5; V_2O_3, V_2O_4; Sb_2O_3, Sb_2O_4; Sb_2O_2, Sb_2O_5; MoO_2, MoO_3; Cu_2O, CuO; MnO, MnO_2; MnO, Mn_3O_2; Cu, Cu_2O; BiO, Bi_2O_3; and CoO, Co_3O_4 and chemical and physical combinations and mixtures thereof, and having an oxidation-reduction potential of from substantially −0.838 to 0.283 volt,
matching the oxidation-reduction potential of (B–1) with (B–2) within the range of ±0.15 volt, (B–1) being selected from the group consisting of a hydrocarbon of from one to six carbon atoms and hydrogen and having an oxidation-reduction potential of from substantially −1.47 volt to substantially 0.32 volt, and (B–2) being selected from the group consisting of WO_2, WO_3; Nb_2O_4, Nb_2O_5; Sb_2O_3; Sb_2O_4; MnO, Mn_2O_3; MnO, Mn_3O_4; MoO_2, MoO_3; V_2O_3, V_2O_4; and BiO, Bi_2O_3 and chemical and physical combinations and mixtures thereof, and having an oxidation-reduction potential of form substantially −0.454 volt to −1.380 volts.

3,360,402
PRODUCTION OF NEGATIVE ELECTRODES FOR FUEL CELLS
Karl Ackermann, deceased, late of Mannheim, Germany, by Karl Siebert, representative, Kuhbach, near Lahr, Germany, assignor to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany
No Drawing. Filed Oct. 8, 1965, Ser. No. 495,030
Claims priority, application Germany, Oct. 16, 1964, B 78,937
11 Claims. (Cl. 136—120)

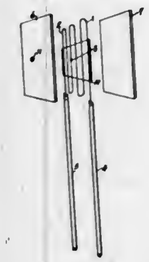
11. A process for the production of activated metals suitable as material for negative electrodes for fuel cells wherein an aqueous solution of at least one salt of a weakly basic metal is allowed to act in the presence of oxidizing anions on a metal selected from the group consisting of nickel, cobalt and mixtures thereof, an aqueous solution of a hydroxide of an alkali metal is allowed to act on said metal and the latter is then washed with water and reduced with hydrogen at temperatures of 200° to 900° C. until water vapor is no longer detectable in the off-gas.

3,360,403
BATTERY INCLUDING IMPROVED VENTING SYSTEM
Vincent Michael Halsall, Bayside, Wis., assignor to Globe-Union Inc., Milwaukee, Wis., a corporation of Delaware
Filed May 4, 1965, Ser. No. 453,014
4 Claims. (Cl. 136—170)

1. In combination, a storage battery with a plurality of battery cells, a battery cover with an inner surface associated with the interior of the battery and an outer surface, a plurality of passageways in the battery cover between said outer surface and interior portions of the battery corresponding to different battery cells, a plurality of venting cavities in the outer surface of the battery cover, said cavities being formed around respective ones of said passageways, a microporous sheet covering all of said cavities whereby said passageways are isolated from one another.



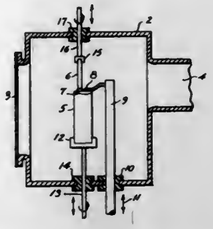
3,360,404
GRID TYPE THERMOCOUPLE
Paul Beckman, 944 Henrietta Ave., Huntingdon Valley, Pa. 19006
Filed Oct. 8, 1962, Ser. No. 229,060
3 Claims. (Cl. 136—230)



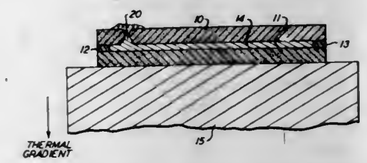
1. A substantially flat surface temperature sensor in which a thermocouple junction is well isolated thermally from electrical leads therefor, comprising a pair of extremely delicate thermocouple wires having ends disposed for connection with the electrical leads for the sensor, said wires being of substantially the same length formation consisting of substantially parallel portions connected in series at their alternate ends, a single thermocouple junction only disposed substantially midway between said ends of said wires disposed for connection with the leads and holding means including electrically insulating material secured to said wires and holding said portions together in said grid formation as a laminar structure with said junction within the confines of said laminar structure.

3,360,405
APPARATUS AND METHOD OF PRODUCING SEMICONDUCTOR RODS BY PULLING THE SAME FROM A MELT
Wolfgang Keller, Pretzfeld, Germany, assignor to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, a corporation of Germany
Filed Apr. 29, 1965, Ser. No. 451,893
Claims priority, application Germany, Apr. 29, 1964, S 90,831
18 Claims. (Cl. 148—1.6)

1. Method of producing a monocrystalline semiconductor body which comprises horizontally rotating a melt of semiconductor material simultaneously with a carrier of the same material underlying and supporting the melt; applying heat at a radially extending area overlying the rotating melt so as to heat the melt as it passes beneath the area to at least the melting temperature of the material; and pulling with the aid of a crystal seed a monocrystalline semiconductor body from a portion of the melt distantly located from the applied heating area.



3,360,406
TEMPERATURE GRADIENT ZONE MELTING AND GROWING OF SEMICONDUCTOR MATERIAL
Stanley Sumski, New Providence, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Dec. 3, 1965, Ser. No. 511,530
5 Claims. (Cl. 148—1.6)



1. A process for the growth of semiconductor crystals which comprises the steps of mounting a flat, semiconductor substrate wafer in spaced parallel relation overlying a flat semiconductor solute wafer each of said wafers comprising the semiconductor material being grown, placing a solid body of a solvent material which has a melting point below that of the said semiconductor material, and in which the semiconductor material has a substantial solubility on the top surface of said substrate wafer, said solid body having a volume when molten which substantially exceeds the volume of the space between the wafers, heating the wafers to a temperature above the melting point of the solvent material whereby the solvent material dissolves through the substrate wafer and flows into the space between the wafers, heating the wafers in a manner so as to establish a thermal gradient diminishing from the substrate wafer to the solute wafer which is sufficient to maintain the solvent material molten and maintaining a dynamic equilibrium for a period sufficient to recrystallize semiconductor material from the solute wafer onto the substrate wafer.

3,360,407
CAST-IRON COMPOSITION OF HIGH REFRACTORINESS AND STRENGTH AND PROCESS FOR MAKING SAME
Winfried Steinheider, Bad Salzuflen, and Rolf Milbach, Barsinghausen, Germany, assignors to Teves-Thompson & Co. G.m.b.H., Frankfurt am Main, Germany, a corporation of Germany
No Drawing. Filed Apr. 30, 1965, Ser. No. 452,372
Claims priority, application Germany, Apr. 30, 1964, T 26,121
3 Claims. (Cl. 148—3)

1. A process for making cast iron of high refractoriness and strength, comprising the steps of producing an iron melt with a carbon content between substantially 1.4 and

1.8% and a silicon content between substantially 1.8 and 2.2% by weight, admixing with said melt a combination of austenite-stabilizing agents consisting of substantially 0.7 to 1.5% by weight of nickel, substantially 0.3 to 0.6% by weight of chromium, substantially 0.5 to 0.8% by weight of manganese and substantially 0.1 to 0.2% by weight of vanadium, controlledly cooling at a rate of substantially 250° C. per hour the melt to an austenitic-martensitic structure free from primary carbon and ledeburite and with minor proportions of cementite and troostite, and liberating globular secondary graphite finely distributed throughout the structure by briefly annealing same at a temperature of substantially 800° C. to 1000° C. for a maximum time of approximately one hour, the annealing step being followed by air cooling to a temperature of substantially 600° C. and by reheating to substantially 750° C. with subsequent cooling at a rate of about 100° C. per hour.

3,360,408
METHOD OF PRODUCING SEMICONDUCTOR MATERIAL USING A PHOSPHORUS NITRILE HALIDE

Klaus Wartenberg, Erlangen, Germany, assignor to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, a corporation of Germany

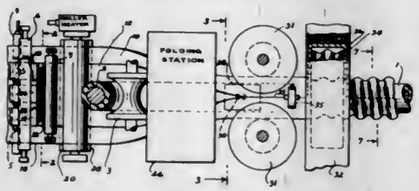
Filed Jan. 29, 1965, Ser. No. 428,940
Claims priority, application Germany, Feb. 1, 1964, S 89,316
3 Claims. (Cl. 148—174)

1. In the method of producing semiconductor material by pyrolytic precipitation of semiconductor material, upon a monocrystalline heated carrier body of the same semiconductor material, from a gaseous reaction mixture of a compound of the semiconductor material and hydrogen, the improvement which comprises passing a portion of the gaseous reaction mixture over phosphonitrile halide, prior to introducing the gaseous reaction mixture to the reaction chamber.

3,360,409
METHOD OF MAKING LOW RESISTANCE COMPOSITE CORRUGATED WELDED SHEATH FOR TELEPHONE CABLES

Ludwik Jachimowicz, Elizabeth, and Jerzy Adam Olszewski, Perth Amboy, N.J., assignors to General Cable Corporation, New York, N.Y., a corporation of New Jersey

Original application Feb. 11, 1963, Ser. No. 257,505, now Patent No. 3,183,300, dated May 11, 1965. Divided and this application Apr. 8, 1964, Ser. No. 358,273
5 Claims. (Cl. 156—54)

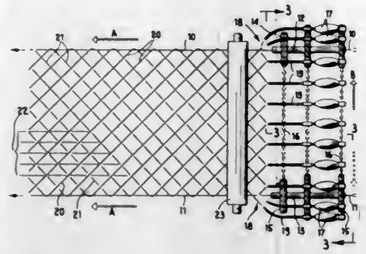


1. The method of sheathing electric cable which comprises the steps of bonding a strip of conductive tape to the central portion of a wider strip of steel tape to form a composite strip, longitudinally bending the composite strip around the cable with the conductive strip inwardly and with the edges of the steel strip abutting one another and separated from the cable, welding the abutting edges of the steel strip together in a continuous seam, corrugating the composite strip to form a corrugated, composite, moisture-impervious sheath, and bringing the strips into electrical contact with one another.

3,360,410
METHOD AND APPARATUS FOR MAKING NON-WOVEN TWILL WEBS

Bruno Romanin, 8 Via Vincenzo Monti, Milan, Italy

Filed May 21, 1963, Ser. No. 282,054
Claims priority, application Italy, May 29, 1962, 10,623/62, Patent 669,075
5 Claims. (Cl. 156—172)

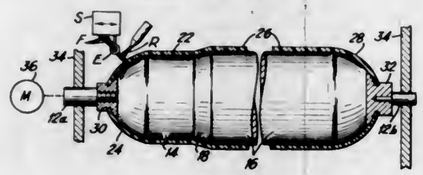


1. In the method of continuously producing a non-woven web having parallel side edges and a network of web-forming yarn portions diagonally arranged with respect to the side edges and overlapping and intersecting in the plane defined by the side edges, and in which yarns, including a pair of straight side yarns extending parallel to the side edges of the plane defining the side edges, are progressively drawn from supplies thereof longitudinally and in substantially parallel relation to the side edges of the plane, a plurality of web-forming yarn supplies are continuously circulated in a closed path circumscribing the plane defined by the side yarns and transversely of the side yarns, the web-forming yarns are continuously drawn from the supplies thereof and progressively drawn longitudinally with the side yarns, while being layed diagonally of the side yarns on opposite surfaces of the plane extending between the side yarns, and diagonally extending, and web-forming yarns on opposite surfaces of the plane are subjected to bonding pressure at intersections thereof of said web-forming yarns to form the flattened helices: the improvement in which the web-forming yarn supplies are continuously circulated in a closed path including a pair of rectilinear portions parallel to and immediately adjacent opposite surfaces of said plane and including semicircular short radius portions extending about said parallel side edges and interconnecting said rectilinear portions.

3,360,411
METHOD OF FORMING A HOLLOW CONTAINER OF WOUND FILAMENTARY MATERIAL

Warren E. Ponemon, Locust Valley, N.Y., assignor to Koppers Company, Inc., a corporation of Delaware

Filed Oct. 15, 1964, Ser. No. 403,973
9 Claims. (Cl. 156—175)



1. The method of forming a hollow container comprised of adhesively bonded filamentary material, said method comprising the steps of:

(a) winding the adhesively coated filamentary material on a mandrel having different sized diameters to form a shell whereby the outside diameter of one portion of the shell is less than the inside diameter of another portion of the shell;

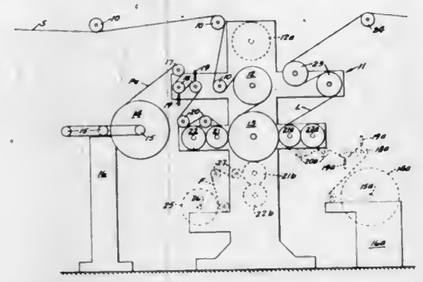
(b) cutting the wall of the wound shell to define at least two separate sections; and

(c) securing at least two sections of the shell together in axial, end-to-end relationship to form a bottle, whereby the outside diameter of one of the sections fits into the inside diameter of another one of the sections.

3,360,412
PROCESS AND SYSTEM FOR PRODUCING HEAT SEALED LAMINATES

Albert L. James, Anoka, Minn., assignor of forty percent to Wm. C. Heller, Jr., Milwaukee, Wis.

Filed June 29, 1964, Ser. No. 378,491
6 Claims. (Cl. 156—229)



6. In an apparatus system for producing a heat sealed lamination from a film of polyolefin material and a substrate web formed of a material dissimilar from said polyolefin film, said apparatus system comprising

means for moving a polyolefin film through a predetermined path while maintaining the same in an unheated condition so that the polyolefin film remains dimensionally stable,

mechanism for treating one surface of said polyolefin film, which is normally non-polar to render the surface polar so that the treated surface is capable of chemical bonding with a dissimilar material through heat sealing,

mechanism for applying constant and uniform tension to the polyolefin film to stretch the same in the direction of travel thereof and to contract the film transversely thereof to thereby increase the longitudinal size of indicia printed on the polyolefin film to a predetermined size,

means for moving a substrate web of material through a predetermined path,

a heating mechanism for heating a substrate web during movement thereof so that at least one surface of the substrate web is heated to a temperature at least approximating the heat sealing temperature of one surface of the polyolefin film,

means defining a plurality of spaced-apart nips for pressing the film against the substrate web to cause transfer of heat from said heated substrate web and to effect heat sealing with the film and in laminated form,

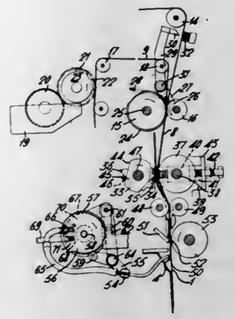
means for advancing the laminate thus formed, and means for cooling said laminate.

3,360,413
WRAPPING MACHINES

Charles Thomas Hall, London, England, assignor to The Molins Organisation Limited, London, England, a corporation of Great Britain

Filed May 7, 1965, Ser. No. 454,028
Claims priority, application Great Britain, May 8, 1964, 19,306/64
5 Claims. (Cl. 156—250)

1. A method of producing a composite sheet in which two separate sheets cut from first and second moving webs are joined in overlapping relationship, comprising the steps of: applying adhesive patches at equal intervals along the first web while it is moving, causing the second web to adhere to the first at each patch, cutting the first web into first web sheets each of length equal to the said interval and each having an end attached to the second web, accelerating the free end of each first web sheet in

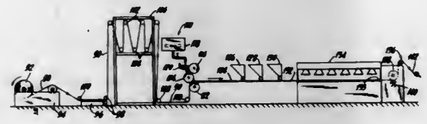


the direction in which it is moving so as to cause gaps therebetween, severing the second web in the region of each gap between first web sheets so as to produce second web sheets of length equal to the first web sheets and decelerating the free end of each first web sheet so that it lies along the second web sheet in overlapping relationship to form the said composite sheet.

3,360,414
MANUFACTURE OF HARD-SURFACED COVERINGS AND DECORATIVE CLIPS THEREFOR

Jay D. Tuthill, Salem, N.J., assignor to Mannington Mills, Incorporated, Salem, N.J., a corporation of New Jersey

Filed Feb. 7, 1964, Ser. No. 343,418
9 Claims. (Cl. 156—264)



8. In the manufacture of decorative hard-surfaced cover material for floors, walls, and the like, the steps comprising spreading on a release paper at ambient temperature about .004 to .075 inch in thickness of a layer of a liquid organosol having a Brookfield viscosity within the range from about 1,000 to about 40,000 cps., as measured with a number 4 spindle at 20 r.p.m. at a temperature of 75° F. and comprising solids, including a polyvinyl chloride resin, suspended in a liquid including a plasticizer with which the solids gelate and fuse to an increasing extent with increase in temperature from a partial gelation at a predetermined elevated temperature within the range from about 250° F. to about 300° F. to a more complete final fusion at a higher temperature within the range from about 300° F. to about 400° F., heating the layer to said predetermined elevated temperature to effect said partial gelation, stripping the partially gelated layer from the relase paper, cutting the stripped layer into chip sizes, forming the said chips into the surface of a wear layer and heating the resulting article to said final temperature to effect the said final fusion.

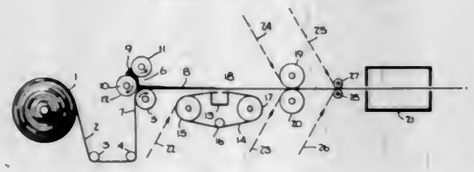
9. The process of claim 8, wherein the wear layer is prepared by spreading on a backing at ambient temperature a layer of a liquid composition having a Brookfield viscosity within the range from about 1,000 to about 40,000 cps., as measured with a number 4 spindle at 20 r.p.m. at a temperature of 75° F. and comprising solids, including a vinyl resin suspended in a liquid, including, in major proportion, a plasticizer with which the solids gelate and fuse to an increasing extent with increase in temperature from a partial gelation at a predetermined elevated temperature to a more complete final fusion at a higher temperature, depositing decorative chips on the surface of said liquid layer to said predetermined elevated temperature to effect said partial gelation, and rolling the said surface of the partially gelated layer at the aforesaid predetermined elevated temperature to embed therein chips so deposited.

3,360,415

FOAM PRODUCT AND PROCESS

Carl Hellman, West Englewood, and John Bogdany Lodl, N.J., assignors to General Foam Corporation, New York, N.Y., a corporation of New York

Filed Oct. 21, 1963, Ser. No. 317,690
7 Claims. (Cl. 156—285)



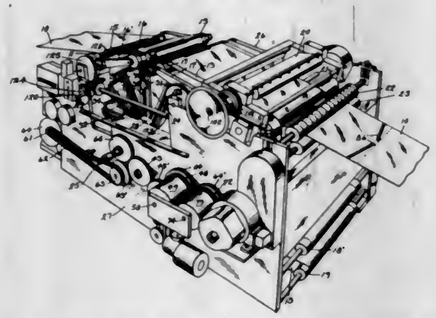
1. A method of uniformly impregnating an open cell polyurethane foam web with a polyvinyl chloride plastisol having a viscosity of from about 250 to about 1,000 centipoises which method comprises partially impregnating the foam by depositing the plastisol on one surface thereof applying suction to the other surface so as to impregnate half or more of the thickness of the web and thereafter guiding the partially impregnated foam through pressure applying means to apply sufficient pressure to complete the impregnation of the foam.

3,360,416

ROTARY SEALING DEVICES FOR EFFECTING TRANSVERSE SEALS

Richard H. Cochrane, Milwaukee, Wis., assignor to Pratt Manufacturing Corporation, Milwaukee, Wis., a corporation of Wisconsin

Filed July 8, 1964, Ser. No. 381,142
8 Claims. (Cl. 156—359)



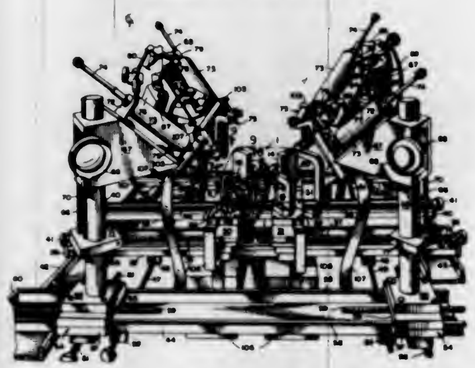
1. In apparatus for effecting tranverse seals at predetermined longitudinally spaced locations on a continuous multi-ply web of material wherein there is a sealing rotor having spaced sealing stations forming its periphery; means supporting said stations for movement radially of said rotor; means for effecting said radial movement to vary the peripheral distance between sealing stations and the effective diameter of the rotor; flexible belt means cooperable with the outside of the web as it passes around the rotor for applying sealing pressure thereto throughout the sealing operation; and means for supporting and guiding said flexible belt means, said supporting and guiding means including a delivery roller positioned for coaction with the rotor, a take off roller positioned for coaction with the rotor, and swingable arms supporting said delivery and take off rollers, and a common means for swinging said arms simultaneously to control the position of the rollers in accordance with the adjusted diameter of the sealing rotor.

3,360,417

HEAT SEALING MACHINE FOR BONDING FLEXIBLE STRIPS TO THERMOPLASTIC SURFACES

Everett A. Peterson, Roslyn Heights, and Harold W. Peterson, Roslyn, N.Y., assignors to Peterson Electronic Die Co., Inc., Mineola, N.Y., a corporation of New Jersey

Filed Apr. 1, 1964, Ser. No. 356,579
5 Claims. (Cl. 156—380)



1. A machine for heat-sealing a thermoplastic resin member on a thermoplastic surface of a hollow shell which comprises a plurality of spaced anvil electrodes adapted to hold a hollow shell thereon, movable bases on which said anvil electrodes are mounted whereby the spacing between said electrodes can be changed, a plurality of electrode-pressure shoes, one for each anvil electrode, a pneumatic cylinder having a piston rod mounting each respective shoe on said frame for movement toward and away from the respective anvil electrode, and means for applying a high frequency electric current between each of said electrode-pressure shoes-anvil electrode pairs when they are juxtapositioned.

3,360,418

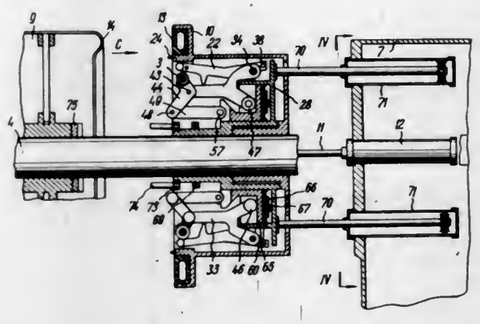
BEAD-RING BUILDING-IN MECHANISM FOR A PNEUMATIC TYPE BUILDING MACHINE

Grigory Vasiljevich Novikov, Alexandr Fedorovich Tikhomirov, Konstantin Nickolaevich Baranov, and Leonid Stepanovich Sataev, Jaroslavl, U.S.S.R., assignors to Jaroslavsky Gosudarstvenny Shynny, Zavod, Jaroslavl, Polushkina Roshcha

Filed Oct. 31, 1963, Ser. No. 320,321
20 Claims. (Cl. 156—400)

1. A mechanism adapted for use with a tire-building machine for forming beads containing bead rings for pneumatic tires, the machine having a pair of shafts, a drum on one of the shafts and two substantially identical units mounted on the shafts and located on either side of the drum for forming beads with bead rings inserted therein

on pneumatic tires formed on the drum, each unit comprising: a helical garter spring encircling the associated shaft, actuation means axially movable on said shaft and supporting the garter spring for radial expansion and contraction between and expanded and a contracted position, turndown lever means operatively coupled with the actuation means and supported for pivotal movement for cooperating with the garter spring in the expanded position thereof to engage a tire band on the drum for the forming of said beads, housing means slidably supported on the shaft for movement towards and away from said drum,



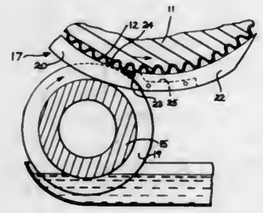
the housing means being adapted for supporting a bead ring and being operatively positioned with respect to the turndown lever means to contact the latter upon movement towards the drum and cause the turndown lever means to be pivotally moved towards the garter spring for cooperatively engaging the tire band together with the garter spring while depositing the bead ring on the thus engaged tire band, and bead forming means on said housing including an inflatable member which exerts pressure on the bead with the bead ring supported therein when the housing is adjacent the drum to thereby permanently form the bead with the bead ring supported therein.

3,360,419

APPARATUS FOR FORMING SINGLE FACED CORRUGATED BOARDS

Donald L. Cannady, Jacksonville, Fla., assignor to Owens-Illinois Glass Company, a corporation of Ohio

Filed June 29, 1964, Ser. No. 378,679
4 Claims. (Cl. 156—473)



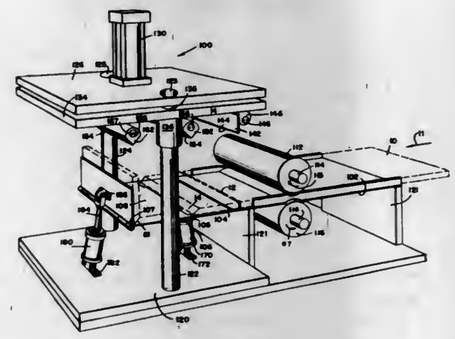
1. In a machine for making corrugated paperboard, the combination of a corrugated roll rotatable about an axis and constructed to mesh with a continuous corrugated web for conveying said web past an adhesive roll to a liner-applying roll, an adhesive roll arranged to apply adhesive to the outwardly presented tips of said corrugated web as said web is conveyed thereby around the rotary axis of said corrugated roll, said adhesive roll having grooves, a series of guides received by said grooves and guiding the web on the corrugating roll, said guides having means thereon for funneling adhesive, applied to the tips adjacent the guides, into the area where the guides engage the tips.

3,360,420

APPARATUS FOR FORMING SHAPED CUSHIONS

James H. Paul, 2438 Tanglewood Road, Decatur, Ga. 30033, James C. Dickinson, Jr., 4438 Briarcliff Road, Atlanta, Ga. 30329, and Richard L. Sorrell, 352 Colchester Drive, Stone Mountain, Ga. 30083

Filed Aug. 19, 1964, Ser. No. 390,619
2 Claims. (Cl. 156—492)



1. An apparatus for forming shaped cushions from a thermoplastic sheet comprising:

(A) a frame assembly including a feeding platform having a transverse opening therein;

(B) a driving means positioned adjacent the opening in said platform, said driving means operatively engaging and advancing said sheet;

(C) a generally horizontal table, spaced from said platform in continuation thereof, said table comprising a plurality of individual surfaces joined by hinges;

(D) a plurality of heated bodies each having hot working surfaces adapted to melt that portion of the thermoplastic sheet in contact therewith, said heated bodies being spaced from said table and moveable as a unit into said sheet overlying said table, at least one of said bodies defining a cutting means adapted to slice through said sheet intermediate said table and said platform, the remainder of said bodies defining gouging means overlying said hinges, said gouging means being adaptable to gouge said sheet;

(E) extensible actuator means interconnected between said surfaces of said table and said frame, said actuator means operable to fold said surfaces about said hinges.

3,360,421

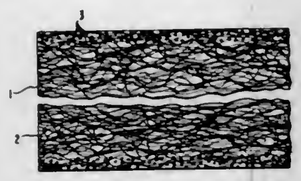
BONDED NONWOVEN BACKING MATERIAL HAVING PERFORATE SELVAGE AND CARPET MADE THEREFROM

Seymour Sands, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Apr. 23, 1965, Ser. No. 450,487
11 Claims. (Cl. 161—63)

7. A bonded nonwoven sheet comprising a matrix of synthetic organic fibers being of polymer selected from the group consisting of isotactic polypropylene, linear polyethylene, crystalline copolymers of at least 75% propylene or ethylene with up to 25% of other copolymerizable monomers and mixtures of isotactic polypropylene or linear polyethylene with up to 25% of other polymers,

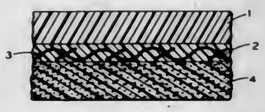
said fibers being interconnected at a multiplicity of points throughout the sheet by bonds having a strength greater than 0.1 gram, the average strength of these bonds being at least 0.9 gram and less than the matrix fiber breaking strength, the bond strength distribution being characterized by a variance of at least 4, the number of bonds being such that the product of the number of bonds per cubic centimeter and the average bond strength is greater



than 5×10^4 g./cm.^{3}, and this product divided by the fiber breaking strength is less than 9×10^3/cm.^{3}, the said sheet having as a selvage, perforations along edges thereof at a hole density between about 20 and 80 per square inch, the filaments at the walls of each perforation being fused throughout the depth of the perforation.

11. A tufted carpet having a primary backing which prior to tufting is the sheet of claim 7.

3,360,422
REINFORCED CELLULAR FLOOR COVERING
Robert P. Desch, Lancaster, Pa., assignor to Armstrong Cork Company, Lancaster, Pa., a corporation of Pennsylvania
Filed Oct. 19, 1965, Ser. No. 497,737
2 Claims. (Cl. 161—89)



1. A cushion type of floor covering which maintains its dimensional stability and resists delamination comprising:

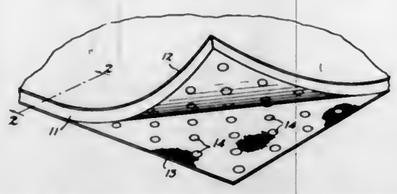
a flexible wearing surface layer in the form of a sheet of plasticized poly(vinyl chloride) resin;

a flexible cushion backing layer in the form of a sheet of plasticized cellular poly(vinyl chloride) resin positioned beneath and substantially co-extensive in area with the wearing layer;

an improved adhesive layer consisting essentially of a plasticized film of a vinyl chloride polymer selected from the group consisting of poly(vinyl chloride) and vinyl chloride-vinyl acetate copolymer and containing a plasticizer for the vinyl chloride polymer in an amount of 20% to 65% by weight of the vinyl chloride polymer disposed between the flexible wearing surface layer and the flexible cushion backing layer and adhered directly to substantially the entire confronting faces thereof so as to strongly bond the wearing surface and cushion backing layers together in a manner to resist delamination; and

a supporting open mesh glass fiber fabric scrim layer having a number of enlarged openings per unit area and being substantially co-extensive in area with said other layers and of lesser thickness than and embedded in said adhesive bonding layer, said adhesive layer having a thickness in the range of 110% to 200% of the thickness of said scrim, the vinyl chloride polymer material extending freely through the openings in the scrim and extending integrally across the space between the confronting faces and into contact therewith and completely surrounding and embedding said scrim whereby said glass fabric scrim is confined in fixed position relative to said other layers and serves to maintain the dimensional stability of the floor covering.

3,360,423
FLEXIBLE STRUCTURAL FOAM SANDWICH CONSTRUCTION
Charles D. Lindberg, Cuyahoga Falls, Ohio, assignor to The General Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed Sept. 21, 1961, Ser. No. 139,685
2 Claims. (Cl. 161—148)



1. An upholstery material consisting essentially of a flexible polyurethane foam sheet ranging in thickness from about 0.05 inch to about one-quarter inch, one side of said foam sheet being adhered to a flexible polyvinyl plastic sheet coextensive with said foam sheet and ranging in thickness from about 0.003 inch to about 0.1 inch and the other side of said foam sheet being adhered by a discontinuous layer of a cement to a fabric backing coextensive with said foam sheet.

3,360,424
DELUSTERED PLASTIC FILAMENT
Adolf J. Tlamicha, deceased, late of Gellertstrasse 3, Goppingen, Germany, by Libuse A. Tlamicha, sole heir and executrix, Goppingen, Germany
Original application Sept. 23, 1963, Ser. No. 311,289, now Patent No. 3,229,347, dated Jan. 18, 1966. Divided and this application Feb. 9, 1965, Ser. No. 439,120
3 Claims. (Cl. 161—180)

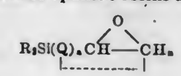


1. A delustered filament made of highly molecular plastics, characterized in that the surfaces thereof are provided substantially unformly on all sides and over the entire length thereof with two sets of mechanically abraded microscopic and mutually intersecting grooves, the grooves of the respective sets forming oppositely directed angles with respect to an axial cross-sectional plane through the filament.

3,360,425
OIL RESISTANT SILICONE RUBBER METAL LAMINATES AND METHOD OF MAKING SAME
Jack L. Boone, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan
Filed Nov. 12, 1963, Ser. No. 323,136
21 Claims. (Cl. 161—186)

1. A composition of matter consisting essentially of

(1) 5 parts of a material selected from the group consisting of aromatic epoxide resins and



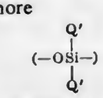
(2) from 2 to 50 parts of the material selected from the group consisting essentially of a liquid siloxane of the formula



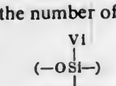
any remaining units being of the formula



there being no more

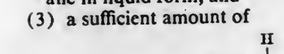


units than twice the number of

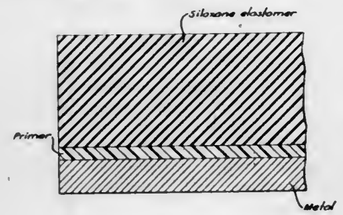


units present in the polymer, and a monovinyl siloxane in liquid form, and

(3) a sufficient amount of



to allow curing of the composition, where R is selected from the group consisting of lower alkoxy and



hydrocarbyl-substituted isocyanoxy groups, *a* is an integer of 0 through 1, Q is selected from the group consisting of divalent and trivalent radicals consisting of carbon and hydrogen, any other atoms present being oxygen that is attached by means of an ether linkage, *n* is an integer of 1 through 2, *n* being 1 when Q is part of a cyclic structure, Vi is the vinyl radical, Q' is selected from the group consisting of methyl and phenyl radicals, there being on the average no more than one phenyl radical per silicon atom, R' is a divalent aliphatic hydrocarbon radical, and R'' is selected from the group consisting of hydrogen, alkyl and aminoalkyl radicals.

3,360,426
OXYLUMINESCENT PANEL
Edward T. Cline, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Aug. 15, 1966, Ser. No. 572,874
6 Claims. (Cl. 161—196)

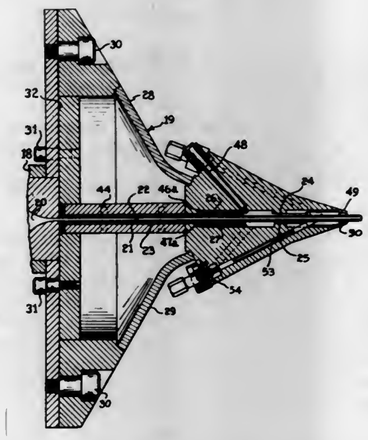
1. An oxyluminescent panel comprising an enclosure of polyamide film containing a porous substrate impregnated with a tetrakis(disubstituted-amino)ethylene oxyluminescent material, said panel having one surface laminated to a sheet of aluminum foil and the opposite transparent surface of the panel sealed to at least one tear strip of a stronger plastic film, which, when pulled, causes the weaker enclosing polyamide envelope to be ruptured at or near the edges of the tear strip, thereby admitting air to the oxyluminescent material and causing it to luminesce.

6. An oxyluminescent panel of claim 1 wherein the substrate is glass fiber paper and is impregnated with tetrakis(dimethylamino)ethylene enclosed in a transparent envelope of polycaprolactam film, said substrate being kept out of intimate contact with the enclosing envelope by means of a spacer of nylon netting.

3,360,427
METHOD TO PRODUCE FLAT VULCANIZED FIBRE SHEETS AND COILS
Edward Joseph Sites, Havertown, Pa., assignor to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Dec. 21, 1964, Ser. No. 419,674
2 Claims. (Cl. 162—157)

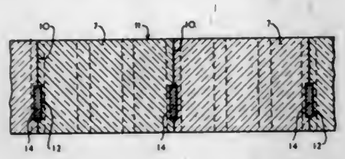
1. A process for the manufacture of flat vulcanized fibre sheets and coils comprising the steps of forming cellulosic fibers into a continuous strip of paper, increasing the basis weight of said paper in small increments from the edges of said paper strip to the center of said paper strip, said increasing of said basis weight being accomplished by employing an adjustable, flexible lip slice and adjusting the lip of the slice to provide predetermined basis weights in said paper, said basis weight at said center being one to eight percent greater than said basis weight at the edges and vulcanizing the said paper strip, said step of vulcanizing including saturating said fibre with a hydrolyzing agent and removing said hydrolyzing agent in a series of leaching steps.

3,360,428
PAPERMAKING MACHINE STOCK INLET
James Loynd, Neenah, Wis., assignor to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware
Filed Mar. 5, 1965, Ser. No. 437,540
4 Claims. (Cl. 162—347)



2. In a paper stock inlet for a papermaking machine, the combination of a pair of relatively flexible substantially parallel plates providing a slot between them through which paper stock may discharge, a relatively rigid inlet part on which each of said plates is carried, a seal strip on each side of the inlet in contact with the side edges of the plates for sealing the sides of the slot, and means for fixing each seal strip with respect to a first one of said rigid parts but not the second one of said rigid parts so as to allow the side edge of the plate carried by said second part to move with respect to the side edge of the plate carried by said first part.

3,360,429
SUCTION BOX COVER
Jean Proulx, 35 Gamelin Blvd., Hull, Quebec, Canada
Filed Dec. 10, 1964, Ser. No. 417,343
4 Claims. (Cl. 162—363)



1. A suction box cover comprising a row of juxtaposed moulded blocks with complementary shallow grooves extending the length of the blocks in confronting faces of adjoining blocks that together form a cooperative passageway and an elongated metal reinforcing spline disposed between adjoining blocks and cooperatively housed in said complementary grooves.

3,360,430
METHOD OF CONTROLLING SOIL FUNGI WITH BIS(CHLOROMETHYL)DISULFIDE
Silvio L. Giolito, Whitestone, N.Y., and Thomas B. Williamson, Santa Clara, Calif., assignors to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Jan. 16, 1962, Ser. No. 166,700
The portion of the term of the patent subsequent to Apr. 19, 1982, has been disclaimed
1 Claim. (Cl. 167—22)

The method of inhibiting the growth of soil fungi which comprises applying thereto a small but effective amount of bis (chloromethyl) disulfide having the following formula:

$$Cl—CH_2—S—S—CH_2—Cl$$

3,360,431
COMPOSITIONS AND METHOD FOR INCORPORATING MICROBIOCIDAL AMOUNTS OF ARSENOSOBENZENE INTO RESINS
Charles C. Yeager, Glen Ellyn, Ill., assignor to Scientific Chemicals, Inc., a corporation of Illinois
No Drawing. Filed Mar. 15, 1965, Ser. No. 439,986
The portion of the term of the patent subsequent to Nov. 29, 1983, has been disclaimed
12 Claims. (Cl. 167—30)

1. A method of incorporating microbicidal amounts of arsenosobenzene into vinyl resin material which comprises dissolving arsenosobenzene into a solvent selected from the group consisting of phenol, alkyl phenols, chlorinated phenols, amino phenols, dihydric phenols, aliphatic alcohols having 5 to 12 carbon atoms and monocarboxycylic acids having 5 to 12 carbon atoms, admixing said solvent solution with said vinyl resin material and processing said admixture to desired solid physical form.

3,360,432
CHLOROPHENYLCYCLOPROPANECARBOXAMIDE MITE OVICIDES
Peter E. Newallis, Morris Plains, and Francis A. Spano, Millington, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed Nov. 12, 1965, Ser. No. 507,526
3 Claims. (Cl. 167—30)

1. The process of combatting mites which comprises exposing mite eggs to a toxic ingredient selected from the group consisting of N-(p-chlorophenyl)cyclopropanecarboxamide and N-(2,4-dichlorophenyl)cyclopropanecarboxamide.

3,360,433
ANTHELMINTIC COMPOSITIONS AND METHODS OF USING SAME
Norman Greenhalgh, Macclesfield, and Paul Arnall, Four Ashes, near Wolverhampton, England, assignors to Imperial Chemical Industries Limited, London, England, and The Midland Tar Distillers Limited, Oldbury, near Birmingham, England, both corporations of Great Britain
No Drawing. Original application Nov. 7, 1960, Ser. No. 67,481, now Patent No. 3,223,710, dated Dec. 14, 1965. Divided and this application Apr. 23, 1964, Ser. No. 368,435
Claims priority, application Great Britain, Dec. 1, 1959, 40,845/59; Dec. 2, 1959, 40,931/59; June 8, 1960, 20,099/60
17 Claims. (Cl. 167—53)

1. An anthelmintic composition comprising an anthelmintically effective amount of a member of the group consisting of 2-β-methoxyethylpyridine and pharmaceutically-acceptable salts thereof as active ingredient together with a pharmaceutically-acceptable carrier therefor.

3,360,434
METHOD FOR REDUCING BLOOD PRESSURE WITH PHENYLALANINE DERIVATIVES
Sidney Udenfriend and Albert Sjoerdsma, Bethesda, and Sydney Spector, Silver Spring, Md., assignors to the United States of America as represented by the Secretary of Health, Education, and Welfare
No Drawing. Filed Mar. 22, 1965, Ser. No. 441,870
5 Claims. (Cl. 167—65)

1. The method of reducing blood pressure by inhibiting the hydroxylation of

$$\text{tyrosine} \xrightarrow{\text{hydroxylase}} \text{DOPA}$$

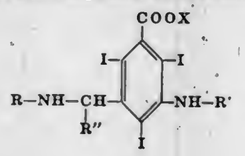
in the enzymatic sequential reaction of the amino acid tyrosine to the pressor amine epinephrine by the administration to warm blooded animals of from about 25 to about 500 milligrams per unit dose of a compound selected from the group consisting of α-methylphenylalanine, 3-iodotyrosine and 3,5-diiodotyrosine and nontoxic salts thereof.

3,360,435
TREATMENT OF DEPRESSED STATES
Alexander Kandel and Paul Merrill Lish, Evansville, Ind., assignors to Mead Johnson & Company, Evansville, Ind., a corporation of Indiana
No Drawing. Filed May 21, 1965, Ser. No. 457,837
5 Claims. (Cl. 167—65)

1. The process of eliciting an antidepressant effect in a host subject to a depressed condition which comprises administering to said host a dose of from 0.1 to 5 mg./kg. of body weight of said host of a compound selected from the group consisting of 1-(2-dimethylaminoethyl)-1-phenylindene, 1-[2-(methylalmino)ethyl]-1-phenylidene and the pharmaceutically acceptable acid addition salts thereof.

3,360,436
RADIOOPAQUE COMPOUNDS AND METHODS OF PREPARING THE SAME
Ernst Felder and Davide Pitre, Milan, Italy, assignors to Eprova Limited, Schaffhausen, Switzerland
No Drawing. Filed Nov. 12, 1963, Ser. No. 323,085
Claims priority, application Switzerland, Nov. 23, 1962, 13,788/62; Aug. 9, 1963, 9,857/63
24 Claims. (Cl. 167—95)

1. A radioopaque compound of the formula



wherein R and R′ are lower alkanoyl radicals, R″ is a member of the group consisting of hydrogen and lower alkyl, and X is a member of the group consisting of hydrogen, physiologically tolerated alkali metal, lower alkyl, and physiologically tolerated alkanolamine.

3,360,437
METHOD OF OBTAINING IMPORTANT CONSTITUENTS FROM POLLEN
Carl Gösta Carlsson, Sandakra, Vegeholm, Sweden, assignor to AB Cernelle, Vegeholm, Sweden, a corporation of Sweden
No Drawing. Filed July 29, 1964, Ser. No. 386,068
Claims priority, application Sweden, July 30, 1963, 8,388/63
8 Claims. (Cl. 195—1)

1. A method for obtaining important constituents from pollen by extraction which comprises
(a) extracting pollen with an aqueous solution of a member selected from the group consisting of ethyl alcohol and acetone,
(b) subjecting the resulting extract in the presence of the pollen to digestion with *Mucor hiemalis* for a period of about 48 hours, and
(c) separating the resulting digested solution from the pollen residue.

3,360,438
RAPID SEPARATION OF SCHISTOSOME OVA FROM TISSUE BY DIGESTION WITH PINGUINAIN
Efrain Toro Goyco, Rio Piedras, and Eliseo Rivera Collazo, Hato Rey, Puerto Rico, assignors to the United States of America as represented by the Administrator of Veterans Affairs and/or the Secretary of the Army
No Drawing. Filed Sept. 22, 1964, Ser. No. 398,456
7 Claims. (Cl. 195—2)

1. In a process for the separation of schistosome ova from animal tissue containing said ova by digestion of the animal tissue with a proteolytic enzyme, the improvement which comprises digesting said animal tissue with pinguinain.

3,360,439
PROCESS FOR PREPARING 1-DEHYDRO STEROIDS
Raymond C. Erickson, New Brunswick, William E. Brown, Princeton, and Richard W. Thoma, Somerville, N.J., assignors, by mesne assignments, to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Aug. 19, 1964, Ser. No. 390,757
7 Claims. (Cl. 195—51)

1. In a process for selectively 1-dehydrogenating a 1,2-saturated steroid of the 3,20-diketo-Δ^4-pregnene series, which process comprises the steps of subjecting the steroid to the action of the cells of a 1-dehydrogenating microorganism in the presence of a hydrogen carrier, and recovering the 1-dehydrogenated steroid formed, the improvement which comprises pretreating an aqueous suspension of such cells with from about five to about twenty volumes per volume of suspension of a solvent selected from the group consisting of lower alkanols and lower alkanones at a temperature of about 0° C. to about 5° C. for a time sufficient to inactivate the 20 keto reductase activity of the cells, and separating the treated cells from the solvent prior to contact with the steroid.

3,360,440
COLD WATER RECONSTITUTABLE MICROBIOLOGICAL MEDIUM, PROCESS FOR PREPARATION AND USE, AND PRODUCT
Walter Haab, Dutch Hill Road, Canadensis, Pa. 18325, and Martin D. Appleton, 209 Claremont Ave., Clarks Summit, Pa. 18411
Filed Apr. 13, 1966, Ser. No. 542,382
26 Claims. (Cl. 195—100)



17. A dry composition of matter having as its distinctive characteristic the property of being reconstitutable in cold water to form a clear microbiological hydrogel medium, consisting essentially of a homogeneous intermixture of microbiological nutrients and as the sole functional gelling agent a cold water soluble modified cellulose selected from the group consisting of carboxymethyl cellulose, hydroxyethyl cellulose, carboxymethyl-hydroxyethyl cellulose, alkali metal salts of carboxymethyl cellulose, alkali metal salts of hydroxyethyl cellulose, and akali metal salts of carboxymethyl-hydroxyethyl cellulose.

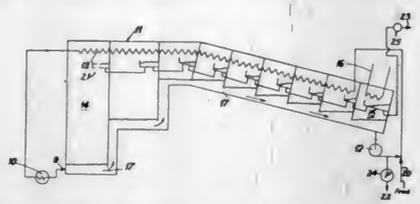
3,360,441
MICROBIOLOGICAL SCREENING PROCESS FOR AFLATOXIN
Harland R. Burmeister, Peoria, Ill., assignor to the United States of America as represented by the Secretary of Agriculture
No Drawing. Filed Sept. 16, 1965, Ser. No. 487,933
4 Claims. (Cl. 195—103.5)

1. A microbiological process for detecting the presence of very low levels of aflatoxin contamination in suspected cereal grains and animal feeds comprising extracting a predetermined quantity of the suspected material with chloroform to obtain any aflatoxin present therein, precipitating the crude aflatoxin therefrom with hexane, evaporating the hexane, suspending the crude aflatoxin in sterile water, forming a serial dilution series thereof, adding the said series to respective culture tubes containing a tryptone-glucose-yeast extract agar medium adjusted to pH 6.2 and having dispersed therein 1 percent by weight of a suspension containing 3×10^9 spores per milliliter of an aflatoxin sensitive microorganism selected from the group consisting of *Bacillus megaterium* NRRL B–1368, *B. megaterium* NRRL B–1370, and *B. brevis* NRRL B–1874, incubating the tubes for 72 hours at 30° C., and inspecting the culture surfaces for evidence of bacterial growth thereon.

3,360,442
MULTI-STAGE FLASH EVAPORATOR
Roy Starmer, North Shields, Northumberland, England, assignor to Applied Research and Engineering Limited, Durham, England, a British company
Filed Dec. 23, 1964, Ser. No. 420,642
2 Claims. (Cl. 202—173)

1. A multi-stage flash evaporator in which there is a succession of flash chambers interconnected by orifices, means for supplying heated liquid for distillation to the first chamber in the succession, means comprising a condenser tube arranged in the upper section of said chambers and through which said liquid flows for condensing vapours produced in the successive chambers and for maintaining the chambers in the succession at successively

decreasing vapour pressures, with the vapour pressure differences between chambers at the beginning of the succession larger than the vapour pressure differences between chambers later in the succession, and in which said succession of chambers comprise a first group and a second



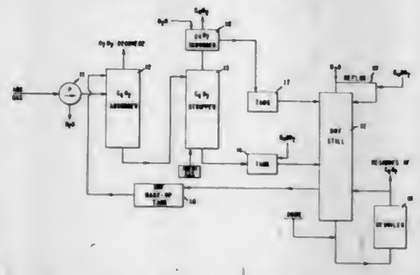
group connected together, the first group comprising a plurality of chambers arranged in step-wise form one above the other, the second group comprising a plurality of chambers arranged in step-wise form and in a downwardly inclined path one below the other to the last chamber.

3,360,443

RECOVERY OF DIMETHYL FORMAMIDE FROM TRIACETYLENE BY DISTILLATION IN THE PRESENCE OF A POLYMERIZATION INHIBITOR

David Apotheker, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Jan. 22, 1965, Ser. No. 427,248
4 Claims. (Cl. 203—9)



1. In the process which comprises (1) the purification of acetylene, which is made by the pyrolysis of hydrocarbons, by absorbing diacetylene and higher acetylenic compounds including triacetylene with a dimethylformamide solution, (2) substantially removing the diacetylene therefrom, and (3) recovering the dimethylformamide by distillation; the improvement, in said recovery, of adding to the dimethylformamide solution containing said higher acetylenic compounds (a) from 0.002 to 0.5 weight percent alkali metal nitrite and (b) from 0.05 to 0.5 weight percent of a second component selected from the group consisting of ethylene glycol and a monoalkyl ether of diethylene glycol having from 1 to 4 carbon atoms in the alkyl group, both percentages based on the weight of dimethylformamide, said addition being subsequent to step (2) but before step (3).

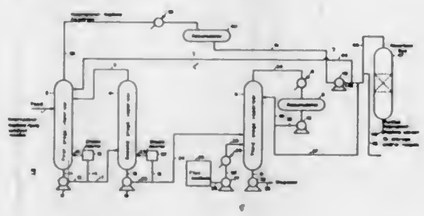
3,360,444

SOLVENT RECOVERY BY PLURAL DISTILLATION WITH UTILIZATION OF SOLID ABSORBENT

Irving Leibson, Odessa, and Ray Richard Rasmussen, Houston, Tex., assignors to Rexall Drug and Chemical Company, Los Angeles, Calif., a corporation of Delaware

Filed May 18, 1965, Ser. No. 456,695
5 Claims. (Cl. 203—41)

1. In a process for recovering a solvent employed in a deashing operation to extract catalyst and low molecular weight polymeric residues from an alpha-olefin polymer comprising concentrating the mixture in said solvent contaminated with said residues in a first-stage vaporization zone, concentrating the residue from said first-stage vaporization zone in a second-stage vaporization zone, recycling a portion of the residue from said second-stage vaporization zone through a reboiler and back to the second-stage vaporization zone, passing the remainder portion of said residue from the second-stage vaporization zone to a third-stage vaporization zone, introducing a heated flux medium into the lower section of said third-stage vaporization zone and vaporizing the remainder of said solvent in the residue from said second-stage vaporization zone in conjunction with said heated flux medium, said flux medium being heated to a temperature of about 300° F. and having an initial boiling point above 300° F., and recovering overhead solvent from said first, second



and third stage vaporization zones, the improvement in said process which comprises:

(a) using as the solvent in said process a hydrocarbon-alcohol azeotrope having a boiling point between about 150° to 300° F.,
(b) condensing the effluent recovered overhead from the third-stage vaporization zone, said effluent comprising 50 to substantially 100% of the solvent from said second-stage vaporization residue,
(c) refluxing a first portion of said effluent to said third-stage vaporization zone,
(d) recycling a second portion of said effluent to said first-stage vaporization zone,
(e) passing a third portion of said effluent through an adsorbent bed and
(f) recovering a substantially purified solvent from said adsorbent bed.

3,360,445

ELECTRODEPOSITION OF NICKEL FROM THE SULFAMATE BATH

Ramon U. Tobar, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Jan. 4, 1965, Ser. No. 423,301
10 Claims. (Cl. 204—3)

1. An aqueous acidic nickel electrodepositing solution comprising 130 to 500 grams of nickel sulfamate per liter of solution and a sufficient amount of a nitrate salt to supply 5 to 250 parts per million of nitrate ion in the solution, with the limitation that the nitrate salt must be one which contains no cations which would interfere with a nickel electrodeposition process.

8. An electroforming process comprising passing a current from an anode through an aqueous acidic nickel solution comprising per liter of solution 130 to 500 grams of nickel sulfamate, 30 to 60 grams of buffering agent, 1 to 100 grams of anode-corrosion agent, .1 to 1 gram of anti-pitting agent and from 0.25 to 3 grams of brightening agent and containing sufficient nickel nitrate to supply from 5 to 250 parts per million of nitrate ion based on the total solution in which the pH is maintained in the range of 3 to 4.5, the temperature is maintained in the range of 90 to 140° F., and the current density is maintained in the range of 20 to 300 amperes per square foot, to a cathode.

3,360,446

ELECTRODEPOSITING A TIN-BISMUTH ALLOY AND ADDITIVES THEREFOR

Jan C. Jongkind, Roseville, Mich., assignor to M & T Chemicals Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed May 8, 1964, Ser. No. 366,193
17 Claims. (Cl. 204—43)

1. The method of electrodepositing a tin-bismuth alloy plate comprising immersing an article to be plated in an aqueous alkaline plating bath containing alkali metal stannate, in amount of 10–300 grams per liter (expressed in terms of contained tin), free alkali metal hydroxide, and hydroxy alkyl bismuthate; and electrodepositing a tin-bismuth alloy plate onto said article as cathode in said bath.

12. A novel composition for make-up and maintenance of aqueous electroplating baths for deposition of a tin-bismuth alloy plate consisting essentially of a hydroxy alkyl bismuthate and an alkaline tin oxide sol.

3,360,447

BATH FOR ELECTROLYTICAL SEPARATION OF COPPER WITH HIGH-GRADE MECHANICAL PROPERTIES

Lubomir Svatek, 102 Prazska, Ujezd nad Lesy, Czechoslovakia, and Jaromir Vitek, 4 Pisecka, Prague 3, Czechoslovakia

No Drawing. Filed Mar. 1, 1965, Ser. No. 436,332
Claims priority, application Czechoslovakia, Mar. 11, 1964, 1,391/64
7 Claims. (Cl. 204—52)

1. An improved aqueous acid copper-plating bath having present therein a soluble copper salt and at least 1 part by volume per 1000 parts of acid bath of an additive material consisting essentially of 40 to 60 weight percent of absolute ethyl alcohol, 30 to 40 weight percent of glacial acetic acid, 0.2 to 0.4 weight percent of gelatin, 0.5 to 0.7 weight percent of casein, and 10 to 20 weight percent of concentrated sulfuric acid.

3,360,448

PROCESS FOR MODIFYING POLYESTER FILM BASES USING IRRADIATION

Rudolf Schneider and Karl Heinz Haenisch, Neu-Isenburg, Germany, assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Dec. 2, 1963, Ser. No. 327,530
Claims priority, application Germany, Dec. 10, 1962, A 41,836
9 Claims. (Cl. 204—159.19)

1. A process for modifying the surface of a hydrophobic highly polymeric polyester shaped article which comprises

(a) treating the surface of such an article with an essentially neutral to weakly acidic solution of aqueous hydrogen peroxide in a volatile organic solvent that is essentially a non-solvent for the polyester, and
(b) exposing the treated surface of said article while still in a wet state with ultraviolet radiation.

3,360,449

ACTINIC LIGHT ACTIVATED CATALYTIC DEHYDROGENATION OF UNSATURATED HYDROCARBONS

Arnold N. Wennerberg, Chicago, Ill., assignor to Standard Oil Company, Chicago, Ill., a corporation of Indiana

No Drawing. Filed Aug. 14, 1964, Ser. No. 389,793
12 Claims. (Cl. 204—162)

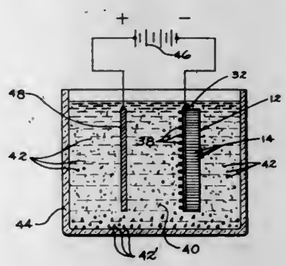
12. A method of preparing benzene comprising contacting (a) n-hexene at a temperature above 400° C. in a catalytic conversion zone with a catalyst subjected to ultraviolet irradiation of 600 to 4000 Angstroms having the three different metal oxides in the weight ratio indicated in the range of from 0.1 to 5 parts each of zinc oxide and magnesium oxide for each 10 parts of alumina whereat said n-hexene is dehydrogenated and cyclized to benzene.

3,360,450

METHOD OF MAKING CATHODE RAY TUBE FACE PLATES UTILIZING ELECTROPHORETIC DEPOSITION

Frederick R. Hays, Woodstock, Conn., assignor to American Optical Company, Southbridge, Mass., a voluntary association of Massachusetts

Filed Nov. 19, 1962, Ser. No. 238,395
6 Claims. (Cl. 204—181)

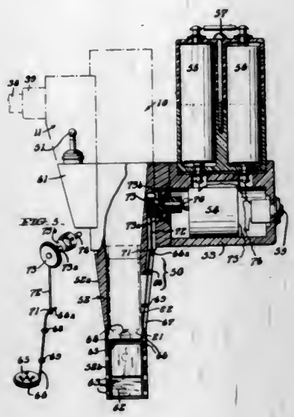


1. The method of forming a face plate of the character described embodying a fiber optical structure formed of a plurality of light-conducting fibers bundled together in side-by-side relation and each having a core part of light-conducting material of relatively high index of refraction surrounded by a comparatively thin cladding of relatively low index light-conducting material with corresponding opposite ends of said fibers arranged to provide respective light-receiving and light-emitting opposite sides of said structure, said method comprising applying a thin transparent electrically conductive coating to a first side of said structure, providing a layer of photosensitive electrically insulating material over said coating, said material being characterized to become hardened by exposure to actinic light and readily removable from said coating where not appreciably exposed to such light, directing actinic light through substantially only said claddings of said fibers from said second side of said structure to cause exposure and hardening of said layer throughout portions thereof overlying said claddings adjacent said first side of said structure, removing remaining portions of said layer to expose said coating and applying a controlled thickness of particles of energy converters upon said exposed portions of said coating to form deposits thereof each in substantial registry with a respective core part of said fibers and with said deposits being separated from each other by amounts substantially corresponding to the thicknesses and configurations of said claddings.

3,360,451
AGITATOR FOR DISSOLVED OXYGEN PROBE

Vernon T. Stack, Jr., Chadds Ford, Pa., assignor to Roy F. Weston, Inc., Newtown Square, Pa., a corporation of Pennsylvania

Filed Feb. 26, 1965, Ser. No. 435,646
8 Claims. (Cl. 204—195)

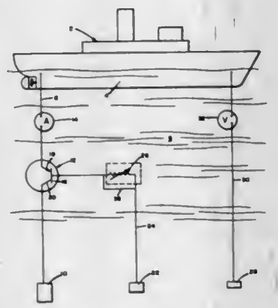


1. In combination; a dissolved oxygen probe having an elongated downwardly-extending body portion having an electrode at the tip; a shield having a downwardly-extending open barrel portion and an upper laterally-extending portion; an agitator plate supported within said barrel portion of said shield just below the tip electrode of said probe; and power drive means supported by the laterally-extending portion of said shield and connected to said agitator plate for vibrating the same.

3,360,452
CATHODIC PROTECTION SYSTEM

Frank E. McNulty, Tulsa, Okla., assignor to Nee & McNulty, Inc., a corporation of Oklahoma

Filed Feb. 24, 1964, Ser. No. 346,945
10 Claims. (Cl. 204—197)

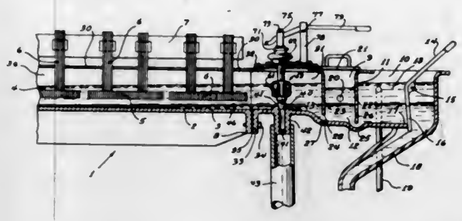


1. A cathodic protection apparatus comprising, a cathode, a first anode, a first conductor joining said cathode and first anode, a power transistor in said first conductor having its collector connected to said first anode and its emitter connected to said cathode, a second anode, and a second conductor joining the second anode to the base of said transistor, said first and second anodes being of metal higher in the electrochemical series than said cathode.

3,360,453
APPARATUS FOR THE RAPID REMOVAL OF BRINE FROM MERCURY CELLS

Joshua Szechtman, Byram, Conn., assignor to Amroc Incorporated, Zeeland, Mich., a corporation of Michigan

Original application Dec. 17, 1959, Ser. No. 860,294. Divided and this application Sept. 28, 1964, Ser. No. 404,545
7 Claims. (Cl. 204—219)

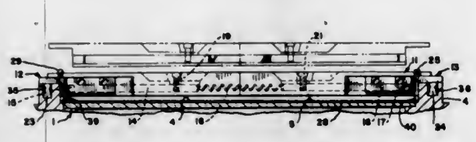


1. Apparatus for the rapid removal of brine from mercury cells comprising a cell and a chamber member secured to the outlet end thereof, enclosing means for sealing said cell and chamber from the atmosphere, the interior of said chamber forming an uninterrupted continuation of the interior of said cell and being formed with means for maintaining a stream of mercury therein at a predetermined level, a discharge conduit connected to the bottom of said chamber for the removal of the brine from the cell, said conduit having an opening with inward and downward taper and having a rounded lip adjacent said predetermined mercury level, a tubular valve extending to a predetermined brine level which is maintained during operation of the cell and having an inward and downward taper for sealing fit and seated in said opening and normally closed for retaining the brine in the cell, and means for opening the valve quickly to discharge the brine rapidly from the cell and chamber while retaining the sealing of said cell and chamber from the atmosphere, said means for opening the valve including a manually operable handle exterior to the enclosing means, and flexible means secured to a portion of said valve stem and said enclosing means to permit the operation of the valve without permitting the escape of gas from said cell.

3,360,454
SAMPLE APPLICATOR USED IN ELECTROPHORESIS

Otto H. Sahmel, Rochester, N.Y., assignor to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York

Filed Apr. 2, 1965, Ser. No. 445,072
5 Claims. (Cl. 204—299)



1. A sample applicator for applying a test sample to the migration medium on a table of an electrophoretic tank comprising, two end pieces, a central bar providing rigidity to the applicator having a latching means attaching said two end pieces to said central bar, means for engaging a string to each of said two end pieces in a taut position intermediate said end-pieces including a string fastener on each of said end pieces for engaging said string to the respective end piece, means on said bar for releasing said latching means upon positioning of the end pieces in the desired position on an electrophoretic tank.

3,360,455
ASPHALT PLASTISOLS

Luke W. Corbett, Mountainside, and Robert E. Swarbrick, Belle Mead, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

Filed Jan. 27, 1966, Ser. No. 523,299
5 Claims. (Cl. 208—22)

1. An asphalt plastisol comprising nonvolatile petrolene particles, having an initial atmospheric boiling point within the range of 600° and 1400° F., passing a number 8 U.S. Sandard Sieve screen, coated with asphaltenes and suspended in liquid volatile petrolenes having a boiling point range below that of the said nonvolatile petrolenes, said asphalt plastisol being comprised of from about 10 to about 50 wt. percent of said nonvolatile pertolenes, from about 5 to about 40 wt. percent of said asphaltenes and from about 20 to about 60 wt. percent of said liquid volatile petrolenes.

3,360,456
PROCESS FOR THE HYDROCRACKING OF HYDROCARBONS IN TWO STAGES TO PRODUCE GASOLINE WITH A REDUCED CONSUMPTION OF HYDROGEN

Joseph K. Kosiba, Port Arthur, and Theodore Rice, Beaumont, Tex., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

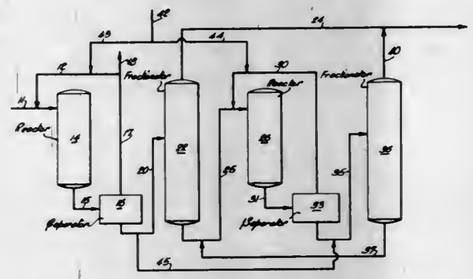
No Drawing. Filed Oct. 14, 1965, Ser. No. 496,166
3 Claims. (Cl. 208—59)

1. A two-stage hydrocracking process which comprises hydrocracking in a first stage a hydrocarbon stock boiling in the range from about 400° to about 850° F., containing less than about 5 p.p.m. nitrogen, containing up to about 80 percent by volume of aromatic hydrocarbons and containing at least 30 percent by volume of hydrocarbons having at least one saturated ring by contacting the hydrocarbon stock with hydrogen at a temperature in the range from about 800° to about 1000° F., a pressure in the range from about 350 to about 650 p.s.i.g., a space velocity in the range from about 1.0 to about 2.0 volumes of hydrocarbon stock per hour per volume of catalyst, with a hydrogen consumption of less than 200 standard cubic feet of hydrogen per barrel of hydrocarbon stock while in the presence of a catalyst comprising a hydrogenation component consisting essentially of sulfided nickel-tungsten wherein the tungsten comprises from about 3 to about 25 percent by weight of the total catalyst and the nickel comprises from about 0.5 to about 10 percent by weight of the total catalyst, composited with an activated alumina having less than about 10 percent of its pore volume in pores having a radius greater than 70 A., thereby effecting a conversion from about 30 to about 60 percent by volume to materials boiling below the initial boiling point of the hydrocarbon charge stock, separating from the effluent of the first stage a gasoline fraction boiling up to 400° F. and a fraction boiling above 400° F., hydrocracking the fraction boiling above 400° F. in a second stage by contacting said 400° F.+ fraction with hydrogen at a temperature in the range from about 600° to about 750° F., a pressure in the range from about 1500 to about 2500 p.s.i.g., a space velocity in the range from about 0.5 to about 2.0 volumes of 400° F.+ fraction per hour per volume of catalyst, with a hydrogen consumption of at least 1,000 standard cubic feet of hydrogen per barrel of 400° F.+ fraction while in the presence of a dual component hydrocracking catalyst consisting essentially of a hydrogenation component selected from the group consisting of Group VI and VIII metals, their oxides and sulfides, supported on a refractory metal oxide carrier having substantial cracking activity, thereby effecting a conversion of a least 70 percent by volume to materials boiling below 400° F. and separating from the effluent from the second stage a second gasoline fraction boiling up to 400° F.

3,360,457
HYDROCRACKING PROCESS

Reese A. Peck and Edward T. Child, Fishkill, and Donald A. Messing, Poughkeepsie, N.Y., assignors to Texaco, Inc., New York, N.Y., a corporation of Delaware

Filed July 1, 1965, Ser. No. 468,746
9 Claims. (Cl. 208—59)

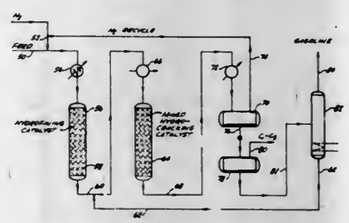


1. A process for the conversion of a hydrocarbon fraction into lighter hydrocarbons which comprises contacting a hydrocarbon fraction boiling within the range of about 400–950° F. under hydrocracking conditions with a hydrocracking catalyst comprising a hydrogenating component in sulfide form in a first stage, recovering a motor fuel fraction from the first stage effluent, contacting the entire portion of the reaction product boiling above the motor fuel range under hydrocracking conditions but at a temperature below the temperature of the first stage with a hydrocracking catalyst comprising a hydrogenating component selected from the group consisting of metals and oxides of metals in a second stage and recovering from the second stage effluent a motor fuel fraction having a higher octane number than the motor fuel fraction recovered from the first stage effluent.

3,360,458
HYDROCRACKING PROCESS

Dean Arthur Young, Yorba Linda, Calif., assignor to Union Oil Company of California, Los Angeles, Calif., a corporation of California

Filed Nov. 21, 1966, Ser. No. 595,799
The portion of the term of the patent subsequent to Nov. 22, 1983, has been disclaimed and dedicated to the Public
9 Claims. (Cl. 208—111)



1. A process for hydrocracking a hydrocarbon feedstock containing both polycyclic and non-polycyclic hydrocarbons, which comprises: subjecting said feedstock plus at least about 500 s.c.f./b. of added hydrogen to catalytic

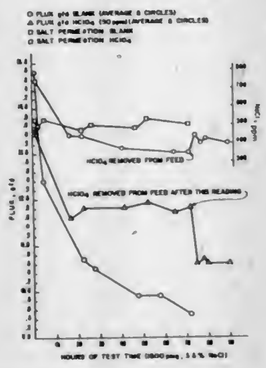
hydrocracking at pressures above about 400 p.s.i.g. in contact with a homogeneously copelleted mixture of two different catalysts A and B, catalyst A consisting essentially of an amorphous solid cracking base upon which is deposited a minor proportion of a Group VIII noble metal, catalyst B consisting essentially of a crystalline, zeolitic, molecular sieve cracking base upon which is deposited a minor proportion of a Group VIII noble metal, catalyst B containing a substantially higher atomic proportion of noble metal than catalyst A, and recovering desired low-boiling hydrocarbons from said hydrocracking.

3,360,459

PROCESS FOR REMOVING WATER FROM SOLUTIONS, USING OSMOTIC MEMBRANES TREATED WITH STABILIZING AGENTS

William M. King, Walnut, and Charles R. Cannon, Baldwin Park, Calif., assignors to Aerojet-General Corporation, El Monte, Calif., a corporation of Ohio

Filed Dec. 8, 1965, Ser. No. 513,665
8 Claims. (Cl. 210—22)



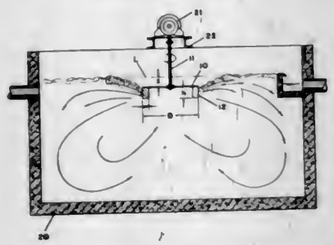
1. In the process of removing water from aqueous solutions containing impurities, wherein aqueous solution is passed over a cellulose acetate membrane at a pressure above the osmotic pressure of the aqueous solution, the improvement comprising the step of adding perchloric acid to the feed water in the concentration of approximately five to five hundred parts per million of feed water, said perchloric acid serving as a stabilizing agent to slow the decline of the membrane flux.

3,360,460

SURFACE AERATOR

Roy F. Weston, Sawmill Road, Newtown Square, Pa. 19073

Continuation of application Ser. No. 103,167, Apr. 14, 1961. This application Jan. 11, 1965, Ser. No. 424,539
3 Claims. (Cl. 210—63)



1. A method of dissolving gases present above the free surface of a body of waste water with a generally horizontal plate of imperforate construction at least at its center portion, said plate having a plurality of spaced-apart blades extending downwardly from said plate at least partly inwardly from the periphery thereof, said method comprising submerging said plate subadjacent the free surface of the water; rotating said plate about a vertical axis through its center; and economically entraining gases in said waste water by operating in a regime in which high gas dissolution occurs with low consumption of power by said plate, said entraining operation including adjusting the submergence level and speed of rotation of said plate to effect a ratio of submergence head to peripheral velocity head of not substantially greater than 0.3 and to effect a ratio of submergence head plus blade height to peripheral velocity head within the range of about 0.1 to about 0.6, said entraining operation inducing the water to flow outwardly along said blades and to develop low pressure areas at the trailing edges of said blades and simultaneously inducing gas which is above the surface of the body of water to contact substantially the entire upper surface and the periphery of said plate and to flow into the low pressure areas at the trailing side of said blades.

3,360,461

LOW SOLIDS SALT WATER DRILLING FLUIDS

Duane B. Anderson and James L. Lummus, Tulsa, Okla., assignors to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware

No Drawing. Filed Apr. 20, 1964, Ser. No. 361,270
4 Claims. (Cl. 252—8.5)

1. A low solids salt water drilling fluid containing a small but effective amount of a prehydrated montmorillonitic clay not to exceed about 17 lbs. per barrel of said fluid, a selective water soluble beneficiating agent for said clay present in a concentration of from about 0.075 to about 3 lbs. per barrel of said fluid, said beneficiating agent being selected from the class consisting of a vinyl-maleic copolymer having from 1 to about 1½ times as many vinyl radicals as maleic radicals and a water soluble salt of an acrylic acid-acrylamide copolymer, wherein the ratio of carboxylic acid salt groups to amide groups ranges from about 12:88 to about 70:30, said copolymer being polymerized to a degree such that a 1 percent by weight solution in distilled water has a viscosity of between about 2,000 and about 20,000 cps., as measured with a Brookfield viscosimeter at 20° C., rotating at 6 r.p.m., using a No. 2 spindle for viscosities up to 5,000, a No. 3 spindle between 5,000 and 20,000, and a No. 4 spindle for viscosities above 20,000 cps., and from about 1.5 to about 6 lbs. per barrel of flax meal, exclusive of hulls, having an average particle size ranging from about −12 to about + 30 mesh.

3,360,462

THERMOSETTING RESIN-THERMAL ASPHALT BINDER COMPOSITION AND FIBER BOARD PRODUCED THEREFROM

Francis W. Littler, Brooklyn, N.Y., assignor to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed Sept. 23, 1963, Ser. No. 310,878
14 Claims. (Cl. 260—17.2)

1. A fiberboard-forming composition containing a thermosetting resin produced by the polycondensation of a phenolic compound with a compound selected from the group consisting of formaldehyde and formaldehyde donors and a thermal asphalt binder possessing a softening point (R. & B.) from about 210 to about 290° F.

3,360,463

LUBRICANTS CONTAINING SYNERGISTIC WEAR INHIBITORS

James Keith Jacques, Walsall, England, assignor to Albright & Wilson (Mfg.) Limited, Oldbury, near Birmingham, England, a British company

No Drawing. Filed Apr. 13, 1966, Ser. No. 542,222
Claims priority, application Great Britain, Apr. 15, 1965, 16,297/65
12 Claims. (Cl. 252—32.7)

1. A lubricant additive combination consisting essentially of a trialkylthiophosphite ester wherein each alkyl group has from 6 to 18 carbon atoms, and x percent based on the total weight of said additive combination, of a dialkyldithiophosphate salt of the formula $M[(RO)_2PS_2]_n$ wherein R is an alkyl group having from 2 to 12 carbon atoms, M is selected from divalent lead, zinc, molybdenum, nickel, chromium, and monovalent copper, n is the valency of the metal radical M, and x is a number such that where M is zinc or lead x has a value between 10 and 98; where M is molybdenum or copper x has a value between 0.5 and 99; where M is nickel x has a value between 55 and 98; and where M is chromium x has a value between 60 and 90.

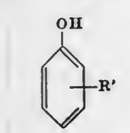
3,360,464

LUBRICATING OILS CONTAINING ALKYLATED PHENOXY ACID DERIVATIVES

Ferdinand P. Otto, Jr., Woodbury, N.J., assignor to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed Aug. 2, 1965, Ser. No. 476,653
5 Claims. (Cl. 252—51.5)

1. A lubricating oil composition comprising a major proportion of a lubricating oil and a minor proportion sufficient to provide detergent properties thereto of a compound prepared by (1) the reaction of an alkali metal salt of a polyalkylenephenol having the formula:



wherein R′ is a polyalkylene radical selected from the group consisting of polypropylene, polybutene, and polyisobutylene having a molecular weight in the range of about 500 to 3000, with an aliphatic lactone having from 2 to about 20 carbon atoms, thereby forming a polyalkylenephenoxymonocarboxylic acid compound; and (2) the reaction of said acid compound with an alkanolamine having from 1 to about 20 carbon atoms.

3,360,465

SYNTHETIC ESTER LUBRICANTS

Murray Warman, East Brunswick, N.J., assignor to Drew Chemical Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed May 22, 1964, Ser. No. 369,600
2 Claims. (Cl. 252—56)

1. A lubricant composition adapted for use at −40° F. consisting essentially of an ester of pentaerythritol and a mixture of alkanoic acids consisting essentially of about 25 mol percent caprylic acid, about 15 mol percent methyl pentanoic acid, in the range of from about 15 to about 20% pelargonic acid, and in the range of from about 40 to about 45 mol percent valeric acid, said mixture of alkanoic acids having in the range of from about 6.5 to about 6.7 carbon atoms per acid molecule, said pelargonic and caprylic acids consisting of from about 51½ to about 57 mol percent of said alkanoic acids, said alkanoic acids consisting of not more than 15 mol percent of branched acids, said composition being characterized by remaining liquid and also maintaining its lubricity at −40° F, and further characterized by an initial kinematic viscosity of not more than about 6800 centistokes at −40° F.

3,360,466

HEAT-GENERATING MAGNETIC INK COMPOSITIONS

Oliver A. Short, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Nov. 18, 1964, Ser. No. 412,253
4 Claims. (Cl. 252—62.53)

1. A heat-generating magnetic ink consisting essentially, on a weight basis, of 0.9 to 4 parts of a finely divided magnetic pigment possessing a high energy loss and a coercivity of 2 to 20 oersteds per 1 part of a liquid vehicle having drying properties and containing a metal compound drier dissolved therein, said pigment being a metal ferrite containing, on an oxide basis, 3 to 30% NiO, 2 to 20% ZnO, 0 to 5% MnO and at least 66% Fe_2O_3.

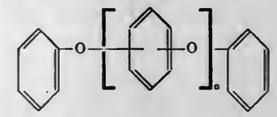
3,360,467

FUNCTIONAL FLUID

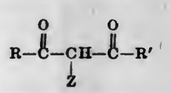
Kenneth L. McHugh, Kirkwood, Mo., and John O. Smith and John R. Stemniski, Swampscott, Mass., assignors to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Mar. 29, 1965, Ser. No. 443,665
10 Claims. (Cl. 252—74)

1. A liquid fluid composition consisting essentially of a polyphenyl ether of the formula



wherein n is a whole number of from 2 to 5 and from 0.01% to 1.0%, by weight of the ether, of a chelate of a heavy metal of Groups I–IV and VII–VIII of the periodic Arrangement of Elements and a carbonyl compound of the formula



wherein R and R′ are selected from the class consisting of alkyl radicals of from 1 to 6 carbon atoms and aryl, alkaryl and aralkyl radicals of from 6 to 10 carbon atoms and Z is selected from the class consisting of hydrogen, R, and R′, and carboalkoxy radicals of from 2 to 6 carbon atoms.

3,360,468

WATER-IN-OIL EMULSION USEFUL AS FIRE-RESISTANT HYDRAULIC FLUID

Edgar A. Dieman, Crown Point, and James W. Gaynor, Valparaiso, Ind., assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana

No Drawing. Filed June 28, 1965, Ser. No. 467,741
4 Claims. (Cl. 252—75)

1. A water-in-oil emulsion suitable for use as a fire resistant hydraulic fluid consisting essentially of:

(A) about 30–50 vol. percent water;

(B) about 50–70 vol. percent of a mineral lubricating oil having a viscosity of about 80–200 SSU at 100° F. containing

(a) about 7–15 wt. percent of a mixture consisting of

(i) about 0.1–1 parts by wt. of a polyoxyalkylene derivative of a fatty partial ester of a 6 carbon polyhydric alcohol mono- and di-anhydride and mixtures thereof, said de-

rivative containing 1–4 carbon atoms in the alkylene radical;

(ii) about 3–6 parts by wt. of a fatty acid partial ester of a 6 carbon polyhydric alcohol mono- and di-anhydride and mixture thereof, wherein said fatty acid has from 6 to 30 carbon atoms;

(iii) about 3–6 parts by wt. of a barium salt of the hydrolyzed reaction product of P_2S_5 and a butylene polymer having a molecular weight of about 150–50,000; and

(b) 0–1 vol. wt. percent of zinc di(C_{1-20} alkyl) dithiophosphate;

(C) 0–5 vol. percent of a member of the group consisting of ethylene glycol, propylene glycol or glycerine; and

(D) 0–30 parts per million of a polyalkyl siloxane having a viscosity of about 200–1000 centistokes at 25° C.

3,360,469

DRY-MIXED DETERGENT COMPOSITIONS

Robert J. Fuchs, Clark, N.J., assignor to FMC Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed June 7, 1965, Ser. No. 462,082
8 Claims. (Cl. 252—99)

1. A dry-mixed, built detergent composition containing compacted sodium tripolyphosphate and being readily soluble in water without caking under adverse dissolving conditions, essentially containing 20 to 90% of a granular compacted sodium tripolyphosphate having a density of 1.0 g./cc. to 1.25 g./cc. and a particle size of about —16 to +100 mesh, said compacted sodium tripolyphosphate having uniformly distributed thereon 2.5% to 7% of water, and the balance of said composition essentially containing at least one of 0.5 to 50% of a water-soluble, non-soap organic synthetic detergent from the group consisting of water-soluble anionic detergents and water-soluble nonionic detergents, 0.5 to 50% of sodium silicate having a molar ratio of Na_2O to SiO_2 of about 1:1 to 1:3.2, 0.5 to 20% of a chlorocyanuric compound from the group consisting of chlorocyanuric acids, an alkali metal or alkaline earth metal salt of dichlorocyanuric acid and mixtures thereof, 0.5 to 50% of chlorinated trisodium phosphate, 0.5 to 50% of an alkali metal carbonate and 0.5 to 60% of an inert inorganic filler.

3,360,470

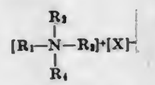
LAUNDERING COMPOSITIONS

Harold Eugene Wixon, New Brunswick, N.J., assignor to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 2, 1966, Ser. No. 576,493
11 Claims. (Cl. 252—99)

1. A composition consisting essentially of

(a) a quaternary ammonium textile softener tending to yellow textile materials upon treatment in water containing colored colloidal particles, and represented by the general formula



wherein R_1 and R_2 are alkyl groups each containing from 1 to 3 carbon atoms, R_3 and R_4 are alkyl groups each containing from 12 to 22 carbon atoms, and X is selected from the group consisting of chlorine, bromine, and methyl sulfate; and

(b) an alkali metal carboxymethyl cellulose wherein the alkali metal is selected from the group consisting of sodium and potassium; the weight ratio of (a)/(b) being from about 1.5/1 to about 4/1 and sufficient to inhibit said yellowing effect.

3,360,471

BIODEGRADABLE CLEANING COMPOUND

Bohdan Kwiatkowski, Chicago, Ill., assignor, by mesne assignments, to Sterling Drug Inc., a corporation of Delaware

No Drawing. Filed Apr. 18, 1963, Ser. No. 273,833
5 Claims. (Cl. 252—114)

1. A biodegradable fluid cleaning concentrate base for mixing with water comprising, at least about 55 percent by weight of a tall oil soap dissolved in a tripropylene glycol methyl ether solvent, the ratio of said solvent to said soap being about 1 to 3.5 by weight, between about one percent and about five percent by weight of said base of terpineol, the remainder of said base being substantially water, said base having less than 0.05 percent by weight of free alkaline matter calculated as potassium hydroxide.

3,360,472

PAINT REMOVER COMPOSITION

Adolph Renold, Somerset, N.J., assignor to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 3, 1963, Ser. No. 313,429
1 Claim. (Cl. 252—170)

A stable composition of matter consisting essentially of 1 part by volume of a reaction product of ozone and limonene and 9 parts by volume of limonene.

3,360,473

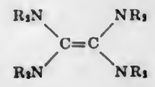
HYDROXYLIC ACTIVATION OF CHEMILUMINESCENCE OF THE CHEMILUMINESCENT TETRAKIS-(PER-TERTIARYAMINOETHYLENES)

Hilmer Ernest Winberg, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Mar. 12, 1965, Ser. No. 439,481
8 Claims. (Cl. 252—188.3)

1. A chemiluminescent formulation comprising

(a) at least one tetrakis(disubstituted-amino)ethylene of the formula



wherein the R's are selected from the group consisting of monovalent alkyl and cycloalkyl of up to 10 carbons, divalent alkylene joined to the other R attached to the same N to form a 3–5 membered monoaza heterocycle and divalent alkylene joined to an R attached to a second N to form a 3–7 membered diaza heterocycle,

(b) a nonquenching organic solvent, and

(c) from 0.01 to 10% by volume, based on the overall formulation, of a hydroxylic activator, said activator selected from the group consisting of water, alcohols and carboxylic acids of up to 20 carbons and organic hydroperoxides of up to 15 carbons being present in the phase containing the tetrakis(disubstituted-amino)ethylene.

3,360,474

COMPOSITION FOR TREATING USED DRY CLEANING SOLVENTS

Warren K. Cooley, Brookeville, Md., and Ralph T. Mease, Washington, D.C., assignors to Caled Products Company, Inc., Brentwood, Md., a corporation of Maryland

No Drawing. Filed Nov. 5, 1963, Ser. No. 321,418
2 Claims. (Cl. 252—259.5)

1. A composition for treating used dry cleaning solvents that consists essentially of about 35 to 53 parts by weight of a filtering powder, about 44 to 65 parts by weight of a polyhydroxy alcohol and about 37 to 46 parts by weight of an alkaline material selected from the group consisting of calcium oxide and sodium carbonate.

3,360,475

MAGNETIC FRICTION PACKINGS

Jean Rossez, Fontenay-sous-Bois, Hauts-de-Seine, France, assignor to Compagnie des Machines Bull (Société anonyme), Paris, France

Filed Mar. 31, 1964, Ser. No. 356,118
Claims priority, application France, Apr. 3, 1963, 930,246; Mar. 5, 1964, 966,153
3 Claims. (Cl. 252—62.52)

1. A dry solid material intended to form a friction lining capable of being subjected to a magnetic field for magnetic clutches, magnetic brakes or like devices obtained from a compressed and thermally sintered mixture of powders, the said mixture consisting before sintering essentially of 49–55% by volume of polytetrafluoroethylene powder and 41–45% by volume of chromised iron powder, the latter being composed of particles of irregular form and containing at most 12% by weight of chromium.

3,360,476

LIQUID HEAVY DUTY CLEANER AND DISINFECTANT

Ewald H. Krusius, South River, N.J., assignor to FMC Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 19, 1964, Ser. No. 353,244
3 Claims. (Cl. 252—107)

1. A clear, germicidal, liquid cleaner, having resistance to near-freezing temperatures consisting essentially of about 50 to 60 parts by weight of water, about 3 to about 12 parts by weight of alkali metal phosphate, about 5 to about 10 parts by weight of a liquid water-miscible alcohol selected from the group consisting of methanol, ethanol, propanol, isopropanol, ethyl ether of ethylene glycol and butyl ether of ethylene glycol, about 15 to about 25 parts by weight of a liquid water-miscible glycol selected from the group consisting of ethylene glycol, propylene glycol, diethylene glycol and dipropylene glycol, about 5 parts by weight of pine distillate, and about 5 to about 10 parts by weight of an alkali metal soap of a fatty acid, at least about 10% of the alkali metal content of said cleaner from said phosphate and said soap of a fatty acid being potassium and the balance sodium.

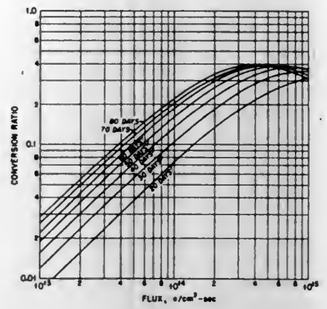
3,360,477

NEUTRON SOURCE

Elick H. Acree, Oak Ridge, and William G. Tatum, Lenoir City, Tenn., assignors to the United States of America as represented by the United States Atomic Energy Commission

Filed Feb. 26, 1965, Ser. No. 435,761
2 Claims. (Cl. 252—301.1)

1. A high-output neutron source of the alpha-neutron reaction type comprising an admixture of a first parent element selected from the group consisting of americium-241 and neptunium-237, a target metal selected from the group consisting of boron and beryllium, and a second element selected from the group consisting of curium-242 and plutonium-238, said second element being produced in situ by neutron irradiation for a period of time sufficient



to convert at least 21% of said first element to said second element.

3,360,478

LASER ACTION FLUORINATED EUROPIUM CHELATE DISSOLVED IN ACETONITRILE

Erhard J. Schimitschek and Richard B. Nehrich, Jr., San Diego, and John A. Trias, La Mesa, Calif., assignors to the United States of America as represented by the Secretary of the Navy

Filed Dec. 14, 1964, Ser. No. 418,358
3 Claims. (Cl. 252—301.2)

1. A liquid lasing solution consisting essentially of a chelate dissolved in acetonitrile to a minimum concentration of 9×10^{17} molecules per centimeter cubed,

said chelate being selected from a group of fluorinated europium chelates consisting of members characterized by a physical structure in which said europium ion is ligated to four fluorinated diketone groups and an amine base, and

said solution being capable of exhibiting stimulated light emission within a temperature range of —40° C. to +30° C.

3,360,479

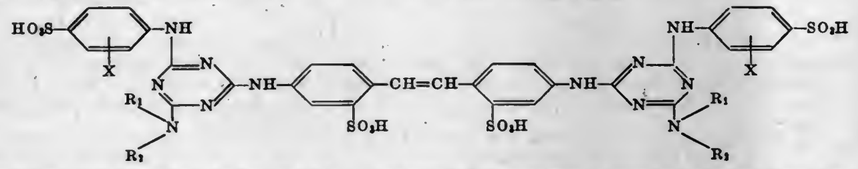
LIQUID OPTICAL BRIGHTENING CONCENTRATE

Heinrich Hausermann, Riehen, near Basel, Switzerland, assignor to J. R. Geigy A.G., Basel, Switzerland

No Drawing. Continuation of application Ser. No. 419,567, Dec. 18, 1964. This application Dec. 16, 1966, Ser. No. 602,411
Claims priority, application Switzerland, Nov. 20, 1959, 80,847/59
6 Claims. (Cl. 252—301.2)

1. A stable optical brightening aqueous composition consisting essentially of

(a) the optical brightening agent having, in its free acid form, the formula



wherein X represents a member selected from the group consisting of H and —CH_3, R_1 represents a

member selected from the group consisting of $-CH_2CH_2OH$ and

$$-CH_2CHOH$$
$$|$$
$$CH_3$$

and R_2 represents lower alkyl, and

(b) an organic solubility promoter selected from the group consisting of ethylene glycol, propylene glycol, butylene glycol, glycerin, pentaerythritol, sugar, sulphite cellulose waste liquor, ethylene glycol monomethyl ether, ethylene glycol monoethyl ether, ethylene glycol monopropyl ether, ethylene glycol monobutyl ether, di-β-hydroxyethyl ether, di-β-hydroxyethyl thioether, ethylene glycol, di-β-hydroxyethyl ether, diethylene glycol monomethyl ether, diethylene glycol monoethyl ether, polyglycol ethers having a molecular weight of about 400, urea, N-dimethyl-methyl-urethane, N-dimethyl-ethyl-urethane, N-dimethyl-methoxyethyl-urethane, N-di-methyl-ethoxyethyl-urethane, formamide, N-dimethyl-formamide, acetamide, N-diethyl-acetamide, N-dimethyl-benzamide, N-diethyl-benzamide acetic acid diethanolamide, mono-ethanolamine, diethanolamine, triethanolamine, N-methyl-mono-ethanolamine, N-methyl-di-ethanolamine, N-ethyl-mono-ethanolamine, N-ethyl-di-ethanolamine, propanolamine, the sodium salt of m-xylene sulphonic acid and diethyl formamide, the solution having a content of 25 to 50% by weight of said optical brightening agent, and the quantity of said organic solubility promoter being sufficient to maintain said quantity of said optical brightening agent in solution in said preparation, but not substantially exceeding 100% of the weight of the brightening agent.

3,360,480
PROCESS FOR PREPARING YTTRIUM VANADATE PHOSPHORS

Joseph S. Martin, Jr., and Stephen S. Trond, Lancaster, Pa., assignors to Radio Corporation of America, a corporation of Delaware

No Drawing. Filed Mar. 16, 1965, Ser. No. 440,320
1 Claim. (Cl. 252—301.4)

A method for preparing a europium-activated yttrium vanadate phosphor comprising:

(1) simultaneously adding to an aqueous solution containing ammonium nitrate, a first solution containing soluble salts of Eu and Y, the molar ratio of Eu/Y being between 2/98 and 9/91 in said first solution, and a second solution containing a soluble vanadate, the molar proportion of added V in the mixed solution being about equal to the molar proportion of added Eu+Y in said mixed solution, each of said solutions being at about 80° C., and higher, thereby producing a coprecipitate of vanadates of Eu and Y,

(2) filtering said mixed solution to remove said coprecipitate and then drying said coprecipitate,

(3) mixing the dry coprecipitate with a vanadate flux, the weight of said vanadate flux being about 2 to 15 weight percent of the dry coprecipitate, and

(4) heating the dry mixture in air at temperatures between 1100 and 1300° C. for between 1 and 4 hours to form said phosphor.

3,360,481
CATALYST ACTIVATION PROCESS

Donald Danley McLaren, Plainfield, N.J., and Alfred Douglas Reichle, Baton Rouge, La., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed June 3, 1964, Ser. No. 372,384
12 Claims. (Cl. 252—420)

1. A process for activating a hydrocracking catalyst comprising a crystalline alumino-silicate zeolite composited with a platinum group metal componest which comprises initially contacting said catalyst, at a temperature up to about 300° F., with a substantially dry gas stream comprising a major proportion of hydrogen until less than about 50 p.p.m. water is detected in said stream after it has contacted said catalyst; and subsequently contacting said catalyst, at elevated pressure and a temperature above about 300° F., with an undried gas stream comprising a major proportion of hydrogen until activation is substantially complete.

3,360,482
ANHYDROUS LIQUID CATALYTIC COMPOSITION

James E. McKeon and Paul S. Starcher, Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York

Original application May 15, 1963, Ser. No. 280,534, now Patent No. 3,238,247, dated Mar. 1, 1966. Divided and this application Dec. 23, 1965, Ser. No. 515,872
The portion of the term of the patent subsequent to Mar. 1, 1983, has been disclaimed
3 Claims. (Cl. 252—428)

1. An essentially anhydrous, liquid composition which contains (1) cupric acetate; (2) a metal acetate of the group consisting of lithium acetate, potassium acetate, and mixtures thereof; (3) acetic acid; (4) palladium (II); (5) wherein the concentration of cupric acetate as defined by Expression I

$$\text{(I)} \qquad \frac{[Cu(OAc)^2]}{[Cu(OAc)_2]+[MOAc]+[Z]}$$

is at least 10 percent greater than the maximum concentration of cupric acetate as defined by Expression II

$$\text{(II)} \qquad \frac{[Cu(OAc)^2]}{[Cu(OAc)_2]+[Z]}$$

wherein Expressions I and II supra represent homogeneous liquid systems at the same temperature, wherein $Cu(OAc)_2$ represents cupric acetate, wherein MOAc is of the group consisting of lithium acetate, potassium acetate, and mixtures thereof, and wherein Z is of the group consisting of acetic acid and a mixture of acetic acid plus an inert, normally-liquid organic vehicle; and (6) wherein the concentration of palladium (II) is from about 1×10^{-7} to about 0.2 gram atom of palladium (II) per liter of said liquid composition.

3,360,483
CATALYSTS FOR OXYCHLORINATION REACTIONS

Louis H. Diamond, Yardley, Pa., and Walter Lobunez, Princeton, N.J., assignors to FMC Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 2, 1964, Ser. No. 401,227
3 Claims. (Cl. 252—441)

1. A catalyst for Deacon reactions, oxychlorination reactions and dehydrochlorination reactions, consisting essentially of a mixture of (a) cupric silicate and (b) a magnesium compound from the group consisting of magnesium chloride and magnesium silicate, in relative proportions of (a) to (b) to provide 0.1 to 4 moles of magnesium ion per mole of cupric ion, said catalyst being carried on a porous adsorptive carrier.

3,360,484
HYDROCARBON CONVERSION CATALYST AND PREPARATION THEREOF

Sebastian Marc Laurent, Baton Rouge, La., assignor to Esso Research and Engineering Company, a corporation of Delaware

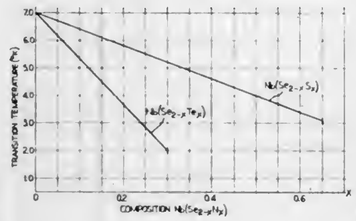
No Drawing. Filed Aug. 24, 1965, Ser. No. 482,265
8 Claims. (Cl. 252—455)

1. In a process for the preparation of hydrocarbon conversion catalysts comprising a crystalline-metallo-alumino-silicate molecular sieve zeolite having a silica to alumina mole ratio in the range between about 3 and about 10 and having pore openings in the range of 6 to 15 A. composited with a catalytically active form of palladium, the improvement comprising contacting said zeolite with a dilute, aqueous, acidic solution of a palladium compound as the means of introducing said palladium onto said zeolite.

3,360,485
SUPERCONDUCTOR HAVING VARIABLE TRANSITION TEMPERATURE

Glen A. Spiering and Eugene Revolinsky, Milwaukee, and Donald J. beerntsen, Wauwatosa, Wis., assignors to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.

Filed May 6, 1965, Ser. No. 453,747
3 Claims. (Cl. 252—518)



1. A superconducting composition of matter consisting essentially of a solid solution niobium diselenide and at least one element selected from the group consisting of sulfur and tellurium.

3,360,486
PRODUCTION OF EPOXIDE RESINS FROM AROMATIC AMINES IN THE PRESENCE OF A HYDROXYL GROUP-CONTAINING PROMOTER

Edward William Garnish, Saffron Walden, England, assignor to Ciba Limited, Basel, Switzerland, a company of Switzerland

No Drawing. Filed June 9, 1964, Ser. No. 373,822
Claims priority, application Great Britain, June 26, 1963, 25,469/63
8 Claims. (Cl. 260—2)

1. Process for the production of epoxide resins containing on average more than one 1,2-epoxide group per molecule which consists essentially of (a) reacting an aromatic amine containing at least two hydrogen atoms attached directly to nitrogen with an epihalohydrin in the presence of a promoter formed by reaction of a member selected from the group consisting of phenols and alcohols having not more than three alcoholic hydroxyl groups per molecule with an epihalohydrin, opening the 1,2-epoxy group of the epihalohydrin and (b) treating the resulting mixture with an alkali selected from the group consisting of alkali metal hydroxides and alkaline earth metal hydroxides, the quantity of alkali being at least equivalent to the total amount of reacted epihalohydrin.

3,360,487
MULTICOLORED DECORATION PAINTS AND METHOD OF PREPARING THE SAME

Heijiro Hondo, Suzuka, and Yoshio Nakamuro, Kuwana, Japan, assignors to Suzuka Paint Manufacturing Company, Limited, Yotsukaichi, Mie Prefecture, Japan

No Drawing. Filed Apr. 28, 1965, Ser. No. 451,664
4 Claims. (Cl. 260—15)

1. A method of preparing coating compositions of gelatinous particles having the characteristics that they are converted into sols in the course of drying after application to a surface and are capable of forming a continuous film upon the coated surface when dried, which comprises diluting nitrocellulose lacquer containing one or more colored substances and comprising nitrocellulose of high viscosity and a resin selected from the group consisting of butyrated melamine-formaldehyde resin, butyrated benzoguanamine-formaldehyde resin, butyrated melamine-benzoguanamine-formaldehyde cocondensation resin and butyrated dibenzoguanamine-formaldehyde resin, with alcohols selected from the group consisting of secondary butanol and mixtures of isopropanol and normal butanol, adding water with stirring to said mixture to form gelatinous precipitates of the mixture, and dividing the resulting mixture, by way of passing it through a screening means, into coarsely divided gelatinous particles of a size which is visible to the naked eye.

ERRATUM

For Class 260—17.2 see:
Patent No. 3,360,462

3,360,488
ADHESIVE COMPOSITIONS COMPRISING ATACTIC POLYPROPYLENE AND TALL OIL

Lewis W. Hall, Jr., and Jackson S. Boyer, Claymont, Del., and Richard E. Ware, Trainer, Pa., assignors to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey

No Drawing. Filed May 5, 1965, Ser. No. 453,513
4 Claims. (Cl. 260—23)

1. A thermoplastic hot melt adhesive comprising a homogeneous mixture of a major proportion of atactic polypropylene and a minor proportion of tall oil.

3,360,489
WRITING ELEMENTS COMPRISING COLLOIDAL THERMOPLASTIC RESIN AND METALLIC SOAP

Harold Grossman, Upper Montclair, N.J., and Verlon Wiser, Shelbyville, Tenn., assignors to Hassenfeld Bros., Inc., Central Falls, R.I., a corporation of Rhode Island

No Drawing. Filed Oct. 19, 1965, Ser. No. 498,132
40 Claims. (Cl. 260—23)

1. A composition for a writing element for pencils, said composition consisting essentially of a substantially water insoluble metallic soap, a thermoplastic resin binder solid at room temperature having colloidal particle size in sufficient amount to furnish an extrudable writing element, and a marking material selected from the group consisting of a graphite, a pigment and a dye, the pigment and the dye having a mineral filler associated therewith.

3,360,490
BITUMINOUS POLYESTER HALOGEN CONTAINING RESIN COMPOSITION

Walter A. Szymanski, Grand Island, and Robert E. Robinson and Robert C. Talbot, Niagara Falls, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Filed Nov. 16, 1961, Ser. No. 152,935
7 Claims. (Cl. 260—28.5)

1. A bituminous composition comprising (A) a bituminous material and (B) a thermoset polyester comprising the reaction product of (1) a polymerizable linear polyester resin, comprised of the reaction product of a polycarboxylic acid and a polyhydric alcohol, said resin having olefinic polymerizable unsaturation and (2) a vinylidene monomer in an amount sufficient to produce a thermoset polyester, a component of said thermoset polyester containing an adduct of hexahalocyclopentadiene wherein the halogen is selected from the group consisting of fluorine, chlorine, bromine and mixtures thereof, with a compound selected from the group consisting of a polycarboxylic compound containing aliphatic carbon-to-car-

bon unsaturation and a polyhydric alcohol containing aliphatic carbon-to-carbon unsaturation, said bituminous material comprising from about 5 to about 50 weight percent of the total composition, and said thermoset polyester comprising from about 40 to about 85 percent by weight of the total composition.

3,360,491

METHOD OF POLYMERIZING SILOXANES AND SILCARBANES IN EMULSION

Gordon L. Axon, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

No Drawing. Filed May 18, 1964, Ser. No. 368,352

37 Claims. (Cl. 260—29.2)

1. A method which comprises polymerizing and copolymerizing

(1) at least one member selected from the group consisting of organosiloxanes of the unit formula

$$\frac{R_nSiO_{4-n}}{2}$$

in which R is selected from the group consisting of hydrogen atoms, monovalent hydrocarbon radicals and monovalent halohydrocarbon radicals and n has an average value of from 1 to less than 3 and silcarbanes having the general formula

$$HO(R)_2SiQSi(R)_2OH$$

wherein R is selected from the group consisting of hydrogen atoms, monovalent hydrocarbon radicals and monovalent halohydrocarbon radicals and Q is a divalent radical attached to both silicon atoms via a silicon-carbon bond, said Q being selected from the group consisting of radicals composed of carbon and hydrogen atoms and radicals composed of carbon, hydrogen and oxygen atoms, there being less than 15 carbon atoms in said Q radical and any oxygen that is present being in the form of ether linkages, by polymerizing said member, in an aqueous medium while in a dispersed state, in the presence of

(2) a compound of the formula $R'OSO_2OH$ wherein R' is a monovalent aliphatic hydrocarbon radical of at least 6 carbon atoms, as the primary catalyst for polymerization,

until the desired increase in molecular aggregation is obtained.

3,360,492

MOLDING COMPOSITION COMPRISING A REFRACTORY MATERIAL AND AS A BINDER THE REACTION PRODUCT OF FORMALDEHYDE, FURFURYL ALCOHOL AND A UREA

Ivan H. Tsou, Allen Park, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed Aug. 5, 1964, Ser. No. 387,749

11 Claims. (Cl. 260—29.4)

1. A molding composition consisting essentially of particulate refractory material, a heat polymerizable resin formed by reacting together organic monomers consisting essentially of formaldehyde, furfuryl alcohol and an organic nitrogenous compound selected from the group consisting of urea and substituted ureas, and a heat-activatable polymerization catalyst having a pH of at least about 7 upon being introduced into said composition and consisting essentially of an aqueous solution of the product of heating hydrochloric acid in an excess of said nitrogenous compound until the pH of said product is at least about 7.

3,360,493

HYDRAULIC CEMENT COMPOSITIONS AND METHODS

Robert M. Evans, Shaker Heights, Ohio, assignor to The Master Mechanics Company, Cleveland, Ohio, a corporation of Ohio

No Drawing. Filed Mar. 11, 1966, Ser. No. 533,424

28 Claims. (Cl. 260—29.6)

26. A hardenable cementitious composition comprising a hydraulic cement, water, dispersed particles of a film-forming copolymer of (1) about 75 to 25% by weight of vinyl acetate, (2) 25 to 75% by weight of at least one alpha-olefin having 2 to 3 carbon atoms, and (3) .5% to 10% by weight of a copolymerizable unsaturated carboxylic acid, said composition containing fine aggregate, the ratio of fine aggregate to cement being 3:1 to 1:3, the amount of water being sufficient to permit said composition to be shaped or spread.

3,360,494

COATING COMPOSITIONS OF UNSATURATED MONOCARBOXYLIC ACID POLYMER AND POLYURETHANE

Edgar Dare Bolinger, Spartanburg, S.C., assignor to Deering Milliken Research Corporation, Spartanburg, S.C., a corporation of Delaware

No Drawing. Filed Oct. 13, 1966, Ser. No. 586,351

20 Claims. (Cl. 260—29.6)

7. A textile sizing composition comprising a water soluble unsaturated monocarboxylic acid polymer, a water soluble polyurethane carried in an aqueous medium and a film-hardening agent selected from the group consisting of cationic starch and polyvinyl alcohol, said polyurethane being the reaction product of a diisocyanate and a polyalkylene ether glycol and being present in amounts of from about three parts to about five parts of polyurethane per part of said acid polymer.

9. A textile sizing composition comprising a water soluble unsaturated monocarboxylic acid polymer formed with an acid selected from the group consisting of acrylic acid, butenic acid, pentenic acid, hexenic acid and methacrylic acid, a water soluble polyurethane carried in an aqueous medium and a polyvinyl alcohol film hardening agent carried in an aqueous medium, said polyurethane being the reaction product of a diisocyanate and a polyalkylene ether glycol and being present in an amount from about three parts to about five parts of polyurethane per part of monocarboxylic acid polymer.

3,360,495

POLYURETHANES

Erwin Muller and Dieter Dietrich, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed Feb. 6, 1964, Ser. No. 343,104

Claims priority, application Germany, Feb. 11, 1963, F 38,979

4 Claims. (Cl. 260—33.2)

1. A method for making a stable dispersion of a polyurethane which comprises mixing together a di-(primary hydroxy) alcohol and a di(secondary hydroxy) alcohol and an organic diisocyanate in an amount up to the stoichiometric equivalent of said di(primary hydroxy) alcohol, whereby said di(primary hydroxy) alcohol reacts preferentially with the organic diisocyanate to form a polyurethane which precipitates from solution forming a dispersion in said di(secondary hydroxy) alcohol which does not settle out upon standing.

3,360,496

HEAT SHRINKABLE COMPOSITIONS

Donald E. Weyer, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

No Drawing. Filed Sept. 21, 1964, Ser. No. 398,029

6 Claims. (Cl. 260—37)

1. A composition of matter consisting essentially of

(1) a vulcanizable organopolysiloxane rubber consisting essentially of

(A) a polymeric diorganopolysiloxane in which the substituents are selected from the group consisting of methyl, phenyl, vinyl and RCH_2CH_2— radicals in which R is a perfluoroalkyl radical, at least 30% of said substituents being methyl, and

(B) a filler for (A), and

(2) from 10 to 65% by weight, based on the weight of (A) of an organopolysiloxane resin consisting essentially of

(C) blocks of siloxane units of the average formula

$$\left(\frac{R'_zSiO_{4-z}}{2}\right)_n$$

in which n has an average value from 6 to 100 inclusive, z has an average value from 1.9 to 2 inclusive, and R' is selected from the group consisting of methyl and phenyl radicals, there being no more than 10 mol percent phenylsiloxane in (C), and

(D) blocks of the formula

$$\frac{(C_6H_5)_xR''_ySiO_{4-x-y}}{2}$$

in which x has a value from .9 to 1.2 inclusive, R'' is a lower alkyl radical and y has a value from 0 to .1 inclusive, the prime mol ratio of (C) to (D) being from 30:70 to 60:40 (2) having a melting point of at least 50° C. and having overall from 1.3 to 1.65 total hydrocarbon groups per silicon atom.

3,360,497

POLYOLEFIN PIGMENT DISPERSION

George F. Jones and Vernon H. Ure, Glens Falls, N.Y., assignors to Hercules Incorporated, a corporation of Delaware

No Drawing. Filed Oct. 16, 1964, Ser. No. 404,211

19 Claims. (Cl. 260—41)

1. The process of preparing a pigment dispersion in a polyolefin which comprises (1) preparing an aqueous dispersion of the pigment in the presence of a material selected from the group consisting of water-soluble and water-dispersible cationic and anionic surfactants, said material being convertible to an oil-soluble, water-insoluble form, (2) mixing the aqueous dispersion thus formed with (a) a solution of low molecular weight polyolefin in an organic solvent therefor, (b) sufficient high molecular weight polyolefin to bring the pigment content to a desired level, and (c) sufficient water to dilute the pigment dispersion to a point such that adequate fluidity is maintained throughout the process, (3) adding to the resulting dispersion a material capable of reacting with said material selected from the group consisting of water-soluble and water-dispersible cationic and anionic surfactants to convert same to a water-insoluble, oil-soluble, or oil-dispersible form, (4) reacting said first-named material with said second-named material to effect conversion thereof to the water-insoluble, oil-soluble or oil-dispersible form, (5) drying the mixture, and (6) subjecting the resulting product to high shear.

3,360,498

STABILIZED POLYCARBONATES

Herbert L. Rawlings, New Martinsville, W. Va., assignor to Mobay Chemical Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed June 23, 1965, Ser. No. 466,416

10 Claims. (Cl. 260—45.7)

1. A polycarbonate composition comprising a polycarbonate and a hydrophobic coated silica.

3,360,499

POLYALKYLENE OXIDES STABILIZED WITH AN AMINE AND AN ALIPHATIC THIOETHER

Otto Mauz, Frankfurt am Main, and Claus Heuck, Hofheim, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Feb. 3, 1965, Ser. No. 430,166

Claims priority, application Germany, Feb. 6, 1964, F 41,931

1 Claim. (Cl. 260—45.8)

A composition of matter comprising a polyalkylene oxide and 0.3–3% calculated on the weight of the polyalkylene oxide of a mixture comprising (a) an amine selected from the group consisting of N,N-diphenyl-ethylene diamine, phenothiazine, N,N'-di-β-naphthyl-p-phenylene amine, phenyl-β-naphthylamine, 4,4'-diamino-diphenylamine, N,N-diphenyl-ethylene diamine, N-cyclohexyl-N'-phenyl-p-phenylene diamine, N,N'-dicyclohexyl-p-phenylene diamine, N,N'-diisopropyl-p-phenylene diamine, N,N'-dioctyl-p-phenylene diamine and N,N'-didodecyl-p-phenylene diamine and (b) an aliphatic thioether of the formula

$$R—S_n—R'$$

in which n stands for a whole number in the range from 1 to 4 R and R' represent a member selected from the group consisting of an alkyl radical with 8 to 20 carbon atoms and the group $—(CH_2)_m—COOR_1$, in said group m being a whole number in the range of 1 to 4 and R_1 being an alkyl radical with 8 to 20 carbon atoms, components (a) and (b) being contained in the mixture within the range of 1:5 to 5:1 parts by weight.

3,360,500

PROCESS FOR PREPARING HIGH MOLECULAR WEIGHT POLYESTERS

William L. Hergenrother, Akron, Ohio, assignor to The Firestone Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Filed May 21, 1964, Ser. No. 369,316

5 Claims. (Cl. 260—75)

1. Process of preparing high molecular weight linear polyesters of dicarboxylic acids with glycols from low molecular weight precursors thereof, said precursors being selected from the group consisting of

(1) mono-esters of said dicarboxylic acids with said glycols

(2) di-esters of said dicarboxylic acids with said glycols, and

(3) mixtures of said mono- and di-esters with each other and with low molecular weight polyesters of said dicarboxylic acids with said glycols,

which process comprises

heating and precursors in admixture with antimony trisulfide as a catalyst until the intrinsic viscosity of the resultant condensation product is above .25.

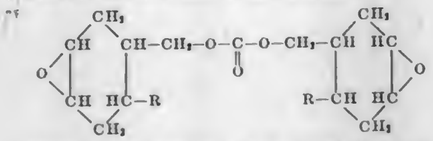
3,360,501
HEAT-HARDENABLE EPOXY COMPOSITIONS

Gustav Widmer, Basel, Hans Batzer, Arlesheim, and Erwin Nikles, Liestal, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a company of Switzerland

No Drawing. Filed Nov. 9, 1965, Ser. No. 507,052
Claims priority, application Switzerland, Mar. 5, 1959, 70,384/59; Sept. 10, 1959, 78,067/59
The portion of the term of the patent subsequent to Sept. 27, 1983, has been disclaimed
3 Claims. (Cl. 260—77.5)

1. A heat-hardenable composition of matter, which comprises

(a) an epoxy compound of the formula



where R is a member selected from the group consisting of hydrogen atom and methyl group; and

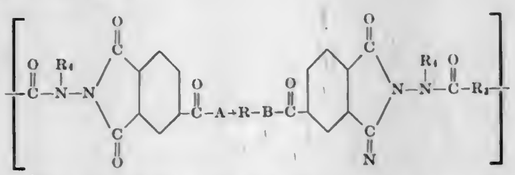
(b) a polycarboxylic acid anhydride as curing agent.

3,360,502
POLYESTERAMIDEIMIDES FROM BIS-TRIMELLITATES

Donald F. Loncrini, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

No Drawing. Filed Oct. 31, 1963, Ser. No. 320,516
9 Claims. (Cl. 260—78)

1. A polyesteramideimide consisting essentially of the recurring unit



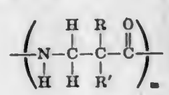
where A is selected from the group consisting of oxygen, NH and sulfur, B is selected from the group consisting of oxygen, NH and sulfur, R is a divalent organic radical containing at least two carbon atoms, R_1 and R_2 are selected from the group consisting of trivalent aromatic, carbocyclic and saturated aliphatic groups, R_3 is selected from aliphatic, aromatic, alicyclic and heterocyclic radicals and R_4 is selected from hydrogen, aliphatic, aromatic and alicyclic radicals.

3,360,503
PROCESS FOR PREPARING POLY(α,α-DISUBSTITUTED β-LACTAMS)

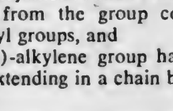
Adriaan Bantjes, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Original application Apr. 9, 1963, Ser. No. 271,598, now Patent No. 3,297,754, dated Jan. 3, 1967. Divided and this application May 17, 1966, Ser. No. 550,616
1 Claim. (Cl. 260—78)

A coupled process for producing polyamides of the formula



wherein R and R′ are as defined below, which comprises reacting equimolar proportions of a compound of the formula:



wherein X is selected from the group consisting of Cl and Br; R and R′, which may be the same, are selected from the group of chloromethyl, phenyl, alkyl and cycloalkyl of up to six carbon atoms and may together with —C— to which they are attached form an alicyclic hydrocarbon ring of up to six carbon atoms, and a compound of the formula $(R'')_nM$ wherein M is selected from the class of alkali and alkaline earth metals; n is the valence of M; and R″ is selected from the group consisting of hydrogen, tertiary alkoxy, and hydrocarbon of under 20 carbon atoms, at a temperature of between about 70 and 120° C. and in the presence of a polar solvent free of active hydrogen and boiling between 165–400° C. until the α,α-disubstituted-β-halopropionic acid amide has been converted to the lactam, heating the lactam in the presence of a polar solvent free of active hydrogen and containing an alkaline catalyst at a temperature of at least about 20° C. until polymerization takes place.

3,360,504
HYDROXYALKYL - N - VINYLOXYALKYLCARBAMATES AND HYDROXYALKYL N-VINYLETHIOALKYLCARBAMATES AND POLYMERS THEREOF

Everett J. Kelley, Moorestown, N.J., assignor to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Nov. 12, 1964, Ser. No. 410,717
10 Claims. (Cl. 260—79.7)

2. As a composition of matter, a solid addition polymer of a compound of the formula

$$H_2C{=}CH{-}A{-}Z{-}N(R){-}C(O){-}O{-}Y{-}OH \quad (I)$$

wherein

A is selected from the group consisting of O and S,

Z is an alkylene group having 2 to 12 carbon atoms, having at least 2 carbon atoms extending in a chain between the adjoined A and N atoms,

R is selected from the group consisting of H and (C_1–C_4) alkyl groups, and

Y is a (C_2–C_4)-alkylene group having at least 2 carbon atoms extending in a chain between the adjoined O atoms.

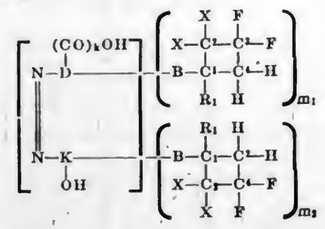
3,360,505
WATER-SOLUBLE, METAL-CONTAINING AZO-DYESTUFFS CONTAINING HALOGENATED CYCLOBUTANOIC ACID AMIDE OR CYCLOBUTANE ACRYLIC ACID AMIDE GROUPS

Otto Scherer, Bad Soden, Taunus, and Klaus Uhl, Hofheim, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Mar. 30, 1965, Ser. No. 444,034
Claims priority, application Germany, Apr. 4, 1964, F 42,517
6 Claims. (Cl. 260—147)

1. The water-soluble complex metal compound containing a metal selected from the group consisting of

nickel, copper, cobalt and chromium of an azo-dyestuff of the formula



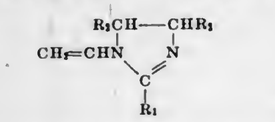
wherein D represents the radical of a diazo compound selected from the group consisting of radicals of the benzene and naphthalene series, K represents the radical of a coupling component selected from the group consisting of radicals of the benzene, naphthalene and pyrazolone series, at least one of D and K containing at least one sulfonic acid group, X represents a member selected from the group consisting of chlorine and fluorine, R_1 represents a member selected from the group consisting of hydrogen, chlorine and lower alkyl, B represents —NH—CO— or —NH—CO—CH=CH—, k represents an integer from 0 to 1, and m_1 and m_2 represent integers from 0 to 1, the sum of m_1, m_2 being 1.

3,360,506
SPECIFIC N-VINYL-2-IMIDAZOLINES

Peter L. De Benneville, Philadelphia, and Lawrence J. Exner, Cheltenham, Pa., assignors to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Feb. 8, 1963, Ser. No. 257,070
1 Claim. (Cl. 260—78.5)

A homopolymer of a compound having the formula



in which R_1 is alkyl of up to 18 carbon atoms, R_2 is alkyl of up to 17 carbon atoms and R_3 is alkyl of up to 17 carbon atoms.

3,360,507
AZO DYESTUFFS CONTAINING α,α-BIS(TRIFLUOROMETHYL) BENZYL ALCOHOL GROUPS

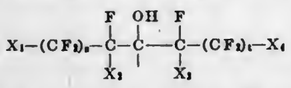
Willis A. Fisher, Snyder, and Russell I. Steiner, Williamsville, N.Y., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Dec. 3, 1964, Ser. No. 415,800
25 Claims. (Cl. 260—147)

1. An azo dyestuff of the structure

$$Q{-}(Z)_n$$

wherein Q is a residue of an azo dyestuff containing at least one aromatic residue which may contain one or more substituents selected from the group consisting of sulfonic acid, carboxylic acid, sulfonic acid amide, alkyl, alkoxy, sulfonyl alkyl, aryl, nitro and hydroxy or a halogen atom which may be fluorine, chlorine or bromine, n is a whole number from 1 to 2 and Z is a substituent directly attached to a carbon atom of an aromatic nucleus present in Q, said Z corresponding to the structure



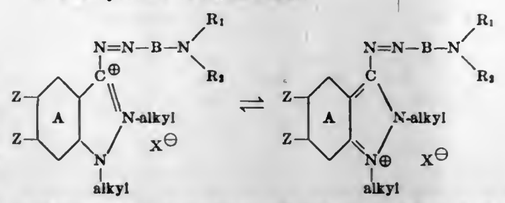
wherein X_1, X_2, X_3 and X_4 are each fluorine, chlorine or bromine, and s and t are integers 0 to 1.

3,360,508
MONOAZO DYESTUFFS OF THE INDAZOLE SERIES

Robert Frederic Michel Sureau, Enghien-les-Bains, Gilbert Victor Henri Krémer, Ermont, and Victor Marie Dupré, Louvres, France, assignors to Etablissements Kuhlmann, Paris, France

No Drawing. Filed Jan. 26, 1965, Ser. No. 428,198
Claims priority, application France, Nov. 29, 1960 845,310
6 Claims. (Cl. 260—163)

1. The dyestuffs of the formula:



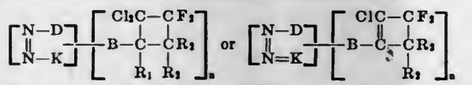
in which one Z attached to the benzene nucleus A is a nitro group and the other a hydrogen atom, each of the alkyl substituents is a member selected from the group consisting of methyl and ethyl groups, B represents a member selected from the group consisting of p.phenylene, methyl substituted p.phenylene, methoxy substituted p.phenylene, acetylamino substituted p-phenylene, methoxycarbonylamino substituted p-phenylene, ethoxycarbonylamino substituted p.phenylene, methylsulphonylamino substituted p.phenylene, and 1,4-naphthylene; R_1 and R_2 each represents a member selected from the group consisting of the hydrogen atom, the methyl, ethyl, hydroxyethyl, cyanoethyl and phenyl groups; and X represents a monovalent anion.

3,360,509
WATER-SOLUBLE AZO DYESTUFFS CONTAINING HALOGENATED CYCLOBUTYL- AND CYCLOBUTENYL-CARBONYLAMINO GROUPS

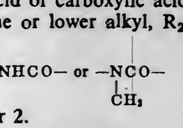
Otto Scherer, Bad Soden, Taunus, and Klaus Uhl, Hofheim, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Feb. 19, 1965, Ser. No. 434,122
Claims priority, application Germany, Feb. 28, 1964, F 42,146
6 Claims. (Cl. 260—163)

1. A water-soluble azo-dyestuff of the formula



in which D is a benzene, azobenzene or naphthalene diazo component, K is a hydroxybenzene, hydroxynaphthalene, pyrazolone, barbituric acid or acetoacetylaminobenzene coupling component, at least one of D and K having at least one sulfonic acid or carboxylic acid substituent, R_1 is hydrogen, chlorine or lower alkyl, R_2 is hydrogen or lower alkyl, B is a



bridge, and n is 1 or 2.

3,360,510
METHYLATED POLYSACCHARIDE AND METHOD OF MAKING

Alexander Farkas, 425 NE. 173rd St., North Miami Beach, Fla. 33162

No Drawing. Filed Mar. 17, 1966, Ser. No. 535,042
1 Claim. (Cl. 260—209)

A methylated polysaccharide having the formula

$$[(\text{glucose})_m\cdot(\text{mannose})_m\cdot(\text{glucuronic acid residue})_n\cdot(Ca)_p(CH_3)_q\cdot YH_2O]_x$$

where m is an integer providing from about 30 to about 37%, by weight, of the unit; n is an integer providing from about 0.9 to about 1.7% of the unit; p is an integer which provides from about 11.5 to about 14.2% of the unit; q is an integer providing from about 2 to about 20% of the unit; Y is an integer providing 0 to about 8.5% of the unit, and x is an integer providing a molecular weight of from about 430,000 to about 620,000.

3,360,511
ALOE POLYSACCHARIDE COMPOSITION AND ITS PREPARATION

Alexander Farkas, 425 NE. 173rd St., North Miami Beach, Fla. 33162

No Drawing. Filed Nov. 22, 1966, Ser. No. 596,102

7 Claims. (Cl. 260—209)

1. An aloe polysaccharide-containing composition comprising, in addition to the aloe polysaccharide, a gum selected from the group consisting of guar gum and locust bean gum intimately mixed with said aloe polysaccharide.

3,360,512
FORMALDEHYDE DERIVATIVES OF STARCH

Jerry W. Moore, Clinton, Iowa, assignor to Standard Brands Incorporated, New York, N.Y., a corporation of Delaware

No Drawing. Filed June 1, 1964, Ser. No. 371,841

10 Claims. (Cl. 260—233.3)

1. In the process of preparing formaldehyde derivatives of starch by reacting formaldehyde and starch, the improvement which comprises reacting said formaldehyde and starch at a temperature below the gelatinization temperature of the starch in an aqueous slurry having a filtrate acidity of 9–11.

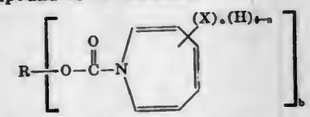
3,360,513
CERTAIN ESTERS OF AZEPINE CARBOXYLIC ACIDS AND THEIR PREPARATION

Robert J. Cotter, Bernardsville, NJ., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed June 5, 1963, Ser. No. 285,595

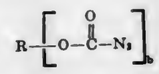
11 Claims. (Cl. 260—239)

1. A compound of the formula:



wherein R is a cyclic hydrocarbon radical of from 6 to 30 carbon atoms inclusive; X represents a member selected from the group consisting of halogen, alkyl of 1 to 12 carbon atoms, phenyl, tolyl, benzyl, lower alkoxy and lower alkylthio, n is a digit having a value of 0 to 3 and b is an integer having the value of 1 to 3.

9. The method of producing N-azepinyl carboxylates by thermolysis which comprises reacting an azidoformate of the formula:



wherein R has a valence equal to b and represents a member selected from the group consisting of alkyl, alkanediyl, alkanetriyl, cycloalkyl, cycloalkanediyl, cycloalkanetriyl, alkaryl, aryl, aralkyl, arylene and aromatic hydrocarbon triyls of from 1 to 30 carbon atoms, inclusive; and b is an integer having a value of from 1 to 3 inclusive with an aromatic hydrocarbon containing at least one benzenoid nucleus of from 6 to 30 carbon atoms inclusive at a temperature of from 50° C. to 300° C.

3,360,514
PROCESS FOR PREPARING EPSILON-CAPROLACTAMS

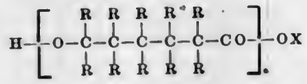
Francis Weiss, Pierre-Benite, and Arsene Isard, Saint-Genis-Laval, France, assignors to Ugine Kuhlmann, Paris, France, a corporation of France

No Drawing. Filed Aug. 17, 1965, Ser. No. 480,484

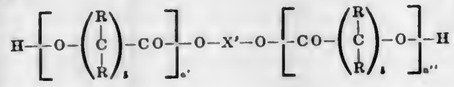
Claims priority, application France, August 28, 1964, 986,565

6 Claims. (Cl. 260—239.3)

1. A process for preparation of epsilon-caprolactams comprising subjecting to the action of an aqueous solution of a member selected from the group consisting of ammonia and a primary aliphatic amine, a polyester of an epsilon-hydroxycaproic acid selected from the group consisting of



and



in which R is a member selected from the group consisting of hydrogen, a lower alkyl radical, and a cycloalkyl radical,

X is a member selected from the group consisting of hydrogen, a lower alkyl radical and a hydroxyalkyl radical,

X' is an alkylene radical containing 2–6 atoms of carbon, and n and the sum of $(n'+n'')$ are a number from about 4 to about 40.

said subjecting being carried out under autogenous pressure and at a temperature of about 250° C.–475° C., the amount of said aqueous solution being such that the polyester concentration of the solution and itself is between about 5% and 40% by weight (and extracting the resulting epsilon-caprolactam by a solvent therefor.

3,360,515
7-(CONDENSED N-CONTAINING HETEROCYCLIC CARBONAMIDO) CEPHALOSPORANIC ACID AND DERIVATIVES THEREOF

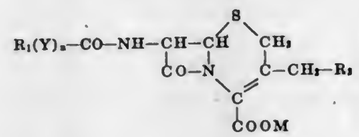
Tadayoshi Takano, Hirakata, Kiyoshi Hattori, Ibaragi, and Teiji Kishimoto, Kyoto, Japan, assignors to Fujisawa Pharmaceutical Co., Ltd., Osaka, Japan, a Japanese company

No Drawing. Filed July 20, 1965, Ser. No. 473,482

Claims priority, application Japan, July 24, 1964, 39/42,267

7 Claims. (Cl. 260—243)

1. A compound having the general formula:



(I)

wherein R_1 is an indazole, benzotriazole, quinoxaline group or a substituted indazole, substituted benzotriazole or substituted quinoxaline group in which the substituent is halogen, nitro or lower alkyl; R_2 is an acetoxy, pyridinium, azido or guanidinium group; n is an integer from 0 to 1; Y is a lower alkylene group; and M is hydrogen, an alkali metal, a cyclohexylammonium group or an anionic charge.

3,360,516
N-[4-(2,6-DIMETHYLPYRIMIDYL)]3,5-DINITROBENZAMIDE

Guy H. Harris, Concord, Calif., Patricia I. Traylor, Cambridge, Mass., and Bryant C. Fischback, Walnut Creek, Calif., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Continuation of application Ser. No. 770,579, Oct. 30, 1958, now Patent No. 3,152,136, dated Oct. 6, 1964. This application June 23, 1961, Ser. No. 119,023

1 Claim. (Cl. 260—256.4)

N-[4-(2,6-dimethylpyrimidyl)] 3,5-dinitrobenzamide.

3,360,517
3-AMINO-6-SUBSTITUTED-PYRAZINOYL-GUANIDINES

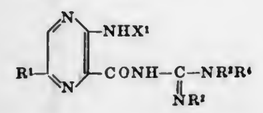
Edward J. Cragoe, Jr., Lansdale, Pa., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Mar. 16, 1966, Ser. No. 534,638

The portion of the term of the patent subsequent to Apr. 11, 1984, has been disclaimed

14 Claims. (Cl. 260—250)

1. A (3 - amino - 6 - substituted-pyrazinoyl)guanidine selected from the group consisting of a product having the general structural formula



and pharmaceutically acceptable salts thereof wherein

R^1 is selected from the group consisting of lower alkyl, lower alicyclic, phenyl, halo-phenyl, phenyl-lower alkyl, lower alkoxy, lower alkylthio, lower alkyl-sulfonyl, phenyl-lower alkylthio, phenyl-lower alkyl-sulfonyl, amino, lower alkoxyamino, lower alkylamino, lower dialkylamino,

wherein n is a numeral from 4 to 7, (phenyl-lower alkyl)amino, and anilino;

R^2 is selected from the group consisting of hydrogen and lower alkyl;

R^3 is selected from the group consisting of hydrogen, lower alkyl, hydroxy-lower alkyl, phenyl, phenyl-lower alkyl;

R^4 is selected from the group consisting of hydrogen and lower alkyl;

R^2 and R^3 when each is a lower alkyl, they can be joined together to form, with the nitrogen atoms to which they are attached, an imidazolinyl radical; and

R^3 and R^4 when each is a lower alkyl, they can be joined together to form, with the nitrogen atom to which they are attached, one of the cyclic structures 1-pyrrolidinyl, piperidino, 1-piperazinyl, 4-lower alkyl-1-piperazinyl and morpholino;

X^1 is selected from the group consisting of hydrogen and lower alkanoyl.

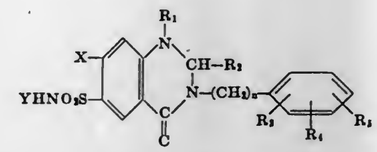
3,360,518
TETRAHYDRO-HALO-SULFAMYL QUINAZOLINONES

Bola Vithal Shetty, Rochester, N.Y., assignor to Wallace & Tiernan Inc., Belleville, N.J., a corporation of Delaware

No Drawing. Filed Jan. 3, 1966, Ser. No. 517,995

11 Claims. (Cl. 260—256.5)

1. A compound of the formula:



in which X is halogen or trifluoromethyl, Y is hydrogen or lower alkyl, R_1 is hydrogen or lower alkyl, R_2 is hydrogen, lower alkyl, thio loweralkyl, halogen substituted lower alkyl, aralkyl in which the aryl is phenyl or naphthyl and the alkyl is a lower alkyl, or substituted aralkyl in which the aryl is phenyl or naphthyl, the alkyl is a lower alkyl and the aryl substituent is hydroxy, lower alkoxy, lower alkyl, halogen, trifluoromethyl, sulfamyl or amino, R_3 is hydrogen, lower alkyl, hydroxy, lower alkoxy, NH_2, sulfamyl, halogen, or trifluoromethyl, R_4 and R_5 are any of the members of R_3, and n is an integer from 0–4.

3,360,519
PROCESS FOR THE PREPARATION OF 3-CYCLOHEXYL-5,6-TRIMETHYLENEURACIL

John C. Watts, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Sept. 23, 1964, Ser. No. 398,748

2 Claims. (Cl. 260—260)

1. A process for preparing 3-cyclohexyl-5,6-trimethyleneuracil which comprises the steps of:

(a) heating a dialkyl adipate selected from the group consisting of dimethyl, diethyl, and methyl ethyl adipate with an equimolar amount of an agent selected from the group consisting of sodium and sodium alkoxide in the presence of a solvent to form a reaction mixture in which ring closure of said dialkyl adipate is effected;

(b) converting said reaction mixture to an acidic condition by treatment with a non-aqueous acid;

(c) heating the reaction mixture resulting from (b) with an amount of cyclohexylurea equivalent to about 1 mole of cyclohexylurea for each mole of dialkyl adipate charged to step (a) at a temperature of from 70 to 90° C. and under a pressure to distill off water of reaction, for a period of time to substantially drive off the theoretical amount of water of reaction;

(d) heating the reaction mass resulting from step (c) with an amount of a strong base equivalent to 1.0 to 1.5 moles of said base for each mole of dialkyl adipate charged to step (a) at a temperature of from 60 to 80° C. for 1 to 3 hours to form a salt of 3-cyclohexyl-5,6-trimethyleneuracil;

(e) treating the reaction mixture resulting from step (d) with an acid to convert said salt to 3-cyclohexyl-5,6-trimethyleneuracil; and

(f) recovering said 3-cyclohexyl-5,6-trimethyleneuracil from the reaction mixture of step (e).

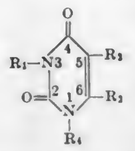
3,360,520
1,3,5,6-TETRASUBSTITUTED URACILS

Raymond W. Luckenbaugh, Wilmington, Del., and Edward J. Soboczenski, Chadds Ford, Pa., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Original application May 1, 1964, Ser. No. 364,309, now Patent No. 3,235,363, dated Feb. 15, 1966. Divided and this application Dec. 27, 1965, Ser. No. 516,682

7 Claims. (Cl. 260—260)

1. A compound selected from the group consisting of



where

R_1 is alkyl of 1 through 10 carbon atoms,
phenyl,
substituted phenyl wherein said substituent is chlorine, bromine, fluorine, trifluoromethyl, or alkyl of 1 through 5 carbon atoms,
cycloalkyl of 3 through 12 carbon atoms,
substituted cycloalkyl of 3 through 12 carbon atoms, wherein said substituent is alkyl of 1 through 4 carbon atoms or methoxy,
cycloalkenyl of 4 through 12 carbon atoms,
substituted cycloalkenyl of 4 through 12 carbon atoms wherein said substituent is alkyl of 1 through 4 carbon atoms or methoxy;

R_2 is fluorine, chlorine, bromine, iodine, or methyl;

R_3 is methyl or ethyl;

R_4 is trichloromethylthio, or



wherein

R_5 is
hydrogen,
alkyl of 1 through 9 carbon atoms,
chloroalkyl of 1 through 4 carbon atoms,
polychloroalkyl of 1 through 4 carbon atoms,
phenyl,
chlorophenyl of 1 through 3 chlorine atoms,
benzyl,
phenoxymethyl, or
chlorophenoxymethyl of 1 through 3 chlorine atoms;

with the provision that R_2 and R_3 by appropriate loss of hydrogen atoms from alkyl groups can become part of a $-(CH_2)_n-$ group to form a ring wherein n is 3.

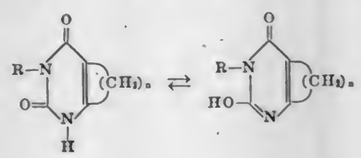
3,360,521
3-SUBSTITUTED-5,6-ALKYLENEURACILS

Edward J. Soboczenski, Chadds Ford, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Original application Oct. 22, 1962, Ser. No. 232,311, now Patent No. 3,235,360, dated Feb. 15, 1966. Divided and this application Dec. 27, 1965, Ser. No. 516,686

6 Claims. (Cl. 260—260)

1. A compound selected from the group consisting of:
(a) Compounds of the formula



where:

R is cycloalkyl containing 3 through 10 carbon atoms, substituted cycloalkyl containing 3 through 10 carbon atoms wherein said substituent is selected from the group consisting of alkyl containing 1–4 carbon atoms, chlorine, bromine, and methoxy; cycloalkenyl containing 4 through 10 carbon atoms; substituted cycloalkenyl containing 4 through 10 carbon atoms wherein said substituent is selected from the group consisting of alkyl containing 1–4 carbon atoms, chlorine, bromine, and methoxy, or



wherein:

R_1 is methyl or ethyl,

R_2 is alkyl containing 1 through 5 carbons atoms, and

R_3 is hydrogen or methyl, and

n is 3, 4, or 5; and

(b) the sodium, potassium, lithium, and alkyl quaternary ammonium salts of the compounds of (a).

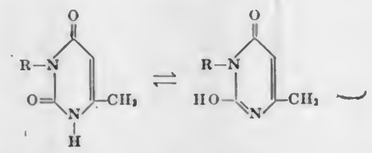
3,360,522
3-BICYCLOALKYL-6-METHYLURACIL

Harvey M. Loux, Hockessin, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington Del., a corporation of Delaware

No Drawing. Original application Oct. 29, 1962, Ser. No. 233,952, now Patent No. 3,235,361, dated Feb. 15, 1966. Divided and this application Dec. 27, 1965, Ser. No. 516,779

4 Claims. (Cl. 260—260)

1. A compound selected from the group consisting of (a) compounds of the formula



where:

R is selected from the the group consisting of bicycloalkyl of 7 through 12 carbon atoms, bicycloalkenyl of 7 through 12 carbon atoms, bicycloalkyl alkyl of 8 through 13 carbon atoms and bicycloalkenyl alkyl of 8 through 13 carbon atoms; and

(b) the sodium, potassium, lithium and lower alkyl quaternary ammonium salts of the compounds in (a).

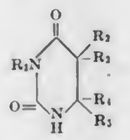
3,360,523
3,5,6-SUBSTITUTED HYDROURACILS

Harvey M. Loux, Hockessin, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Original application June 17, 1964, Ser. No. 375,958, now Patent No. 3,322,526, dated May 30, 1967. Divided and this application Mar. 30, 1967, Ser. No. 626,928

9 Claims. (Cl. 260—260)

1. A compound selected from
(a) compounds of the formula



wherein

R_1 is selected from the group consisting of alkyl of 3 through 6 carbon atoms, cycloalkyl of 3 through 12 carbon atoms, optionally substituted with a substituent selected from the group consisting of alkyl of 1 through 4 carbon atoms, methoxy, chlorine, and bromine, cycloalkyl of 4 through 13 carbon atoms, optionally substituted with a substituent selected from the group consisting of alkyl of 1 through 4 carbon atoms, methoxy, chlorine, and bromine;

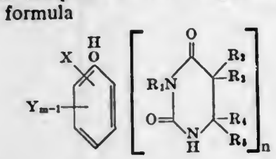
R_2 is selected from the group consisting of chlorine, bromine, fluorine, nitro, methyl, ethyl, hydroxymethyl, methoxymethyl, ethoxymethyl, methoxy, and hydrogen;

R_3 is selected from the group consisting of chlorine and bromine;

R_4 is selected from the group consisting of alkoxy of 1 through 6 carbon atoms, and haloalkoxy of 1 through 6 carbon atoms; and

R_5 is selected from the group consisting of methyl and ethyl; and

(b) phenol complexes of the compounds of (a) having the formula



wherein

R_1, R_2, R_3, R_4, and R_5 are as defined above,

X is selected from the group consisting of hydrogen, chlorine, bromine, nitro, alkyl of 1 through 3 carbon atoms, and alkoxy of 1 through 3 carbon atoms,

Y is selected from the group consisting of chlorine and alkyl of 1 through 3 carbon atoms,

m is a whole number 1 through 5, and

n is selected from the group consisting of 1 and 2.

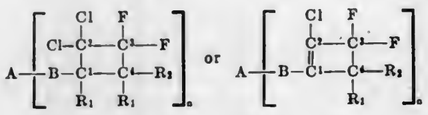
3,360,524
WATER-SOLUBLE DYESTUFFS CONTAINING HALOGENATED CYCLOBUTENE OR CYCLOBUTANE CARBOXAMIDE GROUPS

Otto Scherer, Bad Soden, Taunus, and Klaus Uhl, Hofheim, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Feb. 26, 1965, Ser. No. 435,670 Claims priority, application Germany, Feb. 28, 1964, F 42,148

7 Claims. (Cl. 260—277)

1. A water-soluble dyestuff of the formula



wherein A is a water-soluble anthraquinone-, phthalocyanine-, perylene tetracarboxylic acid amide, benzacridone or naphthothioxanthene dyestuff radical, B is —NHCO— or



R_1 is hydrogen, chlorine or lower alkyl, R_2 is hydrogen or lower alkyl, and n is 1 or 2.

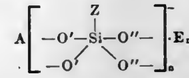
3,360,525
PENTACOORDINATE SILICON COMPLEXES II

Cecil L. Frye, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

No Drawing. Filed Nov. 16, 1964, Ser. No. 411,598

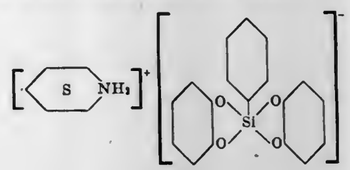
48 Claims. (Cl. 260—294.7)

1. A pentacoordinate silicon complex having the general formula



wherein Z is a monovalent radical attached to the silicon atom via a silicon-carbon bond, the O′ oxygen atoms are attached to carbon atoms of an aromatic ring which are ortho to each other, the O″ oxygen atoms are attached to carbon atoms of an aromatic ring which are ortho to each other, A is a cation formed from a base, n is an integer not greater than the valence of A, E is unprotonated amine when A is formed from an amine and m is from zero to an integer.

12. The pentacoordinate silicon complex



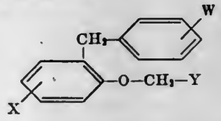
3,360,526
HETEROCYCLICAMINO METHYLENE ETHERS OF BENZYLPHENOLS

William F. Minor, Fayetteville, N.Y., assignor to Bristol-Myers Company, New York, N.Y., a corporation of Delaware

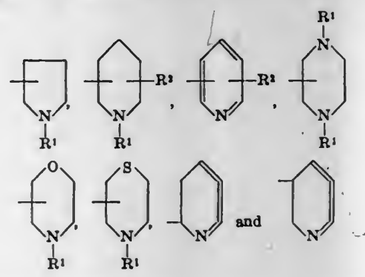
No Drawing. Filed Dec. 29, 1964, Ser. No. 422,017

9 Claims. (Cl. 260—294.7)

1. A member selected from the group consisting of compounds of the formula



wherein X and W are each a member selected from the group consisting of hydrogen, halogen, (lower)alkoxy, (lower)alkyl and trifluoromethyl and Y is a member selected from the group consisting of radicals of the formula



in which R^1 represents a member selected from the group consisting of hydrogen, (lower)alkyl and phenyl (lower) alkyl and R^2 represents a member selected from the group consisting of hydrogen and methyl; and nontoxic acid addition and quaternary salts thereof.

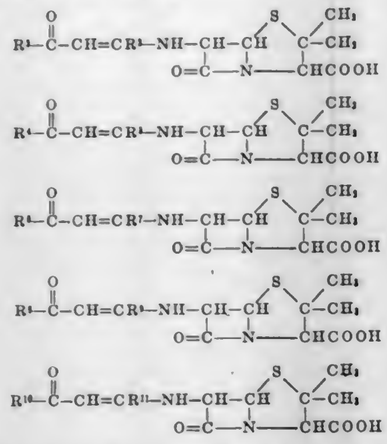
4. 3 - (2 - benzyl - 4 - chlorophenoxymethyl) - 1 - methylpiperidine.

3,360,527
VINYLPENICILLINS

Takayuki Naito, Susumu Nakagawa, and Jun Okumura, Tokyo, Japan, assignors to Bristol-Banyu Research Institute, Ltd., Tokyo, Japan, a corporation of Japan

No Drawing. Filed May 3, 1966, Ser. No. 547,169
5 Claims. (Cl. 260—306.7)

1. A member selected from the group consisting of the compounds of the formulae



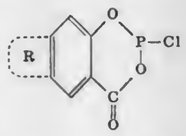
and pharmaceutically acceptable salts thereof wherein R^2 represents (lower)alkyl; R^3 represents a member selected from the group consisting of hydrogen and (lower)alkyl; R^4 represents halo(lower) alkyl; R^5 represents a member selected from the group consisting of hydrogen, (lower) alkyl, thienyl and furyl; R^6 represents carboalkoxy; R^7 represents a member selected from the group consisting of hydrogen and (lower)alkyl; R^8 represents a member selected from the group consisting of phenyl, o-chlorophenyl, p-chlorophenyl, o-bromophenyl, p-nitrophenyl, p-methoxyphenyl, benzyl and phenoxyethyl; R^9 represents a member selected from the group consisting of hydrogen and (lower)alkyl; R^{10} represents a member selected from the group consisting of thienyl and furyl and R^{11} represents a member selected from the group consisting of hydrogen and (lower)alkyl.

3,360,528
2-CHLORO-4H-1,3,2-DIOXAPHOSPHORIN-4-ONES AND PROCESS FOR PREPARING THEM

Joachim Ribka, Offenbach am Main, Germany, assignor to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed July 13, 1965, Ser. No. 471,728
Claims priority, application Germany, July 16, 1964, F 43,452; Jan. 16, 1965, F 44,979; June 2, 1965, F 46,215; June 19, 1965, F 46,383
6 Claims. (Cl. 260—315)

1. A 2-chloro-4H-1,3,2-dioxaphosphorin-4-one having the formula



wherein R taken together with the annulated benzene nucleus represents a radical selected from the group consisting of naphthalene, 5,6,7,8-tetrahydronaphthalene, 6-methoxy-naphthalene, 6-bromo-naphthalene, anthracene, carbazole-(2,3), indolo-(3',2'-7,8)-naphthalene-(2,3), and diphenyleneoxide-(3,2).

3,360,529
GUANIDINOALKYLBENZODIOXAN DERIVATIVES

John Nicholson Gardner, Bloomfield, N.J., assignor to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Jan. 15, 1963, Ser. No. 251,471
Claims priority, application Great Britain, Jan. 29, 1962, 3,340/62
6 Claims. (Cl. 260—340.3)

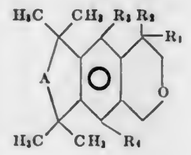
1. A pharmaceutically acceptable, nontoxic acid addition salt of 2-guanidinomethyl-1:4-benzodioxan.

3,360,530
TRICYCLIC ISOCHROMANS AND PROCESSES FOR MAKING SAME

Lambertus Gerke Heeringa and Muus Gerrit Jan Beets, Hilversum, Netherlands, assignors to International Flavors & Fragrances Inc., New York, N.Y., a corporation of New York

Filed June 20, 1963, Ser. No. 289,261
Claims priority, application Great Britain, July 23, 1962, 28,221/62; Feb. 18, 1963, 6,412/63
5 Claims. (Cl. 260—345.2)

1. A new tricyclic isochroman with musk odor having the structure (I):



in which substituents R_1 and R_2 are selected from the group consisting of methyl and hydrogen, and where substituents R_3 and R_4 are selected from the group consisting of methyl and hydrogen, and where one of said substituents R_3 and R_4 is methyl, the other is hydrogen; and A is selected from the group consisting of methylene, ethylene, ethylidene, 1,2-propylene and 2,3-butylene.

3,360,531
IN SITU EPOXIDATION PROCESS

William H. French, St. Paul, Minn., assignor to Ashland Oil & Refining Company, Ashland, Ky., a corporation of Kentucky

Filed Oct. 6, 1964, Ser. No. 401,921
15 Claims. (Cl. 260—348.5)

1. In a process for epoxidizing an epoxidizable compound characteristically possessing the group:

$$>C=C<$$

wherein said epoxidizable compound is epoxidized with peracetic acid and wherein said peracetic acid is formed in situ by the reaction of aqueous hydrogen peroxide with acetic acid in the presence of a liquid acid catalyst selected from the group consisting of sulfuric acid and lower alkyl sulfonic acids, the improvement which comprises the steps of:

(a) forming a first mixture of said epoxidizable compound and acetic acid, and

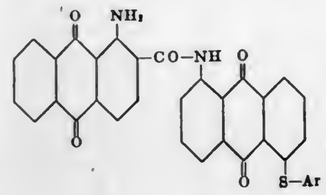
(b) then slowly adding said aqueous hydrogen peroxide having a hydrogen peroxide concentration of from 60 to 90% and said acid catalyst to said first mixture at an epoxidation temperature, said peroxide and said catalyst being added over a period of at least 30 minutes while agitating said first mixture.

3,360,532
N-(S'-ARYLTHIO-1'-ANTHRAQUINONYL)-1-AMINO-2-ANTHRAQUINONE CARBOXAMIDE

Hans Altermatt, Reinach, Basel-Land, Switzerland, assignor to Ciba Limited, Basel, Switzerland, a Swiss company

No Drawing. Filed Sept. 1, 1964, Ser. No. 393,764
Claims priority, application Switzerland, Sept. 20, 1963, 11,642/63
3 Claims. (Cl. 260—368)

1. An anthraquinone dyestuff of the formula



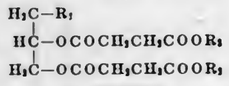
in which Ar represents a member selected from the group consisting of phenyl, halogen phenyl, methyl phenyl, trifluoromethylphenyl, diphenyl and naphthyl.

3,360,533
PROCESS FOR THE IMPROVED WINTERIZATION OF OIL

James C. Wootton, Springfield Township, Hamilton County, and Fredric J. Baur, Cincinnati, Ohio, assignors to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

No Drawing. Original application June 17, 1963, Ser. No. 288,438, now Patent No. 3,290,340, dated Dec. 6, 1966. Divided and this application May 17, 1966, Ser. No. 550,635
4 Claims. (Cl. 260—428)

1. In the process of winterizing oil comprising the steps of chilling a liquid oil to a temperature substantially below 70° F., permitting the chilled oil to remain at that temperature until crystallization equilibrium has been obtained, and separating the resultant mixture of crystals and oil to obtain a crystal fraction and a liquid oil fraction, the improvement which consists of adding to the oil a composition of matter having the formula



wherein R_1 is an alkanoyloxy group containing from 12 to 20 carbon atoms, and R_2 and R_3 are alkyl groups containing from one to three carbon atoms in the molecule in an amount of from about 0.05 to about 1.0% by weight of oil to be winterized.

3,360,534
METHOD OF PRODUCING A GUANYL-O-ALKYLISOUREA SALT

Keijiro Odo, Shibuya-ku, Tokyo, and Eiichi Ichikawa, Kohoku-ku, Yokohama, Japan, assignors to Nippon Carbide Kogyo Kabushiki Kaisha, Tokyo, Japan, a company of Japan

No Drawing. Filed Mar. 24, 1964, Ser. No. 354,459
Claims priority, application Japan, Apr. 1, 1963, 38/16,153
11 Claims. (Cl. 260—429.9)

1. A method of producing a guanyl-O-alkylisourea salt which comprises reacting dicyandiamide with a lower aliphatic alcohol and a zinc salt selected from the group consisting of zinc nitrate, sulfate, bromide, chloride, acetate an propionate, to form a guanyl-O-alkylisourea zinc complex salt and then subjecting the said complex salt to hydrolysis to form a guanyl-O-alkylisourea salt.

3,360,535
AMMONIATED MERCURY SALICYLATE AND PREPARATION THEREOF

Alfred Halpern, Great Neck, Mortimer D. Sackler, New York, and Raymond R. Sackler, Roslyn, N.Y., assignors of sixty percent to Gray Pharmaceutical Co., Yonkers, N.Y., a copartnership and forty percent to Synergistics, Inc., New York, N.Y., a corporation of New York

Filed July 22, 1964, Ser. No. 384,340
11 Claims. (Cl. 260—434)

11. The method of preparing metallic salicylate basic salts, characterized by reacting ammonia with mercury salicylate, or reacting ammoniated mercury with salicylic acid or sodium salicylate, in an inert solvent, and recovering the metallic salicylate salt as ammoniated mercury salicylate.

3,360,536
METHOD OF PREPARING CUPROUS ACYLATES AND CUPROUS AMMONIUM ACYLATES

James E. McKeon and Paul S. Starcher, Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Dec. 27, 1963, Ser. No. 334,007
3 Claims. (Cl. 260—438.1)

1. A process for the manufacture of cuprous acylates and/or cuprous ammonium acylates which comprises contacting:

(1) a cupric salt of the group consisting of cupric acylates, cupric ammonium acylates, and mixtures thereof, the acylate moiety of said cupric salt represents the anion of a monocarboxylic acid which has an ionization constant of less than 5×10^{-3} as determined in water at 25° C.

(2) an olefinically unsaturated compound,

(3) a palladium (II) compound of the group consisting of palladium (II) salts which have an ionization constant not greater than 5×10^{-3} as determined in water at 25° C. and complexes of palladium (II), and

(4) a saturated aliphatic monocarboxylic acid having a melting point less than 150° C. and a boiling point of less than 250° C.;

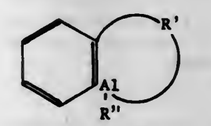
the concentration of said palladium (II) compound being from about 0.00001 to about 1.5 weight percent calculated as palladium (II) based on the total weight of the liquids employed; at an elevated temperature; and for a period of time sufficient to convert at least a portion of said cupric salt to the corresponding cuprous salt.

3,360,537
1-ALUMINUM INDANES AND 1-ALUMINUM TETRALINES AND THEIR MANUFACTURE

Roland Köster, Mulheim (Ruhr), Germany, assignor to Studiengesellschaft Kohle m.b.H., Mulheim (Ruhr), Germany

No Drawing. Filed May 13, 1963, Ser. No. 280,073
Claims priority, application Germany, May 16, 1962, St 19,251
11 Claims. (Cl. 260—448)

3. A heterocyclic bound compound of the formula



wherein R' represents a member selected from the group consisting of $—CH_2CH_2—$ and alkyl substituted derivatives thereof and $—CH_2CH_2CH_2—$ and alkyl substituted derivatives thereof, and R'' represents a hydrocarbon group.

3,360,538
FLUOROORGANO-SUBSTITUTED SILANES

Bruce A. Ashby, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

No Drawing. Filed Dec. 16, 1963, Ser. No. 330,607
6 Claims. (Cl. 260—448.2)

1. A silane having the formula

$$(Z)_a\overset{(R'')_b}{\underset{|}{Si}}(X)_c$$

where Z is $H(C_2F_4)_n$ $CHR—C(R)_2$, R is selected from the class consisting of hydrogen and a lower alkyl radical, n is an integer equal to from 1 to 3, inclusive, R'' is selected from the class consisting of hydrogen, monovalent hydrocarbon radicals, halogenated monovalent hydrocarbon radicals, and cyanoalkyl radicals, X is a halogen radical, a is an integer equal to from 1 to 4, inclusive, b is a whole number equal to from 0 to 3, inclusive, c is a whole number equal to from 0 to 3, inclusive, and the sum of a, b and c is equal to 4.

2. 3,3,4,4,5,5,6,6-octafluorohexyldimethylchlorosilane.

3,360,539
CHLORINATION OF AROMATIC ISOCYANATES

Joseph P. Henry, South Charleston, W. Va., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Apr. 12, 1963, Ser. No. 272,554
6 Claims. (Cl. 260—453)

1. In the process of chlorinating aromatic isocyanates selected from the group consisting of phenyl isocyanate, tolyl isocyanate, toluene diisocyanates, 4,4'-methylenediortho-tolylisocyanate, 2,4,4' - triisocyanatodiphenylether, toluene-2,4,6-triisocyanate, 1-methoxy - 2,4,6 - benzenetriisocyanate, meta-phenylenediisocyanate, 4,4'-biphenyldiisocyanate, 1,5 - naphthalenediisocyanate, diphenylmethane-p:p'-diisocyanate, stilbene diisocyanates, dixylylmethane diisocyanates, 2,2-bis-(4-isocyanatophenyl)propane, 2,2,1-tris(4-isocyanatophenyl)propane, diphenylmethane tetraisocyanates, trimethylbenzene triisocyanates, phenyltolylmethane triisocyanates, ditolylmethane triisocyanates, triphenylmethane triisocyanates, 3,3'-dimethyldiphenylene-4,4'-diisocyanate, 3,3'-dimethoxydiphenylene-4,4'-diisocyanate, diphenyl triisocyanates, and diphenylcyclohexane-p:p'-diisocyanate, the improvement which comprises contacting a quantity of said aromatic isocyanate maintained in the dark at a temperature of between —20° C. and 20° C. with a feed of chlorine and an added feed of anhydrous hydrogen chloride as the sole catalyst in sufficient amounts to initiate chlorination of said aromatic isocyanate.

3,360,540
PROCESS FOR THE MANUFACTURE OF CYANOACETIC ACID ESTERS

Kurt Sennewald and Alfred Hauser, Knapsack, near Cologne, and Winfried Lork, Friesheim, near Euskirchen, Germany, assignors to Knapsack Aktiengesellschaft, Knapsack, near Cologne, Germany, a corporation of Germany

No Drawing. Filed Apr. 12, 1965, Ser. No. 447.524
Claims priority, application Germany, May 8, 1964, K 52,894
8 Claims. (Cl. 260—464)

1. A process for the manufacture of cyanoacetic acid esters of the formula

$$CN—CH_2—COOR$$

which comprises reacting a halogenoacetic acid ester reactant of the formula

$$Hal\text{-}CH_2—COOR$$

wherein R is defined as hydrocarbyl or substituted hydrocarbyl having as substituent a member selected from the group consisting of a halo, alkoxy, cyano, nitro or amino and Hal is a chloro, bromo or iodo atom with a stoichiometric excess of hydrogen cyanide in the presence of an alkali metal alcoholate; effecting the reaction at a temperature of about 20–250° C. and a pressure of about 1–6 atmospheres; and recovering the resulting reaction product.

3,360,541
MANUFACTURE OF ADIPONITRILE

Walter John Korchinsky, Lafayette, Ind., and Joseph Sikora, St. Hilaire, Quebec, and John Murray Earls Hill, St. Lambert, Quebec, Canada, assignors, by mesne assignments, to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Apr. 13, 1965, Ser. No. 447,874
Claims priority, application Canada, May 5, 1964, 902,100
9 Claims. (Cl. 260—465.2)

1. A process for the manufacture of adiponitrile which comprises the steps of adjusting the pH of the aqueous component of crude adiponitrile product obtained by the dehydration of adipic acid in the presence of ammonia under vapor phase adiponitrile precursor dehydrating conditions to from 7.0 to 10.0 at 25° C.; separating the aqueous components and removing the water therefrom; contacting the residue from the aqueous layer with a dehydration catalyst in the presence of ammonia under liquid phase adiponitrile precursor dehydration conditions and recovering adiponitrile from the product.

3,360,542
TRIFLUOROMETHYL-AMINO-SULFENYL HALIDES

Engelbert Kühle, Cologne-Stammheim, and Erich Klauke, Cologne-Flittard, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Oct. 29, 1963, Ser. No. 319,691
Claims priority, application Germany, Dec. 10, 1962, F 38,508
4 Claims. (Cl. 260—470)

1. N-trifluoromethyl-N-phenyl-amino-sulphenyl halides of the formula

$$Ph—\underset{\underset{CF_3}{|}}{N}—S—X$$

wherein Ph is a member of the group consisting of a phenyl, a nitrophenyl, a halogenophenyl, an alkylphenyl, an alkoxyphenyl and a carbalkoxyphenyl radical and X is a member of the group consisting of chlorine and bromine.

3,360,543
REACTION PRODUCTS OF POLYCARBOXY POLYESTERS AND MONOCARBOXYLIC ACID ANHYDRIDES

Kenneth L. Hoy, St. Albans, W. Va., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed June 7, 1962, Ser. No. 200,661
26 Claims. (Cl. 260—475)

1. A reaction product of (1) a carboxy terminated polycarboxy polyester and (2) an anhydride of an aliphatic monocarboxylic acid having the formula:

$$R—\underset{\underset{O}{|}}{\underset{\underset{R—C=O}{|}}{C=O}}$$

wherein R is an aliphatic monovalent hydrocarbon radical; said polycarboxy polyester being produced by reaction of at least one polyol, containing 2 to about 4 hydroxyl groups, with an excess of at least one member selected from the group consisting of aliphatic hydrocarbon polycarboxylic acids, aliphatic hydrocarbon polycarboxylic acid anhydrides, aromatic hydrocarbon polycarboxylic acids, and aromatic hydrocarbon polycarboxylic acid anhydrides; said reaction product being carboxy terminated and containing within the same molecule anhydride groups and ester groups.

3,360,544
PROCESSES FOR PREPARING ALKYL HYDROXYALKYL FUMARATES

James C. Wygant, Creve Coeur, and Erhard J. Prill, St. Louis, Mo., assignors to Monsanto Company, a corporation of Delaware

No Drawing. Filed July 19, 1963, Ser. No. 296,387
9 Claims. (Cl. 260—485)

1. A process for preparing alkyl 2-hydroxyalkyl fumarates which comprises reacting an alkylene oxide selected from the group consisting of ethylene oxide and propylene oxide and an alkyl hydrogen fumarate where the alkyl group has no more than about 12 carbon atoms in the presence of an alkyl metal fumarate catalyst where the metal in the fumarate salt is selected from the group consisting of alkali metals and alkaline earth metals and where the catalyst is used in an amount equal to about 0.1 to 10 equivalent percent based on the alkyl hydrogen fumarate and the temperature is maintained between about 75° to 150° C. and stopping the reaction when the acid number of the reaction mixture is about 10 to 30 by stopping flow of alkylene oxide to the reaction mixture and permitting the reaction mixture to cool.

3,360,545
PROCESSES FOR PREPARING BIS(HYDROXYALKYL)FUMARATES

James C. Wygant, Creve Coeur, Mo., assignor to Monsanto Company, a corporation of Delaware

No Drawing. Filed Aug. 27, 1963, Ser. No. 304,961
16 Claims. (Cl. 260—485)

1. A process for preparing bis(2-hydroxyalkyl)fumarates which comprises reacting an 1,2-alkylene oxide which has no more than about five carbon atoms and fumaric acid suspended in an inert organic solvent in the presence of about one to ten weight equivalent percent of a basic catalyst selected from the group consisting of alkali metal hydroxides, carbonates and salts of organic carboxylic acids, alkaline earth metal hydroxides, carbonates and salts of organic carboxylic acids, phosphines having up to three alkyls attached to the phosphorus, phosphines having up to three phenyls attached to the phosphorus, monoalkyl amine, dialkyl amine, trialkylamine, aniline, N,N-dialkyl aniline, and pyridine, wherein the reaction temperature is maintained between about fifty and one hundred and twenty-five degrees centigrade and stopping the reaction when the acid number is about five to thirty.

3,360,546
PURIFICATION OF HYDROXYALKYL FUMARATE ESTERS

James C. Wygant, Creve Coeur, and Erhard J. Prill, Don E. Carter, and Richard R. Kucia, St. Louis, Mo., assignors to Monsanto Company, a corporation of Delaware

Filed Sept. 16, 1963, Ser. No. 309,152
12 Claims. (Cl. 260—485)

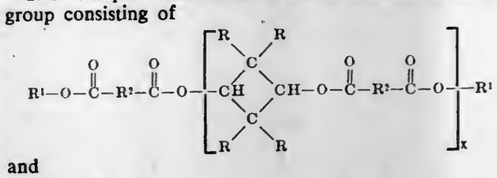
1. A process for purifying hydroxyalkyl fumarate diesters which comprises dissolving hydroxyalkyl fumarate diesters in which the hydroxyalkyl group has 2 to 4 carbon atoms with the hydroxy group in the 2-position in an inert organic solvent selected from the group consisting of aromatic hydrocarbons, chlorinated alkanes, lower dialkyl ketones, alcohols and ethers, the said solvent being further limited to having a water solubility of less than about fifteen weight percent, and washing the resulting solution with a basic aqueous solution having a pH from about eight to twelve until there has been a substantial purification of the said hydroxyalkyl fumarate diester, the base being selected from alkali metal and ammonium salts giving aqueous solutions of the specified pH.

3,360,547
POLYESTERS OF TETRAALKYL-CYCLOBUTANEDIOL

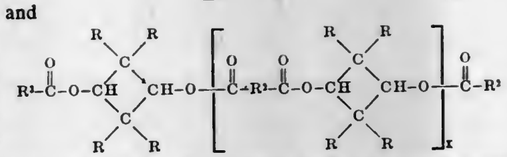
Earl W. Wilson and Charles W. Hequembourg, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Feb. 23, 1965, Ser. No. 434,684
5 Claims. (Cl. 260—485)

1. A complex ester of the structure selected from the group consisting of



and



wherein R^1 is an alkyl radical of from 1 to 20 carbon atoms, R^2 is an alkylene radical of from 4 to 10 carbon atoms, the substituents, R, are lower alkyl radicals, R^3 is an alkyl radical of 1 to 19 carbon atoms and x is an integer from 1 to 10.

3,360,548
PRODUCTION OF SATURATED ESTERS BY OXIDATION OF ALKENYL HALIDES OR ALKENYL ESTERS OF CARBOXYLIC ACIDS

Duncan Clark and Percy Hayden, Norton-on-Tees, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed July 25, 1966, Ser. No. 567,364
Claims priority, application Great Britain, Nov. 12, 1962, 46,621/62
15 Claims. (Cl. 260—491)

1. A process for preparing a product consisting essentially of saturated esters of compounds having the formula

$$\overset{OH}{\underset{|}{R—CH}}—\overset{OH}{\underset{|}{CH}}—CH(R')X$$

which comprises the step of reacting a compound having the structure $R.CH{=}CH.CH(R')X$ in which R is a monovalent radical selected from the group consisting of hydrogen, alkyl, aryl, alkaryl and aralkyl, R' is a monovalent radical selected from the group consisting of hydrogen and alkyl, and X is a monovalent radical selected from the group consisting of halogen and acyloxy, at a temperature of at most 200° C. with a solution containing as the only reactive components a carboxylic acid, a palladous salt, a cupric salt, a metal halide selected from the group consisting of chlorides, bromides and iodides and less than 25% by weight of water, the halide ion concentration being in the range 0.05 to 1.0 molar so as to produce said saturated esters.

3,360,549
ORNITHINE ASPARTATE AND A PROCESS FOR ITS PREPARATION

Hirofuto Marumo and Kunio Saito, Shizuoka-ken, Japan, assignors to Kyowa Hakko Co., Ltd., Tokyo, Japan, a corporation of Japan

No Drawing. Filed Sept. 13, 1963, Ser. No. 308,628
Claims priority, application Japan, Sept. 17, 1962, 37/39,972
3 Claims. (Cl. 260—501.11)

1. Crystalline ornithine aspartate.

3. A process for the preparation of crystalline ornithine aspartate which comprises preparing an aqueous solution of free ornithine having a concentration of about 200 grams per liter, adding to the said solution and dissolving therein crystalline aspartic acid until the pH of the said solution is about 7, concentrating the said solution to a concentration of about 50% aqueous ornithine aspartate, slowly adding to the aqueous solution a member selected from the group consisting of methanol and ethanol, cooling the resultant solution and isolating therefrom crystals of ornithine aspartate monohydrate, heating the crystals at a temperature of about 105° C. for about 30 hours and recovering the resulting crystalline ornithine aspartate.

3,360,550

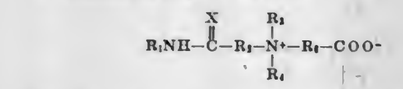
BETAINES

Frank M. Cowen, North Plainfield, N.J., and Gloria Bellis, New Rochelle, N.Y., assignors to American Cyanamid Company, New York, N.Y., a corporation of Maine

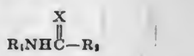
No Drawing. Original application Dec. 28, 1959, Ser. No. 862,087, now Patent No. 3,225,074, dated Dec. 21, 1965. Divided and this application Sept. 1, 1964, Ser. No. 398,143

3 Claims. (Cl. 260—501.13)

1. Betaines having the formula



where R_1 is an aliphatic hydrocarbon radical of from 10 to 20 carbon atoms selected from the group consisting of long chain saturated aliphatic and long chain alkenyl aliphatic radicals, R_2 and R_5 are alkylene radicals of from 1 to 12 carbon atoms, R_4 is a member of the group consisting of $-C_nH_{2n+1}$ in which n is a whole number from 1 to 10 and $-C_nH_{2n}$-OH in which n is a whole number from 1 to 10 and $-(C_2H_4.O)_xH$ in which x is a whole number from 2 to about 100 and R_3 is a member of the group consisting of R_4,



$-R_6-COOH$ and $-R_6COOMe$ in which R_1, R_2, R_4 and R_6 are as defined above and Me is a monovalent salt-forming radical, and X is selected from the group consisting of O and S.

3,360,551

CARBOXYLATION OF GRIGNARD REAGENTS IN THE PRESENCE OF LIQUID CO_2

David Regenbogen, Fair Lawn, N.J., assignor to M & T Chemicals Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Sept. 3, 1963, Ser. No. 306,279

5 Claims. (Cl. 260—515)

1. The method of preparing a carboxylated Grignard reagent which comprises reacting said Grignard reagent with carbon dioxide in a reaction mixture; maintaining a body of liquid carbon dioxide in contact with said reaction mixture during said reaction; volatilizing carbon dioxide from said body of liquid carbon dioxide into said reaction mixture thereby extracting heat from said reaction mixture and maintaining said reaction mixture at controlled temperature; and withdrawing product carboxylated Grignard reagent from said reaction mixture.

3,360,552

PROCESS FOR THE PREPARATION OF ETHYLENEDIAMINE BIS(o-HYDROXYPHENYLACETIC ACID) AND THE MONO-AMIDE THEREOF

Philip G. McCracken, Mobile, Ala., assignor to Geigy Chemical Corporation, Greenburgh, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 27, 1963, Ser. No. 326,381

5 Claims. (Cl. 260—519)

1. In a process of hydrolyzing ethylenediamine bis(o-hydroxyphenylacetonitrile) to a mixture of ethylenediamine bis(o-hydroxyphenylacetic acid) and ethylenediamine bis(o-hydroxyphenylacetic acid)-monoamide in the presence of hydrohalic acid, the improvement which consists in using hydrochloric acid of a concentration of over 40%.

3,360,553

PROCESS FOR PRODUCING HYDROXYBENZOIC ACID

Ryoichi Wakasa, Atsuo Nakanishi, and Naoya Kominami, Tokyo, Japan, assignors to Asahi Kasei Kogyo Kabushiki Kaisha, Osaka, Japan, a corporation of Japan

No Drawing. Filed July 16, 1963, Ser. No. 295,512

Claims priority, application Japan, July 19, 1962, 37/29,747

6 Claims. (Cl. 260—521)

1. A process for producing hydroxybenzoic acid which comprises introducing molecular oxygen containing gas into cresol melted at a temperature more than 230° C. in the presence of an excess amount of caustic alkali, and at least one catalyst member selected from the group consisting of metallic copper, copper oxides, and copper oxides-producing compounds at the reaction condition.

3,360,554

PROCESS FOR CRYSTALLIZING OUT L-GLUTAMIC ACID

Sotoo Yamamoto and Masatoshi Nakayama, Nobeokashi, Miyazaki-ken, and Shoichi Miyamoto, Itabashi-ku, Tokyo, Japan, assignors to Asahi Kasei Kogyo Kabushiki Kaisha, Osaka, Japan

No Drawing. Filed Dec. 18, 1963, Ser. No. 331,392

4 Claims. (Cl. 260—527)

1. A process for the production of pure L-glutamic acid crystals, comprising the steps of:

(a) preparing an L-glutamic acid solution having a pH of 3.2 and being free from insolubles;

(b) continually maintaining the temperature of the solution of step (a) between about 5° C. and about 60° C.;

(c) mixing into the solution of step (a) L-glutamic acid seed crystals of the trigonal pyramid type;

(d) preparing a concentrated L-glutamic acid solution having about pH 7 and being free from insolubles;

(e) adding, at a rate of about 0.1 liter per hour, the concentrated solution of step (d) to the mixture of step (c), while constantly agitating the mixture of step (c) and while maintaining the pH of the mixture of step (c) at 3.2, whereby crystalline precipitation occurs according to the crystalline structure of the seed crystals of step (b); and

(f) removing at least about 97% of the liquor formed in step (e) from the crystals formed in step (e).

3,360,555

PROCESS FOR PRODUCING MONOSODIUM GLUTAMATE

John A. Frump, Terre Haute, Ind., assignor to Commercial Solvents Corporation

No Drawing. Filed Dec. 10, 1964, Ser. No. 417,502

12 Claims. (Cl. 260—534)

1. A process for the recovery of monosodium glutamate from zinc glutamate which comprises adding

Na_2HPO_4 to an aqueous zinc glutamate slurry in an amount sufficient to precipitate $ZnNaPO_4 \cdot H_2O$, separating the precipitated $ZnNaPO_4 \cdot H_2O$ and recovering monosodium glutamate from the solution remaining.

7. Process of claim 1 further including the steps of slurrying said $ZnNaPO_4 \cdot H_2O$ in water, adding sufficient NaOH to the slurry so produced to precipitate $Zn(OH)_2$, separating the $Zn(OH)_2$ and recovering Na_3PO_4 from the solution remaining.

10. Process of claim 7 wherein said Na_3PO_4 is converted to Na_2HPO_4 by the addition thereto of H_3PO_4 and the Na_2HPO_4 so produced used to produce additional monosodium glutamate.

3,360,556

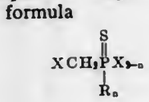
PREPARATION OF HALOMETHYLPHOSPHINE SULFIDES FROM s-TRITHIANE AND PHOSPHORUS HALIDES

Kurt Moedritzer, Webster Groves, Mo., assignor to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Mar. 15, 1963, Ser. No. 265,346

8 Claims. (Cl. 260—543)

1. The method of reacting s-trithiane, at a temperature of above about 50° C., with a trivalent phosphorus compound of the formula R_nPX_{3-n} wherein R is selected from the class consisting of hydrocarbon and halogen-substituted hydrocarbon and is free of aliphatic unsaturation, X is selected from the class consisting of chlorine and bromine, and n is a number of zero to 1, whereby said trivalent phosphorus compound is converted to a compound of the formula



wherein X and n are as above defined.

3,360,557

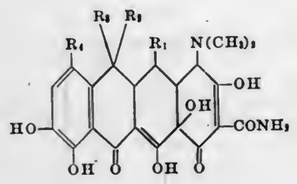
9-HYDROXYTETRACYCLINES AND A PROCESS OF PREPARING SAME

Ping Shu, Pearl River, N.Y., assignor to American Cyanamid Company, New York, N.Y., a corporation of Maine

No Drawing. Filed May 10, 1963, Ser. No. 279,632

11 Claims. (Cl. 260—559)

1. A compound selected from the group consisting of compounds of the formula:



wherein R_1 is selected from the group consisting of hydrogen and hydroxy, R_2 is selected from the group consisting of hydrogen and hydroxy, R_3 is selected from the group consisting of hydrogen and methyl, R_4 is selected from the group consisting of hydrogen, halogen, nitro, amino, mono(lower alkyl)amino and di(lower alkyl)amino, and R_2 and R_3 taken together is methylene; and the non-toxic pharmaceutically aceptable acid-addition and metal-enolate salts thereof.

3,360,558

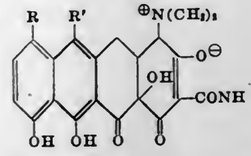
SUBSTITUTED 5α,6-ANHYDROTETRACYCLINE METHYL BETAINES

Joseph John Hlavka, Tuxedo, and Panayota Bitha, New York, N.Y., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Nov. 30, 1964, Ser. No. 414,872

9 Claims. (Cl. 260—559)

1. A compound of the formula:



wherein R is selected from the group consisting of hydrogen, chlorine and bromine and R' is selected from the group consisting of hydrogen and methyl.

3,360,559

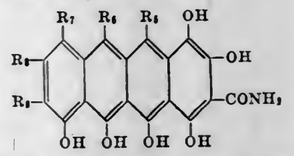
SUBSTITUTED 1,3,4,10,11,12-HEXAHYDROXY-NAPHTHACENE-2-CARBOXAMIDES

Jerry Robert Daniel McCormick, Spring Valley, and Elmer Raymond Jensen, Nanuet, N.Y., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Nov. 30, 1964, Ser. No. 414,899

8 Claims. (Cl. 260—559)

1. A compound of the formula:



wherein R_5 is selected from the group consisting of hydrogen and lower alkyl, R_6 is selected from the group consisting of hydrogen and lower alkyl, and R_7, R_8 and R_9 are each selected from the group consisting of hydrogen, halogen, hydroxy, lower alkoxy, lower alkyl, amino, mono(lower alkyl)amino, di(lower alkyl)amino, nitro, nitroso, thiocyano and mercapto.

3,360,560

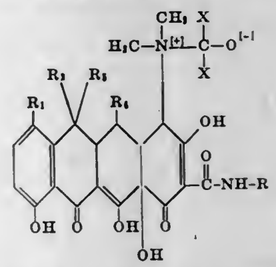
COMPLEXES OF TETRACYCLINES AND DERIVATIVES THEREOF

Frank L. Weisenborn and J. S. Paul Schwarz, Somerset, N.J., assignors, by mesne assignments, to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Jan. 8, 1965, Ser. No. 424,217

5 Claims. (Cl. 260—559)

1. A complex of the formula



wherein R is selected from the group consisting of hydrogen and pyrrolidinomethyl; R_1 is selected from the group consisting of hydrogen and halo; R_2 is selected from the group consisting of hydrogen and lower alkyl; R_3 is

selected from the group consisting of hydrogen and hydroxy; and together R_2 and R_3 is lower alkylene; R_4 is selected from the group consisting of hydrogen and hydroxy; and each X is selected from the group consisting of trihalomethyl, lower alkyl and phenyl, provided that at least one X is trihalomethyl.

3,360,561

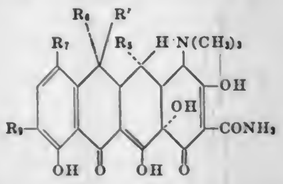
NITRATION OF TETRACYCLINES

Ronald Theodore Zambrano, Paterson, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine.

No Drawing. Filed June 19, 1967, Ser. No. 647,186

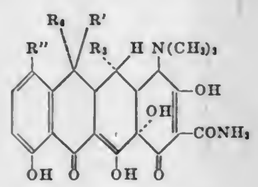
10 Claims. (Cl. 260—559)

1. The process of preparing compounds of the formula:



(I)

wherein R_5 is selected from the group consisting of hydrogen and hydroxy, R′ is selected from the group consisting of hydrogen and hydroxy, R_6 is selected from the group consisting of hydrogen and methyl, R′ and R_6 taken together is methylene, R_7 is selected from the group consisting of hydrogen, chloro and nitro and R_9 is selected from the group consisting of hydrogen and nitro with the proviso that R_7 and R_9 cannot both be hydrogen; which comprises contacting a compound of the formula:



(II)

wherein R_5, R′ and R_6 are as hereinabove defined and R″ is selected from the group consisting of hydrogen and chloro; with potassium nitrate in trifluoroacetic acid.

3,360,562

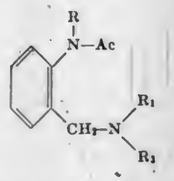
2-TERTIARYAMINOMETHYL-N-ACYLANILINES

Philip M. Carabateas, Schodack, N.Y., assignor to Sterling Drug Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 17, 1964, Ser. No. 390,218

8 Claims. (Cl. 260—562)

1. A compound of the formula



where R is lower-alkyl, Ac is a member selected from the group consisting of lower-alkanoyl and lower-alkanesulfonyl, R_1 is lower-alkyl, and R_2 is a member selected from the group consisting of lower-alkenyl, halo-(lower-alkenyl) and (lower-cycloalkyl)-(lower-alkyl).

3,360,563

MYRISTYL DIMETHYL BENZYLAMMONIUM CHLORIDE DIHYDRATE

Simon Bonta, Cincinnati, Ohio, assignor to Sterling Drug Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 1, 1966, Ser. No. 569,019

1 Claim. (Cl. 260—567.6)

Myristyl dimethyl benzylammonium chloride as the substantially pure crystalline dihydrate.

3,360,564

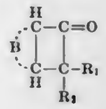
2,2-DIALKYLCYCLOBUTANONE AND 2,2-DIALKYLCYCLOBUTANOL COMPOUNDS AND PROCESSES FOR THEIR PREPARATION

James C. Martin and Paul Glenn Gott, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersery

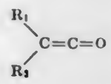
No Drawing. Filed Jan. 13, 1964, Ser. No. 337,171

4 Claims. (Cl. 260—586)

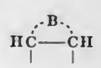
1. A process for preparing the compounds having the formula:



which comprises reacting at from 100 to 200° C. a dialkylketene having the formula:



with a cyclic olefin selected from the group consisting of cyclopentene, cyclohexene, 3-methylcyclohexene, cycloheptene, cyclooctene and bicyclo[2.2.1]hept-2-ene and wherein in the foregoing formulas R_1 and R_2 each represents an alkyl radical and



collectively represents a member selected from the group consisting of 1,2-cyclopentylene, 1,2-cyclohexylene, 3-methylcyclohexylene, 1,2-cycloheptylene and 2,3-bicyclo[2.2.1]heptylene.

3,360,565

METHOD OF PRODUCING 2,2,6,6-TETRACHLOROCYCLOHEXANONE

Hans Arnoldy, Van Houtenlaan, Weesp, Netherlands, assignor to North American Philips Company Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 10, 1965, Ser. No. 478,767

Claims priority, application Netherlands, Aug. 12, 1964, 64—9,256

7 Claims. (Cl. 260—586)

1. A method of producing 2,2,6,6-tetrachlorocyclohexanone comprising reacting a mixture of cyclohexanol and a quantity of chlorine ranging from about an equivalent amount to about a 10% excess of the chlorine at a temperature of 0° C. to 100° C. in the presence of about 1%–100%, based on the weight of the cyclohexanol, of an amine selected from the group consisting of aromatic, aliphatic and heterocyclic hydrocarbylamines and ethanolamine.

3,360,566

MANUFACTURE OF 2′,4′-DICHLOROACETOPHENONES AND BETA-POLYCHLORINATED 2′,4′-DICHLOROACETOPHENONES FROM MIXED DICHLOROBENZENES

Jerome Linder, Niagara Falls, Edward D. Weil, Lewiston, and Jack S. Newcomer, Wilson, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Filed Nov. 25, 1964, Ser. No. 413,969

9 Claims. (Cl. 260—592)

1. A process for the production of the group consisting of 2′,4′ dichloroacetophenone and beta-polychlorinated 2′,4′ dichloroacetophenone in a proportion exceeding the proportion of metadichlorobenzene in a dichlorobenzene starting mixture comprising reacting a mixture of dichlorobenzenes containing from 20 to 85 percent metadichlorobenzene isomer with an acetylating reagent selected from the group consisting of acetyl chloride, acetic anhydride, dichloroacetyl chloride, trichloroacetyl chloride, dichloroacetic anhydride and trichloroacetic anhydride, said acetylating reagent being used in an amount up to the stoichiometric equivalent based on the amount of metadichlorobenzene in the reaction mixture and effecting the reaction in the presence of a Lewis-acid catalyst.

3,360,567

CATALYTIC DEHYDROGENATION OF ALCOHOLS

Fred L. Johnson, Jr., Austin, Tex., assignor to Jefferson Chemical Company, Inc., Houston, Tex., a corporation of Delaware

No Drawing. Filed Oct. 31, 1963, Ser. No. 320,560

6 Claims. (Cl. 260—594)

1. A method for the production of a keto alcohol which comprises the steps of contacting in the vapor phase a 1,2-glycol of the formula

$$RCHOHCH_2OH$$

wherein R is selected from the group consisting of phenyl and an alkane hydrocarbon group containing 1 to 16 carbon atoms with a copper, zinc, chromium oxide catalyst at a temperature within the range of about 200° to about 450° C. and recovering a keto alcohol corresponding to the 1,2-glycol feed stock from the products of the reaction, said catalyst having been prepared by the hydrogen reduction of a mixture of copper, zinc and chromium oxides containing from about 5 to 50 wt. percent of copper oxide, from about 2 to about 25 wt. percent of chromium oxide and, correspondingly, about 93 to about 25 wt. percent of zinc oxide.

3,360,568

PREPARATION OF HALOGENATED ORGANIC COMPOUNDS

Murray Hauptschein, Glenside, Pa., and Milton Braid, Haddon Heights, N.J., assignors to Pennsalt Chemical Corporation, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Dec. 31, 1963, Ser. No. 334,915

7 Claims. (Cl. 260—601)

1. A method for preparing compounds selected from the class consisting of halogenated aldehydrols and corresponding aldehydes which comprises hydrolyzing a halogenated halosulfate of the formula $RCX_2CHXOSO_2X$ where R is haloalkyl radical which is at least half halogenated and where X is selected from the class consisting of chlorine and fluorine.

3,360,569

11-CARBORANYL-ALKENES AND THE PREPARATION THEREOF

Daniel Grafstein, Morristown, Jack Bobinski, Rockaway, and Marvin M. Fein, Westfield, N.J., assignors to Thiokol Chemical Corporation, Bristol, Pa.

No Drawing. Filed June 27, 1963, Ser. No. 290,904

14 Claims. (Cl. 260—606.5)

1. A compound of the formula

$$H\theta R_5CH{=}CHR_4$$

wherein R_4 is chosen from the group consisting of a hydrogen atom and an alkyl group, R_5 is an alkylene group and θ is $C_2H_{10}B_{10}$.

3,360,570

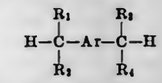
RECOVERY OF OXIDATION PRODUCTS

Thomas Bewley, Epsom, England, and William Webster, Grangemouth, Scotland, assignors, by mesne assignments, to Hercules Incorporated, a corporation of Delaware

No Drawing. Filed Dec. 12, 1963, Ser. No. 329,946

4 Claims. (Cl. 260—610)

1. A process for the oxidation of a dialkyl aromatic hydrocarbon having the formula



wherein Ar is an arylene group and R_1, R_2, R_3 and R_4 are alkyl groups having from 1 to 4 carbon atoms which comprises contacting said hydrocarbon with molecular oxygen to form an oxidate containing the monohydroperoxide thereof and the dihydroperoxide thereof, the oxidation being carried out at a pH within the range from about 3 to about 7, subjecting the oxidate to extraction with an aqueous alkali metal hydroxide having a concentration in the range of about 1% to about 12% in an amount sufficient to form as aqueous phase an aqueous alkali solution of said dihydroperoxide, and as organic phase the residual oxidate, separating said alkali solution of dihydroperoxide from the residual oxidate, by phase separation of the two liquid phases, intimately contacting said residual oxidate containing said monohydroperoxide with gaseous carbon dioxide in an amount sufficient to neutralise the alkali metal hydroxide content of said residual oxidate, extracting the carbon dioxide-treated residual oxidate with water in an amount sufficient to form as aqueous phase an aqueous solution of the salts formed by the carbon dioxide treatment, and as organic phase the residual oxidate, separating said aqueous solution of salts from the residual oxidate by phase separation of the two liquid phases, and recycling said residual oxidate containing said monohydroperoxide to the oxidation step.

3,360,571

HYDROXYLATED DIFUNCTIONAL POLYMERS

Stanley P. Rowland, New Orleans, La., and Ervin G. Pritchett, Cincinnati, Ohio, assignors to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Jan. 17, 1966, Ser. No. 520,875

7 Claims. (Cl. 260—618)

1. As a new composition of matter, a hydroxylated glycol having a molecular weight ranging from about 300 to about 20,000 and having the general formula

$$HO{-}R[(OH)_n(A)_a(B)_b]R{-}OH$$

wherein R is a divalent hydrocarbon radical, A is a polymerized diolefin unit, B is a unit of polymerized styrene, OH is hydroxyl, *a* is a whole number of at least 2, *b* is a whole number ranging from 0 to 9*a* inclusive, and *n* is a whole number of ranging from about 2 to 2*a*.

3,360,572

OXIDATION OF BENZENE TO PHENOL

Charles M. Selwitz, Monroeville, Pa., assignor to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed Dec. 22, 1964, Ser. No. 420,436
14 Claims. (Cl. 260—621)

1. A process for oxidizing benzene to phenol which comprises contacting at a temperature of about 600° to about 800° C. in the vapor phase benzene with a gas containing molecular oxygen, the amount of said oxygen containing gas being sufficient to provide from about 0.02 to about 5 mols of oxygen per mol of said benzene compound, in the presence of about 0.05 to about 50 mols of water per mol of benzene and at least about 0.0001 mol of a compound selected from the group consisting of HBr and a compound capable of resulting in the formation of HBr.

3,360,573

PROCESS OF PREPARING ALKYLATED HYDROXY AROMATIC COMPOUNDS

John M. Walts, Clark, and Leslie M. Schenck, Mountainside, N.J., assignors to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 10, 1964, Ser. No. 388,694
10 Claims. (Cl. 260—624)

1. A method of preparing an alkylated hydroxy aromatic compound which comprises adding from 1 to 10 moles of a mono-halogenated alkyl hydrocarbon of from 2 to 30 carbon atoms wherein the halogen is selected from the group consisting of chlorine, bromine and iodine during a time interval of from about ½ to 8 hours to a reaction mixture maintained at a temperature ranging from about 100° C. to about 250° C. and consisting of 1 to 10 moles of a hydroxy aromatic compound containing from 1 to 3 hydroxy groups directly attached to the aromatic nucleus said nucleus containing no substituents other than hydroxy and alkyl groups and from about 0.1 to about 10% by weight of said hydroxy aromatic compound of raw clay of the silica-alumina type, maintaining the said temperature within the said range for a period of time ranging from 1 to 24 hours, and isolating the alkylated hydroxy aromatic compound from the said reaction mixture.

3,360,574

PERCHLORINATED HYDROCARBON POLYMERS AND THEIR PREPARATION

Manuel Ballester, % Department of Organic Chemistry, University of Barcelona, Barcelona, Spain, and Juan Castaner and Juan Riera, Barcelona, Spain; said Castaner and said Riera assignors to said Ballester

No Drawing. Filed Feb. 17, 1965, Ser. No. 433,508
Claims priority, application Spain, May 23, 1964, 300,179
6 Claims. (Cl. 260—649)

1. A polymer having repeating units represented by the formula

$$\left[\begin{matrix}\text{CCl}-(\text{CCl}=\text{CCl})_n-\text{Ar}-(\text{CCl}=\text{CCl})_n-\text{CCl}\end{matrix}\right]$$

wherein n is a whole number of 0–1, inclusive, and Ar is a perchloroarylene group.

6. A process for preparing polymers having repeating units represented by the formula

$$\left[\begin{matrix}\text{CCl}-(\text{CCl}=\text{CCl})_n-\text{Ar}-(\text{CCl}=\text{CCl})_n-\text{CCl}\end{matrix}\right]$$

which comprises reacting a compound of the formula

$$\text{Cl}_3\text{C}-(\text{CCl}=\text{CCl})_n-\text{Ar}-(\text{CCl}=\text{CCl})_n-\text{CCl}_3$$

wherein n is a whole number of 0–1, inclusive and Ar is a perchloroarylene group, with a dechlorinating agent selected from the group consisting of ferrous chloride and stannous chloride, in a solvent medium and under an inert atmosphere, at a temperature of from about 40° C. to about 150° C.

3,360,575

STABILIZED SOLVENT SYSTEM

Winston E. Brown, Houston, Tex., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed May 19, 1966, Ser. No. 551,200
8 Claims. (Cl. 260—652.5)

1. A saturated aliphatic chlorinated hydrocarbon solvent composition containing as the essential inhibitor against metal induced deterioration, a stabilizing amount of a member selected from the group consisting of dioxene, dioxadiene and mixtures thereof.

3,360,576

IODINATIVE DEHYDROGENATION PROCESS

Thomas A. Rodgers, La Porte, Tex., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 30, 1964, Ser. No. 355,903
2 Claims. (Cl. 260—656)

1. In a process for the dehydrogenation of a first hydrocarbon to a second hydrocarbon wherein the first hydrocarbon is isobutane and the second hydrocarbon is selected from the group consisting of isobutylene and p-xylene, wherein said first hydrocarbon and iodine are reacted in a reaction zone at a temperature in excess of 300° C., whereby said second hydrocarbon and dimethylvinyl iodide are formed, the improvement consisting essentially of introducing a compound selected from the group consisting of ammonia and ethylenediamine into the product stream comprising said second hydrocarbon and dimethylvinyl iodide to inhibit the decomposition of said dimethylvinyl iodide.

2. In a process for the dehydrogenation of a first hydrocarbon to a second hydrocarbon wherein the first hydrocarbon is selected from the group consisting of butene-1 and butene-2 and the second hydrocarbon is butadiene-1,3, wherein said first hydrocarbon and iodine are reacted in a reaction zone at a temperature in excess of 300° C., whereby said second hydrocarbon and dimethylvinyl iodide are formed, the improvement consisting essentially of introducing a compound selected from the group consisting of ammonia and ethylenediamine into the product stream comprising said second hydrocarbon and dimethylvinyl iodide to inhibit the decomposition of said dimethylvinyl iodide.

3,360,577

SELECTIVE HYDROGENATION

Wilfred Pickles, Hazel Grove, Stockport, England, assignor to J. R. Geigy, A.G., Basel, Switzerland

No Drawing. Filed Apr. 13, 1964, Ser. No. 359,474
Claims priority, application Great Britain, Apr. 18, 1963, 15,328/63
17 Claims. (Cl. 260—666)

1. A process of producing a cycloalkene containing at least one ethylenically unsaturated double bond per molecule from a more highly ethylenically unsaturated cycloalkene containing the same number of carbon atoms per molecule, which comprises contacting the more highly ethylenically unsaturated cycloalkene in the presence of a palladium hydrogenation catalyst with a cyclic hydrogen-donating hydrogenation compound, the essential structural moiety of whose molecule is a six-membered nonaromatically unsaturated carbocyclic ring, which ring is convertible by the release of hydrogen from said compound to an aromatic ring, whereby said higher unsaturated cycloalkene is selectively hydrogenated to a product the major portion of which consists of the corresponding cyclomonoene.

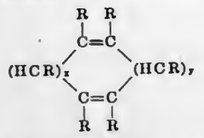
3,360,578

CATALYTIC ISOMERIZATION OF CYCLOALKADIENES

Sterling F. Chappel III, Lake Charles, La., assignor to Columbian Carbon Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 9, 1965, Ser. No. 438,423
15 Claims. (Cl. 260—666)

1. A process for the catalytic isomerization of a cycloalkadiene having an empirical formula of C_nHR_{2n-5} wherein n is an integer having a value of from 6 to 12 inclusive and R is a member selected from the group consisting of hydrogen and (lower) alkyl radicals and corresponding to the general structural formula:



wherein R has the meaning given above, and x and y are numbers the sum of which is equal to n–4, to a structural isomer having a more thermodynamically favored energy state which comprises the steps of (1) effecting said isomerization in a reaction mixture having a composition selected from the group consisting of (a) a reaction mixture consisting essentially of an alkaline earth metal amide and said cycloalkadiene and (b) a reaction mixture consisting essentially of an alkaline earth metal amide, said cycloalkadiene, and an inert solvent selected from the group consisting of an aliphatic saturated hydrocarbon and an ether and (2) recovering the isomerized cycloalkadiene.

3,360,579

CATALYTIC DEHYDROGENATION OF ALKYLAROMATICS

Gerald J. Hills, San Mateo, and Roy C. Siem, Concord, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed May 21, 1965, Ser. No. 457,608
10 Claims. (Cl. 260—669)

1. In a process for the dehydrogenation of an alkyl aromatic to a vinyl aromatic comprising contacting the alkyl aromatic and steam in a molar ratio of about 1:2 to about 1:20 with a catalyst containing about 80 to 90 percent by weight iron oxide, 9 to 18 percent by weight potassium carbonate and 1.5 to 5 percent by weight chromium oxide at a temperature of from about 500° to 700° C., the improvement which comprises using a catalyst prepared by combining a yellow iron oxide, chromium oxide, potassium carbonate and water to form a paste, extruding the paste to form pellets, drying the pellets and calcining them at a temperature ranging from about 800° to 1000° C.

8. A dehydrogenation catalyst containing 80 to 90 percent by weight iron oxide, 9 to 18 percent by weight potassium carbonate and 1.5 to 5 percent by weight chromium oxide prepared by combining yellow monohydrated iron oxide, chromium oxide, potassium carbonate and water to form a paste, extruding the paste into pellets, drying the pellets and calcining them at a temperature ranging from about 800° to about 1000° C.

3,360,580

LOW VISCOSITY POLYMER

Joseph K. Mertzweiller and Horace M. Tenney, Baton Rouge, La., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Oct. 6, 1965, Ser. No. 493,539
6 Claims. (Cl. 260—669)

1. The method for the preparation of low molecular weight polymers which comprises polymerizing a conjugated diolefin of 4 to 6 carbon atoms or copolymerizing said diolefin with a vinyl aromatic hydrocarbon in a reaction medium consisting essentially of 5 to 85 wt. percent of an alkylated aromatic hydrocarbon and 95 to 15 wt. percent of an ether chosen from the group consisting of tetrahydrofuran, tetrahydropyran, dimethyl ether, dimethoxy ethane, dimethoxy methane and methylal in the presence of 0.1 to 5 wt. percent of sodium or potassium aromatic hydrocarbon addition complex catalyst, based on reaction medium, a temperature of 15 to 150° F. with a monomer concentration of 0.1 to 10 wt. percent based on the reaction medium for from 0.2 to 6 hours.

3,360,581

PRETREATING AND ISOMERIZING α-PINENE

John Mentzer Derfer, Jacksonville, Fla., assignor to The Glidden Company, Cleveland, Ohio, a corporation of Ohio

No Drawing. Filed Jan. 16, 1967, Ser. No. 609,352
8 Claims. (Cl. 260—675.5)

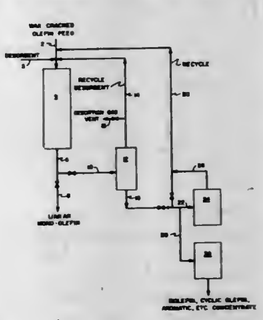
1. A process for the substantial non-destructive isomerization of sour α-pinene to β-pinene, which comprises:
pretreating a sour α-pinene supply at a temperature between about room temperature and a higher temperature, at which substantial isomerization may first take place, with an excess of elemental metallic sodium needed to sweeten the sour α-pinene supply,
and then contacting the pretreated α-pinene supply with the excess of said elemental metallic sodium as a hydrogen-acceptor catalyst under neutral to basic conditions and at a temperature between about said higher temperature and about 300° C. to effect isomerization of α-pinene to β-pinene.

3,360,582

SEPARATING LINEAR MONOOLEFINS BY ADSORPTION ON A MOLECULAR SIEVE

William Judson Mattox, Baton Rouge, La., assignor to Esso Research and Engineering Company, a corporation of Delaware

Filed Mar. 26, 1964, Ser. No. 354,981
14 Claims. (Cl. 260—677)



1. An improved process for the separation of a linear aliphatic mono-olefin from a mixture thereof with corresponding branched and cyclic mono-olefins, diolefins, and aromatics which comprises contacting said mixture with a crystalline metallic alumino-silicate adsorbent having a uniform pore opening of about 6 to 15 Angstrom units and a silica to alumina mole ratio above 3 at a temperature of from about 70 to 650° F. and at a pressure of between about 0.01 and 15 atmospheres in an adsorption zone, said mixture being fed to said zone at a rate of from 0.01 to 10 w./w./hr., adsorbing said branched and cyclic mono-olefins, diolefins and aromatics contained in said mixture on said adsorbent and recovering a stream rich in said linear aliphatic mono-olefin.

3,360,583
PREPARATION OF POLYENES VIA CHLOROETHER. ISOPRENE FROM FORMALDEHYDE AND ISOBUTENE

David W. Hall, Englewood, and Edward Hurley, Jr., Littleton, Colo., assignors to Marathon Oil Company, Findlay, Ohio, a corporation of Ohio

No Drawing. Filed May 24, 1965, Ser. No. 458,432
49 Claims. (Cl. 260—681)

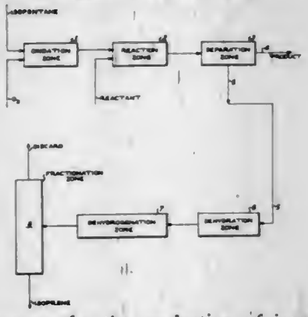
1. The process for the preparation of polyolefinic compounds comprising reacting an alpha haloether with a reactive olefin to form a haloether adduct of the olefin, splitting hydrogen halide and alcohol from the haloether adduct to form a polyolefinic compound, and separating the hydrogen halide and the polyolefinic compound.

35. The process for the preparation of isoprene comprising reacting hydrogen halide with methanol and formaldehyde to form chloromethyl methyl ether, reacting the chloromethyl methyl ether with a butene selected from the group consisting of 2-methylpropene and 2-butene in the presence of about 0.01 to about 0.05 mole of Friedel-Crafts catalyst per mole of chloromethyl methyl ether to form 3-chloro-3-methylbutyl methyl ether, splitting hydrogen halide and methanol from the 3-chloro-3-methylbutyl methyl ether to form isoprene in the presence of a protonic catalyst, separating the hydrogen halide and methanol from the isoprene, and reacting the hydrogen halide and methanol with additional formaldehyde to form additional chloromethyl methyl ether.

3,360,584
PROCESS FOR THE CO-PRODUCTION OF ISOPRENE AND OXYGENATED COMPOUNDS FROM ISOPENTANE HYDROPEROXIDE

John Kollar, Wallington, N.J., assignor to Halcon International, Inc., a corporation of Delaware

Continuation of application Ser. No. 458,614, May 25, 1965. This application Apr. 17, 1967, Ser. No. 631,554
7 Claims. (Cl. 260—681)



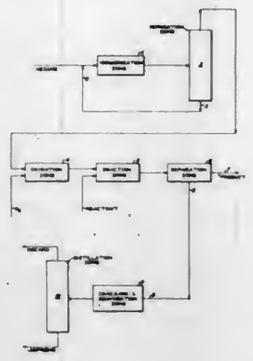
1. In a process for the production of isoprene from isopentane including the steps of oxidizing isopentane to isopentane hydroperoxide, reducing isopentane hydroperoxide to t-amyl alcohol, and dehydrating and dehydrogenating t-amyl alcohol to isoprene, the improvement wherein said reducing step is carried out by catalytically reacting said isopentane hydroperoxide with a member selected from the group consisting of an olefinically unsaturated compound and a primary amine, said member containing 2 to 30 carbon atoms, under conditions effective to convert said hydroperoxide to t-amyl alcohol and to convert said member to an oxygenated product.

3,360,585
PROCESS FOR THE CO-PRODUCTION OF ISOPRENE AND OXYGENATED COMPOUNDS

Charles N. Winnick, Teaneck, N.J., assignor to Halcon International, Inc., a corporation of Delaware

Continuation of application Ser. No. 458,676, May 25, 1965. This application Apr. 17, 1967, Ser. No. 631,555
8 Claims. (Cl. 260—681)

1. In a process for the production of isoprene including the steps of oxidizing an isohexane selected from the group consisting of 2-methyl-pentane and 3-methyl-pentane to the corresponding hydroperoxide, reducing said hydroperoxide to the corresponding alcohol, and dehydrating and cracking said alcohol to isoprene, the improvement wherein said reducing step is carried out



by catalytically reacting said hydroperoxide with a member selected from the group consisting of an olefinically unsaturated compound and a primary amine, said member containing 2 to 30 carbon atoms, under conditions effective to convert said hydroperoxide to the corresponding alcohol and to convert said member to an oxygenated product.

3,360,586
CATALYTIC DEHYDROGENATION OF PARAFFINIC HYDROCARBONS MIXED WITH TRACE H_2O

Herman S. Bloch, Skokie, and Fredrick J. Riedl, Arlington Heights, Ill., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed July 26, 1966, Ser. No. 567,854
10 Claims. (Cl. 260—683.3)

1. A catalytic dehydrogenation process which comprises reacting a straight-chain paraffinic hydrocarbon of from about 7 to about 20 carbon atoms per molecule in contact with a Group VIII noble metal catalyst supported on a nonacidic refractory inorganic oxide carrier, hydrogen, and water in an amount of at least about 400 p.p.m., based upon said hydrocarbon, said hydrogen and water being added with the hydrocarbon feed.

3,360,587
ETHYLENE PRODUCTION AND RECOVERY THEREOF

George F. Adams, Tulsa, Okla., assignor, by mesne assignments, to UOP Process Division (a division of Universal Oil Products Company), a corporation of Delaware

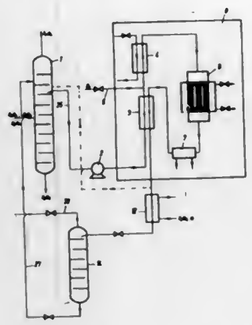
Filed July 29, 1966, Ser. No. 568,792
10 Claims. (Cl. 260—683)

1. A process for the production and recovery of ethylene which comprises thermal cracking saturated hydrocarbons at conditions conducive to producing an ethylene-rich effluent containing acetylene and butadiene, commingling the total ethylene-rich effluent, including said acetylene and butadiene, with the hydrocarbon charge to a catalytic cracking unit, passing the resulting mixture into a reaction zone maintained under cracking conditions selected to produce gasoline boiling range hydrocarbons from heavier hydrocarbons and recovering an ethylene-rich gaseous phase of reduced acetylene and butadiene content from the resulting catalytically-cracked product effluent.

3,360,588
PROCESS AND APPARATUS FOR SEPARATING AND HYDROGENATING GAS MIXTURES

August Kruis, Pullach, Isartal, and Hans Manhard, Munich, Germany, assignors to Gesellschaft für Linde's Eismaschinen Aktiengesellschaft, Munich, Germany

Filed Apr. 17, 1964, Ser. No. 360,506
Claims priority, application Germany, Apr. 19, 1963, G 37,560
11 Claims. (Cl. 260—683.9)



1. A process for the separation of a gas mixture, said gas mixture containing at least three components of low, intermediate, and high vapor pressures, respectively, which process comprises:

(1) a separation step of separating an enriched mixture consisting essentially of said at least three components from said gas mixture:

(2) rectifying said enriched mixture of at least three components at a pressure below that of said separation step and during said rectification withdrawing as a side stream a liquid portion from the rectification column at a point of about the greatest enrichment of the component having said intermediate vapor pressure;

(3) pumping said withdrawn liquid portion to a pressure higher than that of said separation step;

(4) heating said withdrawn liquid pressurized portion and subjecting it to selective hydrogenation of the component having said intermediate vapor pressure;

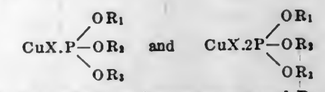
(5) recycling at least a part of said hydrogenated portion in the liquid phase to a preceding step of said separation process of the gas mixture, the pressure of said selective hydrogenation being sufficient so that the recycling can be done without further compression.

3,360,589
COPPER-PHOSPHOROUS COMPLEXES AS COLORLESS STABILIZERS FOR UNSATURATED POLYESTER RESINS

Karl Raichle and Hans Rudolph, Krefeld-Bockum, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a German corporation

No Drawing. Filed May 4, 1964, Ser. No. 364,819
Claims priority, application Germany, May 9, 1963, F 39,690
3 Claims. (Cl. 260—863)

1. A polyester composition comprising mixtures of unsaturated polyester condensation reaction products of saturated and unsaturated dicarboxylic acids with polyols and monomeric olefinically unsaturated, copolymerizable compounds and containing a copper-containing complex of a member selected from the group consisting of cuprous bromide with a neutral phosphorous acid ester, said complex having a formula selected from the group consisting of



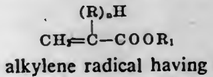
wherein X is a chloro or bromo atom and R_1, R_2 and R_3 are the same or different and stand for lower alkyl, cyclo hexyl, phenyl or benzyl, said complex being present in an amount sufficient to stabilize the polyester composition against gelling during storage.

3,360,590
EASILY PROCESSED SYNTHETIC RESINS

Raimond Liepins, Northfield, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York

No Drawing. Filed June 18, 1962, Ser. No. 202,967
8 Claims. (Cl. 260—884)

1. The polymeric product obtained by the process of polymerizing from about 1 part to about 9 parts by weight of a monomer mixture of a vinyl aromatic monomer having from 8 to 20 carbon atoms and at least one other polymerizable monomer having the structure



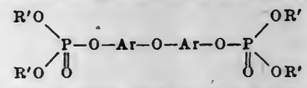
wherein R is an alkylene radical having from 1 to 4 carbon atoms, n is a whole number of from 0 to 1 and R_1 is an alkyl radical having from 1 to 12 carbon atoms, the weight ratio of the vinyl aromatic monomer to the other polymerizable monomer in the monomer mixture being within the range of about 1:2 to about 7:1, said monomer mixture containing a free-radical-producing catalytic agent and in admixture with from about 91 to about 99 parts by weight of post-chlorinated polyvinyl chloride resin in particulate form, said resin having an ASTM density of from 1.43 to 1.65 and a high heat stability such that it is not degraded when heated in air at 375° F. for at least 10 minutes, the amounts of the monomer mixture and chlorinated polyvinyl chloride resin combined totaling 100 parts.

3,360,591
DIPHOSPHATES OF DIVALENT ARYL HYDROCARBONS

John J. Giammaria, Woodbury, and Myron Becker, Pennsauken, N.J., assignors to Mobil Oil Corporation, a corporation of New York

No Drawing. Original application July 31, 1962, Ser. No. 213,578, now Patent No. 3,254,973, dated June 7, 1966. Divided and this application July 13, 1965, Ser. No. 471,737
5 Claims. (Cl. 260—930)

1. A chemical compound of the following formula:



wherein R is a divalent aliphatic hydrocarbon group of one to twelve carbon atoms, Ar is alkyl-substituted phenyl and R′ is a member from the group consisting of phenyl, alkyl-substituted phenyl and chloro-substituted phenyl.

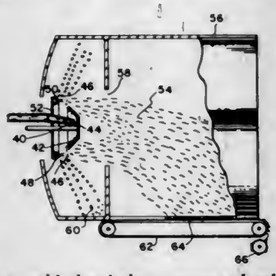
3,360,592
METHOD OF PREPARING FIBERS FROM BY-PRODUCT SLAG OF A PHOSPHORUS FURNACE

Eric Rau, Trenton, and William H. Kibbel, Jr., Pennington, N.J., assignors to FMC Corporation, New York, N.Y., a corporation of Delaware

Filed Aug. 23, 1965, Ser. No. 481,747
2 Claims. (Cl. 264—8)

1. The method of producing mineral fibers while producing elemental phosphorus and ferrophos from phos-

phorus-containing shale composed generally of 22 to 26% P_2O_5, 29 to 43% CaO, 10 to 30% SiO_2, and the balance minor constituents including 3 to 10% Al_2O_3, 0.5 to 2% Fe_2O_3 and moisture, an SiO_2 source and coke, comprising feeding to an electric arc furnace a charge composed of said shale, said SiO_2 source and said coke in relative amounts to provide a weight ratio of SiO_2 to CaO of 0.75 to 1.05 parts of SiO_2:1 part of CaO, and 1 to 1.1 parts of coke per part of P_2O_5 and transition metals calculated as their oxides, electrically heating said charge in said electric arc furnace to 1350° to 1600° C. to provide a molten furnace burden and phosphorus and carbon monoxide vapors, removing said phosphorus and carbon monoxide from said furnace, separately recovering ferrophos and a molten slag at a temperature of at least 2500° F. from fur-



nace burden, said slag being composed substantially of 40 to 50% SiO_2, 45 to 50% CaO, 0.1 to 3% P_2O_5, 3 to 10% Al_2O_3, 0.1 to 1% Fe_2O_3, 1 to 3% F and other minor constituents, and producing fibers from said molten slag by feeding the slag in molten form to a slag-spinner wheel while said molten slag is at a temperature of 1240° to 1450° C. and a viscosity of not greater than 7 poises and is maintained in a molten condition and at a temperature such that it is not cooled to a temperature at which it has a viscosity higher than 7 poises on a said slag-spinner wheel, whereby the wheel discharges streams of molten slag outwardly from said wheel, and intercepting said streams by a high velocity flow of a gaseous fluid to attenuate the streams into fibers.

3,360,593

METHOD OF PREPARING FIBERS FROM SOLIDIFIED PHOSPHORUS-FURNACE SLAG

Eric Rau, Trenton, and William H. Kibbel, Jr., Pennington, N.J., assignors to FMC Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 23, 1965, Ser. No. 481,973
2 Claims. (Cl. 264—8)

1. A method of producing fibers resistant to crystallization and physical degradation on aging from a solidified furnace slag, comprising heating said slag to a conditioning temperature at least 100° C. above the temperature at which the slag is melted and has a spinning viscosity of 15 poises, holding said molten slag at said conditioning temperature for a conditioning time of at least 10 minutes to produce a conditioned slag, feeding said conditioned slag to a spinner wheel which throws streams of said molten, conditioned slag outwardly, said slag being at a conditioning temperature on said spinner wheel, and intercepting said streams by a high velocity flow of a gaseous fluid to attenuate the streams into fibers.

3,360,594

CASTABLE GUNNING MIX

George H. Criss, Bethel Park, Pa., assignor to Harbison-Walker Refractories Company, a division of Dresser Industries Inc., Pittsburgh, Pa.

No Drawing. Filed Jan. 10, 1966, Ser. No. 519,474
5 Claims. (Cl. 264—30)

1. A method of gunning an unconsolidated refractory material on its situs of use, wtih a minimum of rebound, to form a refractory monolith which comprises preparing a refractory batch consisting essentially of from 60–80% of a −4 mesh nonplastic, calcined refractory clay, from 3–8% of plastic clay, from about 1–5% of fibrous asbestos and from about 20–40% of a cementitious material selected from the group consisting of Portland cement and calcium aluminate cement, mixing the refractory batch with an aqueous carrier fluid and forcefully impacting the mixture on the situs of use.

3,360,595

PROCESS FOR PRODUCING FUSED CERAMIC BLOCKS

William Wittels, 2 Cheyne Walk, Chelsea, London S.W. 3, England

No Drawing. Filed June 14, 1965, Ser. No. 464,271
Claims priority, application Great Britain, June 16, 1964, 24,987/64
5 Claims. (Cl. 264—63)

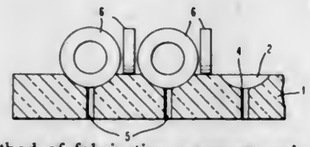
1. A process for the production of fused granite shapes comprising forming pulverized granite particles into "green" shapes which are at least 93% of the density of the solid natural granite from which said pulverized granite particles are obtained and firing such "green" shapes at a temperature in the range of 1150°–1300° C. for a sufficient time to cause surface fusion of the lower melting point constituents of the granite particles throughout the mass so as to cause coherence of the particles.

3,360,596

METHOD OF FABRICATING A CORE SUPPORT UNIT FOR USE IN ASSEMBLING MAGNETIC CORE MATRICES

Robert L. Judge, Poughkeepsie, and John J. Robinson, Wappingers Falls, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York

Filed Feb. 26, 1964, Ser. No. 347,510
1 Claim. (Cl. 264—156)



The method of fabricating a support unit for holding a matrix of magnetic cores on edge during threading of wires through the cores comprising the steps of:

positioning a stock of acrylic plastic material from which the said unit is to be formed in predetermined relation to a punch having a shape corresponding to the shape of a miniature magnetic core element;

selecting positions on the stock so that the distance between consecutive surface positions is on the order of magnitude of the size of the core to be held in said cavity wherein the separation between adjacent cavities is approximately .012 inch at row intervals of approximately .036 inch; selectively impressing, by direct stamping action, an arcuate indentation while holding the punch at an angular orientation of 90° to the material to a close tolerance so that the plastic material is displaced into the stock sheet without removing material, said indentation conforming to the shape of an arc segment of a subminiature toroidal magnetic core approximately .021 inch in outer diameter by approximately .012 inch in lateral thickness and said surface being planar without upsets;

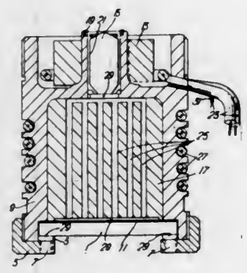
and simultaneously forming at each indentation a connecting opening between the indentation and the opposite surface of the said acrylic plastic material so that vacuum may be applied to the spaces within the indentation through the respective openings.

3,360,597

MELT-SPINNING OF SYNTHETIC LINEAR POLYMERS

Dewi Madoc Jones, Abergavenny, and John K. B. Williams, St. Dials, Cwmbran, England, assignors to British Nylon Spinners Limited, Pontypool, England

Filed May 24, 1965, Ser. No. 458,335
Claims priority, application Great Britain, June 3, 1964, 22,887/64
6 Claims. (Cl. 264—176)



1. A process for melt spinning synthetic linear polymeric material comprising the steps of

(a) melting the material at a temperature below that at which cross linking occurs;

(b) traveling the molten material to a spinneret;

(c) flash heating the molten material for a short duration during a portion of its travel to the spinneret, the temperature to which it is so heated being higher than that at which it was melted but below decomposition temperatures;

(d) cooling the molten material after flash heating but before extrusion to temperatures above the melting point of the material but below the cross linking temperatures; and

(e) extruding the molten material through holes in a spinneret.

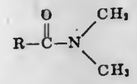
3,360,598

PROCESS OF DRY SPINNING AN AROMATIC POLYCARBONAMIDE FIBER

Carol Reid Earnhart, Richmond, Va., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Dec. 28, 1964, Ser. No. 421,602
8 Claims. (Cl. 264—205)

1. In a dry-spinning method for producing high-melting aromatic polycarbonamide fibers by discharging from a spinneret into a hot gaseous atmosphere a solution comprising poly(meta-phenylene isophthalamide), a solvent of the formula



wherein R is alkyl of 1 to 4 carbons, and 0.2 to 15% by weight, based on said solvent, of at least one halide salt of the group consisting of alkali and alkaline earth metal chlorides and bromides; the improvement, for obtaining fibers of increased halide extractability, wherein the temperature of said solution immediately prior to discharging from said spinneret is at least 150° C.

3,360,599

PREPARATION OF COHERENT BLOCK COPOLYMER FILMS OF HIGH TENSILE STRENGTH AND EXTENSIBILITY

David D. Nyberg, San Pedro, and Joseph T. Bailey, Torrance, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 6, 1963, Ser. No. 321,812
4 Claims. (Cl. 264—216)

1. In the process of preparing films having improved tensile strength from a latex of hydrocarbon block copolymers having the general configuration

A—B—A

wherein each A is a non-elastomeric polymer block of a mono-vinyl substituted arene having an average molecular weight of 5,000–75,000, and B is an elastomeric block of a conjugated diene having an average molecular weight of 35,000–125,000, said latex being laid down as a film and water evaporated therefrom, the improvement comprising annealing the film in the absence of curing agents for 5–60 minutes at 90–120° C. whereby the tensile strength thereof is substantially improved.

ELECTRICAL

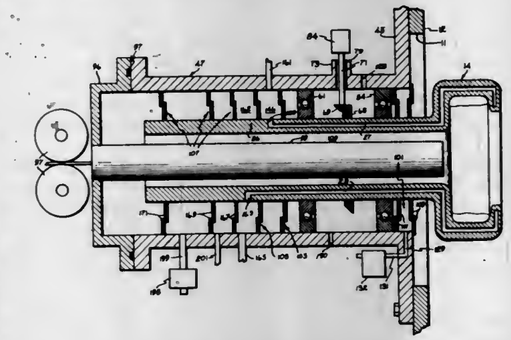
3,360,600

VAPOR SOURCE ASSEMBLY

Andrew Oakley Du Bois, Berkeley, Calif., assignor, by mesne assignments, to Air Reduction Company, Incorporated, a corporation of New York

Filed July 13, 1966, Ser. No. 564,811
12 Claims. (Cl. 13—31)

1. A shaft and supporting assembly for maintaining a plurality of regions of different pressures at the periphery of a rotating shaft intermediate the ends thereof, which shaft extends between two regions of a relatively high vacuum, said assembly including in combination: a rotary shaft, a housing enclosing said shaft and adapted for at least partially enclosing the high vacuum regions, a plurality of annular seal means spaced axially along said shaft between the periphery thereof and said housing, said seal means defining a plurality of pressure confining chambers for maintaining regions of different pressures at the periphery of the shaft, said seal means including first and second seal means positioned to be adjacent, respectively, the two high vacuum regions, said first and second seal means each comprising a pair of axially spaced



annular seals and further comprising means for evacuating the space between said axially spaced seals.

3,360,601
WOODEN POLES WITH ELECTRICALLY ISOLATED SECTIONS AND A CENTRAL OPENING FOR THE INTRODUCTION OF A PRESERVATIVE

Richard L. Rosenberg, Portland, Oreg., assignor to Associated Chemists, Inc., Portland, Oreg., a corporation of Oregon

Filed Feb. 23, 1965, Ser. No. 434,406
5 Claims. (Cl. 174—45)

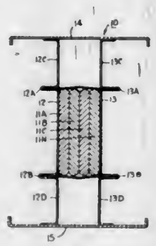


1. An elongate, generally round wood pole,
said pole having an axial opening therein extending the length thereof,
said pole having therein at least two layers of electrical insulating material having a conductivity less than that of wood, each extending from said center opening to the surface of said pole and for the length of said pole.

3,360,602
ELECTRIC POWER BUSWAY HAVING A HOUSING WITH SIDEWALLS CONNECTED TOGETHER WITH RESILIENT TIE PLATES

Lynn M. Harton, Avon, Conn., assignor to General Electric Company, a corporation of New York

Filed Aug. 5, 1966, Ser. No. 570,599
7 Claims. (Cl. 174—68)

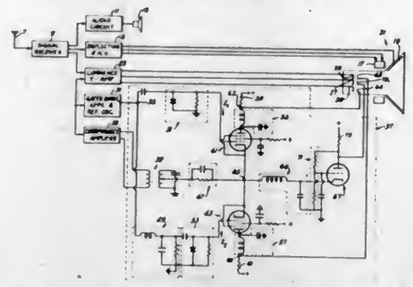


1. An electric power busway section comprising:
(a) an elongated housing including a pair of elongated spaced side wall members and means interconnecting said side wall members;
(b) a plurality of electric power busbars supported in side-by-side insulated relation in said housing in a row between said side wall members;
(c) said side wall members acting on said plurality of usbars to retain said busbars on said side-by-side relation against the force of short-circuit currents tending to drive said busbars apart;
(d) said interconnecting means including means resiliently resisting separating movement of said side walls whereby said busbars are permitted to move a small distance apart under the effect of short-circuit currents against the bias of said resisting means, said side walls moving away from each other against said resisting means of said interconnecting means when said busbars are subjected to said short-circuit current forces whereby to increase the reactance of said busbar section and to limit said short-circuit currents.

3,360,603
SYNCHRONOUS DEMODULATOR

William D. Murphy, Emporium, Pa., assignor to Sylvania Electric Products Inc., a corporation of Delaware

Filed Aug. 26, 1965, Ser. No. 482,701
4 Claims. (Cl. 178—5.4)

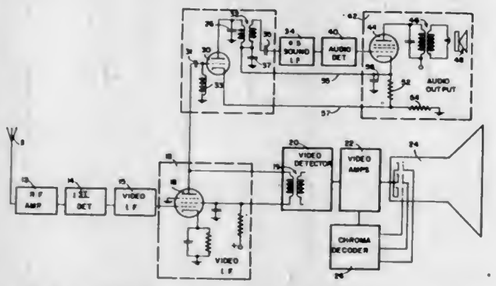


1. In a color television receiver, a color picture tube having a first, second, and third grid, a source of reference oscillation signals, a source of chrominance signals, means for shifting the phase of said reference signal to a phase E_1 lagging the R–Y information in the chrominance signal and a phase E_2 leading the B–Y information in the chrominance signal, first, second, and third amplifiers each including a cathode, at least one grid, and an anode, means for applying said reference signal at a phase E_1 to the grid of said first amplifier, means for applying the reference signal at a phase E_2 to the grid of said second amplifier, means coupled to the grids of the first and second amplifiers for altering the conduction of one with respect to the other, means for applying said chrominance signal through a common impedance to a junction of the cathodes of said first and second amplifiers, means coupling G–Y information appearing at the junction of said first and second amplifiers to the cathode of said third amplifier, means AC coupling the grid of said third amplifier to a reference voltage level, output circuit means coupling a demodulated R–Y signal from the anode of said first amplifier to a first grid of a picture tube, output circuit means coupling a demodulated B–Y signal from the anode of said second amplifier to a second grid of a picture tube, and output circuit means coupling a demodulated G–Y signal from the anode of said third amplifier to a third grid of a picture tube.

3,360,604
SOUND DETECTOR FOR COLOR TELEVISION

Robert B. Hansen, Arlington Heights, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois

Continuation of application Ser. No. 361,037, Apr. 20, 1964. This application Aug. 8, 1966, Ser. No. 571,131
5 Claims. (Cl. 178—5.4)

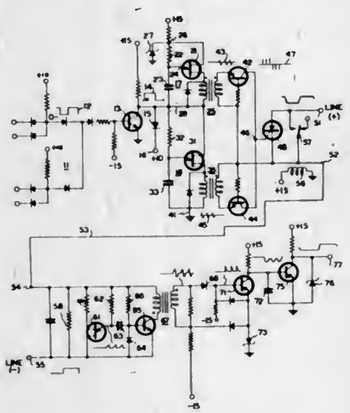


1. In a color television receiver having common intermediate frequency amplifier stages for the sound carrier and the picture carrier of a received color television signal, a detector circuit for deriving sound information from said received television signal including in combination, a vacuum tube triode, first network means coupled between said intermediate frequency amplifier stage and the control grid of said triode, said first network means simultaneously applying a portion of said sound carrier and said picture carrier to the control grid of said triode, a first low impedance direct current voltage source in said receiver, means direct current connected between said first direct current voltage source and the anode of said triode, with the anode voltage thereby applied to said triode of a low value to provide a non-linear transfer characteristic of said triode over its entire operating range, a second low impedance direct current voltage source in said receiver, means direct current connected between said second voltage source and the cathode of said triode, with said triode being thereby biased near cutoff, second network means coupled to the anode of said triode, said second network means tuned to the difference frequency between said sound carrier and said picture carrier to provide an intercarrier sound signal frequency modulated with audio information, and means for deriving said audio information from said intercarrier sound signal.

3,360,605
FSK TRANSCEIVER WITH SCR SWITCHING BETWEEN TRANSMIT AND RECEIVE MODES

Nelson W. Burke, Stoneham, Mass., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware

Filed May 7, 1965, Ser. No. 453,959
8 Claims. (Cl. 178—66)

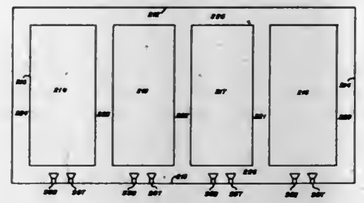


2. A communication line solid state relay for switching in response to mark and space signals comprising
(a) two oscillators,
(b) two opposite polarity rectifier circuits,
(c) two transformers,
(d) circuits connecting the primary of each of said transformers to a different one of said oscillators and the secondary of each of said transformers to a different one of said rectifier circuits,
(e) an output circuit including a controlled rectifier connected for switching said output circuit,
(f) a direct connection from the opposite polarity outputs of said rectifier circuits to the control electrode of said controlled rectifier,
(g) means responsive to said mark and space signals for determining which of said rectifier circutis will be operative to rectify the oscillation of its oscillator thereby determining the polarity of rectified signal applied to said control electrode for switching said output circuit,
(h) a receiving circuit having an input circuit, and
(i) means for coupling said communication line to said output circuit and said input circuit for transmission and reception of said mark and space signals.

3,360,606
STEREOPHONIC SYSTEMS

Harvey L. Ratliff, Jr., Amarillo, Tex., assignor of one hundred percent to Jetru Inc., Amarillo, Tex.

Filed June 12, 1963, Ser. No. 287,338
3 Claims. (Cl. 179—1)



1. A theater; a multiplicity of individualized, non-enclosed areas within said theater, each individualized area having substantially the same configuration with corresponding points therein and with the distance between adjacent areas substantially greater than the distance between the corresponding points in an area; speaker supporting apparatus at said corresponding points in each said area; a set of individualized stereophonic speakers with the corresponding speakers thereof at the respective said corresponding points and supported by said supporting apparatus, the speakers within each area coacting among themselves to produce substantially the same stereophonic effect in every area with only negligible effect on adjacent areas; a set of theatrical, high fidelity speakers acting as a unified sound unit, supported by a surface of said theater and coacting with said individualized stereophonic speakers of each respective said area whereby the combined effect increases the stereophonic quality and the tonal quality at each respective individualized area; means of conveying respective component sound signals to each corresponding respective individualized speaker and a component high fidelity sound signal to all the combined theatrical speakers supported by said surface, each component signal being respectively different in its directional orientation of a unified stereophonic creation,
whereby the producing of substantially identical stereophonic and high fidelity sound conditions in each of said individualized areas recreates substantially identical and high fidelity stereophonic conditions for a large number of people in the theater and the independent support and arrangement of the speakers allows the listener freedom of movement without significantly effecting the re-created stereophonic directional effect.

3,360,607
TELEPHONE ALARM DEVICE WITH SELECTIVE AUTOMATIC DIALING OF A PLURALITY OF STATIONS

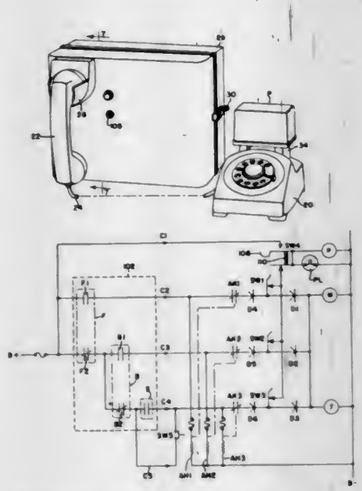
Gene A. Oppenheimer, Rock Island, Ill., assignor to Sensatronics, Inc., Davenport, Iowa, a corporation of Iowa

Filed Sept. 14, 1964, Ser. No. 396,282
5 Claims. (Cl. 179—5)

1. An alarm and signal system for use with a telephone and telephone system, comprising: first, second and third calling means for actuating the telephone to call first, second and third telephone numbers, respectively; first,

second and third electrical circuits respectively connected to and for operating the first, second and third calling means; first double-throw switch means normally opening the first circuit and closing the second circuit and changeable to the opposite condition; second double-throw switch means normally opening the second circuit between the first switch means and the second calling means and closing the third circuit and changeable to the opposite condition; third single-throw switch means normally opening the third circuit between the second switch means and the third calling means and changeable to close said third circuit; and first, second and third signal receivers respectively responsive to first, second and third conditions for respectively changing said first, second and third switch means.

3. An alarm system for use with a dial-system telephone having a base, a receiver and receiver-actuated contact means, comprising: a pulser device operative in lieu of the receiver to engage the contact means and elec-



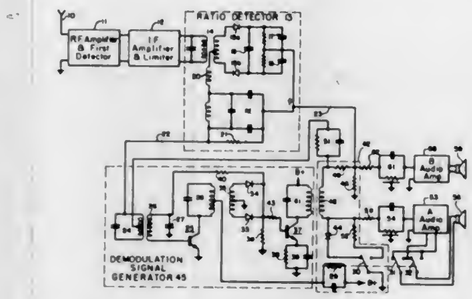
trically energizible and deenergizible to open and close said contact means; a support including switch means electrically connected to and openable and closable to energize and deenergize the pulser device; movable means carried by the support and including a plurality of switch operators arranged thereon in a predetermined pattern based on a selected telephone number and operative when moved past the switch means to open and close said switch means and thereby to cause the pulser device to pulse the contacts according to said pattern; drive means operatively connected to and for driving the movable means; means responsive to a predetermined signal for actuating the drive means and a second switch included in the means for supporting the receiver and electrically connected to the pulser device and normally opened by the supported receiver and closable upon removal of the receiver whereby to energize the pulser to close said contacts independently of the first-mentioned switch means.

3,360,608
SINGLE DIODE FM STEREO MULTIPLEX DETECTOR
Jouke N. Rypkema, Villa Park, Ill., assignor to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware
Filed June 16, 1966, Ser. No. 558,081
10 Claims. (Cl. 179—15)

1. A demodulator for developing a pair of distinct signals from a received composite signal comprising a demodulated component and a subcarrier modulation component collectively defining the composition of said distinct signals, said demodulator comprising:

a series circuit including a single rectifying device and comprising four leg portions with a first one of said leg portions including said single rectifying device and a second of said leg portions including a resistive load impedance;

means for introducing both components of said composite signal into said series circuit with at least



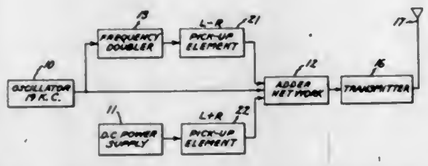
said demodulated component being applied in said third leg of said series circuit;

a first output port taken across said first leg portion;

a second output port taken across said second leg portion;

and separate signal utilization means respectively coupled to said first and second output ports for developing each of said distinct signals separated from the other.

3,360,609
FM MULTIPLEX SYSTEM FOR TRANSMITTING RADIO SIGNALS FROM A STEREOPHONIC PHONOGRAPH
Gunther E. Fenner, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed Dec. 22, 1966, Ser. No. 604,022
8 Claims. (Cl. 179—15)



1. In an FM multiplex system for transmitting stereophonic audio signals, the combination comprising:

first and second electromechanical transducing elements positioned to be acted upon by forces in response to audio signals;

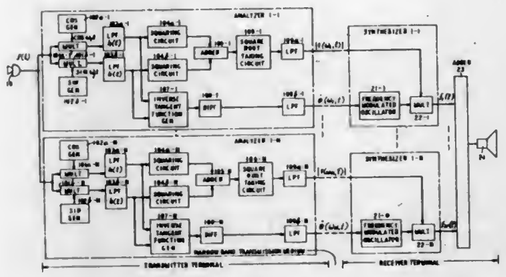
said first electromechanical transducing element amplitude modulating a first constant frequency signal in responce to said audio signals,

said second electromechanical transducing element amplitude modulating a DC signal in response to said audio signals;

means combining the amplitude modulated output signal of said first electromechanical transducing element with the amplitude modulated output signal of said second electromechanical transducing element and a second constant frequency signal; and

transmitter means responsive to said combining means and generating an FM multiplex signal in accordance therewith.

3,360,610
BANDWIDTH COMPRESSION UTILIZING MAGNITUDE AND PHASE CODED SIGNALS REPRESENTATIVE OF THE INPUT SIGNAL
James L. Flanagan, Warren Township, Somerset County, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed May 7, 1964, Ser. No. 365,587
5 Claims. (Cl. 179—15.55)



1. A bandwidth compression system that comprises

a transmitter terminal including

a source of an incoming speech signal, and

a plurality of analyzers with input terminals connected in parallel to said source for deriving from said speech signal a corresponding plurality of pairs of magnitude and phase angle control signals by evaluating the short-time amplitude spectrum and short-time phase spectrum of said speech signal at a corresponding plurality of preset frequencies that span the frequency band of said speech signal,

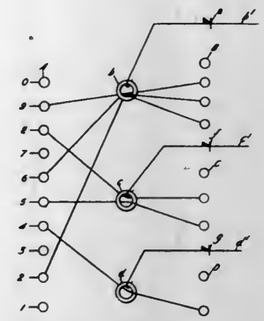
means for transmitting each pair of magnitude and phase angle control signals to a receiver station, and at said receiver station,

a plurality of synthesizers having output terminals connected to an adding means, each synthesizer being supplied with one of said pairs of magnitude and phase angle control signals, wherein each of said synthesizers generates at its output terminal a cosine wave having the same preset frequency as the corresponding one of said analyzers and having magnitude and phase angle respectively specified by said pair of magnitude and phase angle control signals, and

wherein said adding means combines said cosine wave generated by each of said synthesizers to form a replica of said incoming speech signal.

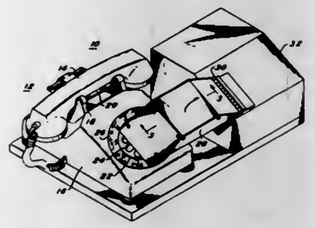
3,360,611
TELECOMMUNICATION LINE CLASS IDENTIFIER HAVING INDUCTIVE COUPLING MEANS
George Arthur Matthews, Beeston, England, assignor to Ericsson Telephones Limited, Engineers and Manufacturers of Telephone Works, Beeston, England, a British company
Filed Oct. 30, 1964, Ser. No. 407,711
Claims priority, application Great Britain, Oct. 31, 1963, 43,048/63
4 Claims. (Cl. 179—18)

1. Telecommunication line class identifying means which includes a conductor corresponding to each line connected to the means and arranged to carry currents during a call from the line to which the conductor corresponds, a signal output lead corresponding to each class in which said lines are classified and an inductive coupling means linking each signal output lead with the conductors corresponding to the lines in the class to which the signal output lead corresponds, said coupling means responding to the build up of direct current flowing in a single conductor consequent upon the initiation of a cell made on the line corresponding thereto and associated with the



coupling to induce through said coupling an output in the signal output lead without any other conductors associated with the coupling being energised.

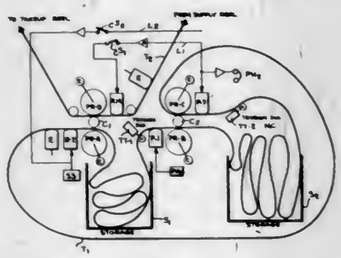
3,360,612
AUTOMATIC TELEPHONE DIALING AND CALLING APPARATUS
Henry Hank Klumb and Henry C. Rogers, Philadelphia, Pa., assignors, by direct and mesne assignments, to The Teleminder Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Feb. 24, 1964, Ser. No. 346,772
9 Claims. (Cl. 179—90)



1. Automatic telephone calling apparatus comprising a dialing head having a dialing finger, mounting means for mounting said head on a rotatable dial having dial holes with said dialing finger in one of the dialing holes, said dialing finger being secured to a free floating plate rotatably mounted on a shaft, a driven member fixedly secured to said shaft, said driven member being spaced from said free floating plate, selectively operable clutch means for selectively engaging said driven member with said free floating plate, a commutator assembly and contact means rotatable with said driven member, said commutator assembly and contact means being operative to energize said selectively operable clutch means at a variable predetermined point during a cycle of rotation of said driven member, and limit means operative to declutch said free floating plate from said driven member at the end of a cycle of rotation of said driven member, a commutator plate, said commutator plate having a plurality of contacts thereon each connected to a predetermined one contact on said commutator assembly, means mounting said plate for indexing movement once per revolution of said shaft, said plate contacts positioned so that one of said plate contacts is energized every two revolutions of said shaft, said plate

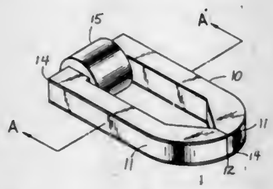
contacts being sequentially energized, said plate contacts being in sequential groups corresponding to a plurality of telephone numbers to be dialed, each of said plate contact groups including an off contact, a control system, said off contact being operative upon energization thereof to cause said control system to stop rotation of said shaft.

3,360,613
EDITING SYSTEM UTILIZING RECIRCULATION MEANS
James N. Cooper, Hyattsville, Md., assignor of one-third to Hyman Hurvitz, Washington, D.C.
Filed July 16, 1963, Ser. No. 295,436
5 Claims. (Cl. 179—100.2)



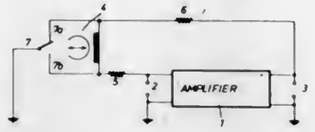
1. A tape recording system, comprising a first capstan, a second capstan, first and second pinch rollers in operative relation to said first capstan, third and fourth pinch rollers in operative relation to said second capstan, a single drive motor for said first and second capstans, a first record head immediately preceding said first capstan, a first reproduce head immediately preceding said third pinch roller, a second reproduce head immediately preceding said fourth pinch roller, a second record head immediately preceding said second pinch roller, a first endless tape threaded in a path including said first, third and fourth pinch rollers in order, and a second tape drivable by said second pinch roller, and means for transferring signal from said second reproduce head to said second record head.

3,360,614
SHUNTED MAGNETIC RECORDING HEAD
Frank A. Comerci, Stamford, and Frank A. Slaker, Norwalk, Conn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed Sept. 19, 1963, Ser. No. 310,004
2 Claims. (Cl. 179—100.2)



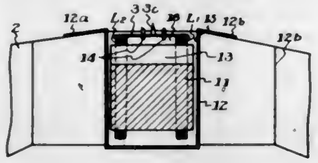
1. In a core for magnetic transducers, in combination, a pole piece composed essentially of magnetic material having permeability and conductivity characteristics suitable for recording high frequency signals without substantial loss and free from detrimental coercivity characteristics, and overlaid on at least one side of said pole piece which side extends into the coil of said transducer, in close contact and coextensive therewith over the entire length thereof, a magnetic shunt consisting of a thin sheet of magnetic material of high direct current permeability, low coercivity and low internal electrical resistance.

3,360,615
CIRCUIT ARRANGEMENT FOR SWITCHING THE AMPLIFIER IN TAPE RECORDERS AND DICTATING MACHINES
Friedrich Knochenhauer and Gunter Loffler, Altena, Westphalia, Germany, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed July 13, 1964, Ser. No. 382,113
Claims priority, application Germany, July 20, 1963, St 20,886
1 Claim. (Cl. 179—100.2)



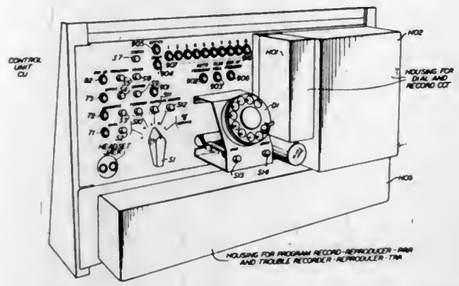
A circuit arrangement to switch the amplifier in a tape recorder and playback machine comprising:
- an amplifier having two input and two output leads, one each of said input and output leads being grounded;
- a switch having two fixed contacts and a grounded movable contact;
- a pick-up head having two terminals, one terminal of said head being connected to one of said fixed contacts, and the other terminal of said head being connected to the other of said fixed contacts;
- an input decoupling resistor connected between the ungrounded input lead of said amplifier and said one terminal of said head; and
- an output decoupling resistor connected between the ungrounded output lead of said amplifier and said other terminal of said head.

3,360,616
STEREOPHONIC RIBBON CARTRIDGE
Takeo Shiga and Hirokuni Kimura, Kawasaki, Japan, assignors to Nippon Columbia Kabushikikaisha (Nippon Columbia Co., Ltd.), Kawasaki, Japan, a corporation of Japan
Filed June 25, 1963, Ser. No. 290,488
Claims priority, application Japan, Aug. 2, 1962, 37/33,178; May 1, 1963 (utility model), 38/32,360
3 Claims. (Cl. 179—100.41)



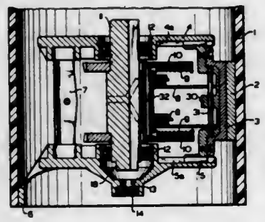
2. In a stereophonic phonograph reproducer having a magnet system, a pair of conductors which are arranged to vibrate in the magnetic field established by said magnet system to produce signal currents for the right and left channels, a stylus arm attached to said pair of conductors, wherein the improvement comprises: a stationary bobbin having a pair of supporting portions for said conductors, said pair of conductors being mounted on said bobbin across said pair of supporting portions in a stretched condition in order to form a restricted vibrating portion responsive to vibrations of said stylus arm and a stylus tip in response to a groove of a stereophonic record, said stationary bobbin being inserted into said magnetic field.

3,360,617
AUTOMATIC LINE TESTING APPARATUS
Verne E. Munson, Manasquan, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed June 26, 1964, Ser. No. 378,196
11 Claims. (Cl. 179—175.3)



3. In a telephone system, apparatus for automatically testing the electrical condition of a plurality of telephone lines comprising, in combination, means including first recording means for establishing a test program in accordance with a preselected sequential order of said lines, means for measuring at least one electrical condition of each of said lines, said first recording means including means for recording a first group of signal indicia each corresponding to a respective one of said lines and a second group of indicia each corresponding to a respective one of said lines, means responsive to said first group of indicia for connecting said measuring means to each of said lines in accordance with said preselected sequential order, second recording means, means responsive to a first preselected condition on any one of said lines as determined by said measuring means for recording a corresponding one of said indicia from said second group of indicia on said second recording means whereby upon the completion of said sequential order by said connecting means said second recording means has recorded thereon indicia of all of said lines conforming to said first preselected condition.

3,360,618
TRANSFER SWITCH FOR TAP-CHANGING TRANSFORMERS CONVERTIBLE FOR ADAPTATION TO A WIDE RANGE OF CURRENTS
Anton Schunda, Regensburg, Germany, assignor to Maschinenfabrik Reinhausen Gebruder Scheubeck K.G., Regensburg, Germany
Filed Apr. 13, 1966, Ser. No. 542,702
Claims priority, application Germany, Apr. 15, 1965, M 64,893
6 Claims. (Cl. 200—11)



1. A transfer switch for tap-changing regulating transformers comprising in combination:
- (a) fixed main contacts and fixed auxiliary contacts arranged along a sector of a circle;
- (b) movable main contacts cooperating with said fixed main contacts and movable auxiliary contacts cooperating with said fixed auxiliary contacts;
- (c) linkage means for operating said movable main contacts and said movable auxiliary contacts radially inwardly and radially outwardly in a predetermined sequence;
- (d) a main operating shaft arranged in the center of said sector of a circle for operating said linkage means;
- (e) a substantially spider-shaped support for supporting said movable main contacts, said movable auxiliary contacts and said linkage means arranged at a level lower than said linkage means and including a bearing for the lower end of said main shaft;
- (f) cooperating pairs of current-carrying contacts arranged below said spider-shaped support and including movable current-carrying contacts pivotally supported by said spider-shaped support;
- (g) an auxiliary shaft for operating said movable current-carrying contacts separate from said main shaft and arranged in coaxial relation to said main shaft; and
- (h) cooperating coupling means at juxtaposed ends of said main shaft and said auxiliary shaft engageable by axial movement of said auxiliary shaft relative to said main shaft in a direction longitudinally of said main shaft and of said auxiliary shaft.

3,360,619
KEY EJECTING VEHICLE IGNITION SWITCH
Vincent E. Grocott, 148 Oakview Road, and Martin E. Breit, 1600 19th St., both of Beaver Falls, Pa. 15010
Filed Nov. 8, 1966, Ser. No. 592,913
2 Claims. (Cl. 200—44)

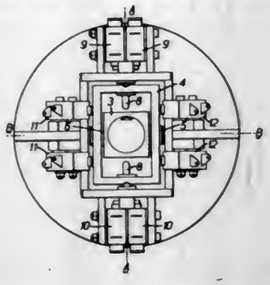


1. In an ignition switch for vehicles having a fixed cylinder, a tumbler rotatable therein by a key from the "off" position to different electrical switching positions, a rotatable switching element having a substantially cup-shaped end portion with a central slot into which a projection from said tumbler is detachably inserted for turning the switching element to selected positions, a stationary switch element cooperating therewith, spring means in said fixed cylinder between said stationary switch element and said rotary switching element, a second slot eccentrically positioned in said end portion of said switching element, a plunger rod extending through said second slot in offset relationship to said projection and in the path of said key and arranged to be ejected by said spring means when said tumbler is rotated by the key to the "off" position.

3,360,620
UNIVERSALLY PIVOTAL SWITCH ACTUATING DEVICE
William Edward Ward, Clanfield, England, assignor to The Plessey Company Limited, Ilford, England, a British company
Filed Mar. 30, 1966, Ser. No. 538,704
Claims priority, application Great Britain, Apr. 2, 1965, 14,114/65
12 Claims. (Cl. 200—61.28)

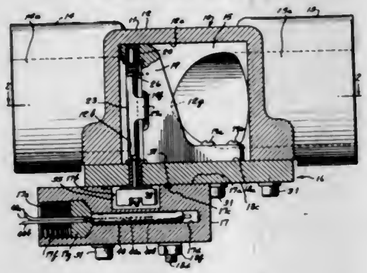
1. An electric switch assembly comprising a lever actuator, a first pivoted structure to which the lever actuator is attached, a second pivoted structure on which said first

structure is pivotally mounted, a fixed frame structure on which said second structure pivots, said pivot axis of said first structure being transverse to said pivot axis of said second structure, and a plurality of electric switches carried by said fixed frame structure and having operating plungers, at least one of said plungers being engageable



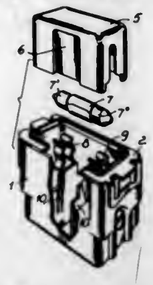
by said first pivoted structure and at least another of said plungers being engageable by said second pivoted structure according to the direction of movement of the lever actuator each of said plungers being depressible in a plane which includes the plane of movement of the pivoted structure by which it is engaged.

3,360,621
FLOW SWITCH HAVING HIGH SENSITIVITY AT LOW FLOW RATES
John A. Liddell, Wallingford, Conn., assignor to Revere Corporation of America, Wallingford, Conn., a corporation of New Jersey
Filed Aug. 20, 1965, Ser. No. 481,280
7 Claims. (Cl. 200—81.9)



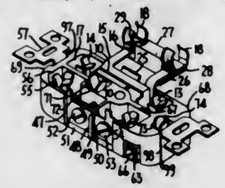
1. A flow switch comprising:
(a) a chamber assembly, including
(i) walls defining a main chamber,
(ii) first and second throats respectively leading into and out of said main chamber, and
(iii) a vane mounted within said main chamber having an area larger than the cross-sectional area of and biased to cover said first throat, and pivoted to be movable away from said first throat in an arcuate path in response to fluid pressure thereat,
said walls being formed to conform closely to the solid of revolution described by said vane during an initial span of movement of said vane away from said first throat, for the essentially constant prevention of flow-by throughout that initial span of movement, and said second throat being disposed to intersect said main chamber at a wall location passed by said vane during a subsequent span of movement thereof away from said first throat; and
(b) switch means responsive to the position of said vane relative to said first throat.

3,360,622
ELECTRIC WARNING OR CUT-OFF DEVICE
Ermanno Bassani, Corso Porta Vittoria 9, Milan, Italy
Filed Oct. 24, 1965, Ser. No. 504,849
11 Claims. (Cl. 200—113)



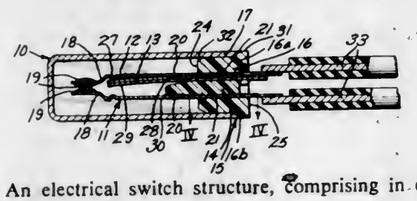
1. In an electrical device, an arrangement comprising, in combination, casing means having an opening and defining an inner chamber; slidably withdrawable cap means extending into and closing said opening; current-conductive holding elements carried by one of said means; a current-responsive electrical component engaged by said holding elements in current-conductive relationship therewith; collar means surrounding said opening of said casing means; frame means having an aperture into which said casing means extends; and a plurality of coupling means, including cooperating first and second coupling means respectively provided on said collar means and said casing means for couplingly securing one to the other, and cooperating third and fourth coupling means respectively provided on said collar means and said frame means for couplingly securing the former to the latter and for thereby connecting said casing means to said frame means.

3,360,623
THREE WIRE GROUND TYPE SAFETY FUSE RECEPTACLE
Michael Graziosi, 383 2nd St., Jersey City, N.J. 07302
Filed Feb. 5, 1964, Ser. No. 342,736
6 Claims. (Cl. 200—115.5)



1. A fused wall receptacle comprising a hollow compartmented body, said hollow compartmented body having an upper body member connectable to a lower body member, said lower body member having a bottom wall face, a metallic band means connectable to said bottom wall face and adapted to extend upwardly on the ends of the compartmented body, a pair of ground pin sockets connected to said metallic band means and extending into the compartmented body through said lower body member, a cross-bar element disposed within the lower body member being provided with prong connector sockets, a positive connector plate having a means for retaining a positive conductor element disposed within said hollow compartmented body, a negative conductor plate connectable to the compartmented body and having a pair of prong connector sockets disposed within the body, said upper body being provided with a pair of upwardly extending receptacle elements, each of said receptacle elements having a pair of slots in alignment with said positive and negative conductor elements and a U-shaped opening in alignment with said ground pin socket, a rectangular hollow casing connected to said upper body member adapted to receive a fuse, said cross-bar member having a right angle shelf with a fuse clip connected thereto, an extension integral with said positive connector plate and being provided with a fuse clip for cooperating with the fuse clip on said right angle shelf to retain a fuse therebetween, a locking post member connectable between the upper body member and the lower body member for securing the members together, and a face plate cover disposed over said upper body member for enclosing said hollow compartmented body portion.

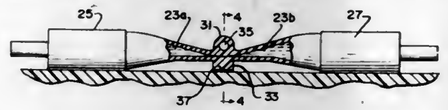
3,360,624
ELECTRIC SWITCH STRUCTURE HAVING EXTERNALLY ACCESSIBLE DRIFT-FREE ADJUSTMENT
Carl L. Erwin and Theodore G. Scheid III, Chicago, Ill., assignors to Northern Electric Company, Chicago, Ill., a corporation of Delaware
Filed Oct. 23, 1965, Ser. No. 503,954
5 Claims. (Cl. 200—138)



1. An electrical switch structure, comprising in combination:
(a) a case of metal having a tubular configuration free of deformation;
(b) an electrical contact supported therein;
(c) an electrical contact blade having a fixed end and a movable contact end engageable with said contact;
(d) separate rigid insulative means fixedly disposed free of deformation within an end of said tubular case and tightly encircled by the deformation-free tubular case, said rigid means extending about said fixed end of said blade in spaced relation to one side thereof so as to leave a space therebetween within said rigid means, such space extending from outside of said case into the interior of said case;
(e) a separate insulative spacer disposed against said one side of said blade and coacting with said rigid means in rigidly supporting said fixed end, said spacer closing said space and being externally accessible for being slidably moved while coacting in the rigid support of said fixed end; and
(f) spring means acting on said slidable spacer in a direction perpendicular to the direction in which said spacer is slidable, and augmenting the frictional resistance of said spacer to sliding.

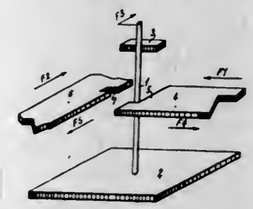
3,360,625
FLUID SWITCHING DEVICE
Robert W. Nickelson, Elk Grove Village, Ill., assignor to Beltone Electronics Corporation, a corporation of Illinois
Filed Sept. 12, 1966, Ser. No. 578,597
6 Claims. (Cl. 200—152)

1. In combination,
a pair of spaced apart contact terminals,
an elastically defo mable, hollow envelope defining a passageway between said terminals, said passageway being at least partially filled with an electrically conductive fluid which is non-wetting with respect to the interior surface of said envelope,
first and second actuating members fastened to said envelope on opposing sides of said passageway,
and means for moving at least one of said members relative to the other of said members between first and second positions, said members in said first position being spaced closely together to constrict said passageway to separate said fluid into non-contacting



physical segments and said members in said second position being spaced apart to open said passageway to create a low impedance electrical connection through said fluid between said first and second terminals.

3,360,626
SWITCHING-SELECTING DEVICE
Charles Vazquez, Paris, France, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed June 29, 1965, Ser. No. 468,071
Claims priority, application France, July 2, 1964, 980,444, Patent 1,408,337
17 Claims. (Cl. 200—153)

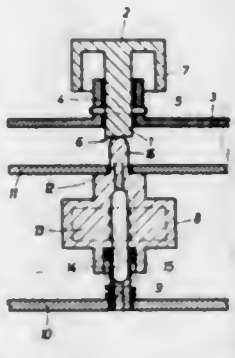


1. A switching-selecting device comprising:
a mobile contact spring having one end supported by a fixed support and having a free end movable about the one end,
at least one stationary contact fixed in position relative to the fixed support,
a pair of mechanical actuating members positioned adacent said mobile contact spring for exerting a pair of spring moving forces on said mobile contact spring,
one of said actuating members being a selection bar for initially deflecting the free end of the mobile contact spring in a first direction, and
the other of said actuating members being a connection bar for thereafter deflecting the free end of the mobile contact spring in a second direction,
said combined deflections serving to cause the free end of the mobile contact spring to engage a selected one of said contacts.

3,360,627
PUSHBUTTON KEY WITH A DUST PROTECTED PASSAGE FOR THE PUSHBUTTON HEAD
Gerhard Wessel, Kornwestheim, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Continuation of application Ser. No. 480,462, Aug. 17, 1965. This application Mar. 14, 1967, Ser. No. 623,141
Claims priority, application Germany, Aug. 20, 1964, St 22,568
3 Claims. (Cl. 200—168)

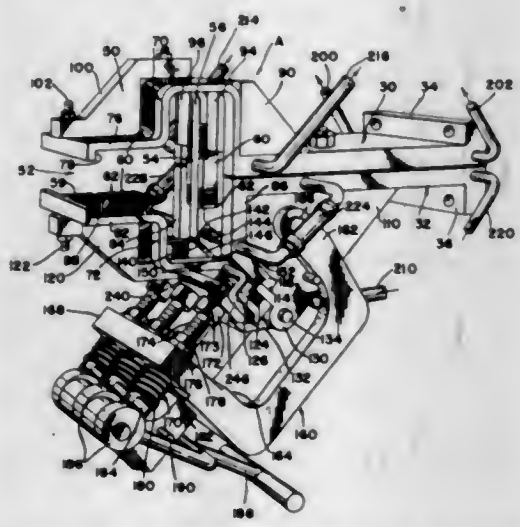
3. A pushbutton key for opening and closing electrical contacts which is free from the infiltration of dust through its point of insertion through and into a supporting body comprising

a first portion aligned along a common central axis and a second portion,
said first portion including a pushbutton shaft integral at one end with a pushbutton head and terminating at the other end as a shaft head,
said push button head being T-shaped with long extensions from the ends of sections perpendicular to the shaft to form a cup around the end of the shaft,
means including a collar for accepting said pushbutton shaft and permitting extension of the shaft therethrough,
said second portion of said pushbutton key including an annular permanent magnet having an axis coinciding with said common central axis for providing a magnetic field for opening and closing electrical contacts,



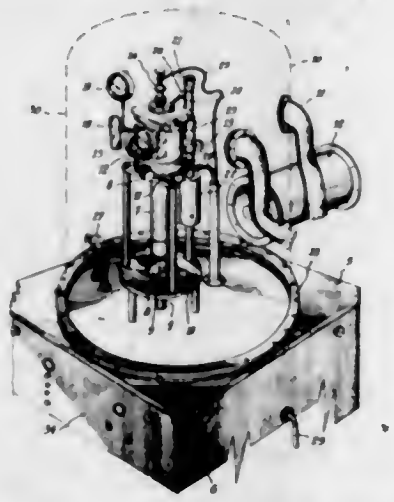
said pushbutton shaft head engaging said second portion of said pushbutton key to act upon it by pressure transfer, and to change the position of said permanent magnet to thereby alter the condition of said electrical contacts,
said collar extending under the pushbutton head as a bushing and dust protector,
a hole through said collar,
an oblong hole through the push button shaft, and
a pin through both said holes permitting motion of said push button shaft along an axis through the center of the shaft,
said pin serving as a retainer to prevent removal of said shaft from the collar.

3,360,628
INDUCTOR FOR AN INDUCTION HEATING APPARATUS
Leonard H. Hadde, Cleveland, Ohio, assignor to The Ohio Crankshaft Company, Cleveland, Ohio, a corporation of Ohio
Filed Mar. 11, 1965, Ser. No. 438,962
13 Claims. (Cl. 219—10.79)



1. An inductor for heating a selected narrow portion along the length of an elongated workpiece having a cross-section including an upstanding leg with a first and a second end and an outwardly extending element adjacent said first end of said upstanding leg, said inductor comprising: a main conductor having an internal contour generally matching said cross-section and slightly larger than said cross-section, and two terminal ends positioned on opposite sides of said upstanding leg and adjacent said second end of said upstanding leg, a pair of return conductors fixedly connected onto each terminal end of said main conductor, said return conductors having an internal contour generally matching at least a portion of said cross-section and slightly larger than said portion of said cross-section, each pair of return conductors being positioned on opposite sides of said workpiece with the return conductors of each pair being on opposite sides of said main conductor.

3,360,629
DEVICE FOR ARC WELDING UNDER GAS PRESSURE
Claude Bridoux, Valentigney, Henri Foulquier, Rueil, Jean Kauffmann, Gif-sur-Yvette, and Paul Thome, Saint-Cloud, France, assignors to Commissariat à l'Energie Atomique, Paris, France
Filed Nov. 7, 1962, Ser. No. 236,085
Claims priority, application France, Nov. 13, 1961, 878,751
1 Claim. (Cl. 219—72)

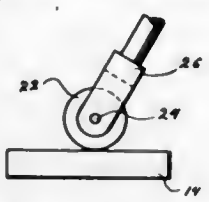


Arc-welding machine for welding at pressures several atmospheres in excess of atmospheric pressure comprising a leakproof welding chamber, means for opening said chamber, a workpiece clamping chuck mounted in said chamber, mechanism for driving said chuck, an electrode in said chamber, means for adjusting said electrode vertically and laterally with respect to the workpiece, a shell beneath said chuck receiving the workpiece, a plurality of interchangeable leakproof elements forming said shell depending on the length of the workpiece, means for supplying a gas under pressure to said chamber, a counterweight connected to and balancing the weight of said chamber, a bell-housing enclosing the machine, gloves for said bell-housing, a lock-chamber for said bell-housing, a block supporting the machine and said bell-housing, said mechanism being located in said block and a control panel on said block for said mechanism.

3,360,630
PROCESS OF HARDENING METAL SURFACES
Henry Blaszkowski, 22315 Maplewood Drive, Southfield, Mich. 48075
Continuation of abandoned application Ser. No. 262,655, Mar. 4, 1963. This application Jan. 19, 1966, Ser. No. 521,607
8 Claims. (Cl. 219—76)

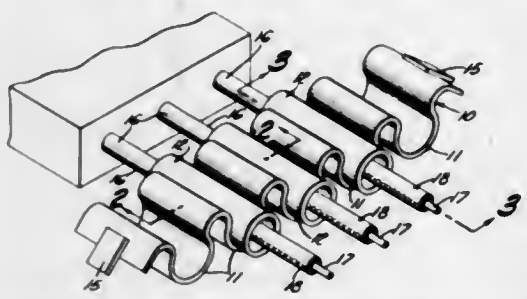
1. A process for forming a hard surface on a metal workpiece comprisingn the steps of contacting the workpiece with an electrode, there being a potential difference between said electrode and said workpiece with resultant intense localized electrical heating such that a

hard relatively rough surface on said workpiece is provided; and then applying pressure to said hard surface, after it has cooled, by a dull hard tool which is moved over and in contact with the workpiece surface under



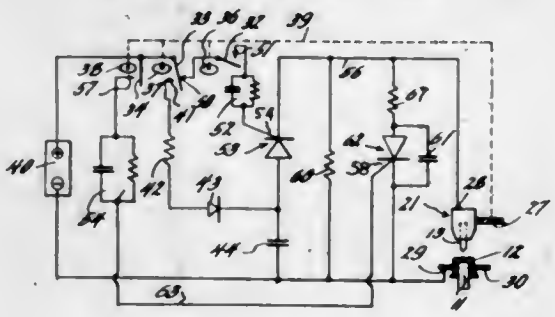
pressure whereby at least portions of said hard rough surface are cold worked into the metal of said workpiece and said surface is made smoother.

3,360,631
PACKAGE ASSEMBLY
Robert L. Hess, Palo Alto, Calif., assignor to Raychem Corporation, Redwood City, Calif., a corporation of California
Filed Apr. 7, 1965, Ser. No. 446,373
15 Claims. (Cl. 219—85)



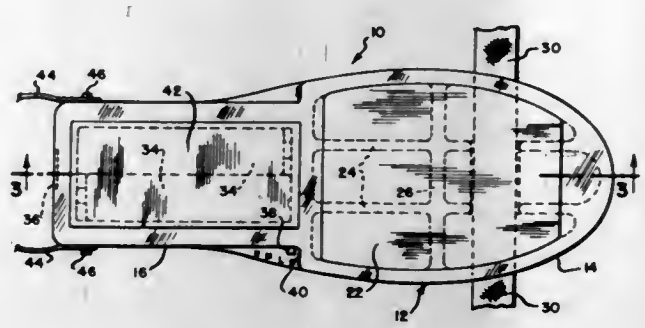
1. A package for heat recoverable objects, comprising: a corrugated sheet of electrically conductive material, each corrugation being adapted to receive one of said objects, at least a portion of each said corrugation having a transverse dimension slightly smaller than the transverse dimension of said objects whereby said objects may be force fit into and securely held by said corrugations, and means for connecting said sheet into an electrical circuit whereby said sheet can be heated by passage of current therethrough.

3,360,632
PERCUSSION WELDING CONTROL CIRCUIT
John C. Huffman, Winston-Salem, N.C., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Mar. 26, 1964, Ser. No. 354,930
10 Claims. (Cl. 219—113)



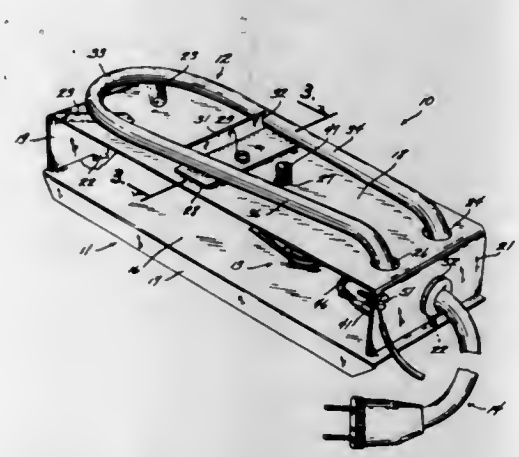
1. A control circuit for a percussion welding apparatus having facilities for relatively advancing a pair of components into percussive engagement, comprising
a storage circuit for storing welding energy, and
means rendered effective by the advancement of the components for switching the storage circuit to discharge the welding energy between the advancing components at a desired spacing and for dissipating welding energy when discharge fails to occur at the desired spacing.

3,360,633
PORTABLE ELECTRICAL FOOT HEATING APPARATUS
David Weisberger, 101 Ellwood Ave., Mount Vernon, N.Y. 10552
Filed Apr. 20, 1965, Ser. No. 449,504
7 Claims. (Cl. 219—211)



1. Apparatus for providing a controlled quantity of available thermal energy for application to the pedis portions of the wearer, comprising, in combination:
a sole portion and a heel portion;
said sole and heel portions being fabricated of an electrically non-conductive material comprising:
a surface having a recess therein;
a heating film of electrically resistive material positioned within said recess for presenting a controlled quantity of available thermal energy that can uniformly and comfortably be applied to the pedis portions of a wearer;
said heel portion comprising:
an energy chamber;
a source of electrical energy positioned within said energy chamber; and
electrical conductors connecting the heating film to the source of energy.

3,360,634
PORTABLE ELECTRIC HEATING APPARATUS
Clifford D. Wilson, Jr., Conrad, Iowa 50621
Filed Feb. 8, 1965, Ser. No. 430,981
2 Claims. (Cl. 219—536)



1. A portable electric heating apparatus comprising in combination:
base means including a ground engageable member, and including a panel having a horizontally disposed portion extended over said member, the ends of said portion depending into engagement with said member so as to space said portion over said member;
a U-shaped rod type heating element having straight downwardly depending legs mounted on and above said portion in an exposed condition, the ends of the

legs of said element depending through openings provided therefor in said portion wherein said element is liftable upwardly and away from said portion;

thermostat means mounted on said base means and detachably operatively connected to said heating element, said thermostat means including a temperature adjusting device extended upwardly through said portion and exposed between the legs of said heating element for overhead adjustment, said adjusting device disposed below the upper surface of said element; and

electric source means electrically connected to said heating element and to said thermostat means.

3,360,635
HEAD FOR READING A PERFORATED RECORD MEDIUM

Edgar Wolf, New Hyde Park, and David E. Worster, West Islip, N.Y., assignors to Digitronics Corporation, Albertson, N.Y., a corporation of Delaware

Filed Feb. 23, 1967, Ser. No. 618,218
10 Claims. (Cl. 235—61.11)



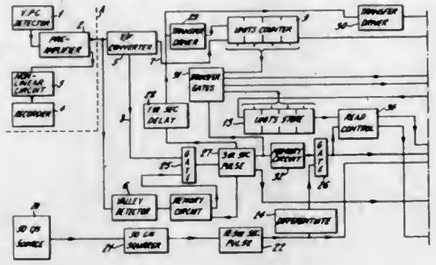
1. A reading head for reading a multichannel perforated record medium comprising a record medium support block, said support block having at least one substantially flat surface upon which said record medium is carried for supporting a record medium during the record medium's longitudinal movement over said support block, a plurality of straight light passageways extending through said support block, each of said light passageways having a first end at the surface of the support block adjacent the record medium for registration with one of the channels thereof and a second end at the surface of said support block remote therefrom, a light radiation element with a dimension very much smaller than the transverse distance between the outermost channels of the record medium, said light radiation element being displaced from and opposite said substantially flat surface of said support block for simultaneously illuminating said first ends of said light passageway adjacent the record medium, each of said light passageways being colinear with an optical radius vector extending from said light radiation element to its end in registration with a channel of the record medium; and a plurality of means for converting light energy to electric signals, each of said converting means being disposed opposite said second ends of said light passageways remote from said record medium, respectively.

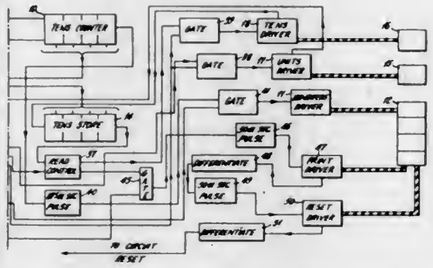
3,360,636
APPARATUS FOR PROVIDING A VISUAL RECORD OF THE INTEGRAL OF AN ELECTRICAL SIGNAL

Alan J. Ramsay, Bothwell, Glasgow, and William Kelvin Bottomley, Hamilton, Scotland, assignors to Minneapolis-Honeywell Regulator Company, Minneapolis, Minn., a corporation of Delaware

Filed May 6, 1964, Ser. No. 365,354
Claims priority, application Great Britain, May 10, 1963, 18,506/63
8 Claims. (Cl. 235—92)

1. Apparatus for providing a visual record of the integral of an electric signal, comprising means for generating a train of pulses the recurrence frequency of which is representative of the magnitude of an applied electric signal, a source of timing pulses, means for counting the number of pulses in said train, said counting means including n counters each for separately registering a corresponding one of the n least significant digits of the number counted, n being a small integer, and a serially operating counter for registering the remaining digits, n storage devices associated one with each of the n counters, and means responsive to a timing pulse from said source operative first to transfer to the associated



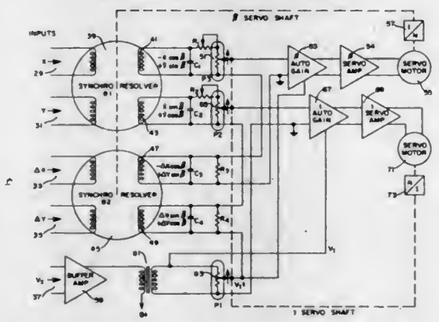


storage devices numbers representative of the numbers registered in the n counters and to re-set the n counters to their datum conditions, and second, at some predetermined interval after said transfer, to actuate means for creating a visual record of the number of pulses counted up to the time of occurrence of the timing pulse and then re-setting the storage devices and the serially operating counter to their datum conditions, said record being derived from the numbers stored in the storage devices and the number registered in the serially operating counter.

3,360,637
HEADING ANGLE COMPUTER

Edgar J. Smith, Verona, N.J., assignor to General Precision Inc., Little Falls, N.J., a corporation of Delaware

Filed July 3, 1963, Ser. No. 292,525
6 Claims. (Cl. 235—150.26)

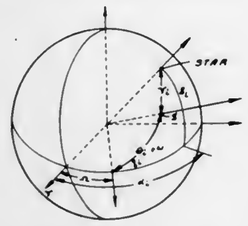


1. A heading computer comprising means to generate a first output signal representing the quantity $\dot{y}t \sin \beta - \dot{x}t \cos \beta + \Delta y \sin \beta - \Delta x \cos \beta$ and a second output signal representing $\dot{x}t \sin \beta + \dot{y}t \cos \beta + \Delta x \sin \beta + \Delta y \cos \beta - V_1 t$ in which β is a first parameter and t is a second parameter and wherein $\dot{x}$ and $\dot{y}$ are derivatives of x and y with respect to t respectively, a variable gain amplifier having a gain varying inversely in accordance with said second parameter t connected to amplify said first output signal, means responsive to said first output signal amplified by said amplifier to change said first parameter β until said first output signal becomes zero, and means responsive to said second output signal to change said second parameter t until said second output signal becomes zero.

3,360,638
DYNAMIC SPACE NAVIGATION EMPLOYING STAR OCCULTATION TECHNIQUE

Robert L. Lillestrand, Minneapolis, and Joseph E. Carroll, Hopkins, Minn., assignors to Control Data Corporation, Minneapolis, Minn., a corporation of Minnesota

Filed Nov. 28, 1962, Ser. No. 240,693
5 Claims. (Cl. 235—150.271)



1. A method for determining the orbit of a vehicle moving in space relative to a known planet or other solar system body, comprising the steps of:

directing an optical imaging system on board said vehicle to encompass a field of view always including a reference mark having a definite positional relationship with respect to said planet and a recognizable source of star radiation;

recording the time of transit of said radiation source past the reference mark while the optical imaging system is so directed;

repeating the foregoing step of recording the time of transit of a radiation source at least five additional times; and

computing a result indicative of the orbit of the vehicle utilizing the recorded times of transit in equations containing orbital parameters, each parameter being functionally dependent on the known right ascension and declination, as well as the transit time, of the recognized stars.

3,360,639
FLASH ADAPTOR

Herman H. Waggershauser, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed July 12, 1965, Ser. No. 471,184
1 Claim. (Cl. 240—1.3)

A multilamp photoflash adaptor comprising:

(a) a body portion;

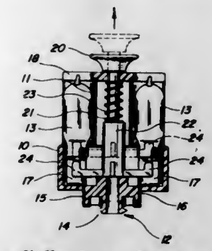
(b) an attaching base to connect the adaptor to a connecting socket having electrical terminals of a photoflash circuit;

(c) a plurality of individual reflectors around the periphery of the body portion;

(d) socket means in the body portion to receive a flash lamp adjacent to each of the reflectors;

(e) electrical contacts to connect electrically the inserted lamps to the electrical terminals; and

(f) ejecting means to eject simultaneously all inserted lamps from the receiving socket means, the ejecting means including an axially movable ejector shaft positioned intermediate the reflectors, ejector arms

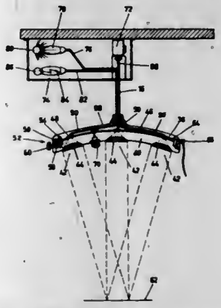


extending radially from the shaft to the receiving socket means adjacent to the inserted lamps, and means for axially moving the shaft and arms to eject the inserted lamps from the receiving socket means.

3,360,640
SURGICAL ILLUMINATING APPARATUS

Ernst-Otto Seitz, Hanau, Volker Schaefer, Bruchkobel, near Hanau, and Juergen Schaefer, Niedermittlau, Kreis Gelnhausen, Germany, assignors to Quarzlampen Gesellschaft m.b.H., Hanau am Main, Germany

Filed Apr. 5, 1965, Ser. No. 445,530
Claims priority, application Germany, Apr. 11, 1964, Q 783
6 Claims. (Cl. 240—1.4)



1. A surgical cold light system for uses such as in an operating room comprising a light source housing with at least one light source therein, a reflector housing with at least one lens supported therein, said reflector housing mounted from the ceiling, said light source housing mounted adjacent the ceiling insulated from said reflector housing, and at least one light conducting fiber cable having one end supported adjacent the light source and the other end supported adjacent the lens, said housing having means for raising and lowering said light source.

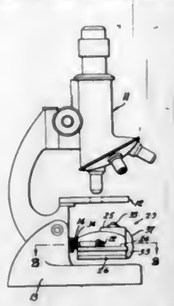
3,360,641
SUBSTAGE ILLUMINATING DEVICE FOR MICROSCOPES

Willard H. Korte, North Miami Beach, Fla., assignor to Tasco Sales, Inc., Miami, Fla., a corporation of Florida

Filed Oct. 4, 1965, Ser. No. 492,762
10 Claims. (Cl. 240—2)

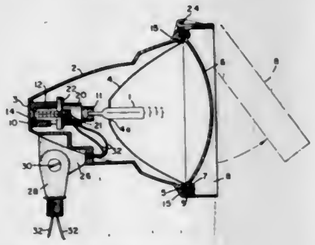
1. In a microscope having a body, lenses movably connected to said body and a stage projecting from said body beneath said lenses, the improvement that comprises a substage illuminating device pivotally connected to said body beneath said stage, said substage illuminating device comprising a casing having a pair of oppositely disposed first faces, a second face intervening said first faces, a

pair of laterally disposed third faces intervening said first faces and offset from said second face, illuminating



means projecting from a first face, mirror means upon an opposite first face, and positioning means upon the second face.

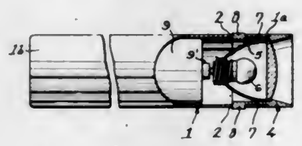
3,360,642
LIGHTING FIXTURE
Hendrik A. J. de Vos, Wenham, and Julian J. Wierzbicki, Peabody, Mass., assignors to Sylvania Electric Products Inc., a corporation of Delaware
Filed June 28, 1966, Ser. No. 561,137
2 Claims. (Cl. 240—3)



1. A lighting fixture comprising:
a housing;
a lamp socket supported in said housing;
a reflector disposed in said housing, said reflector having a central aperture therein in axial alignment with said lamp socket;
a lamp mounted in said lamp socket and extending into said reflector through the aperture therein;
and means for adjusting the relative position of said lamp socket in said housing whereby the relative position of said lamp with respect to said reflector through which it extends can be varied, said adjusting means including a base member having a series of steps formed therein to define different levels of elevation and an adapter having a series of steps formed therein to define different levels of elevation, said first mentioned and said second mentioned series of steps being located in cooperative relationship with respect to one another.

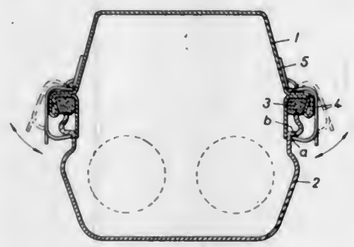
3,360,643
FLASH-LIGHT CASING
Yoshiharu Alan Shimasaki, 105 Azabu-Motomura-cho, Minato-ku, Tokyo, Japan
Filed July 6, 1965, Ser. No. 469,740
Claims priority, application Japan, July 20, 1964, 39/56,826
2 Claims. (Cl. 240—10.68)

1. A flash-light comprising:
a cylindrical housing member having an open front end and defining at least one opening adjacent said open front end,
a separate cylindrical front member having a front portion and a rear portion and said rear portion adapted to be inserted into said cylindrical housing member at the open front end thereof,
said rear portion having a smaller diameter than said front portion and said cylindrical front member defining an annular circumferential abutment ridge at the junction of said rear portion and said front portion, said abutment ridge facing toward said rear portion,
at least one spring member formed on said rear portion and extending parallel to the axis of said cylindrical front member and including a radially outwardly directed projection thereon,
said projection adapted to be inserted into said at least



one opening in said cylindrical housing member when said cylindrical front member is inserted into said cylindrical housing member in an operative position,
said at least one spring member biased in the outward direction for holding said cylindrical front member in releasable engagement with said cylindrical housing member in said operative position,
said front end of said cylindrical housing member abutting said annular circumferential abutment ridge in said operative position, and
a bulb and reflector combination adapted to be positioned securely in said cylindrical front member and said cylindrical housing member in said operative position.

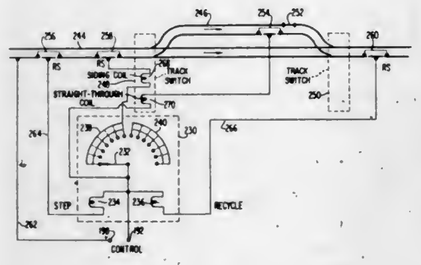
3,360,644
DETACHABLE WATERTIGHT CONNECTION BETWEEN A LIGHTING FIXTURE TOP PART AND PLASTIC SHADE
Ottar Lillebostad, Kviltorp, Molde, Norway
Filed June 30, 1965, Ser. No. 468,538
1 Claim. (Cl. 240—11.2)



A container for a light source comprising first and second elongated generally trough-shaped members, at least one of which is of a light transmitting material, said first member having a substantially U-shaped channel formed adjacent the edge thereof and extending outwardly therefrom, a resilient strip clamped in said channel and extending the entire length thereof, said second member having an outwardly extending protuberance formed adjacent the edge thereof, said members being

inverted with respect to each other with the edge of said first member engaging the inner surface of said second member and the edge of said second member engaging said strip, at least one rigid clamp having a substantially U-shaped cross section corresponding to the outwardly extending portions of said channel and said protuberance, hinge means fixed to one of said members for pivotally mounting said clamp with respect thereto, said clamp extending the entire length of said members and adapted to extend over the outwardly extending portions of said channel and said protuberance to detachably sealingly connect said members.

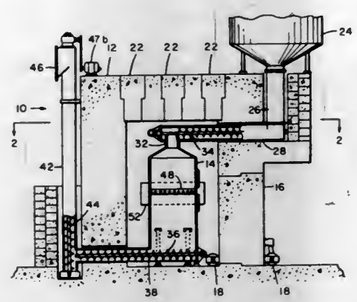
3,360,645
ELECTRICAL RAIL SWITCH AND CONTROL SYSTEM
Fred W. Albertson, Jr., and Fred W. Albertson, Sr., both of 3753 Jenifer St. NW., Washington, D.C. 20015
Original application Nov. 2, 1962, Ser. No. 234,993, now Patent No. 3,219,816, dated Nov. 23, 1965. Divided and this application May 28, 1964, Ser. No. 377,448
1 Claim. (Cl. 246—219)



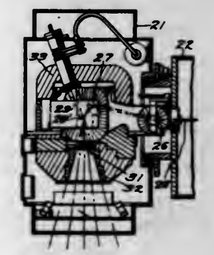
A through train priority system comprising a main track, a siding, first and second switches coupling opposite ends of said siding to said main track, said siding including a rail switch and insulated section of track adjacent said second switch, said first switch including a pair of actuating coils for throwing said first switch in opposite directions, a control source, a first rail switch in said main track adjacent said first switch, a stepper switch having a first set of contacts and having stepper and recycle windings, said first rail switch and said stepper switch contacts coupling one of said actuating coils to said source, a second rail switch in said main track preceding said siding coupling the stepper winding of said stepper switch to said source, and a third rail switch in said main track beyond said siding coupling the recycle winding of said stepper switch to said source.

3,360,646
UNIFORM GAMMA IRRADIATION OF BULK GRAIN MATERIAL
Earl M. Reiback, New York, and Otto A. Kubl, Northport, N.Y., assignors, by direct and mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission
Filed Jan. 29, 1965, Ser. No. 429,185
6 Claims. (Cl. 250—44)

1. Apparatus for the irradiation of bulk material comprising:
(a) means forming a chamber substantially filled with said material during irradiation;
(b) means consisting of a grid of spaced parallel tubular sheaths containing line sources of gamma rays extending through said chamber in a plane at an angle substantially perpendicular to the direction of flow of said material through said chamber, each of said sources being spaced from its sheath to prevent said material from coming close enough to said source to receive an excessive dosage of radiation; and
(c) means for regulating the flow of material downwardly through said chamber to obtain the desired dosages and maintain said chamber substantially filled with said material during operation of said apparatus.



3,360,647
ELECTRON ACCELERATOR WITH SPECIFIC DEFLECTING MAGNET STRUCTURE AND X-RAY TARGET
Robert T. Avery, Orinda, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California
Continuation of application Ser. No. 46,432, Aug. 1, 1960. This application Sept. 14, 1964, Ser. No. 411,170
8 Claims. (Cl. 250—49.5)



1. Apparatus for directing ionizing radiation on a portion of an object comprising linear accelerator means for accelerating a particle beam along a substantially horizontal axis, said beam having particles with an energy spread, a target positioned on said horizontal axis for producing ionizing radiation in response to said beam impinging thereon, means for deflecting the particle beam away from the axis, means for deflecting and focusing the particles of the beam at approximately the same point on said target from a direction substantially 90° with respect to the axis for producing ionizing radiation emanating from said target on said axis in a direction substantially 90° with respect to said axis.

3. Apparatus for directing ionizing radiation on a portion of an object comprising linear accelerator means for accelerating a particle beam along a substantially horizontal axis, means for deflecting the said particle beam in a direction substantially 90° from its original direction, and means for moving the accelerator means in a manner such that the particle beam can be directed at the object being irradiated from many different directions, said apparatus being adapted for directing a particle beam with particles of different energy levels, said

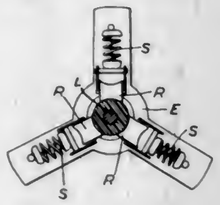
means for deflecting said particle beam including magnet means for deflecting all of the particles of the particle beam emanating from the accelerator means through an angle of substantially 270°, the sum of all the deflecting forces applied to any given particle being substantially proportionate to the energy of that particle.

3,360,648

APPARATUS FOR IMPARTING AN OSCILLATING ROTARY MOTION TO A CABLE PASSING THROUGH AN IRRADIATION MEANS

Eric Haydn Cornish, Alan Richard Gilbert, and Derek Maurice Cutting, London, England, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed Nov. 16, 1964, Ser. No. 411,277
Claims priority, application Great Britain, Dec. 13, 1963, 49,430/63
5 Claims. (Cl. 250—52)



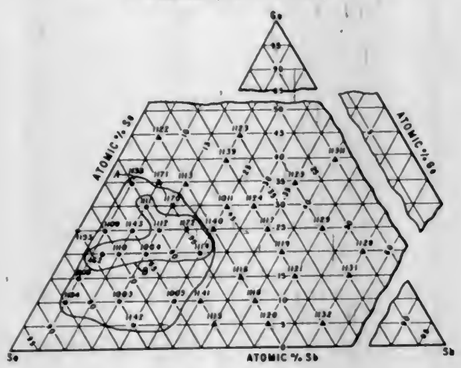
1. Cable processing equipment including irradiation means provided on irradiation zone, means for feeding a cable along its longitudinal axis through said irradiation zone, and cable gripping and driving means for imparting to said cable an oscillating rotary motion about said longitudinal axis of the cable as it passes slidably through said gripping and driving means and through said irradiation zone, whereby the irradiation of said cable is distributed relatively homogeneously.

3,360,649

Ge-Sb-Se GLASS COMPOSITIONS

Maurice J. Brau, Richardson, and Rowland E. Johnson and Robert J. Patterson, Dallas, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Apr. 22, 1965, Ser. No. 449,994
5 Claims. (Cl. 250—83)



1. Ternary glass compositions consisting essentially of germanium, antimony and selenium and lying within line A of FIGURE 1.

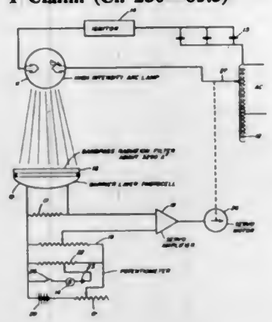
5. An infrared detection system comprising a detector sensitive to infrared energy and a transmitting element in optical contact with said detector, said transmitting element being a ternary amorphous glass composition comprising in major proportion 5 to 37 atomic percent germanium, greater than 0 to 28 atomic percent antimony, and 53 to 85 atomic percent selenium.

3,360,650

APPARATUS FOR ULTRAVIOLET SOURCE STABILIZATION IN EXPOSURE TESTING

Henry C. Lawrence, Warren Township, Somerset County, N.J., assignor to American Cyanamid Company, New York, N.Y., a corporation of Maine

Filed Feb. 12, 1964, Ser. No. 344,383
1 Claim. (Cl. 250—83.3)



In accelerated environmental testing with ultraviolet radiant energy over an extended testing period the combination of

a high intensity arc lamp,

a current limiting reactor in series with said arc lamp,

a variable voltage alternating current power source connected to deliver energy through said reactor to said arc lamp,

a band pass radiation filter, passing a narrow band of radiation from said arc lamp in a portion of the spectrum of primary interest, which filter has a peak transmittance between 3250 and 3350 Angstroms, a half width peak of not greater than 200 Angstroms and no appreciable transmittance below 3000 Angstroms or above 3900 Angstroms,

a photocell which receives the radiation passing through the filter, the output of which photocell is proportional to the incident radiant energy in the selected band from said arc lamp,

a source of constant potential adjustable to the desired output from said photocell,

a servo amplifier connected to buck the output from the photocell and from the constant voltage source,

a servo motor driven by said servo amplifier and connected to said variable voltage source to change the voltage output from the variable voltage source to said arc lamp to such a point that the photocell and adjustable constant potential are the same,

said servo amplifier and said servo motor having, as a system, a time constant for response of the order of one-half second or more whereby random noise and short-term transients are ignored by the servo system.

3,360,651

WEB INSPECTION DEVICE WITH MODIFIED DEFECT SIGNAL CONTROL

James Stephens Linderman, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed May 1, 1964, Ser. No. 364,152
8 Claims. (Cl. 250—219)

1. A web defect detector device comprising

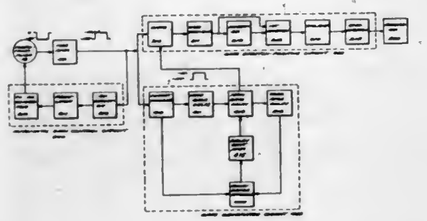
(A) means for repeatedly scanning said web with light to indicate web defects by variations in light intensity;

(B) a photocell for receiving said light upon its passage from said web and producing an electrical pedestal shaped signal each time the light scans the web;

(C) power supply means to automatically provide said photocell with the necessary voltage to maintain a pedestal signal of constant amplitude;

(D) amplifier means to increase the strength of said pedestal signal;

(E) signal forming means for eliminating segments of the leading and trailing portions of said pedestal signal by gating said signal and converting any



defect impulses on said signal to a size capable of being recorded;

(F) gate generating means to actuate said signal forming means in sequence to eliminate said pedestal leading and trailing edge segments, said gate means having signal delay means triggered by the beginning of said pedestal signal, gate actuating means actuated by said signal delay means to initiate said gate generating means, time delay means initiated by the discontinuance of the signal from said gate actuating means and detector means to compare the termination of said pedestal signal with a signal from said time delay means and adjust said gate actuating means according to said comparison; and

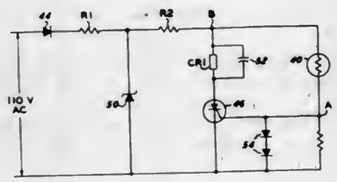
(G) recording means to transcribe said defects.

3,360,652

FAIL SAFE PHOTOELECTRIC SHEET SENSING MACHINE CONTROL CIRCUIT

Tayeb Bernous, Rochester, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York

Filed Oct. 14, 1964, Ser. No. 403,844
2 Claims. (Cl. 250—219)



1. A fail safe detecting device for use in detecting misfed sheets of paper in an automatic xerographic machine including:

a control means adapted to permit operation of the machine when energized and to shut down the machine when deenergized,

a threshold switching means connected in series with the control means to control current flow through the control means, a limited current power supply connected to said threshold switching means and said control means,

a photocell electrically coupled to said threshold switching means and said power supply to trigger said threshold switching means and thereby energize said control means at a photocell response of a predetermined value,

diode means coupled to said photocell and said power supply to short said power supply in response to a photocell response of higher than said predetermined value,

a light source positioned in the automatic xerographic machine to reflect a predetermined amount of light into the photocell under normal operative conditions and to reflect an increased amount of light into the photocell when a sheet of paper is misfed in the machine thereby producing a photocell response of higher than the above mentioned predetermined value,

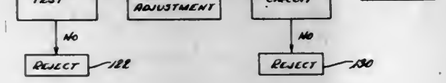
the photocell having a resistance when exposed to light, under normal operating conditions, capable of allowing sufficient current to pass to trigger the threshold switching means and thus allow passage of sufficient current to energize the control means and, upon an increase of light above said predetermined amount, a resistance low enough to draw enough current to actuate said diode means so as to short said power supply and prevent operation of the control means and, upon a decrease of light, a resistance large enough to prevent passage of sufficient current to trigger the threshold switching means.

3,360,653

PHOTOELECTRIC DOCUMENT AUTHENTICATING APPARATUS WITH AGE AND COLOR COMPENSATION

James K. Phares, Akron, Ohio, assignor to Transmarine Corporation, Chesterland, Ohio, a corporation of Ohio

Filed Oct. 22, 1964, Ser. No. 405,666
11 Claims. (Cl. 250—219)



1. In a circuit for authentication of paper securities the combination of

means to project light onto a paper security to be tested,

a reference photocell to view a particular area of the paper security to be tested,

circuit means connected to the reference photocell to produce an output voltage dependent upon the amount of light detected by the reference photocell,

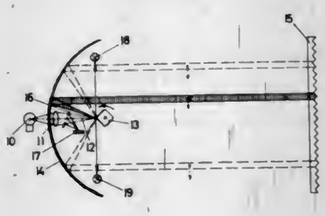
a plurality of test photocells electrically connected with the output voltage from the circuit means to view other areas of the paper security to be tested,

a separate second circuit means impressed with a constant input voltage electrically connected with each test photocell comprising

a pair of zener diode circuits each having one end in common to the voltage potential determined by the test photocell and one circuit having its other end connected to the constant input voltage to the second circuit means and the other circuit having its other end connected to ground, said zener diode circuits being oppositely directed to pass current only when the voltage potential thereacross exceeds a predetermined

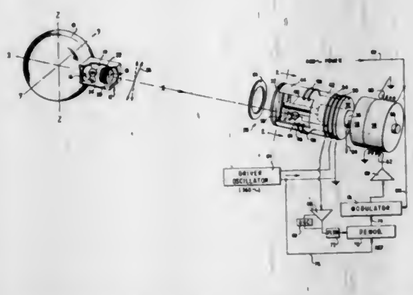
value so that an accept test is present when neither zener diode circuit conducts current, and means to sense all the zener diode circuits electrically connected with all the test photocells to determine whether the paper security tested is authentic.

3,360,654
LIGHT BARRIER FOR PREVENTING MACHINE ACCIDENTS INCLUDING FAIL SAFE DEVICE
Harro Müller, Ottobrunn, Germany, assignor to Erwin Sick, Icking, Isartal, Germany
Filed Apr. 9, 1965, Ser. No. 446,987
Claims priority, application Germany, May 6, 1964, S 90,950
7 Claims. (Cl. 250—221)



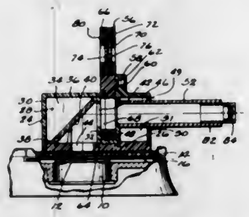
1. In an apparatus for use as a light barrier to provide a warning indication in the event that an object intrudes into a given area, said apparatus having a light source, the improvement comprising: area monitoring means to direct a light beam across said area and to sweep said area repeatedly at high frequency with the light traversing said area being directed to a photoelectric device which produces an electric signal which is a function of the light received thereby, with each sweep constituting a protective cycle, said means shutting off the light to said device for a given period between each protective cycle to produce a monitoring cycle during which a dark pulse occurs; and electrical means connected to said device to provide a warning indication in the event that the light to said device is shut off during a protective cycle and in the event that a dark pulse is not produced during a monitoring cycle.

3,360,655
ANGULAR MOTION SENSOR
William L. McKeown, Hurst, Tex., assignor to Bell Aerospace Corporation, Wheatfield, N.Y.
Filed Mar. 23, 1964, Ser. No. 353,832
9 Claims. (Cl. 250—225)



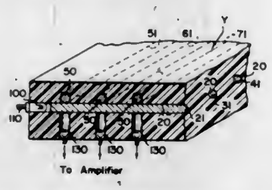
4. A system for slaving a receiver to a body for rotation about a specified axis, comprising a body rotatably mounted on said axis, a projector adapted to be secured to said body for projecting a beam of linearly polarized light generally along said axis, and a receiver disposed to receive radiation from said beam; said receiver comprising a polarization analyzer, servomotor means for rotating said analyzer generally about said axis, means for continuously oscillating said analyzer through a small angular range with reference to the angular position of the analyzer established by said servomotor means, a photocell positioned to respond to light transmitted through said analyzer, and a phase-responsive circuit connecting the output of said photocell to said servomotor to cause the latter to follow and reproduce the rotation of said body, said analyzer being mounted upon a shaft driven by said motor, said shaft having a torsionally deflectable section between said analyzer and said motor.

3,360,656
FILTER ATTACHMENT FOR PHOTOELECTRIC LIGHT METERING APPARATUS
Wolcott S. Kinnard, 4665 N. 56th St., Milwaukee, Wis. 53218
Filed Sept. 15, 1964, Ser. No. 396,634
5 Claims. (Cl. 250—226)



1. An attachment for light metering apparatus, said attachment comprising a housing having two sections, one of said sections having a light admitting opening and the other of said sections having a light discharging opening, and a color wheel rotatable between said sections, said housing including a wheel-confining channel between said sections, one of said sections and said wheel having complementary bearing means for determining the axis of rotation of said wheel, in which said housing includes a flexible base upon which said sections are mounted, the bearing means including a socket and a stud disposed axially of the wheel and engaged in said socket, the socket and stud being engageable and disengageable upon the flexing of said base, the wheel being normally confined in said channel between said sections and said stud being thereby precluded from axial displacement from said socket.

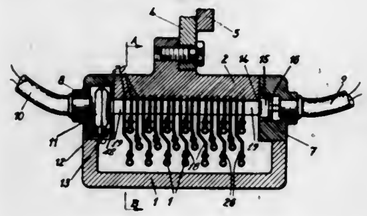
3,360,657
LIGHT RESPONSIVE CROSS BAR SWITCH
Bernard Edward Shlesinger, Jr., 906 Bruce Lane, Annandale, Va. 22003
Filed Nov. 25, 1964, Ser. No. 413,903
23 Claims. (Cl. 250—227)



1. A cross bar switch comprising:
(a) a panel board;
(b) a first series of light transmitting members positioned in said panel board in parallel spaced relation to each other;

(c) a second series of light transmitting members positioned in said panel board in parallel spaced relation to each other and in crossed relation to said first series of members to form a grid arrangement having spaced intersections;
(d) a separate light source for each of said light transmitting members;
(e) means for selectively operating each of said light sources;
(f) said spaced intersections in the zone thereof each having located therein a light sensitive element sensitive to the combined light only in one of said first and one of said second light transmitting members in the zone of their intersection; and
(g) means connecting each of said light sensitive elements to an electrical component.

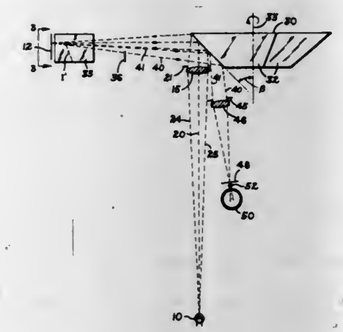
3,360,658
SENSING DEVICES FOR CIGARETTE PACKING MACHINES
Alfred Schmermund, 62 Karnerstrasse, Gevelsberg, Westphalia, Germany
Filed June 4, 1963, Ser. No. 285,312
Claims priority, application Germany, June 8, 1962, Sch 31,597
8 Claims. (Cl. 250—231)



1. In a sensing device for cigarette packing machines to sense cigarettes arranged in a plurality of layers, of the kind comprising a plurality of sensing plungers, means mounting said plungers slidably in the axial direction, said plungers being arranged in a plurality of parallel rows, a plurality of spring means urging said plungers into a first predetermined position, first means for holding a light source, second means for holding a light sensitive cell, a housing enclosing said first holding means and said second holding means and at least parts of said plungers, said plungers protruding from said housing when in said first position, the combination comprising means defining a single straight light channel in said housing between said first holding means and said second holding means for enabling a light beam to travel from said light source to said light sensitive cell, said light channel being parallel to said rows of plungers, and a plurality of masking members carried by said plungers, each plunger carrying one of said masking members, said masking members each extending perpendicular to said plungers and each being shaped and arranged to extend into said light channel to each block the same when said plungers are in said first position and to clear said light channel when said plungers are in a second predetermined position.

3,360,659
COMPENSATED OPTICAL SCANNING SYSTEM
Clinton J. T. Young, Alexandria, Va., assignor to Outlook Engineering Corporation, Alexandria, Va., a corporation of Virginia
Filed Apr. 23, 1964, Ser. No. 362,102
14 Claims. (Cl. 250—236)

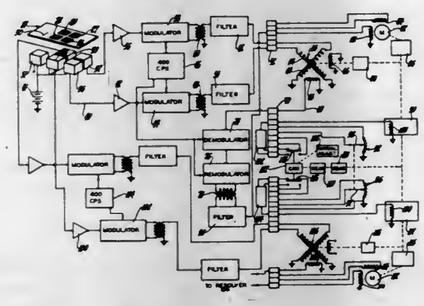
7. A mechanical-optical scanning system, comprising means defining a point source, a lens projecting an image of said source, a rotating scanning mirror structure having an axis of rotation generally aligned with the optical path between said source and said lens and having a plurality of reflecting portions effectively inclined at an included angle of more than 0° and less than 90° to said axis of rotation and movable successively through said path to direct rays from said lens generally radially of said axis onto an object to be scanned for effecting successive scans of the image of said point source across such object, the region of incidence of distance between the one of said reflecting portions with said light path and said object being related with the radial distance of said region of



incidence from said axis so that the change in effective length of light path between said one portion and said object is at least partially offset throughout the length of said scan by a compensating change in length of path between said one portion and said source, and a system responsive to the variations in the intensity of the light reflected from said image including a second lens positioned to receive reflected light from said image through said mirror structure, and a photoelectric transducer positioned to receive light from said second lens to convert the variations in the intensity thereof into an electric signal,

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3,360,660
POSITION AND RATE READOUT SYSTEM WITH DUAL PHASE-DISPLACED GRATINGS
Bernard J. Kusch, Hales Corners, Jack P. Spridco, New Berlin, and David W. Turner, Hales Corners, Wis., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Apr. 7, 1965, Ser. No. 446,247
11 Claims. (Cl. 250—237)



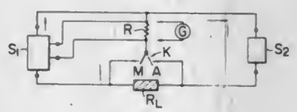
1. In apparatus for monitoring the extent and direction of displacement of a body a first dual grating comprising first and second laterally adjacent sections, the apertures of which have a 90° position phase relation, and first and second photocells associated with the respective sections, a second dual grating fixed in position relative to the first

grating and comprising first and second laterally adjacent sections, the apertures of which have a 90° position phase relation, and third and fourth photocells associated with the respective sections means for producing spaced light line images in substantial alignment with the apertures and which are individually displaceable over the first and second dual gratings in succession and in correspondence with the displacement of said body thereby to produce phase displaced signals from the photocells associated therewith, first selectively utilizable readout means connected to the first and second photocells for producing an indication of the progression of a line image over the first dual grating, second selectively utilizable readout means connected to the third and fourth photocells for producing an indication of the progression of a line image over the second dual grating, and control means for alternately utilizing the first and second readout means thereby to continuously follow the progress of line images across the dual gratings.

3,360,661
AUTOMATIC AND MANUAL SWITCHING SYSTEM IN AN ELECTRONIC CONTROLLER

Shinichiro Ogawa, Chuo-ku, Tokyo, Japan, assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware

Filed Nov. 13, 1964, Ser. No. 410,920
Claims priority, application Japan, Nov. 14, 1963, 38/60,898
5 Claims. (Cl. 307—70)



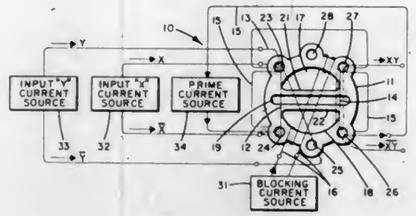
1. In an industrial process control system for controlling the energization of a load device, said control system including an automatic control unit and a manual control unit, an improved switching system for selectively connecting one or the other of said control units in series with the load device; said switching system comprising a switch means having a first selectable terminal, a second selectable terminal and a common terminal; means for connecting said load device between the two selectable terminals of said switch means; means connecting a first output terminal of said automatic control unit to said first selectable terminal of said switch means; means connecting a second output terminal of said automatic controller to a common junction; means connecting a first output terminal of said manual control unit to said second selectable terminal of said switch means; means connecting a second output terminal of said manual control unit to said common junction; a comparison resistor; means connecting said comparison resistor in series between said common junction and said common terminal of said switch means; said automatic and manual control units being connected to apply signals of opposite polarity across said comparison resistor; and means for detecting a resultant signal developed across said comparison resistor.

3,360,662
MULTI-APERTURE MAGNETIC CORE SYSTEMS

Lawrence R. Smith, Phoenix, Ariz., assignor to Motorola, Inc., Chicago, Ill., a corporation of Illinois

Continuation of application Ser. No. 145,052, Oct. 16, 1961. This application June 8, 1964, Ser. No. 375,411
12 Claims. (Cl. 307—88)

1. A multiple-input magnetic device adapted for use in performing OR and AND logic, and including in combination core means of magnetic material having relatively great flux retentivity, said core means having first and second core portions with a major aperture in each said core portion, and said first and second core portions each having a plurality of minor apertures therein, a first input winding linking at least first and second ones of said minor apertures in said first and second core portions respectively, a second input winding linking at least said first

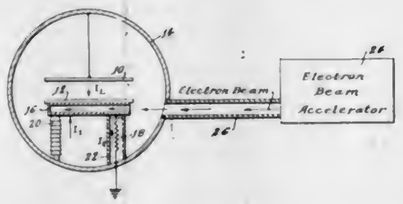


minor aperture and a third minor aperture in said second core portion, an output winding linking in a sense to cause voltage cancellation therein fourth and fifth ones of said minor apertures in said first and second core portions respectively, blocking circuit means linking said first and second core portions, and further circuit means linking at least said fourth and fifth minor apertures.

3,360,663
HIGH-VOLTAGE GENERATOR

Albert V. Crewe, Palos Park, Akihiko Yokosawa, Naperville, and Dale J. De Geeter, Lemont, Ill., assignors to the United States of America as represented by the United States Atomic Energy Commission

Filed May 14, 1965, Ser. No. 456,013
7 Claims. (Cl. 310—5)



7. A device for producing a high voltage between first and second electrodes mounted in a partial vacuum, comprising means for generating an electron beam having an energy of 600 kv. and a current of 300 microamperes, a Faraday cup 18 inches long x 3 inches wide x 2.5 inches high mounted in electrical contact with said first electrode, means for electrically grounding said second electrode and means for directing said electron beam into said cup to cause a negative charge accumulation on said first electrode, whereby a voltage of 600 kv. is developed between said first and second electrodes.

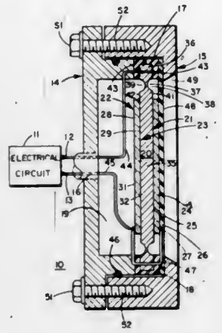
3,360,664
ELECTROMECHANICAL APPARATUS

Helmut J. Straube, Webster, N.Y., assignor to General Dynamics Corporation, a corporation of Delaware

Filed Oct. 30, 1964, Ser. No. 407,685
7 Claims. (Cl. 310—8.2)

1. An electromechanical transducer comprising:
(a) an element of elastic and resilient metal having a rigid peripheral portion, a driven radiating plate portion having a neutral axis about which flexure occurs and a hinge portion connected between said driven radiating plate portion and said peripheral portion along said neutral axis so that said driven radiating portion vibrates in a flexural mode,

(b) said hinge portion being defined by a first groove on one side of said element and a second coaxial groove on the other side of said element in a back-to-back relationship with said first groove so that said hinge portion has a cross-sectional area which is less than the cross-sectional area of said driven radiating plate portion,
(c) said hinge portion defines a nodal circle having a low impedance to flexure of said radiating portion and a high impedance to radial and axial movement of said driven radiating plate portion,



(d) electromechanical translating means coupled to said driven radiating portion for vibrating said driven radiating plate portion in said flexural mode in response to an electric input signal applied thereto, and
(e) support means fixed to said rigid peripheral portion at said hinge portion so that said driven radiating portion vibrates only about said nodal circle.

3,360,665
PRESTRESSED PIEZOELECTRIC TRANSDUCER

Vance F. Boswell, Rocky River, Ohio, assignor to Clevite Corporation, a corporation of Ohio

Filed Apr. 15, 1965, Ser. No. 448,301
7 Claims. (Cl. 310—8.7)



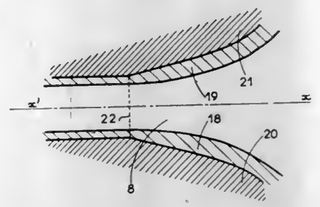
1. A unitary prestressed piezoelectric transducer for generating or receiving energy, comprising: piezoelectric element means, and a layer of shrunk in situ plastic material symmetrically encapsulating said element means between the axial end faces and being anchored thereto to permanently place the element means under compression.

3,360,666
MAGNETOHYDRODYNAMIC HALL EFFECT GENERATOR

Georges Klein, Paris, France, assignor to Compagnie Generale d'Electricite, Paris, France

Filed July 3, 1963, Ser. No. 292,549
Claims priority, application France, July 4, 1962, 902,935
4 Claims. (Cl. 310—11)

1. A Hall effect magnetohydrodynamic generator including a combustion chamber for producing hot ionized working gases, a conversion duct provided with electrodes, means for feeding hot ionized working gases from the combustion chamber into the conversion duct, an electromagnet for producing a transverse magnetic field in the conversion duct and means for extracting the ionized gases from the conversion duct such that the pressure of working gases at the exhaust of the conversion duct is lower than atmospheric pressure, said electromagnet being ar-

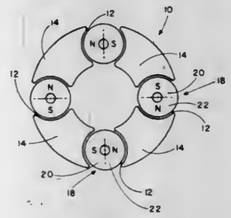


ranged to produce in the duct a magnetic field smaller than 20,000 gauss and having at each point, along the length of the conversion duct, a value proportional to the pressure of the working gases.

3,360,667
FIELD CONTROL MEANS FOR DYNAMO ELECTRICAL MACHINES

Thurlow M. Gordon, Jr., Hop Brook Road, Brookfield, Conn. 06804

Filed May 24, 1965, Ser. No. 458,139
5 Claims. (Cl. 310—154)



1. In a permanent magnet dynamo electrical machine, a hollow cylinder having a plurality of equidistantly spaced bores extending through the cylinder in the direction of the axis to divide the cylinder into a like plurality of adjacent arcuate cylindrical sections extending in the direction of the axis, each section constituting a pole piece and being composed of soft iron, and a like plurality of cylindrical permanent magnets, each magnet being placed in one of said bores, and means for moving said magnets within said bores.

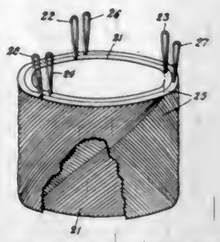
3,360,668
ARMATURE WINDING FOR ROTARY ELECTRICAL MACHINES

Fritz Faulhaber, Schonaich, Wurttemberg, Germany, assignor, by mesne assignments, to Retobobina Handelsanstalt, Schaan, Liechtenstein

Filed Feb. 24, 1965, Ser. No. 434,970
Claims priority, application Germany, Feb. 27, 1964, F 42,137
5 Claims. (Cl. 310—195)

1. An armature winding for an iron-free bell-shaped rotor of an electrical machine, said winding having the form of a hollow right-circular cylinder and wound from a single length of wire, said wire extending progressively around said cylinder along a path which comprises a series of runs which alternately extend from one end of said cylinder to the other and back again, said runs each having the form of a helix having alternate right and left-hand pitches and extending equal even integral fractions of a convolution around said cylinder, said wire being wound a number of times over each of said runs

so that coils are formed which are disposed adjacent one another and uniformly over the surface cylinder, so that



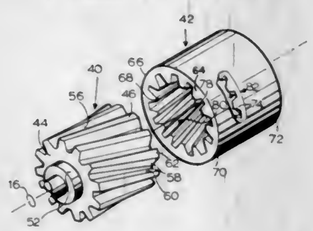
they form successive complementary areas in the shape of isosceles triangles in each of which areas said coils are parallel.

3,360,669

SQUIRREL-CAGE ROTOR

Morton Sagalow, West Orange, N.J., assignor to General Precision Inc., Little Falls, N.J., a corporation of Delaware

Filed Mar. 1, 1965, Ser. No. 436,111
4 Claims. (Cl. 310—211)



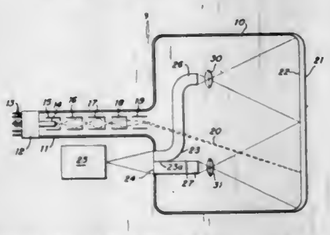
1. A squirrel-cage rotor comprising:
a metal tube with a longitudinal axis having a pair of axially-spaced annular end portions and having a plurality of peripherally-spaced elongate slots forming therebetween bars of trapezoidal cross-section for interconnecting said end portions; and
a metal core coaxially supporting said tube having a pair of end faces respectively abutting said tube end portions and having a plurality of peripherally-spaced grooves with radially-outwardly-diverging groove side walls for receiving said tube bars.

3,360,670

FIBER OPTIC CATHODE RAY TUBE ASSEMBLY

Charles S. Manning, 3454 Bangor Place, San Diego, Calif. 92106

Filed Aug. 3, 1965, Ser. No. 477,048
8 Claims. (Cl. 313—64)



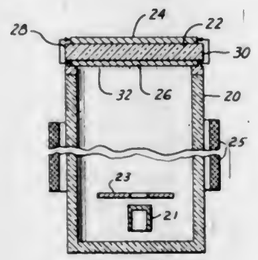
1. A cathode ray tube assembly comprising a cathode ray tube adapted to receive input information for visual representation in response to the impingement of a controllable electron beam on a face of said cathode ray tube and means for superimposing a selectable illuminated display on the face of said cathode ray tube, said means comprising:
first optical means external to said cathode ray tube;
a source of illumination arranged to project an image of said selected display through said first optical means;
a fiber optics array supported by said cathode ray tube at the focal plane of said optical means and extending into the interior of said tube, said array being divided into a plurality of fiber optics sectors;
a plurality of second optical means equal in number to said sectors and supported within said cathode ray tube in spaced disposition from said face; and
means supporting each said fiber optics sector adjacent a respective second optical means within said cathode ray tube for projecting a composite illuminated display from said fiber optics sectors onto the face of said tube.

3,360,671

VIDICON WITH CONNECTED CONDUCTIVE COATINGS ON BOTH SIDES OF FACEPLATE

Francis J. Salgo and George S. P. Freeman, Dallas, Tex., assignors to General Electrodynamics Corporation, Garland, Tex., a corporation of Texas

Filed Apr. 26, 1965, Ser. No. 450,781
2 Claims. (Cl. 313—65)



2. A vidicon tube including an envelope, a faceplate closing one end of said envelope, electrically conducting, continuous layers of material transmissive of radiation to be detected on both sides of the faceplate, means electrically connecting said conducting layers, an electron gun at the other end of said envelope, a photoconductive layer on said conducting layer facing said gun, means scanning said photoconductive layer with electrons from said electron gun whereby a signal may be derived from at least one of said conducting layers.

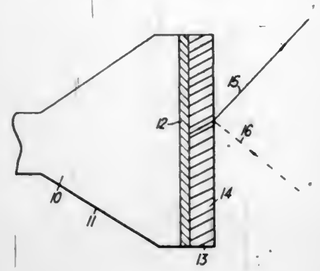
3,360,672

PARALLEL LIGHT FIBERS WITH LONGITUDINAL AXES MAKING OBLIQUE ANGLE WITH DISPLAY SURFACE OF CATHODE RAY TUBES

Gerald Francis Marshall, Edinburgh, Scotland, assignor to Ferranti, Limited, Hollinwood, England, a company of Great Britain and Northern Ireland

Filed Jan. 21, 1966, Ser. No. 522,134
Claims priority, application Great Britain, Jan. 26, 1965, 3,333/65
2 Claims. (Cl. 313—92)

1. A display screen for a cathode-ray tube comprising a plurality of light transmitting fibres arranged with their longitudinal axes substantially parallel to one another, each fibre consisting of a core of substantially transparent material coated over its longitudinal surfaces with a material having a refractive index lower than said transparent material, said plurality of fibres terminating at one end to form a front surface in a viewing plane normal to the horizontal axis of the cathode-ray tube and at the other end to form a back surface substantially parallel to the front surface, a phosphor layer on the back surface by which an optical image may be formed for observation



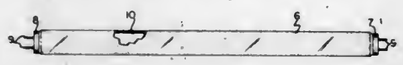
through the front surface, said plurality of fibres being arranged with their longitudinal axes inclined at an oblique angle to the front surface of the display screen such that an image is viewable through the front surface of said screen.

3,360,673

LAMPS HAVING A MOLYBDENUM PHOSPHATE PHOSPHOR

Clarence D. Vanderpool and Vincent Chiola, Towanda, Pa., assignors to Sylvania Electric Products Inc., a corporation of Delaware

Filed June 9, 1964, Ser. No. 373,648
12 Claims. (Cl. 313—108)



1. A low pressure electric discharge device comprising: a glass envelope containing mercury vapor and means to produce an electric discharge within said device; a phosphor coating of molybdenum phosphate disposed upon the inner surface of said envelope.

3,360,674

EUROPIUM AND BISMUTH ACTIVATED YTTRIUM VANADATE PHOSPHOR

Felix F. Mikus, Towanda, and James E. Mathers, Ulster, Pa., assignors to Sylvania Electric Products Inc., a corporation of Delaware

Filed Nov. 23, 1964, Ser. No. 412,895
6 Claims. (Cl. 313—109)

1. A luminescent material consisting essentially of: yttrium vanadate activated by europium and containing sufficient quantities of bismuth in the matrix to enhance the luminescences of said yttrium vanadate.

3,360,675

EUROPIUM AND CALCIUM OR MANGANESE ACTIVATED YTTRIUM VANADATE PHOSPHOR

Felix F. Mikus, Towanda, and James E. Mathers and Frank C. Palilla, Ulster, Pa., assignors to Sylvania Electric Products Inc., a corporation of Delaware

Filed Nov. 23, 1964, Ser. No. 412,896
6 Claims. (Cl. 313—109)

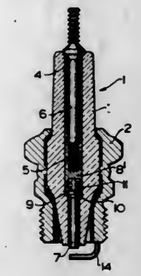
1. A luminescent material consisting essentially of yttrium vanadate activated by europium and containing sufficient quantities of a cation selected from the group consisting of calcium and manganese in the matrix to enhance the luminescence of said yttrium vanadate.

3,360,676

SPARK PLUG WITH A SEALING GLASS MIXTURE WITH GRAPHITE AND IRON, NICKEL OR COBALT

Fritz Esper, Leonberg, Wurttemberg, and Karl-Hermann Friese, Beihingen, Neckar, Germany, assignors to Robert Bosch G.m.b.H., Stuttgart, Germany

Filed June 8, 1965, Ser. No. 462,236
Claims priority, application Germany, June 9, 1964, B 77,161
8 Claims. (Cl. 313—136)



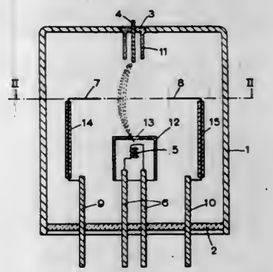
1. In a spark plug, a center electrode comprising two metallic terminals having adjacent but spaced end portions; a conductive connector surrounding said end portions and consisting essentially of a mass or glass having incorporated therein and distributed therethrough at least partially interconnected particles of graphite and of at least one metal selected from the group consisting of iron, nickel and cobalt; and an insulator having a bore sealingly receiving said connector so that said center electrode and said insulator form an integral unit, said terminals, respectively, having second end portions each of which extends beyond one end of said bore.

3,360,677

LINEAR ACCELEROMETERS UTILIZING A DISPLACEABLE ELECTRON BEAM

Brian John Stocker, Thornton Heath, and George Frederick Weston, Merstham, England, assignors to North American Philips Company, Inc., New York, N.Y.

Filed Feb. 1, 1965, Ser. No. 429,332
Claims priority, application Great Britain, Jan. 31, 1964, 4,354/64
9 Claims. (Cl. 313—192)



1. A linear accelerometer responsive to applied acceleration forces along a given axis comprising, a sealed container filled with gas, a rod-shaped anode mounted in said container substantially perpendicular to said given axis, a cathode in said container spaced apart from said anode and arranged to restrict the discharge path between said anode and cathode to a generally rectilinear path extending perpendicular to said given axis, first and second wire-shaped probe electrodes symmetrically mounted in said container on either side of said discharge path in opposed

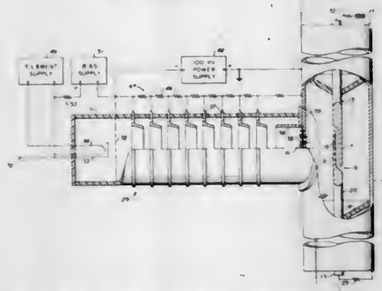
relationship along an axis bisecting said discharge path at right angles thereto, means for applying a voltage to said anode and cathode to establish an electric discharge along said path, and means coupled to said probe electrodes for indicating a potential difference produced across said electrodes and which is determined by the applied acceleration forces.

3,360,678

FAST PULSE GENERATOR UTILIZING AN ELECTRON BEAM TO CAUSE AN ARC BREAKDOWN ACROSS THE GAP REGION OF A COAXIAL LINE CENTER CONDUCTOR

Quentin A. Kerns, Orinda, Calif., assignor to the United States of America as represented by the United States Atomic Energy Commission

Filed May 27, 1965, Ser. No. 459,484
12 Claims. (Cl. 315—3)



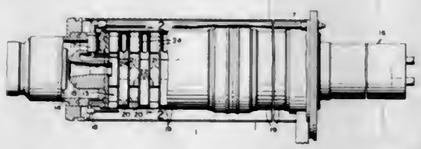
1. In a fast pulse generator, the combination comprising a coaxial transmission line having an outer and an inner conductor, a first portion of said inner conductor being spaced from the outer conductor and from the remainder of the inner conductor of said line, means producing an electrostatic field between said first portion of said inner conductor and said outer conductor of said coaxial line, and a pulsed electron beam generator directing energized electrons between said first portion of said inner conductor and an adjacent one of said conductors to effect discharge of said electrostatic field.

3,360,679

ELECTRON DISCHARGE DEVICE HAVING LOSSY RESONANT ELEMENTS DISPOSED WITHIN THE ELECTROMAGNETIC FIELD PATTERN OF THE SLOW-WAVE CIRCUIT

Rodney R. Rubert, Santa Clara, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California

Filed Feb. 21, 1964, Ser. No. 346,495
21 Claims. (Cl. 315—3.5)



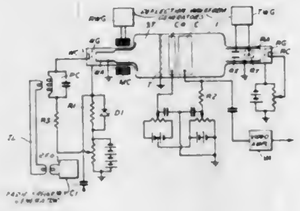
1. A high frequency electron discharge device including a traveling wave interaction region and including: means for forming a stream of electrons, slow-wave interaction circuit means disposed along said stream for electromagnetic interaction with said stream of electrons, and means disposed at the downstream end of said interaction circuit means for collecting said electron beam, said slow wave interaction circuit means being disposed along said stream path for providing cumulative interaction between the stream of electrons and wave of R.F. energy moving on said slow wave interaction circuit, said slow wave interaction circuit means being of the coupled cavity type having at least one lossy resonant element disposed therein internally of at least one of the cavities of said coupled cavity slow-wave interaction circuit means, said at least one lossy resonant element being radially displaced from said stream of electrons and asymmetrical with respect to said stream of electrons, said lossy resonant element adapted and arranged to dissipate R.F. energy present on said slow-wave interaction circuit at at least one frequency, said at least one internally disposed lossy resonant element being physically disposed within the electromagnetic field pattern of the operating mode of the device within said at least one cavity.

3,360,680

STORAGE TUBE CIRCUIT ARRANGEMENTS

Donald Leopold Plaistowe, Chelmsford, England, assignor to The Marconi Company Limited, a company of Great Britain

Filed June 28, 1962, Ser. No. 206,015
Claims priority, application Great Britain, Aug. 31, 1961, 31,317/61
13 Claims. (Cl. 315—8.5)



1. A storage tube circuit arrangement comprising a storage tube including a storage target and means for scanning the storage target with a modulated writing electron beam to store on said target signals corresponding to the modulation; means for subjecting said writing beam to intensity modulation in accordance with pulsed input signals; and means for interrupting the writing beam during each pulse.

3,360,681

HEADLIGHT-DIMMING SYSTEM INCLUDING AUTOMATIC SWITCHING TO DIMMED BEAM UPON FAILURE IN THE CONTROL CIRCUIT

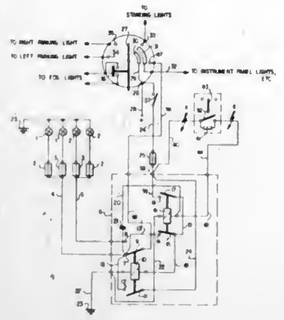
Werner Köhler, Stuttgart-Degerloch, and Ralf Schacher, Stuttgart-Gaisburg, Germany, assignors to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany

Filed Sept. 15, 1965, Ser. No. 487,469
Claims priority, application Germany, Sept. 15, 1964, D 45,418
11 Claims. (Cl. 315—83)

1. In a vehicle lighting system including high beam lights and low beam lights, a voltage supply for said lights, a bi-polar relay having an energizing winding and a switching member selectively connecting said voltage supply to said high beam lights or said low beam lights alternately upon energization of said winding, and impulse switch means for selectively connecting said voltage supply to said bi-polar relay winding upon manual actuation thereof, wherein the improvement comprises,

said impulse switch means including an impulse switch connected with a control relay having an energizing winding connected at one end via said impulse switch to said voltage supply and at the other end to ground controlling a first normally closed switching member connecting said high beam lights to the energizing winding of said bi-polar relay, and

impedance means connected between said voltage supply and said one end of said control relay energiz-



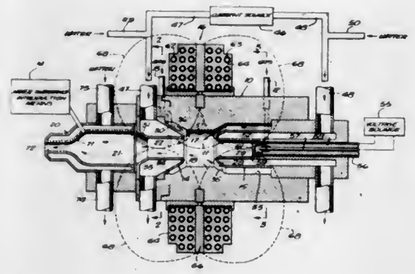
ing winding for controlling said energizing winding to hold said first switching member open only during normal operation of said impulse switch means.

3,360,682

APPARATUS AND METHOD FOR GENERATING HIGH-ENTHALPY PLASMA UNDER HIGH-PRESSURE CONDITIONS

Robert A. Moore, Altadena, Calif., assignor to Giannini Scientific Corporation, Amityville, N.Y., a corporation of Delaware

Continuation of application Ser. No. 183,832, Mar. 30, 1962. This application Oct. 15, 1965, Ser. No. 502,818
13 Claims. (Cl. 315—111)



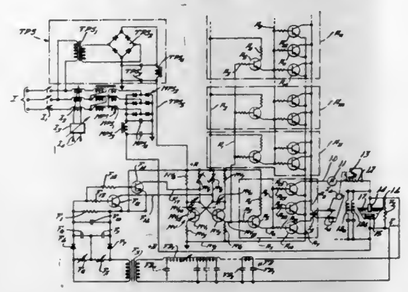
1. Apparatus for generating plasma, which comprises wall means to define a gas-pressure chamber the wall of which is a surface of revolution about a central axis, nozzle and back electrodes mounted in said chamber and having annular portions disposed in opposed relationship coaxially of said chamber, the nozzle passage in said nozzle electrode communicating with the exterior of said chamber, means to maintain a high-current electric arc between said electrodes, means to introduce gas tangentially into said chamber for vortical flow about said axis to thereby stabilize said arc and rotate both footpoints thereof about said axis, said gas being heated by said arc and discharging through said nozzle passage, means to generate in said chamber a magnetic field adapted to cooperate with said vortically-flowing gas in stabilizing said arc and effecting said rotation of said footpoints, and constrictor means provided in said chamber radially outwardly from the gap between said opposed annular portions of said electrodes, said constrictor means being coaxial with said axis and serving to effect radial-inward crowding of said gas into said gap to thereby constrict at least a substantial portion of said arc.

3,360,683

SOLID-STATE PULSE GENERATOR FOR ELECTRIC-DISCHARGE MACHINING

Kiyoshi Inoue, 100 Sakato, Kawasaki, Kanagawa, Tokyo, Japan

Filed Oct. 6, 1965, Ser. No. 493,473
2 Claims. (Cl. 315—209)



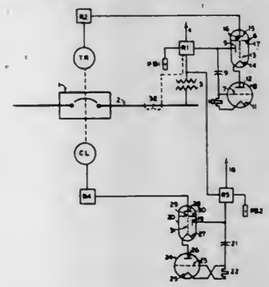
1. In an apparatus for machining a conductive workpiece by intermittent electrical discharge across a gap between an electrode and the workpiece in the presence of a dielectric coolant, a machining power circuit for supplying machining power pulses to said gap comprising a power supply, a periodically operated electronic switching means having principal electrodes connected in a series circuit between said power supply and said gap, a variable magnitude resistor connected in said series circuit with said gap, current sensing means coupled to said series circuit for providing an output signal responsive to abnormal gap characteristic, and means coupling said sensing means to said resistor for selectively increasing the magnitude of said resistor to limit gap current flow responsive to said signal.

3,360,684

CIRCUIT BREAKER WITH CONTROLLED INSTANT OF OPERATION

Henry Greber, 225 W. 80th St., Apt. 8–D, New York, N.Y. 10024

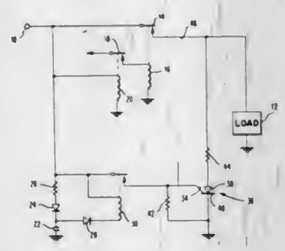
Filed Sept. 7, 1965, Ser. No. 485,462
4 Claims. (Cl. 317—11)



1. A circuit breaker with controlled instant of operation whose tripping and closing coils, each are triggered by a separate relay, each relay being energized through the intermediary of the cathode-anode circuits of at least two electron tubes, one having a grid means which make the cathode-anode path of said tube conductive when said grid is impressed with a predetermined value of a voltage drop on a resistor in series with reactance means fed from the secondary winding of a potential transformer connected to the line side of said circuit breaker, the second of said tubes having at least one plate electrostatically deviating the electron beam between the cathode and anode of said electron tube, which has a screen

provided with a small hole through which said electron beam of said second electron tube passes when the voltage on said deviating plate reaches a value predetermined from the voltage curve so that, if the time corresponding to said predetermined voltage value is added to the time necessary for the breaker mechanism to perform a switching operation, the sum of the two times correspond to a point at which the voltage on the line side of said breaker is zero, and said voltage drop on said resistor connected in series with said reactance means serves to discriminate between a voltage value on the rising or the declining part of the voltage sine wave.

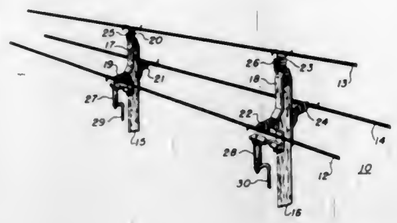
3,360,685
PROTECTIVE CIRCUIT USING SILICON CONTROLLED RECTIFIER
Robert S. Wooldridge, Norristown, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed June 3, 1965, Ser. No. 460,973
8 Claims. (Cl. 317—16)



1. A circuit for preventing excessive current through a load circuit comprising a non-conducting silicon controlled rectifier connected across said load circuit, said silicon controlled rectifier including a gating electrode for switching said rectifier to a conducting state upon the application of a signal thereto, a source of input voltage to be applied to said load, a storage circuit for storing voltage of substantially the same amplitude as said input voltage, normally open, switching contacts connected between said silicon controlled rectifier and said source of voltage, a voltage sensitive relay for closing said switching contacts when current flows through said relay, said relay being connected between said storage circuit and said source of input voltage, whereby current flows through said relay when the amplitude of said input voltage drops below the amplitude of the voltage at said storage means to cause a signal from said source of voltage to be applied to the gating electrode of said silicon controlled rectifier, said silicon controlled rectifier being driven to a conducting state to produce a relatively low impedance path across said load, and additional means for detecting a drop in the voltage of said input voltage to disconnect said source of voltage from said load circuit.

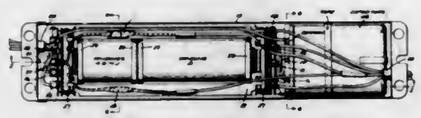
3,360,686
LIGHTNING PROTECTION ASSEMBLY FOR OVERHEAD LINES
John W. Kalb, Medina, Ohio, assignor to The Ohio Brass Company, Mansfield, Ohio, a corporation of New Jersey
Filed Aug. 5, 1966, Ser. No. 573,771
12 Claims. (Cl. 317—72)

10. A unitary pole-top assembly for supporting three line conductors on a line pole in insulated spaced relation from the earth, in a top position and two lower positions below the top position, the top conductor comprising an overhead shield means with respect to the lower conductors, comprising a metal bracket in the form of an inverted substantially U-shaped piece having a yoke, laterally spaced side arms below the yoke, and means for mounting the bracket on the line pole adjacent the top



extremity thereof, a top insulator attached to the yoke and two lower insulators attached to the side arms below the top insulator, and conductive gap means on the bracket defining an arcing path across the top insulator, the said gap means having a discharge voltage less than the breakdown voltages of the lower insulators.

3,360,687
LAMP BALLAST
David H. Riesland, Danville, Ill., assignor to General Electric Company, a New York corporation
Filed Sept. 28, 1965, Ser. No. 490,889
9 Claims. (Cl. 317—99)

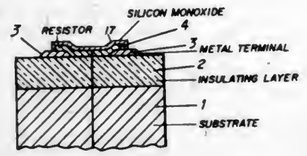


1. An improved ballast for at least one fluorescent lamp comprising: an elongated, shell-type magnetic core having a center leg positioned along a longitudinal axis and having first and second side legs positioned on opposite sides of said center leg to form first and second winding openings between said center leg and said first and second side legs respectively; said first and second winding openings each having a configuration in a plane transverse to said longitudinal axis of a width that is substantially equal to one-half the width of said center leg in said plane; a secondary winding precision wound about one portion of said center leg in said winding openings and having a total length along said longitudinal axis that is approximately eight times said winding opening width; a primary winding wound about another portion of said center leg in said winding openings; and said primary and secondary windings each having predetermined cross sectional areas sufficient to provide current densities less than 1100 amperes per square inch during normal operation.

3,360,688
THIN FILM RESISTOR COMPOSED OF CHROMIUM AND VANADIUM
William M. Triggs, Raritan, N.J., assignor to Radio Corporation of America, a corporation of Delaware
Filed Mar. 11, 1965, Ser. No. 438,952
6 Claims. (Cl. 317—101)

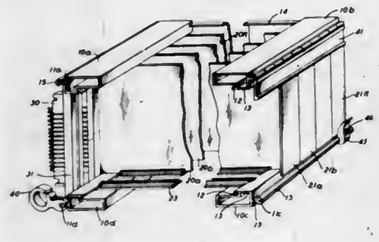
1. A resistive circuit component comprising

(a) a substrate having a surface composed of an electrically insulating material, and



(b) said surface bearing thereon a film of chromium and vanadium.

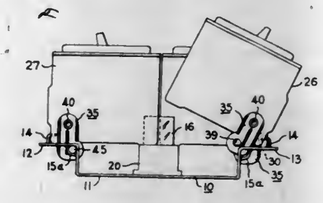
3,360,689
MODULAR PLUG-IN COMPONENT WITH IMPROVED SUPPORT ELEMENT
Paul T. Haury, Berkeley Heights, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Nov. 26, 1965, Ser. No. 510,015
11 Claims. (Cl. 317—101)



1. Modular apparatus for supporting plug-in units which comprises, in combination,
a plurality of elongate members, each of said members characterized (1) by a generally rectangular cross section, (2) by a rounded bead cantilevered along one of the narrow faces of said member, and (3) by an undercut lip along one of the broad faces of said member,
means for securing sections of said elongate members in parallel, spaced-apart relation to form a box-like structure, a first pair of parallel members being oriented with said lips of each facing the other,
a plurality of track members bridging said pair of parallel members for receiving thin plug-in boards, each of said track members being secured at each end normal to and within said members lips, and
means for securing a plurality of terminal receiving members between the bead of a first member of said first pair of parallel members and an elongate member spaced apart and parallel to said first member, said terminal receiving members being secured between the beads of said supporting members in alignment with and substantially at right angles to said track members.

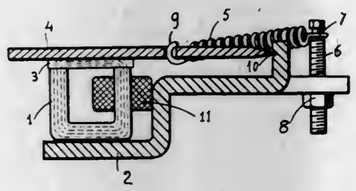
3,360,690
CIRCUIT BREAKER PANELBOARD OR LOAD CENTER
Herman J. Hammerly, Plainville, Conn., assignor to General Electric Company, a corporation of New York
Filed Mar. 3, 1961, Ser. No. 93,109
2 Claims. (Cl. 317—119)

1. An electric circuit breaker panelboard comprising a support having front and back surfaces, a plurality of relatively stationary contacts mounted on the front surface of said support, a plurality of hook-shaped retaining elements each mounted on the front surface of said support in spaced relation to a respective one of said stationary contacts, a plurality of apertures in said support, respective ones of said apertures being spaced from respective ones of said stationary contacts and said retaining elements, a plurality of electric circuit breakers each having a generally rectangular insulating casing, a lug portion carried by each insulating casing at one end thereof, a plug-in type electrical connector carried by each casing adjacent the other end of the insulating casing, said mounting lug being adapted to coact with one of said retaining hooks to facilitate the pivotal movement of each circuit breaker about a retaining hook to move



the plug-in type contact into plug-in electrical engagement with the respective one of said stationary contacts, at least one tab secured to each of selected ones of said circuit breakers, each of said tabs containing an opening, each tab extending through the respective aperture to the back surface of said support when the plug-in type contact of the associated circuit breaker is in plug-in electrical engagement with the respective stationary contact, and a rod passing through the opening in each of said tabs so as to interconnect said tabs and the back surface of said support to prevent the removal of the selected ones of said circuit breakers from said plug-in electrical engagement.

3,360,691
ELECTRIC POWER RELAY WITH HIGH SENSIBILITY OF CONTROL
Mario Paganelli, Varese, Italy, assignor to Bassani S.p.A., Milan, Italy
Filed Dec. 1, 1964, Ser. No. 415,141
Claims priority, application Italy, Dec. 4, 1963, 24,883/63
10 Claims. (Cl. 317—123)



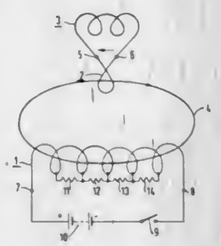
1. A power relay having operative and non-operative states comprising, in combination, supporting means; permanent magnet means secured to said supporting means; armature means attracted to said permanent magnet means and being in close proximity thereof when said relay is in said non-operative state; lever means secured to said armature means and pivotable about a pivot point on said supporting means; spring means secured to said lever means and to said supporting means and applying a force to said lever means so that the direction of said force is substantially along the axis of said lever means when said relay is in the non-operative state, said force also acting on said lever so as to move said lever in said armature away from said permanent magnet when said relay is in the operative state; and electromagnetic coil means wound about said permanent magnet means and

producing when energized a magnetic field opposing the field of said permanent magnet means to reduce the attraction of said armature means to said permanent magnet means, so that said lever means is rotatable by said spring means and moves said armature means away from said permanent magnet means whereby said relay is in the operative state, said force applied to said lever means by said spring means for moving said armature means from said permanent magnet means becoming larger as the space between armature means and permanent magnet means increases.

3,360,692
DEVICE FOR PRODUCING HIGH-INTENSITY MAGNETIC FIELDS OF SHORT DURATION

Wilhelm Kafka, Tennenlohe, near Erlangen, Germany, assignor to Siemens-Schuckertwerke Aktiengesellschaft, Berlin-Siemensstadt, Germany, a corporation of Germany

Filed Dec. 22, 1964, Ser. No. 420,363
Claims proirity, application Germany, Dec. 24, 1963, S 88,895; July 25, 1964, S 92,264
19 Claims. (Cl. 317—123)



1. A device for producing high intensity magnetic fields of short duration, comprising

a superconducting primary excitation winding, said primary excitation winding having a number of turns having ohmic resistance and inductivity;

direct current supply means electrically connected to said primary excitation winding for producing a current flow through said primary excitation winding;

a secondary winding inductively coupled with said primary excitation winding, said secondary winding having a number of turns considerably less than those of said primary excitation winding and having considerably less ohmic resistance and considerably less inductivity than said primary excitation winding;

a normal conductance load winding electrically connected to said secondary winding and energized by said secondary winding; and

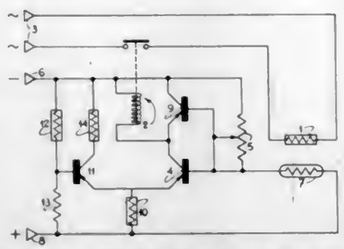
transition control means connected to a plurality of spaced points on said primary excitation winding for changing said primary excitation winding from superconductance to normal conductance.

3,360,693
SWITCHING CIRCUIT FOR AN ELECTRICALLY HEATED BLANKET

August E. F. Fickweiler, Waddinxveen, Netherlands, assignor to Indoheem N.V., a corporation of the Netherlands

Filed Apr. 20, 1965, Ser. No. 449,463
Claims priority, application Netherlands, May 6, 1964, 64—5,085
1 Claim. (Cl. 317—132)

Switching circuit for an electrically heated blanket comprising one or more resistors with negative temperature coefficient which are arranged in the blanket and which serve as temperature sensors and control the switching circuit, wherein the heating element is connected to the supply source through a normally open contact of a relay, the coil of which is connected in the collector circuit of a control transistor, the base electrode of which is through a conventional resistor connected to the collector supply line and through the resistor(s) with negative temperature coefficient is connected to the emitter supply line whilst

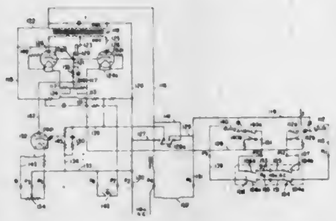


the control circuit is provided with a guard transistor, the base electrode of which is connected to the base electrode of the control transistor, whilst its emitter electrode is connected to the collector electrode of the control transistor and its collector electrode is connected to the collector supply line.

3,360,694
ELECTRICAL CONTROL MEANS

Arthur K. Littwin, Lincolnwood, Ill., assignor to Arthur K. Littwin, Robert L. Littwin, Donald F. Littwin, and Horace A. Young, Chicago, Ill., as trustees under trust, dated Jan. 2, 1951, known as Littwin Family Trust No. 1

Original application May 23, 1962, Ser. No. 197,053, now Patent No. 3,213,342, dated Oct. 19, 1965. Divided and this application Dec. 10, 1964, Ser. No. 417,338
8 Claims. (Cl. 317—142)



1. Electrical control means including a first circuit having a starting condition, an electrically controlled work element in the circuit, a first switch operable by a device to be controlled, tube means in the circuit, means energizing the tube means in response to closure of the first switch, the tube means when energized being operative for energizing the work element, condenser means and means for charging it when the circuit is in starting condition, means controlled by the tube means when the latter is energized for putting the circuit in a second condition, the condenser means discharging in response to the circuit being placed in said second condition and being thereby operable for de-energizing the tube means.

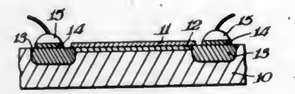
3,360,695
INDUCED REGION SEMICONDUCTOR DEVICE

Joseph Lindmayer, Williamstown, Mass., assignor to Sprague Electric Company, North Adams, Mass., a corporation of Massachusetts

Filed Aug. 2, 1965, Ser. No. 476,377
9 Claims. (Cl. 317—234)

1. A semiconductor device comprising a body of semiconductor material of one conductivity type having an altered region in a surface thereof forming a stabilized inversion layer therein, a layer of insulating material

containing electrically active impurities overlying said inversion layer, said impurities having a work function unequal to the work function of said semiconductor material

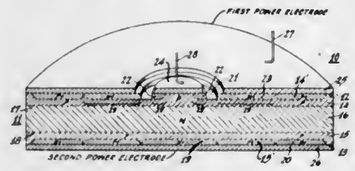


and said insulating material, and the numerical values of the resistivity and the temperature coefficient of resistance of said inversion layer being proportional to the differential of said unequal work function.

3,360,696
FIVE-LAYER SYMMETRICAL SEMICONDUCTOR SWITCH

John M. S. Neilson and Timothy J. Desmond, Mountaintop, and Harry Weisberg, Forty Fort, Pa., assignors to Radio Corporation of America, a corporation of Delaware

Filed May 14, 1965, Ser. No. 455,737
10 Claims. (Cl. 317—235)

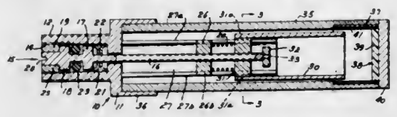


1. A bidirectional thyristor comprising a semiconductive body with two opposing major faces and an edge substantially perpendicular to said faces, said body having five successive regions of alternately different conductivity types, four p-n junctions between said five regions, and only three electrodes, characterized in that only two of said junctions intercept said edge of said body.

3,360,697
TRIMMER CAPACITOR WITH DIRECT TRAVEL MECHANISM

Hugo Seiden, Brooklyn, N.Y., assignor to JFD Electronics Corporation, Brooklyn, N.Y., a corporation of New York

Filed Mar. 29, 1962, Ser. No. 183,512
2 Claims. (Cl. 317—249)

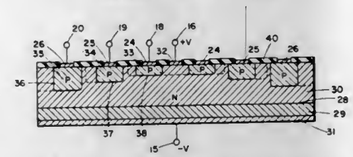


1. In an adjustable capacitor having a first fixed electrode and a second movable electrode and a dielectric member interposed therebetween; said second electrode comprising a piston movable with respect to the other of said electrodes, and mechanism connected to said piston for moving said piston; said mechanism comprising a guide means, a rotatable screw having a position axially fixed with respect to said first electrode and being rotatable about the axis thereof, and a screw receiving member integrally connected to said piston and threadably receiving said rotatable screw; said screw receiving member having a radially outwardly extending section; said radially extending section being received by said guide means; said guide means permitting translation motion of said screw receiving member and preventing rotary motion of said screw receiving member; said guide means comprising a slotted bushing; said piston being telescoped over said slotted bushing; said slotted bushing having a longitudinal slot therein extending through the wall of said bushing and extending to an end of said slotted bushing; said longitudinal slot receiving said radially extending section of said screw receiving member.

3,360,698
DIRECT CURRENT SEMICONDUCTOR DIVIDER

Raymond M. Warner, Jr., Scottsdale, Ariz., and Yehuda A. Konnan, Arlington, Mass., assignors to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois

Filed Aug. 24, 1964, Ser. No. 391,673
3 Claims. (Cl. 317—235)

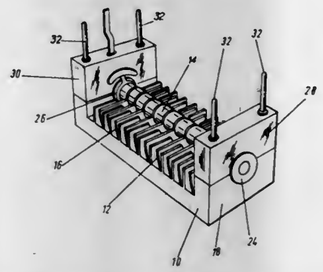


1. A semiconductor voltage dividing device comprising a body of semiconductor material having first and second faces on opposite sides thereof, an input PN junction in said body between a first region of one conductivity type at and beneath said first face and a second region of the opposite conductivity type separated from said first face by said first region, electrical connections to said first and second regions providing a pair of input terminals for said device, a plurality of output PN junctions in said body all defined by said second region with additional regions of said one conductivity type at and beneath said second face of said body, said output junctions extending to different depths in said body beneath said second face and thereby being separated different distances from the plane in which said input PN junction lies so that when a reverse voltage is applied to said pair of input terminals a depletion region will spread from said input junction to reach said output junctions at different levels of reverse voltage applied to said input terminals, and individual electrical connections to said additional regions providing output terminals for said device which exhibit different output voltages corresponding to the level of reverse voltage required to extend a depletion region to the particular output PN junctions to which the output terminals connect.

3,360,699
TRIMMER CAPACITORS

Brian Ainley, Ulverston, England, assignor to Oxley Developments Company Limited, Ulverston, England, a British company

Filed Apr. 4, 1966. Ser. No. 539,911
Claims priority, application Great Britain, Apr. 29, 1965, 17,991/65
1 Claim. (Cl. 317—253)



A trimmer capacitor comprising, in combination:
a stator,

a rotor, said stator and rotor each being formed from a single piece of metal,

two plates formed integrally with and defining opposite ends of the stator, each plate being in part cut-away along its upper edge to define a semi-circular recess,

a spindle formed integrally with the rotor to extend beyond the ends of the rotor to form coaxial stub shafts,

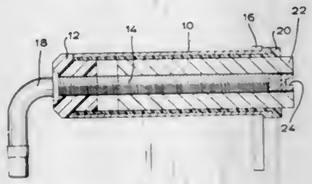
two bridge members for securing to the two end plates of the stator in contact with the upper edges thereof, each bridge member being formed from electrically insulating material and being in part cut-away along the edge in contact with the end plate, to define a semi-circular recess complementary to that in the end plate, to thereby define a circular aperture at each end of the stator,

two bearings of electrically insulating material housed in said circular aperture to receive as a close slipping fit the two stub shafts of the rotor, each bearing having a central cylindrical section for positioning in the aperture and two end flanges of greater diameter to retain the bearing in the aperture,

conductive pins for securing the bridge members to the stator end plates, the pins extending through the bridge members to form stator terminals, and

a conductive contact member in electrical contact with the rotor at one end and extending through and terminating beyond one of the bridge members to form a rotor terminal at its other end.

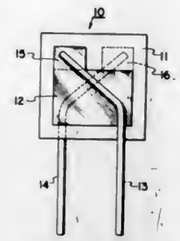
3,360,700
TUBULAR TRIMMER CAPACITORS
Brian Ainley, Ulverston, England, assignor to Oxley Developments Company Limited, Ulverston, England, a British company
Filed Dec. 6, 1965, Ser. No. 511,955
Claims priority, application Great Britain, Dec. 15, 1964, 50,933/64
9 Claims. (Cl. 317—249)



1. A tubular trimmer capacitor comprising: a tubular outer casing of synthetic resin material having a threaded cylindrical interior surface and a metallised external cylindrical surface, and a piston member also of synthetic resin material having a length of the same order as that of the outer casing and having a threaded cylindrical exterior surface engageable with the thread in the outer casing in a close circumferential axially displaceable fit in said outer casing, said piston member having at least one metallic cylindrical surface; at least one of the two surfaces, the interior of the outer casing and the exterior of the piston member, being a dielectric material.

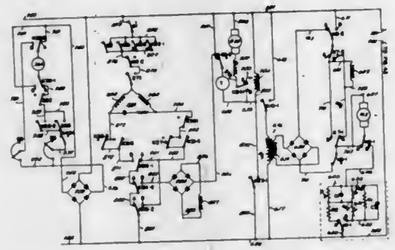
3,360,701
MICA CAPACITOR
John E. Dornfeld, Mequon, Wis., assignor to Sprague Electric Company, North Adams, Mass., a corporation of Massachusetts
Filed Aug. 29, 1966, Ser. No. 575,742
3 Claims. (Cl. 317—258)

1. An electrical capacitor comprising a mica dielectric layer having conductive metal electrodes deposited upon opposing planar surfaces thereof; leads attached to portions of the electrode surfaces which extend beyond the active capacitance area between the electrodes, the leads extend across the electrode surface from the attachment area, the portions lie out of registration from a common



end of the active capacitance area in a non-overlapping and electrically neutral configuration such that dielectric degeneration in the lead attachment area does not cause a corresponding capacitance variation.

3,360,702
DIGITAL SELECTOR SWITCH AND INDEXING MOTOR CONTROL SYSTEM
Robert A. Lasley and Siegfried K. Handel, Hamilton, and David L. Eisenstadt, Cincinnati, Ohio, assignors to The Mosler Safe Company, Hamilton, Ohio, a corporation of New York
Original application May 9, 1963, Ser. No. 279,234. Divided and this application June 1, 1965, Ser. No. 460,384
5 Claims. (Cl. 318—18)



1. Indexing apparatus comprising,

a base,

a member movable upon said base to a plurality of index positions,

reversible motor means drivably connected to said member, and

motor control means operable to control said motor and thereby move said member to a selected indexable position through the shortest path of movement to said selected position,

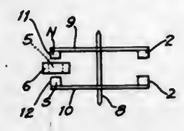
said control means including a digital selector switch,

said switch having at least two stator means upon each of which are mounted a set of contacts, each of said sets including a plurality of contacts, one of said sets being operative to control movement of said member to approximately the preselected position, and the other set being operative to control movement of said member to the exact preselected position,

said switch having at least two commutators upon each of which are mounted two electrically conductive areas engageable with the contacts of one of said stators, the electrically conductive areas of each commutator being operable to control motor rotation in opposite directions,

said control means including a flip-flop circuit operable to reverse the direction of rotation controlled by the conductive areas of one of said commutators.

3,360,703
OSCILLATING ELECTRIC MOTOR
Robert Walter Reich, Merzhauserstr. 143, Freiburg im Breisgau, Germany
Filed Apr. 2, 1964, Ser. No. 356,786
Claims priority, application Germany, Apr. 4, 1963, R 34,863
5 Claims. (Cl. 318—128)



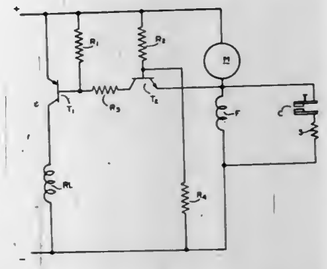
1. An electronically operated driving mechanism comprising; a balance wheel having an axle and an upper and lower disc fixed in spaced parallel relation thereon, said balance wheel having a zero position and adapted to be biased toward said zero position, a first plurality of permanent magnets mounted on the perimeter of said upper disc and comprising a central magnet mounted on the perimeter at said zero position and a side magnet on each side of said center pole and spaced therefrom in the peripheral direction of said wheel, a second plurality of permanent magnets mounted on the perimeter of said lower disc and comprising a central magnet mounted on the perimeter of said zero position and a side magnet on each side of said center pole and spaced therefrom, the center magnets of said first and second plurality of magnets establishing a central axial magnetic field in one direction therebetween and the side magnets of the respective discs establishing side axial magnetic fields therebetween in the opposite direction, a coil combination comprising coaxial driver and exciter coils stationarily mounted at said zero position between the perimeters of said upper and lower discs, and circuit means interconnecting said driver and exciter coils, said coil combination and said first and second plurality of magnets being dimensioned and positioned to generate an impulse in said exciter coil as the said magnetic field is passing through one side of said exciter coil and is receding from the axis of said coils and the pertaining side magnetic field of said first and second plurality is passing through the other side of said exciter coil and is approaching said coil axis, said impulse generated in said exciter coil being effective through said circuit means to create a driving impulse in said driving coil which will repulse said central magnets and attract the said pertaining side magnets which are approaching said coil axis to drive said balance wheel.

3,360,704
SPRING-TYPE ELECTROMECHANICAL OSCILLATOR
Walter Kohlhagen, 818 Oakley Ave., Elgin, Ill. 60120
Filed Apr. 22, 1965, Ser. No. 450,149
17 Claims. (Cl. 318—128)



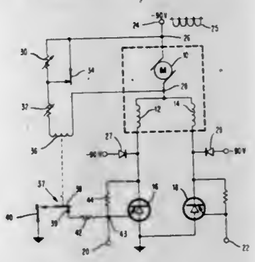
1. An oscillator, comprising a rigid inertia member; a single longitudinal leaf-type spring carrying said member; a support on which said spring is mounted so that said member and support are connected by a flexible length of said spring, said flexible spring length and member together forming an oscillatory unit, and said flexible spring length wholly lying in any oscillator position substantially in a single plane when said unit is in repose position, with said member being arranged to have its center of gravity substantially midway of said spring length so that in oscillation of said unit said flexible spring length will flex in S-fashion and every part of said member will move substantially through the same distance in a direction substantially normal to said plane; and means for impulsing said unit for oscillation of the same at its natural frequency.

3,360,705
DC MOTOR FIELD CONTROL CIRCUIT
Herbert E. Morris, Roanoke, Va., assignor to General Electric Company, a corporation of New York
Filed June 1, 1965, Ser. No. 460,134
1 Claim. (Cl. 318—246)



A control circuit for a direct current motor having a series field shunt, a transistor, a voltage divider connected with said transistor for deriving a bias to prevent said transistor from conducting, said bias being arranged to be overcome at a predetermined motor speed by the back E.M.F. of the said armature, a second transistor directly under control of the first said transistor, and means under control of the said second transistor for disconnecting said shunt when said back E.M.F. is reduced as a result of decreasing the speed of said motor under load.

3,360,706
REEL MOTOR SPEED REGULATOR
Robert S. Wooldridge, Jr., Norristown, Pa., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Feb. 26, 1965, Ser. No. 435,528
9 Claims. (Cl. 318—305)



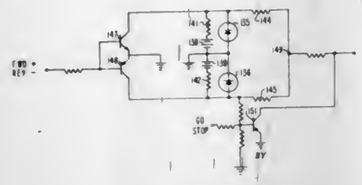
1. In combination with a motor capable of developing a voltage proportional to its speed and for removing tape from a loop box at a relatively low rate of speed and moving said tape at a relatively high speed after it has left said loop box comprising a source of voltage for driving said motor, sensing means responsive to a relatively low voltage developed across said motor to limit the speed thereof, and means responsive to the movement of said tape out of said loop box to cause said sensing means to be responsive only to a relatively high voltage across said motor to permit said motor to be driven at a relatively high speed.

3,360,707
MOTOR DRIVE CIRCUITS FOR BIDIRECTIONAL CONTROL OF A DRIVE MOTOR

Martyn A. Lewis, Los Angeles, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California

Original application Mar. 22, 1963, Ser. No. 267,166. Divided and this application July 18, 1966, Ser. No. 566,125

4 Claims. (Cl. 318—308)



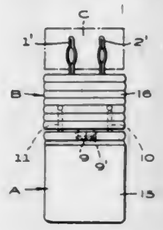
1. In a circuit for providing bidirectional operation of a capstan driven tape system, an input circuit comprising a pair of resistance elements forming a voltage divider circuit with an output terminal connected therebetween, a stable positive polarity voltage source connected to one side of said voltage divider circuit, a stable negative voltage source connected to the other side of said voltage divider, said output terminal normally being maintained at zero potential, a pair of normally open electronic switches having control electrodes thereon, one of said electronic switches being responsive to a positive polarity signal applied to its control electrode and the other being responsive to a negative polarity input signal, said electronic switches each being connected in parallel with a respective one of said voltage sources, and means connected to the control electrodes of both the electronic switches for selectively applying positive or negative control signals to close one of said switches to short one of said voltage sources so that a portion of the voltage from the other voltage source appears at said output terminal.

3,360,708
COMBINATION BATTERY AND RECHARGER

David Palmer-Persen, Hillsborough, Calif., assignor to En-Power Company, Inc., San Mateo, Calif., a corporation of California

Filed Aug. 23, 1965, Ser. No. 481,654

2 Claims. (Cl. 320—2)



2. In a combination battery and recharger:

(a) a rechargeable battery defining a case having an anode (+) and a cathode (—) therein;

(b) a recharging circuit unit having a housing defining opposite ends, and each of these ends being made to be selectively coupled to the top of the battery case;

(c) the case and recharging circuit unit defining negative (—) and positive (+) terminals, respectively, when one end of the unit is coupled to the battery case in one end position for use as a battery;

(d) a recharging circuit housed in said unit and having power blades projecting upwardly therefrom, when this unit is inverted and the other end thereof is coupled to the battery case in another end position;

(e) the circuit including the power blades which are made to be connected to a source of alternating current, and the circuit further including means operable for converting said current to direct current, and this circuit being connected to the anode (+) and the cathode (—) for flow of the direct current from the former to the latter internally of the battery to recharge the battery, when the unit is coupled to the battery in the latter position;

(f) the battery being provided with a plurality of prongs projecting upwardly from its top;

(g) the underneath end of the recharging circuit unit having a plurality of sockets therein disposed to have preselected of said prongs removably inserted thereinto, when the unit is disposed on the top of the battery case in battery-forming position;

(h) certain of the prongs and sockets being electrically connected in series into the battery circuit between the cathode (—) and the negative (—) terminal of the battery when in battery-forming position;

(i) and another prong and its socket being electrically connected into the battery circuit between the anode (+) of the battery and the positive (+) terminal of the unit when in battery-forming position.

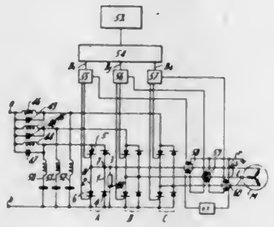
3,360,709
ARRANGEMENTS FOR CONTROLLING GENERATORS SHOWING AN ADJUSTABLE CONDUCTIVITY

Marcel Etter, 6 Blvd. des Promenades, Carouge-Geneva, Switzerland

Filed Aug. 9, 1963, Ser. No. 301,062

Claims priority, application Switzerland, Aug. 13, 1962, 9,577/62

6 Claims. (Cl. 321—5)



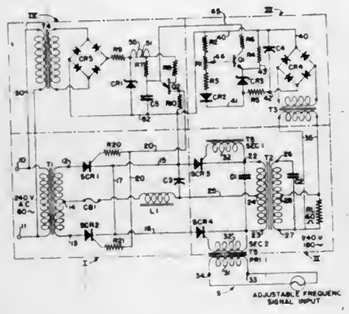
6. In combination with a main polyphase generator of an adjustable conductivity and effective to produce signals of adjustable amplitude and adjustable first frequency, a common reference generator adapted to produce one reference signal at a predetermined second frequency much higher than said first frequency, the curve representing the variation with respect to time of the reference signal having the same shape as the corresponding curve representing the variation with respect to time of the signal to be produced by the main generator. means comparing, at a comparison frequency different from the frequency of the reference signal, the successive instantaneous values of the reference signal with the corresponding instantaneous values of the main generator signals in each phase, means controlled by said comparing means and controlling the conductivity of the main generator to maintain the main generator signals in the corresponding phase substantially proportional to said successive instantaneous values of the reference signal, the frequency of the main generator signals being equal to the difference between the frequency of the reference signal in one phase and that of a frequency selected from the fundamental and harmonic frequencies of the comparison frequency.

3,360,710
CONVERTER—ALTERNATING CURRENT OR DIRECT CURRENT TO ALTERNATING CURRENT, WITH CONTINUOUSLY VARIABLE ADJUSTMENT OF OUTPUT FREQUENCY AND VOLTAGE

Fred O. Barthold, 1100 S. Parkway Trail, Topanga, Calif. 90290

Filed June 8, 1964, Ser. No. 373,286

3 Claims. (Cl. 321—9)



1. An electric power converter comprising:

a power input component having phase-controlled gating means for transmitting a succession of DC output pulses;

an inverter component including means to receive said DC pulses and to transmit the same as a sinusoidal alternating current output, and gating means for controlling the reception of said pulses;

a feedback component sensing the voltage of the power output of said inverter component and delivering feedback signals varying in accordance with the variations of power output sensed by said feedback component; and

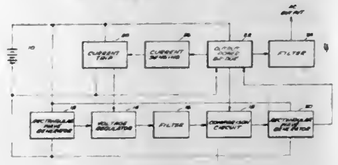
a transfer component including means for generating a succession of half cycles of control voltage having repetition intervals synchronized to those of said power input component, means responsive to said control voltage for delivering a succession of control pulses to said power input component for controlling the action of its said gating means and means responsive to the feedback signals delivered by said feedback component for variably timing the conduction intervals of said control pulses so as to correspondingly time the gating action in said power input component in a manner to vary the power magnitude of the said DC pulses transmitted by said power input component to said inverter component, whereby to vary the power magnitude of the output of said inverter component; said inverter component comprising a transformer including primary and secondary windings, a primary capacitor connected across the terminals of said primary winding, and a secondary capacitor connected across the terminals of said secondary winding, said transformer having a leakage inductance between said windings such as to constitute, with said capacitors, an equivalent pi-type filter embodied integrally within said transformer and capacitors, such as to provide highly efficient square wave to sine wave conversion combined with minimal weight in said inverter component.

3,360,711
CONTROL ARRANGEMENT FOR AN INVERTER CIRCUIT

Edward H. Dinger, Waynesboro, Va., assignor to General Electric Company, a corporation of New York

Filed Dec. 19, 1963, Ser. No. 331,752

10 Claims. (Cl. 321—18)



9. An improved control arrangement for an electric power converter comprising a set of input terminals adapted to be connected to a source of electric current, a set of alternating current output terminals, and means for electrically interconnecting said sets of input and output terminals, which means includes complementary first and second current-conducting paths with each of said paths including at least one unidirectional switching component, said first path being disposed to conduct source current in one direction with respect to said output terminals and said second path being disposed to conduct source current in the opposite direction with respect to said output terminals, the respective switching components of said first and second paths being alternately switched from nonconducting to conducting states in response to successive control signals supplied by a suitable control signal generator, wherein the improvement comprises the combination of:

(a) a source of an alternating reference signal having a desired frequency and a chosen wave shape;

(b) means connected to said set of output terminals for deriving a feedback signal that is representative of an alternating electric quantity at said output terminals,

(c) means connected to said reference signal source and to said feedback signal deriving means for integrating the difference between said reference and feedback signals; and

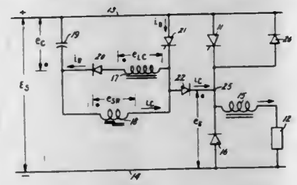
(d) means connected to said control signal generator and operative as soon as the time integral of said difference reaches a predetermined magnitude for initiating the next control signal, the parameters of this combination being so selected that a train of many control signals will be generated during each half-cycle of said reference signal.

3,360,712
TIME RATIO CONTROL AND INVERTER POWER CIRCUITS

Raymond E. Morgan, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

Filed Dec. 27, 1963, Ser. No. 334,690

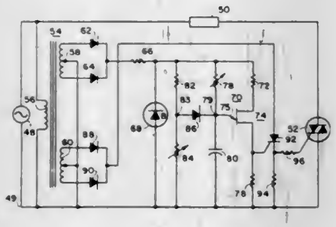
15 Claims. (Cl. 321—43)



4. An improved power circuit using turn on, non-gate turn off solid state silicon controlled rectifier devices including in combination a load current carrying gate turn

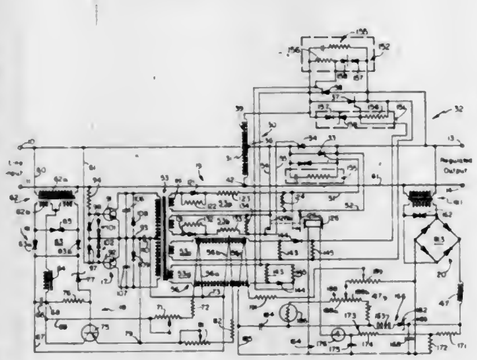
on, non-gate turn off solid state silicon controlled rectifier device, a filter inductance, and a load all connected in series circuit relationship across a pair of terminals that in turn are adapted to be connected across a direct current power supply, a feedback diode connected across the load current carrying gate turn on, non-gate turn off silicon controlled rectifier device in a reverse polarity sense, a coasting rectifier connected in parallel circuit relationship with the filter inductance and the load, and commutation circuit means comprising a linear inductance and blocking diode connected in series circuit relationship, a saturable reactor effectively connected in parallel circuit relationship with the series connected blocking diode and linear inductance, a commutating capacitor connected between one juncture of the parallel connected linear inductance circuit and saturable reactor and one terminal of the load current carrying silicon controlled rectifier device, the commutating capacitor and the linear inductance being tuned to series resonance at a substantially lower frequency than the desired commutating frequency, and the commutating capacitor and the saturated inductance of the saturated reactor being tuned to series resonance at the desired commutating frequency, an auxiliary gate turn on, non-gate turn off silicon controlled rectifier device operatively connected between the remaining juncture of the parallel connected linear inductance circuit and saturable reactor and the abovementioned terminal of the load current carrying silicon controlled rectifier device for oscillating the charge on the commutating capacitor through a closed series circuit loop including the linear inductance circuit and thereby reverse the polarity of the charge on the commutating capacitor, and means including the saturable reactor and a coupling diode having its positive terminal connected to the last mentioned juncture and its negative terminal connected to the remaining terminal of the load current carrying silicon controlled rectifier for effectively coupling the reverse polarity charge on the commutating capacitor across the load current carrying silicon controlled rectifier device to commutate it off.

3,360,713
POWER CONTROL CIRCUITS USING BI-DIRECTIONAL CONTROLLABLE SEMICONDUCTOR SWITCHING DEVICES
Edward Keith Howell, Skaneateles, N.Y., assignor to General Electric Company, a corporation of New York
Filed Feb. 7, 1964, Ser. No. 343,299
8 Claims. (Cl. 323—22)



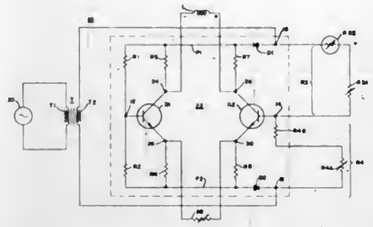
3. In combination, a bi-directional current conducting semiconductor device normally exhibiting a high impedance characteristic between two main current carrying terminals thereof and exhibiting a low impedance characteristic in response to the application of a control signal having at least a predetermined amplitude to a third and gating terminal thereof, the minimum value of said signal necessary to cause low impedance being the same for both directions of current between said two terminals, means serially connecting said two main terminals in a current carrying path to a load and an alternating current source, and means for producing first and second rectified portions of said source output, a unijunction transistor relaxation oscillator including a unijunction transistor having a pair of base electrodes and an emitter electrode, an adjustable time constant circuit associated with said emitter electrode, means for applying said first rectified portion across the base to base path of said transistor and to said time constant circuit to provide signals occurring in synchronism with and in varying phase relationship with half cycles of the source output, a gate controlled rectifier, having an anode, cathode and gate electrode, means for applying said second rectified portion across the anode to cathode of said gate controlled rectifier, means for applying said signals to said gate electrode to produce said control pulses, and means for applying said control pulses between said third terminal and the same one of said main terminals for both directions of current flow between said two main terminals.

3,360,714
VOLTAGE REGULATOR HAVING OPEN AND CLOSED LOOP COMPENSATING MEANS
Henry S. Borkovitz and Hans U. Hjermstad, Chicago, Ill., assignors to Electro-Seal Corporation, Des Plaines, Ill., a corporation of Illinois
Filed June 8, 1964, Ser. No. 373,274
13 Claims. (Cl. 323—43.5)



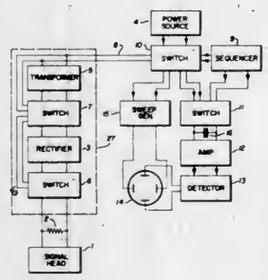
1. A voltage regulator for supplying a substantially constant output voltage from a source to a load connected across the output terminals of the regulator; which voltage regulator comprises an autotransformer connected to the source and having high and low voltage output taps; a solid state switching network connected between said high and low voltage output taps of said autotransformer and the output terminals of the regulator so that the output voltage supplied to the terminals from said autotransformer is dictated by the conductive state of said switching network; a signal generating circuit connected to said solid state switching network for selectively controlling the conductive state thereof; open loop compensating means connected between said autotransformer and said signal generating circuit for developing first control signals in direct response to input voltage variations and for supplying said control signals to said signal generating circuit; and closed loop compensating means connected between the output of said switching network and said signal generating circuit for supplying second control signals to said signal generating circuit; said first and second control signals actuating said signal generating circuit to selectively render said switching network conductive so that a substantially constant output voltage is derived from said autotransformer notwithstanding either input voltage and load variations.

3,360,715
CONDITION RESPONSIVE SOLID STATE TRANSDUCING AND INDICATING CONTROLLER MEANS
Klaus P. Mueller, Goshen, Ind., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware
Filed July 19, 1965, Ser. No. 472,853
10 Claims. (Cl. 323—75)



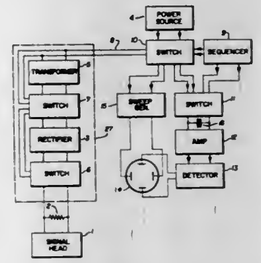
1. Circuit means providing an output voltage signal as a function of the variation of a monitored parameter from a predetermined control point comprising a source of alternating current power; a resistance bridge having input terminals connected across said source, a first pair of series connected constant resistance bridge arms, having a first output terminal therebetween maintained at a predetermined potential, connected across said input terminals through half-wave rectifier means, a second pair of series connected variable resistance bridge arms including a variable resistance sensor means having the resistance thereof variable as a function of a monitored parameter and having a second output terminal therebetween having a variable potential thereon as a function of changes in said parameter, connected across said input terminals; and differential amplifier means having inputs connected respectively, at said output terminals of said resistance bridge, said differential amplifier means including means providing an output voltage signal proportional to the unbalance in said bridge circuit as a function of the said variations in said parameter during each alternate half cycle of power supplied to said bridge.

3,360,716
GYROMAGNETIC RESONANCE METHODS AND APPARATUS
Arnold L. Bloom, Menlo Park, and Dolan L. Mansir, Los Altos, Calif., assignors to Varian Associates, San Carlos, Calif., a corporation of California
Original application Aug. 6, 1956, Ser. No. 602,127. Divided and this application Feb. 23, 1965, Ser. No. 434,508
6 Claims. (Cl. 324—.5)



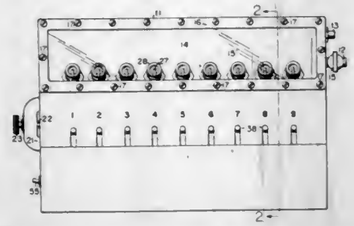
1. Apparatus for determining the thermal relaxation time T_1 of a sample of matter possessing gyromagnetic atom portions located in a first unidirectional magnetic field comprising means for providing a second unidirectional magnetic field to the sample stronger than and at an angle to said first magnetic field for polarizing the atom portions in said second magnetic field, said polarizing field being applied in successive time spaced pulses, the polarizing field in each pulse being decreased to zero slowly so that the polarized atom portions are aligned in said first magnetic field after each polarizing pulse, means for applying an alternating magnetic field of the Larmor frequency of the atom portions to the sample at an angle to said first magnetic field a spaced time period after termination of each polarizing pulse for producing a forced precession of the atom portions in said first magnetic field, the time periods between termination of the polarizing pulse and initiation of the alternating frequency field varying progressively for successive cycles, and means for detecting the free precession of the atom portions in said first magnetic field after termination of the alternating field in each cycle, the initial peak amplitudes of the successive free precession signals producing an envelope curve from which the thermal relaxation time of the sample may be determined.

3,360,717
GYROMAGNETIC RESONANCE METHODS AND APPARATUS
Arnold L. Bloom, Menlo Park, and Dolan L. Mansir, Los Altos, Calif., assignors to Varian Associates, San Carlos, Calif., a corporation of California
Original application Aug. 6, 1956, Ser. No. 602,127. Divided and this application Feb. 23, 1965, Ser. No. 434,509
7 Claims. (Cl. 324—.5)



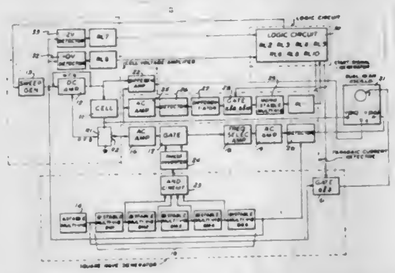
1. The method for determining the thermal relaxation time T_1 of a sample of matter possessing gyromagnetic atom portions in a first unidirectional magnetic field comprising the steps of providing a second unidirectional magnetic field to the sample stronger than and at an angle to the first magnetic field for polarizing the atom portions of said second magnetic field, said second magnetic field being applied in a plurality of time spaced pulses followed by periods of no polarization, the time of each of said pulses and the time of each of the no polarization periods being substantially less than the thermal relaxation time of the sample with reference to the second magnetic field, the polarized atom portions precessing in the first magnetic field after each successive polarizing pulse, the application of each polarizing pulse being synchronized with the precession frequency of the freely precessing atom portions so that the polarizing field is applied at the instants in time when a component of the magnetic moments of the precessing atom portions is oriented in the direction of said polarizing field, and detecting the free precession of the atom portions between polarizing pulses, the initial amplitudes of the free precession signals building up as the polarization of the atom portions builds up, the peak amplitudes defining a polarization curve from which the thermal relaxation time of the sample may be determined.

3,360,718
SPARK PLUG TESTER
Lester W. Williams, 3665 S. Victoria Ave., Los Angeles, Calif. 90016
Filed Aug. 15, 1967, Ser. No. 660,679
6 Claims. (Cl. 324—15)



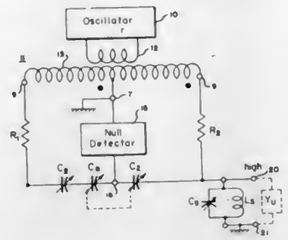
1. A tester for simultaneously enclosing a plurality of more than two spark plugs for testing comprising;
(a) a tray (**19**),
(b) pairs of spaced contacts (**25, 30**) upon said tray for electrically contacting respective spark plug electrodes and for supporting each spark plug of said plurality in an up-ended inclined position.
(c) an elongated housing (**11**) to receive and enclose said tray,
(d) means (**15**) forming a part of said housing to allow observation directly of the spark gaps of the spark plugs,
(e) high voltage source means (**41**), and
(f) individual normally open-curcuit electrical switches (**37, 38, 39, 45**) to selectively connect said source means through said pairs of contacts (**25, 30**) to selected spark plugs (**28**) for enabling observation of the sparks produced thereby.

3,360,719
POLAROGRAPHIC APPARATUS
Yukio Saito, Warabi-shi, and Koichi Okamoto, Kawasaki-shi, Japan, assignors to Sankyo Company, Limited, Tokyo, Japan
Filed Apr. 28, 1967, Ser. No. 634,650
Claims priority, application Japan, Jan. 30, 1962, 37/2,600, 37/2,601
6 Claims. (Cl. 324—31)



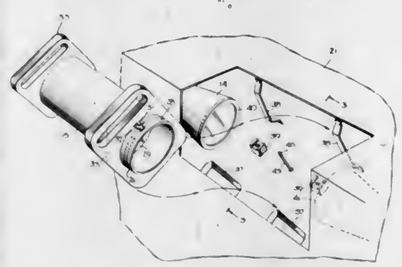
6. In an oscillopolarograph having a linearly varying voltage superposed with a square wave voltage applied to its polarographic cell through an amplifier for at least said square wave voltage; the combination of feedback means effecting a positive feedback to the input of said amplifier of a portion of the cell current, thereby to reduce the time constant for the charging current component of said cell current, and faradaic current detector circuit means sampling the cell current during each half-period of said square wave voltage and including filter means passing only that component of the sampled cell current which has the frequency of said square wave voltage.

3,360,720
ADMITTANCE MEASURING BRIDGE CIRCUIT HAVING A PAIR OF GANGED CAPACITORS
John H. Mennie, Livingston, N.J., assignor to Boonton Electronics Corporation, Morris Plains, N.J., a corporation of New Jersey
Filed June 20, 1962, Ser. No. 203,991
5 Claims. (Cl. 324—57)



1. Admittance measuring apparatus comprising first and second input terminals and a common chassis terminal to receive A-C voltages for energizing said apparatus, means for placing A-C voltages of opposite phase between the respective first and second input terminals and said common chassis terminal, an output detector terminal, a first resistor, a first variable capacitor and a zero-adjust variable capacitor connected in series between said first input terminal and said detector terminal, a second resistor and a second variable capacitor connected in series between said second input terminal and said detector terminal, means for mechanically coupling the rotors of said first and second variable capacitors so that with adjustment the respective capacitors change value in opposite directions, a first test terminal connected to the junction of said second capacitor and said second resistor, a second test terminal connected to said common chassis terminal, and null detector means connected between said output detector terminal and said common chassis terminal.

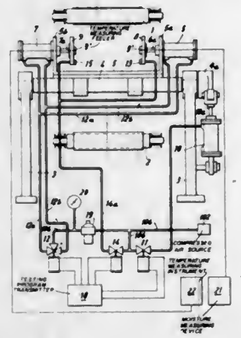
3,360,721
DETERMINATION OF MOISTURE IN TOBACCO
James O. Pullman, Chapel Hill Township, Orange County, N.C., assignor to Liggett & Myers Tobacco Co., New York, N.Y., a corporation of New Jersey
Filed Oct. 30, 1963, Ser. No. 320,015
7 Claims. (Cl. 324—58.5)



1. In a system for determining the moisture contained in a sample of tobacco in particulate form by measuring the attenuation of micro-wave energy beamed from the aperture of a transmitting horn through the sample of tobacco to the aperture of a receiving horn, the improvement of a holder for the sample of tobacco, said holder comprising:
(a) a hollow right rectangular cylinder constructed of electricially conductive material, said cylinder having a circular cross-section,

(b) the inside diameter of said cylinder being substantially equal to the greatest distance across the apertures of said micro-wave horns,
(c) end caps at each end of said cylinder, said end caps being transparent to micro-wave energy, and
(d) suppport means for supporting said holder spaced between said horns without physical contact between said holder and said horns.

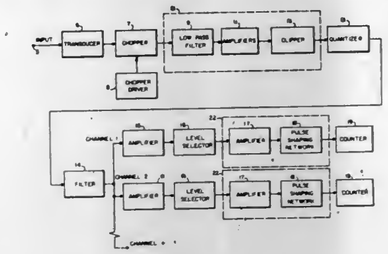
3,360,722
PROCESS AND APPARATUS FOR THE AUTOMATIC PERIODIC DETERMINATION OF THE MOISTURE CONTENT OF FIBROUS AND/OR LEAFY MATERIALS
Max Freiherr von Bethmann, Bremen, Wilhelm Dettmer, Delmenhorst, Johannes van Nooy, Bremen-Neu Vahr, and Rolf Gärtner, Berlin-Schoneberg, Germany, assignors to Firma Martin Brinkmann AG, Bremen, Germany
Filed Oct. 23, 1964, Ser. No. 406,130
Claims priority, application Germany, Oct. 31, 1963, B 74,091
13 Claims. (Cl. 324—65)



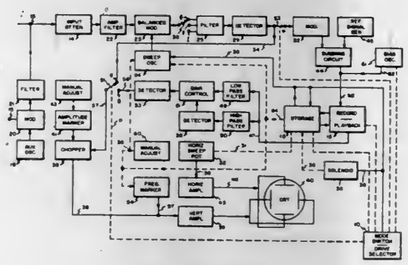
1. A method of determing the moisture characteristics of fibrous, leafy and similar materials, particularly tobacco, using an electric measuring means for indicating moisture including electrodes, comprising moving the material in a continuously moving stream, regularly and periodically removing a sample of material from the continuously moving stream and compressing it to a predetermined constant compression pressure against the electrodes, and simultaneously actuating the electric measuring means for indicating the moisture while the material is being compressed.

3,360,723
DIGITAL VOLTAGE INTEGRATOR SYSTEM
Richard K. Royce, Alexandria, Va., assignor to the United States of America as represented by the Secretary of the Navy
Filed Aug. 28, 1964, Ser. No. 392,972
8 Claims. (Cl. 324—77)

1. A digital integration system for automatically statistically analyzing a random function over a sampling period by analyzing a varying D.C. input signal proportional to said random function comprising:
means for receiving said input signal and producing a series of evenly spaced ouput pulses having continuously variable amplitudes proportional to corresponding evenly spaced portions of said random function;
quantizing means coupled to said receiving means for producing a series of evenly spaced quantized pulses having a number of discrete amplitudes, each of said quantized pulses corresponding to a respective one of said output pulses and each said discrete amplitudes having a unique one-to-one correspondence to a predetermined amplitude range of said output pulses;
level selector means coupled to said quantizing means to receive said series of evenly spaced quantized pulses to produce a pulse signal in a first channel whenever the amplitude of a quantized pulse is greater than or equal to a first given level and to produce a pulse signal in a second channel whenever the amplitude of a quantized pulse is greater than or equal to a second given level; and
at least two pulse counter means coupled to said selector means for separately counting the pulses in said channels.



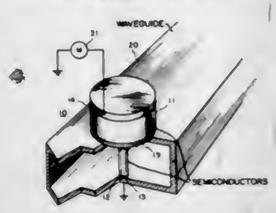
3,360,724
APPARATUS FOR ANALYZING ELECTRICAL SIGNALS INCLUDING MAGNETIC STORAGE MEANS
Francis S. Guros, Yorktown Heights, and James R. Bradford, Pleasantville, N.Y., assignors to General Precision, Inc., a corporation of Delaware
Filed Oct. 30, 1964, Ser. No. 407,648
17 Claims. (Cl. 324—77)



17. Apparatus for analyzing electrical signals comprising,
sweep frequency oscillator means,
means responsive to said sweep frequency oscillator means for modulating said electrical signals thereby,
means for passing said modulated signals at a fixed predetermined frequency,
means coupled to said previously mentioned means for producing storable signals proportional in amplitude and spectral density to the amplitude and spectral density of said electrical signals,
memory means responsive to said storable signals for storage thereof,
visual display means,
means for displaying said storable signals through said visual display means simultaneously during storage thereof by said memory means,
means for subsequently uncoupling said storable signal producing means and for preventing further visual display of said electrical signals, and

means responsive to said uncoupling means for retrieving said storable signals from said memory means and for repeating the visual display thereof through said display means.

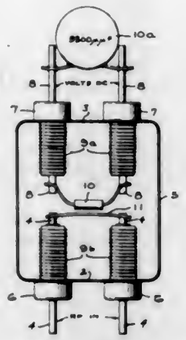
3,360,725
SEMICONDUCTOR MICROWAVE POWER DETECTOR EMPLOYING THE BULK THERMOELECTRIC EFFECT
Joseph Zucker, New York, N.Y., assignor to General Telephone and Electronics Laboratories, Inc., a corporation of Delaware
Filed Apr. 27, 1964, Ser. No. 362,627
4 Claims. (Cl. 324—95)



1. A device for detecting microwave power in a waveguide, said waveguide having an opening in a wall thereof for receiving said device, which comprises:
(a) a bar of semiconductor materials having a carrier concentration of not more than 10^{16} carriers per cubic centimeter and comprising first and second sections, said second section having a reduced area for insertion through the opening in said waveguide wall;
(b) an ohmic contact mounted on the end of said second section and contacting the opposite wall, said contact providing microwave power coupling therethrough;
(c) capacitive coupling means mounted on the side of said first section adjacent said second section for providing coupling at microwave frequencies between the first section of said bar and the adjacent waveguide wall;
(d) a metallic contact mounted on the first section of said bar, the microwave power coupled through said bar heating the carriers within said second section whereby a voltage which is a function of the microwave power in the waveguide is generated between said ohmic and metallic contacts, and
(e) means for coupling said ohmic and metallic contacts to an external indicating means for utilizing the voltage generated therebetween.

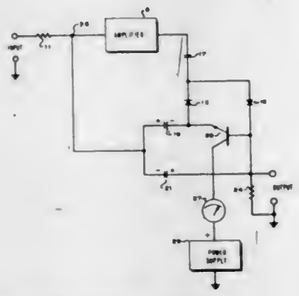
3,360,726
RADIATION RESPONSIVE DEVICE
Carl I. Peters, Jr., 513-B Saratoga Ave., China Lake, Calif. 93555
Filed Mar. 1, 1966, Ser. No. 530,996
2 Claims. (Cl. 324—119)

1. A radio frequency energy determining means comprising:
a housing,
input terminal means in said housing adapted to be connected to a source of radio frequency energy,
a conductive wire having a straight portion connected between said input terminal means and within said housing,
output terminal means in said housing,
at least one germanium crystal point contact diode having an anode and cathode positioned in said housing so that the longitudinal axis of said diode is parallel with and closely adjacent to said straight wire portion,
said diode having terminals connected internally, respectively, to the cathode and the anode of said diode,
said terminals of said diode being connected to said output terminal means so that said terminals connected respectively to said cathode and anode of said diode from the output terminals of said detecting means,



so that radio frequency energy applied to said input terminal means from said external source is carried by said wire thereby producing an electrostatic field which cuts across the axis of said diode, perpendicular thereto, and said electrostatic field of said radio frequency energy induces a direct current potential in said diode, and
direct current detecting means connected to the output terminals, having a response which is a function of the frequency of the source of radio frequency energy.

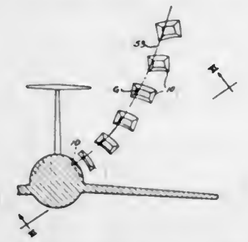
3,360,727
METER BRIDGE CIRCUIT INCLUDING SIGNAL-BIASED AMPLIFIER FOR PROVIDING D.C. CURRENT TO GROUNDED LOAD
Gregory Justice, Mountain View, Calif., assignor to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California
Filed Nov. 16, 1964, Ser. No. 411,458
2 Claims. (Cl. 324—123)



1. An electrical circuit comprising:
a source of alternating signal;
a bridge circuit including a diode in each of two bridge arms having a first common junction therebetween and including a capacitor in each of the two remaining arms having a second common junction therebetween;
circuit means connected to said source and to said first and second common junctions of the bridge circuit for conducting only alternating signal current therethrough from said source;

a transistor connected to receive bias from the bridge circuit and having a base electrode connected to a first common connection of a diode in one arm and a capacitor in one arm and having an emitter electrode connected to a second common connection of another diode in another arm and another capacitor in another arm and having a collector electrode;
a utilization circuit; and
direct-current conducting means connecting the utilization circuit between the collector electrode and said first common connection.

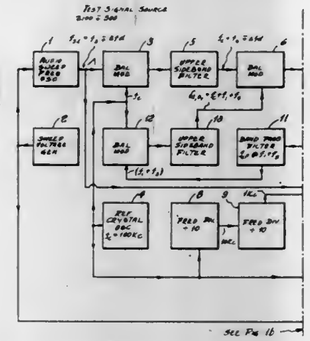
3,360,728
INDICATOR DEVICE FOR RELEASE FROM AIRCRAFT
Harry T. Stevinson, Douglas A. Baker, and George O. C. Paynter, Ottawa, Ontario, Canada, assignors to Canadian Patents and Development Limited, Ottawa, Ontario, Canada, a corporation of Canada
Filed May 6, 1965, Ser. No. 453,660
11 Claims. (Cl. 325—114)



1. As a separable portion of an aircraft, an indicator device comprising a generally flat, airfoil-shaped, rigid casing having leading surfaces for presenting an angle of attack to the airstream during edgewise flight to generate lift and drag on the device, said casing containing a mass of light, tough, energy-absorbing material and an instrument payload, and means for weighting said device so that the centre of gravity thereof is located at a fixed predetermined position towards the leading surfaces and sufficiently forwardly and inwardly in the casing to result in stable edgewise flight with a substantial angle of attack.

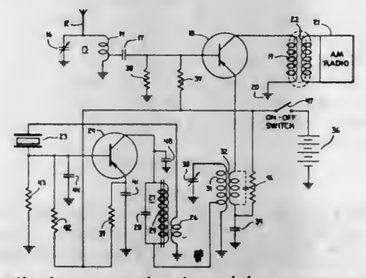
3,360,729
INTERMODULATION DISTORTION TEST SET FOR INDEPENDENT SIDEBAND TRANSMITTERS
Anthony C. Palatinus, 68—17 60th Road, Maspeth, N.Y. 11378
Filed Aug. 27, 1965, Ser. No. 483,380
11 Claims. (Cl. 325—133)

1. A circuit arrangement for the generation of two separate sweep tones of equal amplitude which comprises:
a variable sweep frequency audio frequency generator having a sawtooth sweep voltage generator and a voltage controlled audio oscillator
a source of stable reference frequency higher than the frequency of said audio generator
a first balanced modulator having connected to its inputs the outputs of said audio generator and said stable source
a first upper sideband filter connected to receive the output of said first modulator for passing only the upper sideband frequencies thereof,
frequency means for providing a signal at a frequency within the sweep range of said audio generator,
a double balanced modulator having connected to one of its inputs the output of said audio generator
connecting means for momentarily connecting the output of said frequency means to another input of said double balanced modulator
a bandpass filter connected to the output of said double balanced modulator for passing only the static sum frequencies at the output thereof,
a second balanced modulator having connected to its inputs the output of said bandpass filter and said source of reference frequency,
a second upper sideband filter connected to pass therethrough only the sum frequency output of said second balanced modulator,
a third balanced modulator having connected to its inputs the outputs of said first and second upper sideband filters,



a first low pass filter connected to receive the output of said third balanced modulator and passing only the difference frequencies and having its output connected to said another input of said double balanced modulator, said filter output also providing one of said separate sweep tones,
a second low-pass filter connected to receive the output of said double balanced modulator, passing only the difference whereby the output thereof is the other of said separate sweep tones which sweeps in a direction opposite to and at twice the sweep width of said one of said separate tones.

3,360,730
APPARATUS PROVIDING A-M RADIO RECEPTION OF F-M
David E. Sims, Indianapolis, Ind., assignor of one-half to James E. Smith, and one-half to Eugene E. Williams, Indianapolis, Ind.
Filed Oct. 16, 1964, Ser. No. 404,410
6 Claims. (Cl. 325—315)



3. A radio frequency signal receiving system comprising:
an A-M radio receiver having first antenna means for reception of radio frequency signals;
second antenna means for reception of radio frequency signals;
an input circuit connected to said second antenna and tuned to the frequency of an F-M carrier signal to be received;

a first transistor having a control circuit coupled to said input, and said first transistor having a load circuit with an output inductor therein;

a transistor oscillator having an output circuit coupled to said first transistor to produce an intermediate frequency output in said output inductor, said first transistor functioning as a radio frequency amplifier and mixer;

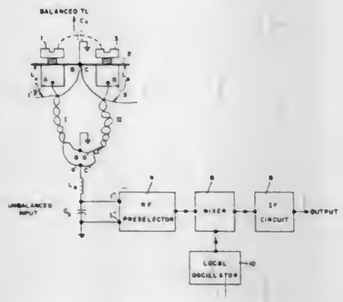
said output inductor being coupled to said first antenna means only inductively and exclusively of any mechanical connection therebetween, whereby information in said F-M carrier is audibly produced by said A-M radio receiver.

3,360,731

BALANCED-TO-UNBALANCED IMPEDANCE MATCHING TRANSFORMER CIRCUIT INCORPORATING LUMPED REACTANCE OF ITS BINDING POSTS

Ben H. Tongue, 41 Ferris Drive, West Orange, N.J. 07052

Filed Dec. 3, 1963, Ser. No. 327,678
5 Claims. (Cl. 325—386)



1. In a converter for ultra-high-frequencies, a balanced-to-unbalanced impedance transformer having, in combination, two sets of insulated twisted two-wire conductors of length small compared to the quarter-wavelengths of the said ultra-high-frequencies, a pair of terminals adapted for connection to a balanced circuit and respectively connected to one end of one wire of each set, means for connecting the adjacent end of the other wire of each set to ground, means for connecting the end opposite the said one end of one wire of one set to ground together with the end opposite the grounded end of the said other wire of the other set, means for connecting together the remaining opposite ends of the wires of the sets and to a series inductance and capacitance connected to ground, means for connecting an unbalanced circuit to the said capacitance, the said inductance and capacitance being tuned with the said sets of twisted wires and the inherent lumped reactance of the said pair of terminals to provide substantially constant filter response to the said ultra-high-frequencies.

3,360,732

GATED CIRCUIT FOR PRODUCING OSCILLATORY WAVEFORM ACROSS CAPACITOR HAVING TWICE THE PRESELECTED GATING FREQUENCY

Connor F. Haugh, Poughkeepsie, and George A. Hellwarth, Baldwin, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

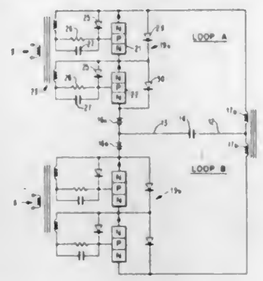
Filed Feb. 26, 1965, Ser. No. 435,483
10 Claims. (Cl. 328—223)

1. A circuit for charging a capacitor comprising:

a first and a second bidirectional switch and a first and a second power supply, and an inductor;

said first switch and said first power supply being connected with said capacitor in a first loop to charge said capacitor in one polarity and discharge said capacitor in the opposite polarity;

said second switch and said second power supply being connected with said capacitor in a second loop to charge said capacitor in said opposite polarity and discharge said capacitor in said one polarity;



means for operating said switches alternately at a preselected frequency;

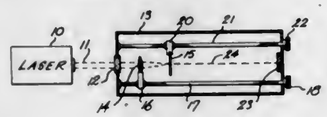
said inductor including connecting means to provide an inductance in each of said loops, said inductance having a value to make each loop resonant at twice said preselected switching frequency.

3,360,733

PLASMA FORMATION AND PARTICLE ACCELERATION BY PULSED LASER

Victor Vali, Seattle, Wash., and Walter Vali, State Line, Nev., assignors to The Boeing Company, Seattle, Wash., a corporation of Delaware

Filed Nov. 12, 1964, Ser. No. 410,465
1 Claim. (Cl. 328—233)



The method of accelerating particles comprising the steps of focusing the output beam of a pulsed laser on a thin metal film having an initial thickness substantially equal to the penetration depth of the laser radiation, the energy of said pulse being sufficient to vaporize the irradiated portion of said film during its rise time, thereby forming a plasma sufficiently dense to reflect said radiation, and maintaining the laser beam focused on said plasma during the persistence of said reflective density to cause an interchange of momentum immediately following formation of said plasma.

3,360,734

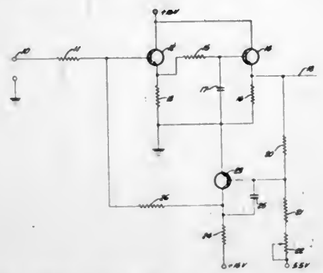
DC STABILIZED AMPLIFIER WITH EXTERNAL CONTROL

James L. Kimball, La Mesa, and William R. Tompkins, San Diego, Calif., assignor to Cohu Electronics, Inc., San Diego, Calif., a corporation of Delaware

Filed May 4, 1965, Ser. No. 453,146
4 Claims. (Cl. 330—25)

1. An AC amplifier having a constant DC output voltage level, comprising, a source of energizing potential, a first transistor having an emitter, a collector and a base, means for connecting said first transistor across said source of potential as an emitter follower, an external reference potential source independent of said source of energizing potential, means including resistive means for coupling the emitter of said first transistor to said external reference potential source, a second

transistor having a base and an output electrode, means for connecting said second transistor across said source of potential, means for connecting the base of said second transistor to a point intermediate the ends of said re-



sistive means, means coupling the output electrode of said second transistor with the base of said first transistor, capacitive means coupling the output electrode of said second transistor with the base thereof, and means for supplying AC signals to the base of said first transistor.

3,360,735

AUTOMATIC GAIN CONTROL CIRCUIT HAVING MEANS FOR COMPENSATING FOR CAPACITIVE EFFECT

Toshihiro Fujimoto, Funabashi-shi, Japan, assignor to Sony Corporation, Tokyo, Japan, a corporation of Japan

Filed July 17, 1964, Ser. No. 383,289
Claims priority, application Japan, July 17, 1963, 38/38,723
2 Claims. (Cl. 330—27)

1. In combination with an amplifier circuit having a signal source connected thereto and including an amplifying transistor with an emitter and a collector thereof connected in series with an output load, an automatic gain control circuit, comprising

(a) a control transistor having an emitter and a collector connected in series between the signal source and a base of the amplifying transistor,

(b) an automatic gain control source connected to a base of said control transistor, and

(c) means connected to said gain control transistor for controlling the value of the emitter-collector capacitance thereof including an inductance connected between the emitter and collector of said control transistor and forming a resonant circuit with the emitter-collector capacitance thereof at the frequency of the signal source.

3,360,736

TWO INPUT FIELD EFFECT TRANSISTOR AMPLIFIER

Minoru Nagata, Kodaira-shi, Japan, assignor to Kabushiki Kaisha Hitachi Seisakusho, Tokyo-to, Japan, a joint-stock company of Japan

Filed Sept. 9, 1964, Ser. No. 395,202
Claims priority, application Japan, Sept. 10, 1963, 38/47,820
2 Claims. (Cl. 330—38)

1. An apparatus for amplifying an input signal including substantially low frequency and high frequency components, which comprises

(1) a field effect transistor having

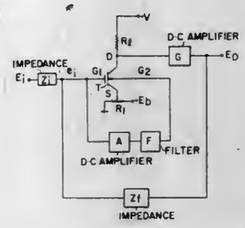
(a) a semiconductor substrate of one conductivity type;

(b) a channel layer of opposite conductivity type to that on said semiconductor substrate, a pn junction being formed between said substrate and said layer;

(c) source and drain electrodes provided on said channel layer, spaced apart from each other;

(d) a first gate electrode provided over said channel layer in an electrically insulated manner;

(e) a second gate electrode formed on the substrate;



(2) means for applying said high frequency component of the input signal to one of the two electrodes;

(3) a chopper amplifier having an input and an output;

(4) means for applying said low frequency component of the input signal to said chopper amplifier; and

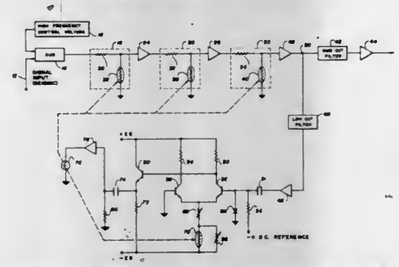
(5) means for applying an output of said chopper amplifier to the other gate electrode, whereby an output signal obtained from said drain electrode is controlled by said high frequency and low frequency components of the input signal.

3,360,737

AMPLIFYING SYSTEM HAVING HIGH SPEED AND HIGH ACCURACY GAIN CONTROL

Ralph A. Harris and Paul E. Carroll, Houston, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed July 31, 1964, Ser. No. 386,630
4 Claims. (Cl. 330—52)



1. A system for controlling the gain of an amplifier, comprising:

means for producing an AC control voltage having a frequency outside the frequency band of interest and having a selectively variable amplitude,

means for applying said control voltage to said amplifier,

means for selectively sensing only the amplitude of the AC control voltage frequency in the output of said amplifier,

a second amplifier for amplifying the sensed frequency,

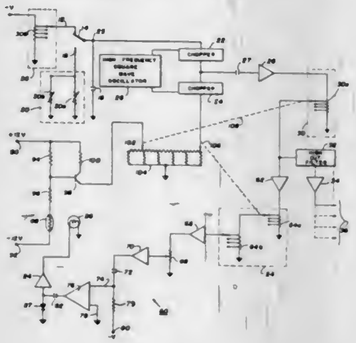
a comparator amplifier having a pair of inputs, one of which is AC coupled to the output of the second amplifier,

a DC reference voltage source,
means for applying the DC reference voltage from said DC reference voltage source across the pair of inputs to the comparator amplifier, whereby only that portion of the half-cycles of the AC control voltage frequency applied to the comparator amplifier which exceeds the reference voltage will be amplified by the comparator amplifier to produce an error signal,
means for applying the error signal to said amplifier, and means in said amplifier for varying the gain thereof responsive to said error signal in a direction tending to maintain the amplitude of the AC control voltage frequency in the output of said amplifier at a constant level,
whereby the gain of the amplifier will be inversely proportional to the amplitude of the AC control voltage.

3,360,738
APPARATUS FOR CONVERTING AN EXPONENTIALLY DECAYING DC VOLTAGE INTO AN EXPONENTIALLY DECAYING SINUSOIDAL VOLTAGE

Ralph A. Harris and Freddy R. Tischler, Houston, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed July 31, 1964, Ser. No. 386,631
18 Claims. (Cl. 330—52)



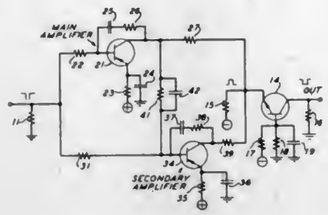
4. A system for producing an AC voltage, the amplitude of which varies at a predetermined rate, comprising:
a source of DC voltage having a predetermined magnitude,
means for varying a DC voltage from said source at said predetermined rate,
means for inverting the DC voltage as it varies to produce an AC voltage having an amplitude corresponding to the varying magnitude of the DC voltage, and
summation network means for summing a second AC voltage and the AC voltage produced by inversion of the DC voltage, the second AC voltage being of the same frequency and in phase with said AC voltage whereby the final amplitude of the total AC voltage is maintained at a predetermined value.

3,360,739
STABILIZIED DUAL-CHANNEL PULSE AMPLIFIERS WITH TRANSIENT RESPONSE COMPENSATION

Edmund H. Cooke-Yarborough, Murray Hill, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed June 10, 1965, Ser. No. 462,869
2 Claims. (Cl. 330—124)

1. A stabilized dual channel signal amplifier which comprises an input section, an output section, first and second parallel channels each extending between said input section and said output section, said first channel containing a main amplifier having a net phase reversal and said second channel containing a secondary amplifier having a net phase reversal, a cross-coupling attenuator connecting the output side of said main amplifier to the input side of said secondary amplifier, and a passive

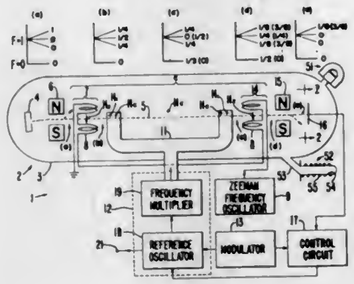


compensator connected in circuit with said attenuator between the output side of said main amplifier and the input side of said secondary amplifier, said compensator having a signal phase advance substantially equal to the signal phase delays common to said main and secondary amplifiers.

3,360,740
CRITICAL TEMPERATURE RANGE FOR OXYGENATED TUNGSTEN IONIZING DETECTOR IN THALLIUM BEAM TUBES

Richard F. Lacey, Essex, Mass., assignor, by mesne assignments, to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California

Filed July 18, 1966, Ser. No. 565,792
7 Claims. (Cl. 331—3)

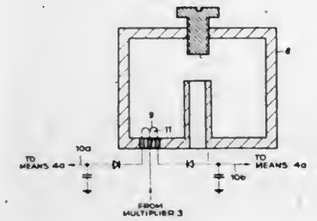


1. An oxygenated tungsten thallium ionizer apparatus including: means defining an evacuated envelope; means for producing a beam of thallium atoms within said envelope; means disposed in the beam path for ionizing thallium atoms of the beam incident thereon; said ionizing means including, a tungsten element, means forming a coating of oxygen atoms on a surface of said ionizer element against which the thallium atoms impinge for ionization, and means for heating the ionizing surface of said tungsten element to and operating same at a temperature within the range of 1200° K. to 1250° K., whereby the ionization efficiency of said ionizing element is on the order of 80% and whereby the mean sticking time of the thallium atoms is on the order of 10^{-2} seconds thereby permitting intensity modulation of the incident beam to be efficienctly carried over as intensity modulation of the ionized beam at frequencies on the order of 10 Hz.

3,360,741
COAXIAL CAVITY RESONATOR PHASE COMPARATOR FOR AUTOMATIC FREQUENCY CONTROL SYSTEM

Hans Kuhn, Pforzheim, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed June 30, 1966, Ser. No. 561,791
Claims priority, application Germany, July 16, 1965, St 24,143
10 Claims. (Cl. 331—9)

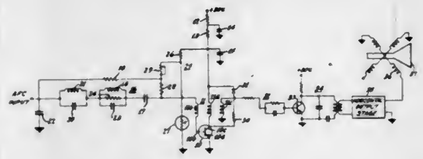


1. A phase comparator for comparing the phase of an oscillator signal having a given frequency and a reference signal having said given frequency comprising:
a resonator means having a resonant frequency equal to said given frequency;
an inductive coupling loop means having
two output terminals to couple two signals phase shifted 180 degrees with respect to each other from said resonator, and
an electric center point to couple said reference signal to said loop means; and
means coupled to said two output terminals to produce a control signal proportional to the phase relationship between said two output signals with respect to said center point.

3,360,742
TEMPERATURE COMPENSATED TRANSISTOR BLOCKING OSCILLATOR

Chi-Sheng Liu, Indianapolis, Ind., and Joseph H. Nevin, Cincinnati, Ohio, assignors to Radio Corporation of America, a corporation of Delaware

Filed May 14, 1965, Ser. No. 455,707
6 Claims. (Cl. 331—66)

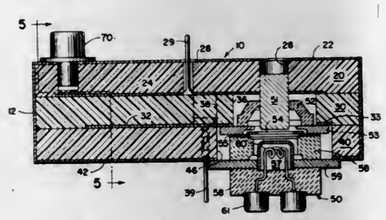


1. A transistor blocking oscillator for producing regularly recurring output pulses comprising
a transistor having an input circuit and an output circuit,
feedback means for regeneratively coupling said output circuit to said input circuit,
said input circuit comprising means including capacitive means for supplying to said transistor an exponentially varying voltage substantially determinative of the interpulse period of said output pulses,
discharge circuit means coupled in series combination with said capacitive means, and
temperature responsive voltage supply means coupled across said series combination, said voltage supply means providing to said series combination a voltage which varies inversely with respect to variations in ambient temperature
whereby the interpulse period of said output pulse is maintained substantially constant throughout the expected range of operation ambient temperatures.

3,360,743
DISTRIBUTED FEEDBACK STRIP TRANSMISSION LINE OSCILLATOR

Melvin D. Clark, Albuquerque, N. Mex., assignor to the United States of America as represented by the United States Atomic Energy Commission

Filed June 30, 1966, Ser. No. 562,953
5 Claims. (Cl. 331—98)



1. A strip transmission line oscillator in which feedback is achieved by mutual distributed capacitance and inductance between a plate line and a grid line comprising in combination, a plurality of circuit boards in stacked superposed relationship, the uppermost board having an electrically conductive clad upper surface and the lowermost board having an electrically conductive clad lower surface, a plate transmission line on a surface of a circuit board disposed between the said upper and lower clad surfaces, a grid transmission line on a surface of another circuit board disposed between said plate transmission line and said lower clad surface and having a length less than that of said plate transmission line, said upper and lower clad surfaces comprise the ground planes for the plate transmission line and said plate transmission line and lower clad surface comprise the ground planes for the grid transmission line and a vacuum tube including an anode element operatively connected to said plate transmission line, a grid element operatively connected to said grid transmission line, and a cathode element operatively connected to said lower clad surface.

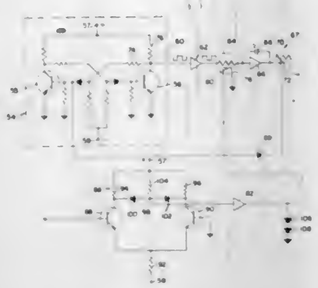
3,360,744
SAWTOOTH WAVE GENERATOR

Daniel Blitz, Boston, Mass., and Russell Kincaid, Milford, N.H., assignors to Sanders Associates, Inc., Nashua, N.H., a corporation of Delaware

Original application Nov. 18, 1963, Ser. No. 324,424. Divided and this application Oct. 23, 1965, Ser. No. 513,892
1 Claim. (Cl. 331—111)

A sawtooth wave generator comprising,
(a) a square wave generator,
(b) means coupled to the output of said square wave generator for integrating the signal from said square wave generator,
(c) a photo-type variable resistance cell having a semiconductor resistance element and a filament, the resistance element being coupled to said square wave generator and forming a portion of said integrating means,
(d) means for applying current to said filament of said resistance cell to vary the resistance thereof, said means for applying current including an amplifier the output from which is proportional to the magnitude of the input signal and independent of the polarity thereof,

said amplifier including a pair of transistors connected in the common emitter configuration, said transistors having a common emitter resistor and separate collector resistors,



including an output terminal coupled to said filament, and

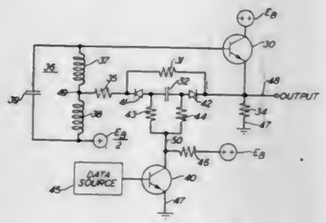
including a pair of diodes one each connected between said output terminal and the collectors of said transistors.

3,360,745

KEYED OSCILLATOR CIRCUIT

Ernest R. Kretzmer, Holmdel, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Jan. 22, 1965, Ser. No. 427,363
9 Claims. (Cl. 332—12)



1. A keying arrangement for an oscillator of the feedback type including a tapped resonant tank circuit and an amplifying device with input and output electrodes connected to opposite ends of said tank circuit and the common electrode connected to the tap on said resonant circuit through a feedback path comprising

a pair of diodes each having a resistance characteristic inversely proportional to forward current,

capacitive means connecting said diodes in series opposition in said feedback path,

means for supplying a constant forward biasing current to each of said diodes at their junctions with said capacitive means, the interaction of said biasing current and oscillatory current through said feedback path causing a variation in diode resistance during each cycle of oscillatory current from a maximum value at the peaks thereof to a minimum determined by said bias current alone at the zero crossings thereof,

a switching device for grounding said current supplying means to stop the operation of said oscillator, and

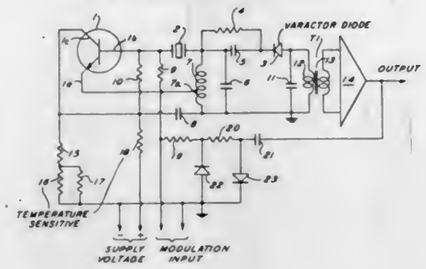
a binary data source controlling said switching device according to the content of a binary message.

3,360,746

CRYSTAL CONTROLLED FREQUENCY MODULATED OSCILLATOR

Charles J. Weidknecht, Willow Grove, Pa., assignor to Datacom, Inc., Warrington, Pa., a corporation of Pennsylvania

Filed Nov. 19, 1963, Ser. No. 324,703
6 Claims. (Cl. 332—26)



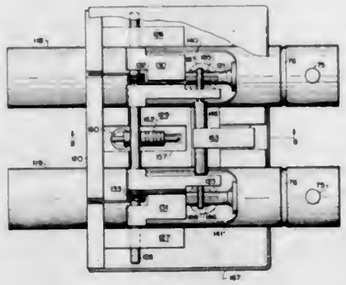
1. A crystal controlled, frequency modulated oscillator circuit comprising, a transistor having emitter, base and collector electrodes, bias resistors connected to said base and said collector electrodes, means for supplying energy via said bias resistors such that said transistor operates as an amplifier, a tank circuit for storing and discharging energy, a crystal resonator element connected between said base electrode of said transistor and one terminal of said tank circuit, feedback means connected between said emitter electrode of said transistor and a further terminal of said tank circuit, means connected in parallel with said tank circuit to provide variations in the frequency to which said tank circuit is tuned, said last named means including a diode which exhibits different operating characteristics in response to the application of different voltages by said tank circuit, modulating input signal supplying means connected to one electrode of said transistor for varying the amplification of said transistor such that signals applied to said tank circuit via said feedback means vary whereby the voltage supplied to said means connected in parallel with said tank circuit varies.

3,360,747

SELF-NORMALING JACK BARREL ASSEMBLY WITH IMPEDANCE BALANCING ELEMENT

Jesse F. Lancaster, Great Falls, Va., assignor to Cooke Engineering Company, Alexandria, Va., a corporation of Delaware

Filed July 19, 1965, Ser. No. 472,977
10 Claims. (Cl. 333—9)



1. A self-normalling jack for selectively connecting a first coaxial cable to a second, or for disconnecting them, and also adapted to connect either of them to other coaxial cables when disconnected from each other, comprising,

(a) first and second jack barrels rigidly and electrically connected together, each having adjacent one end thereof a central conductor insulated from the barrel, but with exposed uninsulated portions within the barrel, the other ends of said jack barrels being open and the wall of each jack barrel having a transverse opening therethrough aligned with the exposed portion of said central conductors,

(b) a shorting rod extending transversely of said jack barrels, into said transverse openings therethrough and with its opposite ends engaging the exposed portions of said central conductors, thereby connecting them,

(c) resilient means urging said shorting rod into engagement with said central conductors,

(d) non-conductive means extending into said transverse opening in said jack barrels and into the path of a patchcord or dummy plug inserted into the open end of either barrel,

(e) said non-conductive means each being effective to separate one end of said shorting rod from its respective central conductor upon the insertion of a patchcord or dummy plug into the open end of its respective jack barrel,

(f) a normally electrically floating circuit impedance balancing element,

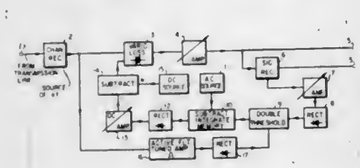
(g) and means operative to electrically connect said circuit impedance balancing element to said shorting rod and to said jack barrels upon separation of either end of said shorting rod from its respective central conductor.

3,360,748

DOUBLE THRESHOLD GAIN REGULATOR FOR COMMUNICATION SYSTEMS

Richard H. Fish, San Mateo, and Neale A. Zellmer, Belmont, Calif., assignors, by mesne assignments, to Automatic Electric Laboratories, Inc., Northlake, Ill., a corporation of Delaware

Filed Apr. 20, 1964, Ser. No. 360,903
12 Claims. (Cl. 333—16)



1. In a communications system, an arrangement for regulating the gain of a transmission path to compensate for level variations of an incoming signal received at the input of said transmission path, said incoming signal including an inband control signal, said arrangement comprising;

(a) a variolosser in said transmission path having an incoming signal input, a regulation signal input, and an output;

(b) rectifier means coupled to said variolosser output;

(c) means tuned to said control signal interposed between said rectifier means and said variolosser output;

(d) means interposed between said rectifier means and said variolosser regulation signal input for deriving said regulation signal, memory means included in said regulation signal derivation means for providing upon the loss of said control signal, substantially the same regulation signal as it provided immediately prior to said loss;

(e) means governing the connection between said rectifier means and said memory means; and

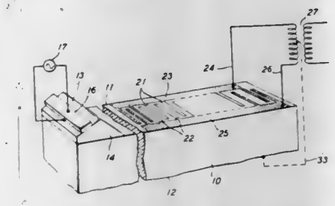
(f) regulation control means connected to said transmission path input and to said governing means, and tuned to said inband control signal for deriving a level range signal for controlling said governing means said regulation control so that said rectifier means is connected to said memory means only when the level of said inband control signal is within a predetermined range.

3,360,749

ELASTIC WAVE DELAY DEVICE

Erhard K. Sittig, Berkeley Heights, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

Filed Dec. 9, 1964, Ser. No. 417,027
4 Claims. (Cl. 333—30)



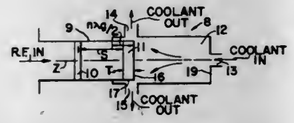
1. An ultrasonic device comprising a body of piezoelectric material, means for launching within said body an ultrasonic wave having a particle displacement that is normal to one surface of said body and that has a maximum amplitude at said surface decreasing with distance away from said surface, electrode means for coupling with said wave on said surface while maintaining the integrity of said wave, said last named coupling means including a plurality of spaced conductive members physically separated from said one surface by a distance that is small compared to a wavelength of said wave, said members comprising means for detecting a piezoelectric field normal to said surface generated by said particle displacement at a multiplicity of spaced points along the direction of propagation of said wave, means for electrically connecting alternate ones of said members together to form two arrays, a load impedance, and means for connecting each of said arrays to opposite sides of said load impedance.

3,360,750

HIGH FREQUENCY WAVEGUIDE LOAD COMPRISING A DIELECTRIC WINDOW IN CONTACT WITH LOSSY COOLANT FLUID

Floyd O. Johnson, Mountain View, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California

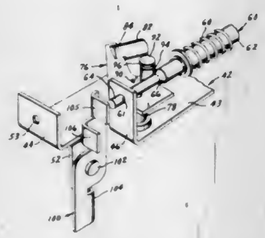
Filed July 23, 1965, Ser. No. 474,414
23 Claims. (Cl. 333—22)



1. A waveguide waterload for dissipating high frequency electromagnetic wave energy including a waveguide having an electromagnetic wave permeable and fluid-impervious dielectric block window disposed therein, fluid coolant dissipation flow channel means coupled to said waveguide in a manner such that lossy coolant fluid passing through said flow channel means will come in intimate contact with said dielectric block window, said waveguide having susceptance means incorporated therein for canceling

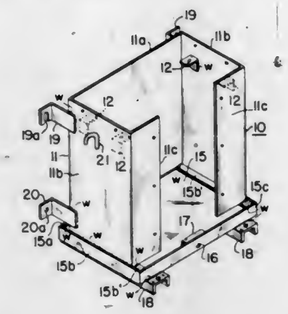
residual reflections of electromagnetic wave energy from said dielectric window, said flow channel having separate means for introducing and extracting lossy coolant fluid therein and therefrom, respectively, said block window having the same height and width dimensions as the internal height and width dimensions of said waveguide.

3,360,751
CIRCUIT BREAKER UNDERVOLTAGE TRIP DEVICE WITH MAGNET RESETTING MEANS
George E. Gauthier, Plainville, and Charles L. Jencks, Avon, Conn., assignors to General Electric Company, a corporation of New York
Filed Oct. 21, 1965, Ser. No. 499,917
4 Claims. (Cl. 335—175)



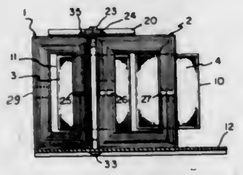
1. A circuit breaker undervoltage trip device comprising:
(a) a support for mounting in an associated circuit breaker;
(b) a solenoid mounted on said support, said solenoid including a winding and a movable armature movable between attracted and a released position with respect to said winding;
(c) a tripping member mounted on said support, said tripping member being movable between latched and tripping positions;
(d) first spring means biasing said tripping member from said latched toward said tripping position for operating a trip member of said circuit breaker;
(e) latch means connected to said armature, said latch means having a latch portion engaging a portion of said tripping member when said latch means is in latching position and said tripping member is in said latched position and holding said tripping member in said latched position against the bias of said first spring means;
(f) said portion of said tripping member acting on said latch portion of said latch means under the bias of said first spring means so as to urge said latch means out of the path of movement of said tripping means;
(g) second spring means acting on said latch means and biasing said latch means toward said latching position with a predetermined force when said latch means is in said latched position;
(h) said solenoid winding when energized by a predetermined voltage exerting a predetermined holding force on said armature in said attracted position;
(i) said predetermined force of said second spring means being insufficient to hold said latch means in said latching position against the bias of said first spring means, but said predetermined force of said second spring means and said predetermined holding force of said solenoid together being sufficient to hold said latch means in said latching position;
(j) resetting means for resetting said tripping member from said tripping position to said latched position;
(k) said second spring means acting on said armature to move said armature from said released to said attracted position when said tripping member is reset to said latched position.

3,360,752
TRANSFORMER HOUSING CONSTRUCTION
Roy E. Uptegraff, Jr., Scottdale, Pa., assignor to R. E. Uptegraff Manufacturing Company, Scottdale, Pa., a corporation of Pennsylvania
Filed Mar. 14, 1966, Ser. No. 534,213
13 Claims. (Cl. 336—59)



1. An improved dry transformer housing construction which comprises, an upright wall enclosure defining a transformer positioning chamber therein and having open top and bottom end portions, a tray having a bottom closure wall in a spaced relation below the open bottom end portion of said upright enclosure and having a rim flange extending upwardly from said bottom closure wall along and about said upright enclosure to define opposed vertical air inlet passageways therebetween in such a manner as to prevent the introduction of a rod or the like substantially horizontally within the transformer chamber, means securing said tray in its defined positioning with respect to said upright enclosure, a lid having a top closure wall in a spaced relation above the open top end portion of said upright enclosure and having a rim flange extending downwardly from top closure wall along and about said upright enclosure to define opposed vertical air outlet passageways therebetween in such a manner as to prevent the introduction of a rod or the like substantially horizontally within the transformer chamber, and means securing said lid in its defined positioning with respect to said upright enclosure.

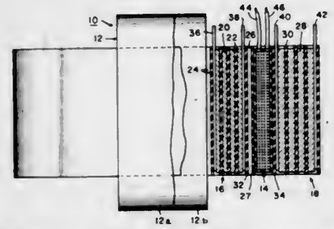
3,360,753
BALLAST TRANSFORMERS HAVING BRIDGED AIR GAP
Theodore Wroblewski, Danvers, Mass., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Continuation of application Ser. No. 546,416, Apr. 29, 1966. This application Aug. 24, 1966, Ser. No. 576,177
8 Claims. (Cl. 336—165)



1. A ballast transformer for electric discharge lamps,

comprising a first magnetic core, closed except for an air gap, a second magnetic core, closed except for at least one bridged air gap, a portion of one core being close to but spaced from a portion of said other core, a primary coil encircling each of said portions of said core and overlying the air gap in said first magnetic core, and a secondary coil encircling a portion of said second magnetic core only and overlying a bridged air gap therein.

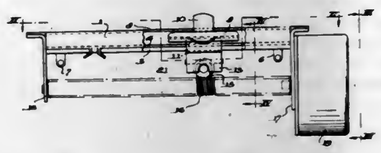
3,360,754
TRANSFORMER HAVING REDUCED DIFFERENTIAL IMPEDANCES BETWEEN SECONDARY PORTIONS
Willis F. Gerdiman, St. Ann, Mo., assignor to Wagner Electric Corporation, St. Louis, Mo., a corporation of Delaware
Filed June 29, 1965, Ser. No. 467,985
9 Claims. (Cl. 336—170)



1. A distribution transformer comprising a magnetic core having a winding receiving core leg, a primary winding coil surrounding said core leg and having connection means for connecting said primary coil to power supply means, first and second secondary winding coils surrounding said core leg in inductive concentric relation with said primary winding coil and disposed respectively on radially inner and outer sides thereof, each of said secondary coils having substantially an equal number of conductor turns so the substantially equal voltages are induced therein when said primary winding coil is connected to said supply means, and means including connection means on each of said secondary coils for selectively connecting said secondary coils in series circuit relation with each other to provide a voltage across said secondary coils substantially equal to twice the voltage induced in one of said secondary coils and in parallel circuit relation with each other to provide a voltage across said secondary coils substantially equal to the voltage induced in one of said secondary coils, said first and second secondary coils having first and second predetermined resistance per unit length of turn values, respectively, said values being in a predetermined ratio in which said first value is predeterminately greater than said second value to reduce the differential between the impedance values of said secondary coils.

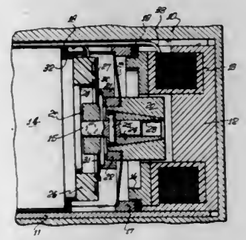
3,360,755
MANUALLY AND ELECTRICALLY OPERATED POTENTIOMETER
David A. Olson, Ridgway, Pa., assignor to Stackpole Carbon Company, St. Marys, Pa., a corporation of Pennsylvania
Filed Feb. 23, 1967, Ser. No. 618,200
10 Claims. (Cl. 338—116)

1. A potentiometer comprising a straight line resistance element, a current collector strip parallel to said element, a slide, an electric contact carried by the slide in engagement with said element and strip, a button projecting from the slide for moving it back and forth along the resistance element and collector strip, a lead screw extending lengthwise of said element, means at opposite ends of the screw pivotally supporting it for rotation on its axis, means for rotating the screw, a gear meshing with the thread of the screw and rotatably connected to the slide on an axis extending transversely of the screw, and a friction member fastened to the slide and pressing against the gear tightly



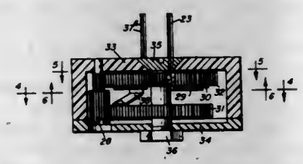
enough to hold it stationary relative to the slide while the screw is being rotated but permitting the gear to rotate and more along the screw when the slide is moved by said button.

3,360,756
POTENTIOMETER WITH LIFT-OFF WIPER
Reginald Darley, Santa Ana, and Peter A. Barrett, Pomona, Calif., assignors to General Dynamics Corporation, a corporation of Delaware
Filed Feb. 27, 1967, Ser. No. 618,660
8 Claims. (Cl. 338—116)



1. A magnetically operated device for lifting the wiper from a potentiometric resistor element when output voltages are not required comprising: a housing, a solenoid assembly secured within said housing, a shaft rotatably mounted within said housing, a tapered member secured to said shaft for rotation therewith, a wiper assembly secured to said shaft and rotatable therewith, a resistance support member fixedly secured within said housing, a resistance member and a pick-off member being operatively positioned on said support member, a diaphragm assembly operatively secured within said housing and including a first portion having a tapered surface configured to frictionally engage said tapered member and a second portion adapted to bear against said wiper assembly under predetermined operating conditions, and electrical wiring for said solenoid assembly and said resistance and pick-off members.

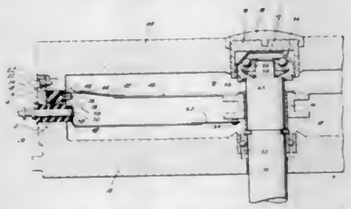
3,360,757
ELECTRONIC DEVICES FOR PROVIDING INFINITELY VARIABLE ELECTRICAL VALUES
Eric C. Wahlberg, 32 8th St., Stamford, Conn. 06905
Filed May 4, 1964, Ser. No. 364,538
5 Claims. (Cl. 338—162)



1. A device for connection in an electrical circuit for establishing a multiplicity of electrical values in said circuit, comprising support means, a pair of elements

mounted on said support means in electrically coactive relationship with each other and for independent rotation while in said coactive relationship about a common axis, each of said multiplicity of electrical values being a function of the relative angular displacement of said pair of elements, and driving means for simultaneously rotating both of said pair of elements in the same direction, said driving means including a rotatable driving member engageable with each of said pair of elements for angular displacement of said members in response to rotation of said driving member, the rate of angular displacement of both said pair of elements being less than the rate of angular displacement of said driving element but different with respect to each other.

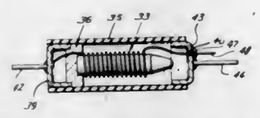
3,360,758
POTENTIOMETERS
Georges Henri Dion, Garches, Seine-et-Oise, France, assignor to Societe d'Instrumentation Schlumberger, Paris, France, a corporation of France
Filed July 28, 1965, Ser. No. 475,508
Claims priority, application France, July 30, 1964, 983,549
2 Claims. (Cl. 338—174)



1. A potentiometer comprising a casing having a circular inner wall which includes a circular wall portion composed of an electrical insulating material, said circular portion having an annular groove formed therein, the groove opening into the casing to form a pair of spaced-apart parallel and substantially right-angled edges in said circular wall portion, a resistance member comprising an open ring mandrel of circular cross-section formed of a flexible material and mounting a helically wound resistance wire thereon, the spacing between said edges being larger than the radius and smaller than the diameter of the cross-section of said mandrel, said member being under compression when forced into said groove and being seated against movement solely by the pair of right-angled edges, a shaft rotatably mounted in said casing, a contact arm formed of a rigid section and a flexible section cantilevered on said rigid section, both sections extending radially from said shaft, said flexible section diverging from a radial plane which passes through said rigid section and extending to slidably engage a lateral portion of the resistance member, an output terminal and a return arm having two ends, one end of said return arm being fixed to said output terminal and the opposite end thereof making electrical contact with said rigid section of said contact arm.

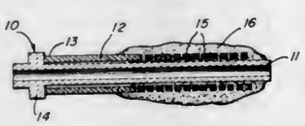
3,360,759
ADJUSTABLE WIRE-WOUND COMPONENT
Gerard A. Gallagher, Chelmsford, Mass., assignor to Weston Instruments, Inc., Newark, N.J., a corporation of Texas
Filed Oct. 27, 1964, Ser. No. 406,708
6 Claims. (Cl. 338—195)

1. An adjustable electrical device comprising: a generally hollow casing having an end and an end member extending across and fixed to said end; a terminal fixed to said end member and extending away from the casing; said end member having an aperture therethrough offset to one side of said terminal; an electrical element in said casing comprised of bare wire wound in spaced turns and having an end; said end of said wire extending through said aperture and having a portion thereof exposed to be grasped from outside said casing; means mounting said electrical element in said casing to freely feed wire from said spaced turns through said aperture when said exposed portion is pulled from outside the casing; at least the portion of the end member between said terminal and said aperture being electrically con-



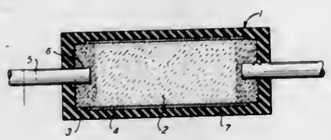
ductive; an electrically conductive meltable substance, said substance when solidified fixing said wire end to said electrically conductive portion of said end member at said aperture to electrically connect said wire end to said terminal; said substance when melted freeing said wire end from said end member to allow pulling bare wire from said spaced turns through said aperture by grasping said exposed portion; whereby said electrical element can be readily adjusted by the user of the device subsequent to manufacture of the device.

3,360,760
HEATING UNIT
Philip P. Johnson, St. Joseph, Mich., assignor to Whirlpool Corporation, a corporation of Delaware
Filed Sept. 30, 1965, Ser. No. 491,683
7 Claims. (Cl. 338—296)



1. A heating unit, comprising: a frangible electric heating element generating heat and having spaced parts, when in use; and a reinforcing material between said parts to inhibit breakage of said parts, said reinforcing material being heat removable by heat generated in said unit during the first operation of said unit at normal operating temperatures.

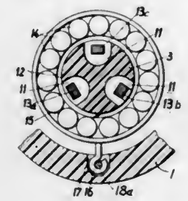
3,360,761
RESISTOR SUBSTRATE HAVING INTEGRAL METAL TERMINATIONS
Earl W. Stapleton, Syracuse, and Irvin J. McKeand, Fayetteville, N.Y., assignors to Air Reduction Company Incorporated, New York, N.Y., a corporation of New York
Filed Apr. 29, 1965, Ser. No. 451,917
4 Claims. (Cl. 338—330)



1. A fully vitrified electrical resistor comprising a substrate having a non-conductive ceramic center portion and conductive end portions formed from powders pressed and fired together into a vitrified unitary structure, and a resistive composition supported thereby to form an electrically continuous path from one conductive end portion

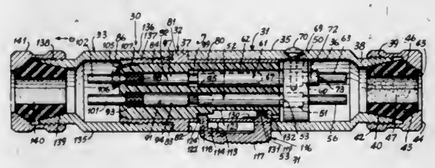
of the substrate to the other, the said resistive composition comprising glass fired to vitrification after application to the prefired substrate and having finely divided conductive particles dispersed therein.

3,360,762
ELECTRIC CABLE COUPLING
Karl Mohr, Aschaffenburg am Main, Germany, assignor to Desco-Werk Seger & Angermeyer KG., Ittersbach, near Karlsruhe, Germany, a German firm
Filed Mar. 25, 1966, Ser. No. 537,455
Claims priority, application Germany, Apr. 12, 1965, M 64,854
2 Claims. (Cl. 339—8)



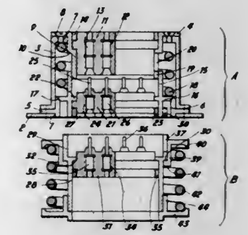
1. A cable coupling for electrically connecting two relatively rotatable multiple-lead cables, said coupling comprising an outer and an inner substantially sleeve-shaped insulation coupling member concentrically arranged one within the other and radially spaced apart to define an annular space therebetween, the inner coupling member being composed of several superimposed generally sleeve-shaped sections rotatable in unison; and a plurality of current-carrying bearings corresponding in number to the number of cable leads to be connected by the coupling, each of said bearings including an inner electrically conductive sleeve-shaped cage ring secured between two adjacent insulation sleeve sections and an outer electrically conducting sleeve-shaped cage ring disposed in said annular space juxtaposed to the inner cage ring, and cylindrical contact rollers interposed between each juxtaposed inner and outer cage ring in engagement therewith, the outer cage ring of each bearing being engaged with the outer coupling member for retention by the same, and the inner cage ring of each bearing having a single lengthwise slot and being outwardly biased to exert a radially directed outward pressure upon the respective contact rollers, thereby maintaining contact pressure between the rings and rollers of the bearings.

3,360,763
PLUG AND RECEPTACLE FOR USE IN HAZARDOUS LOCATIONS
Clarence H. Rongey, Granite City, Ill., and Marshall G. Zavertnik, Manchester, Mo., assignors to Killark Electric Manufacturing Company, St. Louis, Mo., a corporation of Missouri
Filed May 26, 1965, Ser. No. 458,956
4 Claims. (Cl. 339—14)



1. A connector for hazardous locations comprising a plug and a receptacle formed of complementary telescoping sleeves, contact terminals including power and ground terminals supported by the plug and receptacle within the sleeves and adapted to make electrical contact when the sleeves are telescoped, releasable interlocking means to hold the sleeves in telescoping relationship, and means rendering the interlocking means yieldable to permit relative sliding of the sleeves to break electrical contact between the power terminals while preventing separation of the sleeves, the interlocking means comprising a slot in one of the sleeves, an entry to the slot from the end of the sleeve nearest the other sleeve, the entry being narrower than the slot, and a depressible button carried by the other sleeve, the button being slidable through the entry when depressed and being locked from sliding through the entry when not depressed, the contact terminals including a ground terminal in each sleeve, the ground terminals being longer than the other terminals and being sufficiently long to maintain electrical contact with one another when the sleeves are slid to their unseparated positions with the electrical contact between the hot terminals broken.

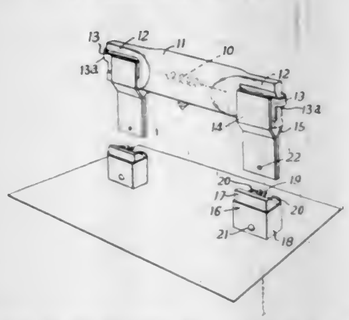
3,360,764
ELECTRICAL CONNECTIONS
Fernand Georges Bac, 18 Rue du Mont-Cenis, Paris, France
Filed Apr. 26, 1965, Ser. No. 450,725
Claims priority, application France, Apr. 24, 1964, 972,342
5 Claims. (Cl. 339—45)



1. A releasable electrical connector permitting abrupt release of electrical conductors connecting an integral device to an outside power supply which comprises a releasable movable part designed to be connected to an outside power supply and a fixed part secured to the integral device, said releasable movable part comprising a first series of movable electrical connecting means in electrical connection with said outside power supply, said fixed part comprising a movable dead face and a fixed connector block situated behind said movable dead face, said movable dead face comprising a second series of corresponding separable electrical connecting means designed to cooperate with said first series of electrical connecting means in said releasable movable part and a third series of separable electrical connecting means respectively connected electrically to said second series of separable electrical connecting means, said fixed connector block comprising a fourth series of electrical connecting means designed to cooperate with said third series of separable electrical connecting means and designed to be connected to conductors situated inside said integral device, means being provided to obtain a relative movement between said dead face and said fixed connector block and also to lock said releasable movable part to said fixed part when the various series of connecting means are in the position of reciprocal contact and to effect the abrupt separation of said releasable movable part from said fixed part, characterized in that said dead face of said fixed part is mounted for axial sliding in the latter, while said fixed connector block is fastened securely and sealingly in said fixed face, elastic means

being provided to move said movable dead face away from said fixed connector block and effect the separation of the cooperating connecting means carried respectively by these two parts, said movable dead face being provided with stop means limiting its movement towards the outside of said integral device by cooperation with a fixed stop secured to said integral device, in order to limit the movement of said dead face in the opposite direction from said fixed connector block to a value at least sufficient to effect the separation of the respective connecting means of the aforesaid third and fourth series, said stop means on said movable dead face and said fixed stop secured to said integral device cooperating to provide a seal between the outside of said integral device and the space contained betwen said fixed connector block and said dead face.

3,360,765
MOUNTING OF TUNGSTEN-HALOGEN LAMPS
John W. Strange and Alex L. Halberstadt, London, England, assignors to British Lighting Industries Limited, London, England
Filed May 27, 1966, Ser. No. 553,426
4 Claims. (Cl. 339—50)



1. A lamp mounting assembly comprising a lamp having an envelope, a press at each end of the lamp envelope, a filament enclosed within the envelope, leads connected to the filament and extending one through each press, a separate generally U-shaped strap embracing each press and electrically connected to one of the leads, each strap having two limbs disposed on opposite sides of the press, blade-like contacts extending along the plane of the presses at right angles to the direction of the lamp filament, each contact having a forked end with two arms which are secured against the outer faces of the limbs of the corresponding strap, and contact sockets removably receiving the blade-like contacts.

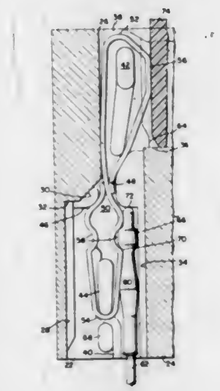
3,360,766
STRAIN RELIEF CABLE CLAMP
Walter C. Schumacher, Warwick, R.I., assignor to General Electric Company, a corporation of New York
Filed Mar. 28, 1966, Ser. No. 538,049
12 Claims. (Cl. 339—103)

1. A clamp device including a base having first and second opposed sides and there being an opening in said base communicating with said sides, a pair of clamp components comprising laterally opposed jaws longitudinally coextending and laterally movable through said base opening and beyond said first side of said base, for a sheathed electrical conductor to be engaged at the sheath by said jaws intermediately of opposite transverse end portions of each of said jaws and the conductor to extend through said base opening, said clamp components having feet connected with said jaws and said feet extending outwardly along said second side of said base in opposite directions from said base opening for being supported externally of the device to maintain said feet slidably in contact with said second side of said base; and the clamp device further including a pair of substantially fixed posts connected with said base and extending adjacent to said transverse end portions of each of said jaws outwardly of said first side of said base; and a plurality of fastener means



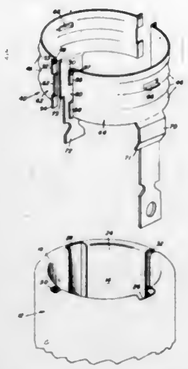
movably engaging said transverse end portions of said jaws with said posts to move said jaws laterally to clamp a sheathed electrical conductor at the sheath and for a support externally of the device to maintain said feet in sliding contact with said second side of said base to stabilize said jaws.

3,360,767
ELECTRICAL CONNECTOR
Albert C. Brown, Corona, Jack J. Maranto, La Habra, and Jack E. Antes and Philip M. Phelps, Long Beach, Calif., assignors to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed Aug. 24, 1965, Ser. No. 482,081
4 Claims. (Cl. 339—176)



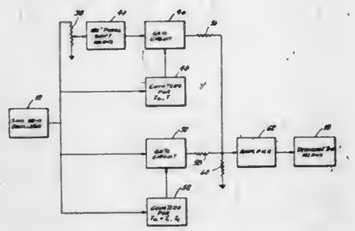
1. An electrical connector comprising: an electrical conductor; a receptatcle block having a plurality of cavities each adapted to receive a mating electrical contact element; an electrical insulating plug member supporting at least one flexible electrical contact element in at least one of said cavities, each said flexible electrical contact element including a pair of deflectable loop portions pivotally retained by said plug member, one of said loop portions being adapted to be deflected into engagement with said mating electrical contact element and the other of said loop portions being adapted to be independently deflected into engagement with said electrical conductor, said loop portions being formed in the opposite ends of an elongated metal strip with the ends thereof looped into engagement with said strip in an opposing relationship at a point substantially adjacent the end of each loop portion; and said plug member including a restriction adapted to retain the looped ends of said strip to provide an independent pivot for each of said loop portions.

3,360,768
SCREW SOCKET
Paul H. Winter, Syracuse, N.Y., assignor to Pass & Seymour, Inc., Syracuse, N.Y., a corporation of New York
Filed Nov. 2, 1966, Ser. No. 591,493
7 Claims. (Cl. 339—199)



1. In an Edison type screw socket adapted to receive a threaded lamp base, a socket housing, said socket housing having a cylindrical bore with one end open, the bore wall having a pair of retaining grooves formed therein, said grooves being generally parallel to the longitudinal axis of the bore and extending up to the open end, a two-piece contact shell interfitted within the housing, said contact shell comprising two separate curved shell elements forming together a generally complete cylinder sized to fit within the housing bore, said two curved shell elements being grooved to form a thread when together, said thread being adapted to receive a like-threaded lamp base, the respective confronting edge portions of the shell elements having flange portions directed generally outwardly with respect to the cylinder formed by the two shell elements, said two shell elements being fitted together with their flange portions in confronting relation to form the cylindrical socket shell which is fitted down into the bore of the housing with the outwardly extending flange portions positioned in the retainer grooves so that the socket shell is accurately assembled in the housing.

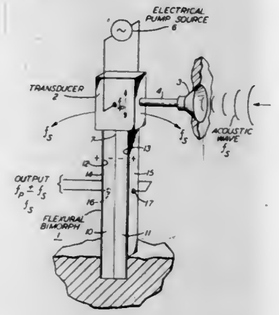
3,360,769
METHOD AND MEANS FOR GENERATING AND ANALYZING SPECIAL WAVEFORM SIGNALS OF HIGH INFORMATION CONTENT
Norman W. Lord, Yonkers, N.Y., assignor to Columbia University, New York, N.Y., a corporation of New York
Filed Mar. 29, 1967, Ser. No. 627,589
9 Claims. (Cl. 340—3)



1. Apparatus for propagating an easily identifiable signal through a heterogeneous, noisy, unstable medium comprising, in combination:
means providing a first pulse of oscillatory energy;
means providing a second pulse of oscillatory energy, said second pulse being of shorter period than the first,
the amplitude of said second pulse being greater than the amplitude of said first pulse,
the phase of the oscillations of said second pulse being reversed 180 degrees relative to the phase of the oscillations of said first pulse, and
the durational period of said second pulse occurring within the durational period of said first pulse;
means for adding said two pulses together thereby forming an interiorly phase-reversed pulse of energy; and
means for propagating a replica of said phase-reversed pulse within said medium.

8. A method for generating an echo ranging signal and identifying its echo reflected from a target located within a heterogeneous, noisy, unstable medium comprising the steps of:
generating a first pulse of oscillatory energy;
generating a second pulse of oscillatory energy, said second pulse being of shorter period than the first,
the phase of said second pulse being reversed 180 degrees relative to the phase of said first pulse,
the amplitude of said second pulse being greater than the amplitude of said first pulse,
the durational period of said second pulse occurring within the durational period of said first pulse;
adding said two pulses together, thereby forming an interiorly phase-reversed pulse of energy;
propagating a replica of said phase-reversed pulse within said medium;
receiving an echo signal reflected from said target and converting said echo signal into a corresponding electrical signal; and
cross-correlating said corresponding electrical signal with a replica of the propagated pulse which includes a phase reversal.

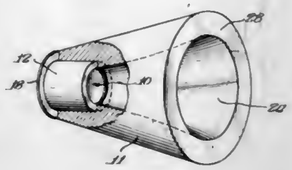
3,360,770
VIBRATION SENSOR
Allen N. Friedman, Fair Lawn, and Donald L. White, Mendham, N.J., assignors to Bell Telephone Laboratories, Incorporated, Berkeley Heights, N.J., a corporation of New York
Filed Sept. 26, 1966, Ser. No. 582,099
6 Claims. (Cl. 340—10)



1. In combination;
a flexural bimorph comprising two abutting piezoelectric members, defining therebetween a planar interface;
means for inducing a compression wave within said bimorph in a direction parallel to said interface;

means for bending said bimorph;
and means connected across said bimorph for extracting an electrical signal therefrom.

3,360,771
UNDERWATER HORN LOUDSPEAKER
Frank Massa, Jr., Cohasset, Mass., assignor to Massa Division Dynamics Corporation of America, Hingham, Mass.
Filed May 21, 1965, Ser. No. 457,701
9 Claims. (Cl. 340—12)



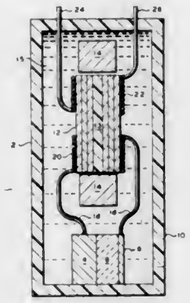
1. In combination in an underwater horn loudspeaker, a vibratory structure having a vibratory surface capable of performing oscillatory displacements, said vibratory surface characterized in that the square root of its area is less than ⅓ the wavelength of sound being radiated in the water by the vibrating surface, a horn structure made from a rigid non-homogeneous aggregate having a density greater than the density of water, said horn structure having a tapered passage along its length from a small opening at one end to a large opening at the other end, the small end of the horn structure being in close proximity to the vibratory surface of said vibratory structure for receiving the compressional waves created by said vibratory surface directly in the small opening of said horn structure.

3,360,772
GEOPHONE
Frank Massa, Cohasset, Mass., assignor to Massa Division, Dynamics Corporation of America, Hingham, Mass.
Filed May 26, 1966, Ser. No. 553,131
13 Claims. (Cl. 340—17)



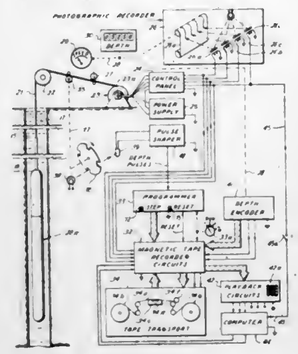
1. In combination in an electroacoustic transducer capable of being coupled to the ground surface for detecting ground vibrations, a rigid base housing, means for coupling said housing to the ground surface to pick-up the vibrations thereof, a vibratile element capable of converting picked-up mechanical vibrations to electrical oscillations, and means for supporting said vibratile element at the periphery thereof by attaching a portion of said vibratile element to said base housing so that the picked-up vibrations of said base housing are transferred to said attached vibratile element, the resonant frequency of said vibratile element lying in the frequency range below one kilocycle per second.

3,360,773
ACOUSTICAL SIGNAL DETECTING
William A. Hensley, Jr., Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Aug. 29, 1966, Ser. No. 575,877
8 Claims. (Cl. 340—17)



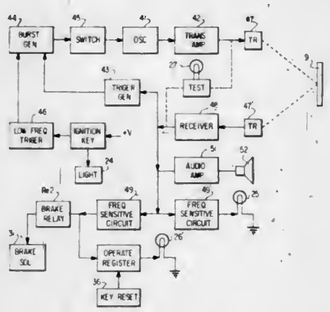
1. A seismometer comprising:
(a) a piezoelectric sensing device having first and second electrical leads connected thereto, said piezoelectric sensing device being positioned in said seismometer so as to be subjected to pressure signals incident upon the exterior of said seismometer and to produce electrical signals in said first and second electrical leads responsive to such incident pressure signals;
(b) a magnetostrictive sensing means positioned in said seismometer so as to be subjected to said pressure signals incident upon the exterior of said seismometer and to produce a variable magnetic field responsive to said incident pressure signals;
(c) a transformer having a primary winding and a secondary winding, said primary winding and said secondary winding being wound about said magnetostrictive sensing means so that said variable magnetic field produced by said magnetostrictive sensing means responsive to said incident pressure signals will induce an electric current in each of said primary winding and said secondary winding, third and fourth electrical leads connected to the opposite ends of said secondary winding; said first and second electrical leads being connected to the opposite ends of said primary winding to cause said electrical signals produced by said piezoelectric sensing device to pass through said primary winding and induce corresponding electrical signals in said secondary winding, the output of said seismometer being the composite electrical signals appearing between said third and fourth electrical leads resulting from said electrical signals produced by said piezoelectric sensing device and from the electric current induced in said primary and secondary windings by said magnetostrictive sensing means responsive to said incident pressure signals.

3,360,774
MAGNETIC TAPE DATA RECORDING METHODS AND APPARATUS
John S. Smith and Bernard Viguerie-Noel, Ridgefield, Conn., and Arthur A. Cavelos, Liverpool, N.Y., assignors, by mesne assignments, to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas
Filed Sept. 3, 1964, Ser. No. 394,174
30 Claims. (Cl. 340—18)



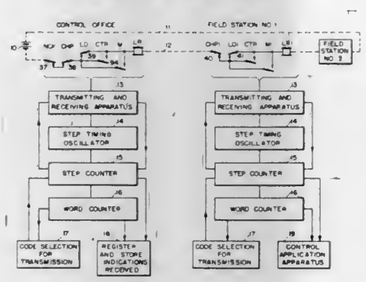
1. A method of recording signals on magnetic recording tape comprising: recording magnetic reference indications along a length of the tape; moving the tape in a longitudinal direction for purposes of recording signal indications thereon; detecting these reference indications during such movement; controlling the longitudinal movement of the tape in accordance with the detection of the reference indications; and recording signal indications on the tape at locations determined by the detection of the reference indications.

3,360,775
ANTICOLLISION DEVICE AND METHOD
Edward W. Schroeder, Atlanta, Ga., assignor to Marriott-Hot Shoppes, Inc., Washington, D.C., a corporation of Delaware
Filed Aug. 24, 1965, Ser. No. 482,119
15 Claims. (Cl. 340—32)



1. The method of controlling the approach of a moving vehicle to a reflective object which comprises:
generating a series of limited duration bursts of energy at a supersonic frequency,
projecting said energy in the direction of approach,
receiving reflections of successive bursts from said object,
projecting a further said burst immediately upon receipt of the first said reflection after each previous burst,
storing said received reflections in a signal form whereof the stored magnitude varies inversely with the distance between vehicle and object,
utilizing the stored magnitude of signal to limit the approach of the vehicle to the object,
generating from said received reflections an audio warning signal varying with the reciprocal of the remaining distance, and
utilizing said audio signal to actuate a control signal at a selected frequency limit.

3,360,776
CODE COMMUNICATION SYSTEM
Nelson B. Coley, Honeoye Falls, N.Y., assignor to General Signal Corporation, Rochester, N.Y., a corporation of New York
Filed Apr. 12, 1963, Ser. No. 272,649
13 Claims. (Cl. 340—163)



1. In a normally at rest code communication system for the communication of indication codes over a normally closed series communication channel connecting a receiving station with a plurality of remotely spaced transmitting stations, the combination comprising:
(a) timing means at each of the transmitting stations for initially opening the communication channel for a given measured time interval in response to the initiation of a communication cycle at that station,
(b) a step counter at each of the stations,
(c) a normally inactive oscillator at each of the stations for determining the rate of operation of said counter,
(d) means for starting the oscillator at each transmitting station upon termination of said given time interval measured at that station only provided that the communication channel is closed at all transmitting stations at that time, and
(e) means response to the closing of the communication channel at all transmitting stations for initiating the operation of the oscillator at the receiving station,
(f) whereby the transmitting station last to close the communication channel at the end of its given time interval has its oscillator started at a predetermined time in advance of the oscillator at the receiving station and the oscillators at the other transmitting stations remain inactive.

3,360,777
PULSE RECEIVER RESPONSIVE TO PLURAL CODE GROUPS HAVING PREDETERMINED TIME SEPARATION
Eric A. Kolm, Brookline, Mass., assignor to Kolm Industries, Cambridge, Mass.
Filed July 16, 1964, Ser. No. 383,181
4 Claims. (Cl. 340—164)

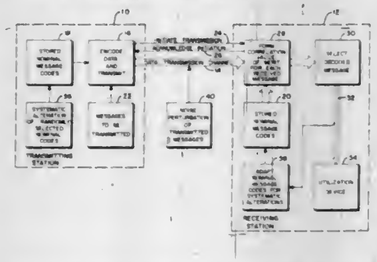
1. Apparatus for remote control of an appliance or the like, said apparatus comprising
(A) means for detecting input signals emitted by a user of the system and supplying countable signals in response to said input signals,

(B) first counting means for counting said countable signals and supplying an intermediate signal when the number of said countable signals reaches a first predetermined number, said intermediate signal being the next countable signal after said first number,
(C) second counting means,
(D) intermediate relay means responsive to said intermediate signal and arranged to pass countable signals



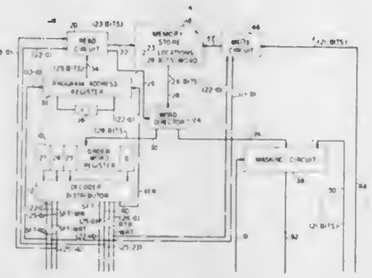
successive thereto to said second counting means if a first interval between said intermediate signal and the first of said successive countable signals is greater than a first value and less than a second value,
(E) said second counting means providing an output signal after a predetermined number of countable signals have been counted thereby, and
(F) power switching means connected for actuation by said output signal.

3,360,778
SELF-ADAPTIVE ENCODING AND DECODING SYSTEM
Edward Jack Farrell, St. Paul, Minn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Mar. 18, 1963, Ser. No. 265,703
21 Claims. (Cl. 340—172.5)

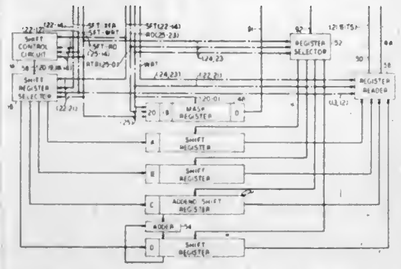


7. An adaptive signal responsive system for handling *n* predetermined message types comprising:
a source of message signals to be encoded for transmission, said messages being within the class of *n* messages;
at least *n* encoding-signal storage means, each for storing a predetermined grouping of *j* distinct digital encoding signals;
means for randomly selecting ones of said encoding-signal storage means for alteration;
alteration means responsively coupled to said randomly selecting means for altering, according to a predetermined plan, selected ones of said digital encoding signals;
encoding means responsively coupled to said source of message signals and said *n* encoding-signal storage means for forming, according to a predetermined plan, encoded digital message signals;
serial transmission means coupled to said encoding means for transmitting said encoded digital message signals sequentially in groups of *j* digits;
at least *n* decoding-signal storage means, each for initially storing a predetermined distinct grouping of *j* digital decoding signals, where each of said groups of decoding signals corresponds to an associated one of said stored encoding-signal groupings;
signal receiving means coupled to said serial transmission means for receiving said encoded message signals;
at least *n* weight-factor storage means, each for storing predetermined weight indicating signals which represent weights to be accorded to associated message types during decoding of said encoded message signals;
message-correlation determining means coupled to said signal receiving means, said plurality of decoding-signal storage means in parallel, and said plurality of weight-factor storage means in parallel, and operative on receipt of encoded messsage signals to provide message-correlation indicating signals, said message-correlation indicating signals being formed in parallel for the respective decoding signal groupings and representative of the degree of correlation between said received encoded message signals and said decoding signals;
commutating means coupled to said signal receiving means for sequentially gating each of said received encoded message signals into said message-correlation determining means for evaluation as received;
decoding means coupled to said message-correlation determining means for determining the messages received in response to said message-correlation indicating signals, and providing message identification signals;
enabling means coupled to said decoding means and actuated by said message identification signals for enabling adaptation of digital decoding signals which correspond to indicated received message signals; and
adaptive means responsively coupled to said enabling means for adapting selected ones of said digital decoding signals to correspond to alterations made in said digital encoding signals.

3,360,779
COMBINED-ORDER INSTRUCTIONS FOR A DATA PROCESSOR
Werner Ulrich, Colts Neck, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Oct. 7, 1964, Ser. No. 402,090
13 Claims. (Cl. 340—172.5)

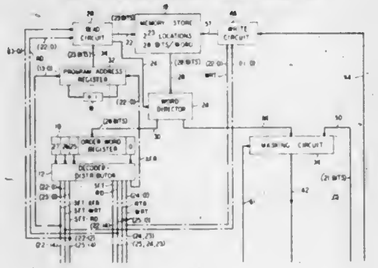


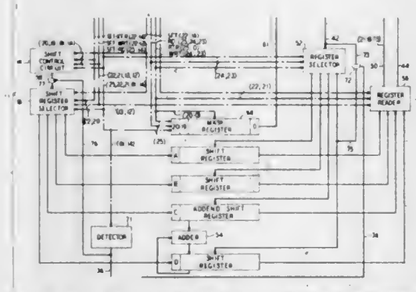
11. A data processor comprising means defining a plurality of memory locations, an instruction register, first means for performing a first type of data processing operation of the data word stored in any one of said memory locations responsive to a first type of instruction word being contained in said instruction register, second means for performing a second type of data processing operation on the data word stored in one of said memory locations responsive to a second type of instruction word being contained in said instruction register, and means responsive to a third type of instruction word being contained in said instruction register for controlling said sec-



ond means to perform said second type of data processing operation on the data word stored in one of said memory locations and for controlling said first means to perform and first type of data processing operation on the data word stored in one of a number of memory locations fewer in number than the total number of said memory locations.

3,360,780
DATA PROCESSOR UTILIZING COMBINED ORDER INSTRUCTIONS
Michael P. Fabisch, Shrewsbury, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Oct. 7, 1964, Ser. No. 402,273
19 Claims. (Cl. 340—172.5)

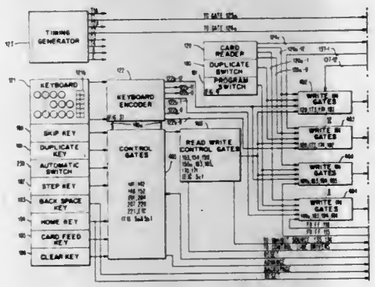


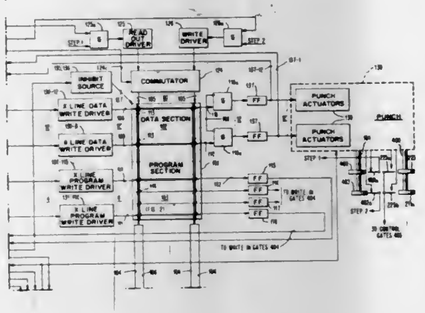


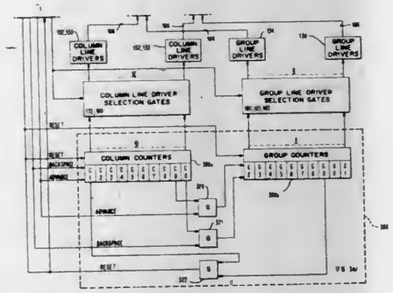
18. In a data processor the combination comprising a plurality of registers,
an order distributor containing an instruction word,
means responsive to a specified instruction word for both performing a first operation and for controlling the shifting of data in one of said registers by an amount specified by said instruction word, and
means responsive to said instruction word specifying the shifting of said data by an implausible amount for inhibiting said shifting and for performing instead a second operation.

19. In a data processor the combination in accordance with claim 18 wherein said means for performing a first operation includes means for reading a data word into a second of said registers and said means for performing said second operation includes means for reading said data word into a third of said registers.

3,360,781
CONTROL CIRCUIT FOR A KEY PUNCH OR VERIFIER
Klaus Juergen Boehnke, Kelkheim, Taunus, Germany, assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Oct. 26, 1964, Ser. No. 406,308
Claims priority, application Germany, Oct. 28, 1963, R 36,432
22 Claims. (Cl. 340—172.5)



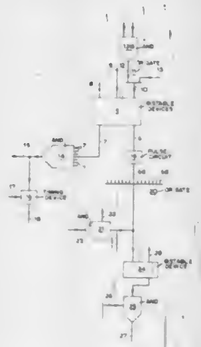




1. In an internally programmed recording apparatus having information input means, the combination comprising: first storage means having a plurality of addressable storage locations coupled to said input means for storing a first type of information entered from said input

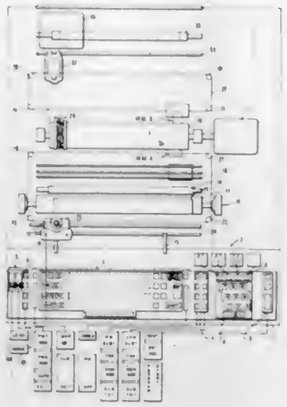
means; second storage means having a plurality of addressable storage locations for storing a second type of information entered from said input means; readout means coupled to said first storage means to readout the contents of an addressable storage location and produce signals in accordance with the information stored thereat; mechanical addressing means coupled to said first and second storage means; electrical addressing means coupled to said first and second storage means; said mechanical and electrical addressing means each capable of addressing the locations of said first and second storage means in a sequential manner; control means coupled to said mechanical addressing means and said electrical addressing means to permit the operation of either of said addressing means or both; and write-in means coupled between said input means and said second storage means and coupled to said readout means and responsive to said signals from said readout means to permit the write-in of information from said input means into locations of said second storage means in accordance with said signals from said readout means.

3,360,782
SEQUENCE CHECKING SYSTEM
Roman Derc, Kidsgrove, Stoke-on-Trent, England, assignor to English Electric-Leo Computers Limited, London, England, a British company
Filed Nov. 23, 1964, Ser. No. 412,916
Claims priority, application Great Britain, Nov. 26, 1963, 46,640/63
4 Claims. (Cl. 340—172.5)



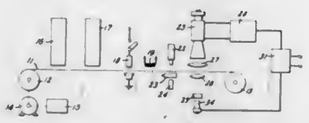
1. A printer having:
a plurality of print hammers with respective firing means;
a character bearing member movable past said hammers;
a memory for storing, for each hammer, data indicative of the character to be printed in a position corresponding to the hammer;
write means for writing said data into the memory;
read means for reading out said data from the memory and operating the firing means in accordance with said data; and
checking means including a separate flip-flop for each hammer;
means effective during the operation of the write means for setting each flip-flop true if the corresponding data represents a character to be printed;
means for changing the state of each flip-flop in response to the operation of the corresponding firing means; and
error indication means for indicating an error in response to any flip-flop changing to the true state during the operation of the read means.

3,360,783
ACCOUNTING APPARATUS
Paul E. Goldsberry and Wilson I. Lockett, Lexington, Ky., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed June 30, 1965, Ser. No. 468,310
14 Claims. (Cl. 340—172.5)



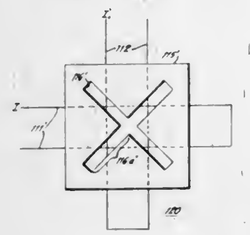
1. Accounting apparatus, comprising:
a printer, said printer having printing means and document supporting means;
means for relatively moving said printing means and said document supporting means to successive positions on a supported document;
storage means associated with said printer, said storage means having an individual storage location respectively associated with each position on a supported document;
means for accessing said individual storage locations;
means under control of said moving means for moving said accessing means to access the individual storage locations in said storage means as the respectively associated positions on said document are reached;
auxiliary means for accessing said individual storage locations; and
means for operating said auxiliary accessing means to access said storage locations independently of said moving means.

3,360,784
HIGH FREQUENCY RECORDING USING ENHANCED SENSITIVITY THERMOPLASTIC MEDIA
Joseph Gaynor, Schenectady, and Laddie L. Stahl, Rexford, N.Y., assignors to General Electric Company, a corporation of New York
Filed Dec. 30, 1964, Ser. No. 422,181
14 Claims. (Cl. 340—173)



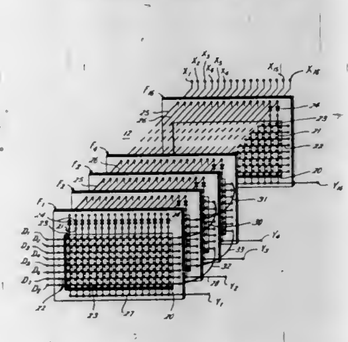
1. In a data storage system employing a solid thermoplastic recording medium, recording means for projecting a beam of charges onto the recording medium in intelligence conveying patterns to produce an electrostatic charge pattern on the surface of the medium that is representative of the data being stored, and heating means for heating the recording medium to a sufficiently fluid condition so that the electrostatic charge forces can deform the surface whereby upon subsequent cooling permanent deformations can be derived in the surface of the recording medium that are representative of the data being stored, the improvement comprising means for charging the surface of the recording medium to a predetermined voltage relative to a predetermined threshold voltage for deformation such that the recording beam need only supply the additional charging required to alter the surface voltage sufficiently so that upon heating selective deformation of the surface of the recording medium by the electrostatic charge forces in accordance with the data to be stored occurs.

3,360,785
SEMI-PERMANENT MEMORY SYSTEM
Takashi Ishidate, Tokyo, Japan, assignor to Nippon Electric Company Limited, Tokyo, Japan, a corporation of Japan
Continuation of application Ser. No. 274,088, Apr. 19, 1963, now Patent No. 3,253,267, dated May 24, 1966. This application Mar. 7, 1966, Ser. No. 532,128
Claims priority, application Japan, Apr. 25, 1962, 37/16,939
2 Claims. (Cl. 340—173)



1. Means for converting a stored data into electrical signals comprising a drive winding, a sense winding positioned adjacent said drive winding at an angle to provide only negligible electromagnetic coupling therebetween; both of said windings being substantially free from the influence of any other electromagnetic fields;
said drive and sense windings each being comprised of a pair of spaced parallel lines windings aligned transverse to one another to form four intersections with one another;
a first end of each of said windings being short-circuited;
a second end of each of said windings being adapted for connection to peripheral circuitry;
said drive and sense windings both lying substantially within a common plane; said four intersections defining a planar rectangular shaped region;
a memory means being a substantially flat conductive plate positioned immediately above and electrically insulated from the intersection of said drive and sense windings and capable of producing circulating eddy currents in said plate in the presence of a time varying current in said drive winding;
the dimensions of said conductive plate being much greater than said planar rectangular shaped region to prevent electromagnetic coupling between said drive and sense windings;
said conductive plate having a first aperture positioned adjacent said intersecting windings, said first aperture having a configuration for electromagnetically coupling said drive and sensing windings;
said first aperture being an elongated substantially rectangular shaped opening positioned above one of said four intersections and being diagonally aligned therewith;
said conductive plate being further provided with second and third elongated substantially rectangular shaped slots being diagonally aligned with two of the remaining three intersections; said first and third apertures being joined at a point above the region enclosed by said four intersections to form a substantially T-shaped slot;
the first, second and third arms of said slot each being positioned above an associated one of said four intersections and being diagonally aligned therewith.

3,360,786
MAGNETIC CORE MEMORY SYSTEM
Thomas S. Steele, Minneapolis, and Wayne L. Walters, Bloomington, Minn., assignors to Electro-Mechanical Research, Inc., Sarasota, Fla., a corporation of Connecticut
Filed Apr. 30, 1963, Ser. No. 276,755
5 Claims. (Cl. 340—174)

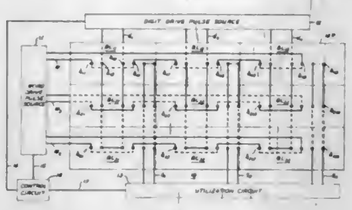


1. A magnetic core memory system comprising:
a system of elongated word lines;
first and second spaced apart sets of elongated digit lines which cross the word lines at recurring junction points;
a plurality of magnetic core elements individually located at different ones of the junction points;
first conductor means connecting the individual digit lines of the first set in series with one another;
and second conductor means connecting the individual digit lines of the second set in series with one another in sequences and with polarities such that half of the digit lines of the second set will carry current in a direction opposite to the direction in which half of the digit lines in the first set will carry current, while the remainder of the digit lines of the second set will carry current in the same direction as the direction in which the remainder of the digit lines in the first set will carry current, thus minimizing the net inductive coupling between the two sets of digit lines.

3,360,787
SINGLE SHEET MAGNETIC MEMORY DEVICE
James T. H. Chang, New Providence, and Umberto F. Gianola, Florham Park, N.J., assignors to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed May 7, 1964, Ser. No. 365,588
8 Claims. (Cl. 340—174)

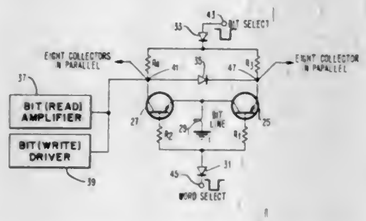
3. A magnetic memory including a memory plane, said memory plane comprising a material having substantially rectangular hysteresis characteristics, said memory plane including a linear array of holes therein, said holes being arranged in groups of six for defining bit locations thereabout, first drive means including a first conductor threaded through the first and fourth holes of each group of six holes for switching the flux in each of the legs therebetween from a first to a second flux

condition in response to a pulse of a first polarity applied by said first drive means, second drive means including a plurality of second conductors each threaded through the second and third holes of a different one of said groups of holes for selectively inhibiting the switching of flux in the legs therebetween in response to a second polarity plus applied by said second drive



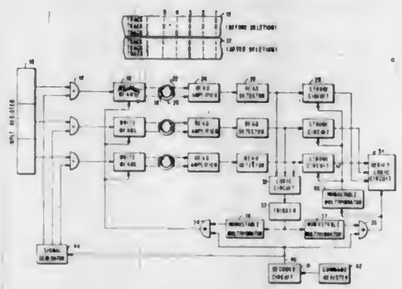
means coincident with a pulse of said first polarity applied by said first drive means, and means including a plurality of third conductors each threaded through the fifth and sixth holes of a different one of said groups of holes for detecting flux switched in the magnetic leg between said fifth and sixth holes in response to a pulse of a second polarity applied by said first drive means.

3,360,788
BI-DIRECTIONAL CURRENT SWITCH
Thomas M. Lo Casale, Warminster, and Alfred E. Hales, Jr., Philadelphia, Pa., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Dec. 14, 1964, Ser. No. 418,173
6 Claims. (Cl. 340—174)



1. A bi-directional current switch comprising:
(a) first and second transistors of the same conductive type each having an emitter element, a base element, and a collector element;
(b) a diode connected between the emitter element of said first transistor and the collector element of said second transistor;
(c) the emitter element of said second transistor connected to the collector element of said first transistor, said last-mentioned elements being common-connected to a load means;
(d) first and second pulse source means;
(e) a first resistor network coupled to said first pulse source means and across said diode;
(f) a second resistor network coupled to said second pulse source means and to said base elements of said first and said second transistors, said first and second resistor networks having resistors whose values are such that when said first and second pulse source means simultaneously apply pulses respectively to said first and second resistor networks said first and second transistors are rendered conducting in saturation such that the current conducting through said first resistor network is conducted in its entirety through said second resistor network; and
(g) input signal means connected to said first resistor network to supply signals alternatively and on occasion collectively through said first and second transistors to said load means and to receive signals in the same manner from said load means through said first and second transistors.

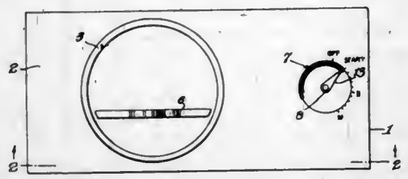
3,360,789
DELETING APPARATUS FOR MAGNETICALLY RECORDED DATA
Hajime Yoshii, Morgan Hill, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California
Filed Apr. 16, 1964, Ser. No. 360,287
6 Claims. (Cl. 340—174.1)



1. In a magnetic recording system including a movable magnetic medium having a series of codes recorded therein each code being comprised of a plurality of digits each of which is either a first or a second binary digit, each digit of a code being recorded in a different one of a plurality of tracks defined in said medium, and including a plurality of magnetic heads each positioned adjacent to a different one of said tracks, each head having a read winding and a write winding coupled thereto, and means for moving said medium past said heads to thereby selectively develop a signal in the read windings representative of respective (a) first digits recorded in respective tracks adjacent thereto, the combination comprising; logic means connected to said read windings and responsive only to a code containing at least one first binary digit for providing an output signal; a signal code generator connected to said write windings and responsive to said logic means output signal for applying a predetermined set of signals to the plurality of write windings for recording a predetermined code in all tracks of said medium prior to the development of signals in each of said read windings representative of the digit succeeding said first digit; command means coupled to said logic means and to said signal code generator for selectively generating a delete command; and verify means coupled to said plurality of read windings and responsive to said logic means and to said command means for verifying that said predetermined code has been successfully recorded in all tracks, wherein the read, delete and verify processes are performed in a single pass of the medium by the magnetic heads.

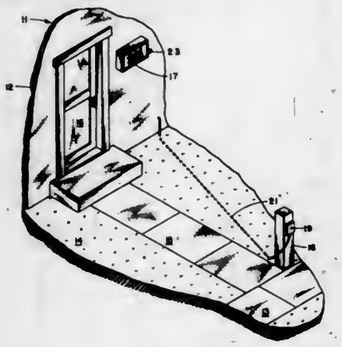
3,360,790
TIMER CONTROLLED ALARM FOR ASH TRAY
Samuel A. Rossitto, 2112 Pyle St., Wilmington, Del. 19805
Filed Jan. 25, 1965, Ser. No. 427,743
3 Claims. (Cl. 340—309.1)

1. A smoker's device comprising a receptacle; in connection with said receptacle a removable ash tray; within said receptacle an audible alarm, a timer and a power source for said alarm and said timer; a timer switch positioned on the outside of said receptacle for actuating said timer; circuit means, including said timer and said



power supply and said alarm, for energizing said alarm; and a means for shunting said alarm to an earphone.

3,360,791
ILLUMINABLE SIGN FOR BUILDING STRUCTURE HAVING INTERIOR AND EXTERIOR CONTROL SWITCHES
Nandor Lazar, 1210 Stockley Gardens, Norfolk, Va. 23517
Filed June 25, 1965, Ser. No. 466,985
6 Claims. (Cl. 340—330)

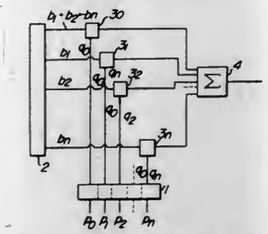


1. An electrically illuminable sign adapted to be mounted exteriorly on a building structure, and circuit means for connecting said sign to an electrical energy source; said circuit means comprising, in combination:
an electrical cable including a pair of electrical leads connected between said sign and said energy source;
a first electrical switch positionable within said building structure and connected in series with one of said electrical leads for continuously completing said circuit means and thereby illuminating said sign; and
a second electrical switch positionable remotely from said building structure and connected in series with said one of said electrical leads yet connected in parallel with said first electrical switch for intermittently completing said circuit means and thereby illuminating said sign.

3,360,792
DIGITAL-TO-ANALOGUE CONVERTORS
Naokazu Kimura, Katsuta-shi, Japan, assignor to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan
Filed Oct. 16, 1964, Ser. No. 404,231
1 Claim. (Cl. 340—347)

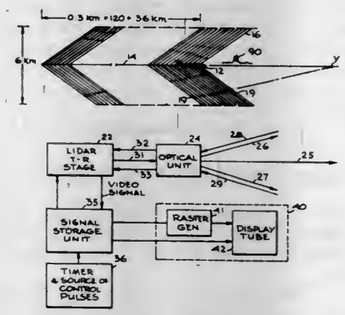
A digital-to-analogue convertor for converting a digital quantity of decimal, binary, or any other system, to an analogue quantity, characterized by comprising a digital-to-phase converting circuit for converting the positive and negative signs and number of places of said digital quantity into positive or negative phases of alternating

current correspondingly, an A.C. voltage distributor circuit for producing alternating current magnitudes corresponding respectively to significance of said places of said digital quantity, synchronous rectifying circuits for generating D.C. voltages of polarities and magnitudes which



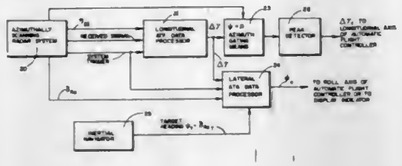
corresponds respectively to the output of said digital-to-phase convertor and the output of said A.C. voltage distributor circuit, and an addition circuit for composing up said output voltages of said synchronous rectifying circuits.

3,360,793
AIRBORNE DETECTION AND DISPLAY SYSTEM
Ronald T. H. Collis, Menlo Park, Calif., assignor to Stanford Research Institute, Menlo Park, Calif., a corporation of California
Filed Oct. 4, 1965, Ser. No. 492,761
14 Claims. (Cl. 343—5)



13. An airborne detection and display system for providing a display of atmospheric conditions, represented by atmospheric targets, about a flight direction of an aircraft in a plane which includes the flight direction, the system comprising:
first means for sequentially transmitting pulses of electromagnetic energy of a substantially single frequency into the atmosphere in at least one fixed direction, having a selected fixed angular relationship with respect to said flight direction and defining a common single plane therewith;
second means for receiving transmitted pulse energy signals which are reflected back to said aircraft by targets representing atmospheric conditions in the atmosphere in which the pulses of energy were transmitted;
storing means for storing y of the last received reflected signals; and
display means for displaying on a display surface thereof said y last received reflected signals on at least one side of a displayed direction on said surface defining said flight direction, whereby the orientations of the displayed signals on said surface with respect to said displayed direction, are representative of the orientations of atmospheric conditions in said plane including said flight direction, and with respect thereto.

3,360,794
TERRAIN AVOIDANCE SYSTEM
Claron E. Anderson, Fullerton, Guy P. Bayle, Orange, and John T. Nishimi, Westminster, Calif., assignors to North American Aviation, Inc.
Filed Aug. 24, 1966, Ser. No. 576,176
9 Claims. (Cl. 343—7)

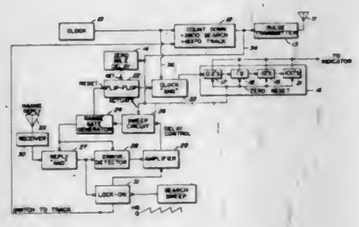


1. In an azimuthally-scanning, directionally ranging system adapted for performing a terrain-following function in a space-borne vehicle, data processing means for providing lateral maneuvering signals for avoiding terrain obstacles sensed along and about a path of said vehicle, comprising

gating means responsive to said ranging system for providing range-gated, azimuth limit-gated terrain warning signals for a plurality of successive range bins, representing terrain obstacles lying within a preselectively laterally maneuver-limited lateral sector about the heading of said vehicle; and

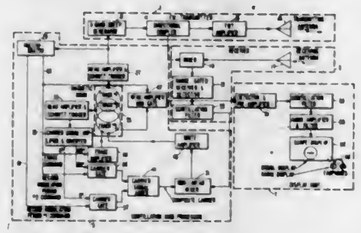
means responsive to the outputs of said gating means and to the associated ranges and directions of the sensed obstacles for generating signals indicative of a lateral clearance distance in excess of a preselected minimum lateral clearance distance between said obstacles.

3,360,795
DIGITAL TIME DOMAIN MODE RANGING SYSTEM
Michael W. Lundgreen, Cedar Rapids, and John B. Majerus, Marion, Iowa, assignors to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa
Filed Aug. 19, 1966, Ser. No. 573,590
12 Claims. (Cl. 343—7.3)



1. A digital range system comprising: pulse generating means; dividing means for dividing the output pulse repetition frequency of said pulse generating means into a first pulse repetition frequency for operation in a first mode and a second pulse repetition frequency for operation in a second mode; transmission means for selectively transmitting said first and second pulse repetition frequencies; reception means for receiving the return signal of the pulse repetition frequency being transmitted as a reply pulse; means for generating a range gate pulse; said reception means receiving said range gate pulse to produce a range signal when said range gate pulse and said reply pulse are simultaneously present in said reception means; switching means responsive to a plurality of said range signals to switch said dividing means from said first mode to said second mode after a selected number of said reply pulses has been received in said reception means; error detector means for receiving said range signal and generating an error signal in response to said range signal; and first sweep means for delaying the generation of said range gate pulse in response to said error signal; second sweep means for activating said first sweep means through said switching means so that said first sweep means varyingly delays the generation of said range gate pulse; the output of said second sweep means being a linearly varying, repetitive signal; means for counting the number of pulses in said output pulse repetition frequency; said counter means being deactivated when said range signal is present so that the number of pulses counted in said output pulse repetition frequency is indicative of the distance traveled by said reply pulse.

3,360,796
RADAR SYSTEM FOR THE DETECTION OF MOVING OBJECTS
Joseph A. Rush, Fairfax, Va., assignor to Keltec Industries, Inc., Alexandria, Va.
Filed Dec. 2, 1965, Ser. No. 511,163
4 Claims. (Cl. 343—7.7)



3. A radar system for the detection of moving objects comprising

transmitter means for transmitting a broad-band frequency-modulated, high-duty cycle signal,

receiver means for receiving reflected portions of said signal,

said reflected portions containing the target components indicative of the characteristics of a given moving target object and clutter components indicative of the characteristics of the moving and stationary terrain clutter,

means for comparing successive reflected portions of said signal and removing unwanted signal components including

a magnetic drum device,

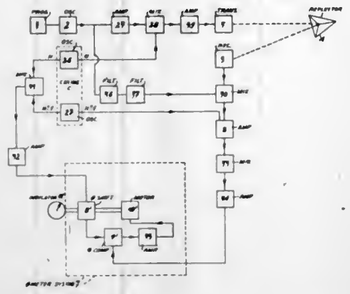
means to write successive reflected portions of said signal in superimposed relationship and 180° out-of-phase with each other on a single track of said magnetic drum thereby cancelling identical out-of-phase signal components and leaving recorded thereon a residual signal, and

means to read the residual signal from said single track of said magnetic drum,

said clutter components being substantially removed, and said target components characterizing moving targets being retained in said residual signal, and

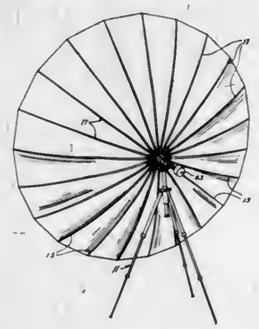
means utilizing said residual signal for indicating said retained target components of said reflected signal, whereby said target components serve to identify the target object.

3,360,797
ELECTROMAGNETIC TELEMETRIC STATION
Claude Picou, Paris, France, assignor to Societe d'Etudes, Recherches & Constructions Electroniques (Sercel), Hauts-de-Seine, France, a corporation of France
Filed Oct. 19, 1966, Ser. No. 587,896
Claims priority, application France, Oct. 29, 1965, 36,639; May 21, 1966, 62,431
8 Claims. (Cl. 343—14)



1. A system for measuring the distance of a reflective object comprising a signal source for generating a signal of varying frequency, first and second oscillators generating signals of frequencies H and $H+f$ respectively, a first mixer coupled to said source and said first oscillator, a transmitter coupled to said mixer and transmitting to said object a signal modulated by the beat signal generated in the mixer, a receiver for receiving signals reflected by said object, said receiver comprising a detector having an outlet supplying a signal of same frequency as said beat signal, a second mixer coupled to said source and receiver to beat the signals thereof, a third mixer to beat the signals of said oscillators, a fourth mixer coupled to said second oscillator and to said second mixer to beat the signals thereof, and a phase meter means to compare and indicate the phase shift between the signals of the third and fourth mixers.

3,360,798
COLLAPSIBLE REFLECTOR
James E. Webb, administrator of the National Aeronautics and Space Administration with respect to an invention of Robert J. Mason, Levittown, Pa., Patrick T. Scully, Moorestown, and Franklin S. Wezner, Camden, N.J.
Filed Jan. 13, 1965, Ser. No. 425,363
10 Claims. (Cl. 343—915)



1. A collapsible reflector adapted to automatically erect to the operational configuration of a paraboloid of revolution, said reflector comprising:

an elongate support member;

a plurality of articulated rib members, each normally assuming the form of a parabolic arc;

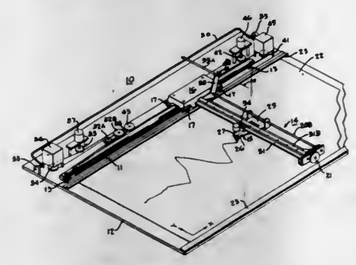
first connecting means joining one end of each said rib member to one end of said elongate support member whereby said rib members are adapted to articulate in the direction of the elongate support member;

second connecting means for articulating each said rib member at approximately its midpoint whereby each said rib member is adapted to be folded in the direction of the elongate support member, said first and second connecting means each consisting of resilient leaf springs extending in the longitudinal direction of its associated rib member whereby the rib member is biased by the resilient leaf springs to its normally unfolded condition in the form of a parabolic arc;

a sheet of reflective material attached to each said rib member in a taut condition when said rib members are in their normally unfolded condition; and

means for releasably latching each said rib member in a folded retracted condition adjacent said elongate support member.

3,360,799
X–Y RECORDER HAVING INTERCOUPLED CORD-PULLEY MEANS FOR INDEPENDENTLY X–Y DRIVES
Norman E. Polster, Southampton, Pa., assignor to Leeds & Northrup Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed June 7, 1966, Ser. No. 555,725
8 Claims. (Cl. 346—29)



1. A two-coordinate recorder comprising

a first guide-structure stationarily mounted on a base structure,

a second guide-structure supported by and movable along said first, stationary guide-structure,

a marker element supported for linear movement along said second guide-structure at a fixed angle to said first guide-structure,

first and second reversible drive means located at fixed locations with respect to said first guide-structure,

a first cable-pulley means for coupling the first drive means to said marker element to effect its motion along said second guide-structure,

a second cable-pulley means for coupling the second drive means to said second guide-structure to effect motion thereof along said first guide-structure and so effect linear motion of said marker element parallel to said first guide-structure, and

means for interconnecting yet effectively isolating said first and second cable-pulley means to obtain motion of said marker element along the second guide structure only by said first drive means and motion of said marker element parallel to said first guide-structure only by said second drive means, said interconnecting means including a floating link which for coordinate motion of said marker element with respect to said first guide-structure moves in direction opposite to the direction of movement of said second guide-structure for half the distance.

DESIGNS

DECEMBER 26, 1967

209,654
ONE PIECE PAJAMA GARMENT
George P. Keyloun, 7205 Narrows Ave., Brooklyn, N.Y. 11209
Filed Sept. 2, 1966, Ser. No. 3,710
Term of patent 3½ years
(Cl. D2—30)



209,655
LADY'S BOOT
Mamie Isaac, 1447 Goodfellow, St. Louis, Mo. 63112
Filed June 29, 1966, Ser. No. 2,848
Term of patent 3½ years
(Cl. D2—282)



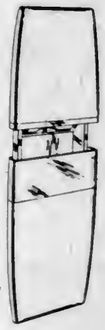
209,656
NECKTIE
John F. Kossow, 3513 50th St. S., Tampa, Fla. 33619
Filed Dec. 1, 1966, Ser. No. 4,871
Term of patent 14 years
(Cl. D2—355)



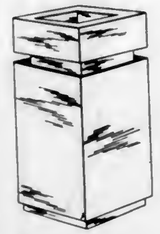
209,657
BUCKLE FOR A SAFETY SEAT BELT
Edward L. Barcus, La Grange Park, Ill., assignor to Pontonier, Inc., Chicago, Ill., a corporation of Illinois
Filed Dec. 2, 1965, Ser. No. 23
Term of patent 14 years
(Cl. D2—408)



209,658
COMBINED TOWEL DISPENSER AND WASTE RECEPTACLE
Joseph C. Grasso, New York, and Patrick Grasso, Scarsdale, N.Y., assignors to Accessory Specialties, Inc., Long Island City, N.Y., a corporation of New York
Filed Dec. 23, 1965, Ser. No. 301
Term of patent 14 years
(Cl. D4—3)



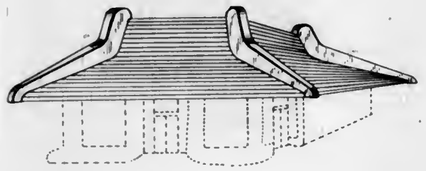
209,659
COMBINED TOWEL DISPENSER AND WASTE RECEPTACLE
Joseph C. Grasso, New York, and Patrick Grasso, Scarsdale, N.Y., assignors to Accessory Specialties, Inc., Long Island City, N.Y., a corporation of New York
Filed Dec. 23, 1965, Ser. No. 310
Term of patent 14 years
(Cl. D4—3)



209,660
PET CLEAN-UP RAKE
Clifford W. Lind, 4301 Winchester Lane, Minneapolis, Minn. 55429
Filed Sept. 12, 1966, Ser. No. 3,825
Term of patent 14 years
(Cl. D9—2)



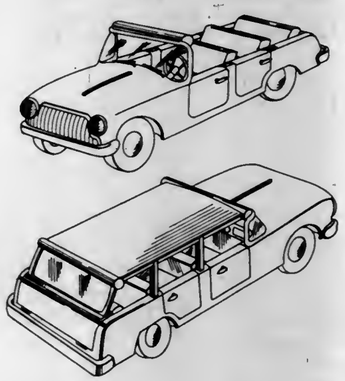
209,661
ROOF
Kenneth E. Bemis, Jr., 5400 Linden Drive, Bethesda, Md.
Filed July 19, 1967, Ser. No. 7,879
Term of patent 14 years
(Cl. D13—1)



209,662
HOUSE
Dwight L. Brown, Barbourville, Ky. 40906
Filed July 28, 1967, Ser. No. 8,048
Term of patent 14 years
(Cl. D13—1)



209,663
AUTOMOBILE WITH ROLLER TOP COVER
Vito Sangimino, 268 Bay 20th St., Brooklyn, N.Y. 11214
Filed Aug. 8, 1966, Ser. No. 3,377
Term of patent 14 years
(Cl. D14—3)



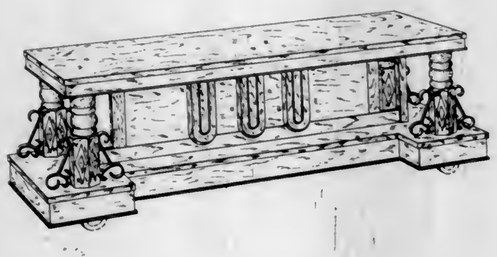
209,664
CABIN FOR HARVESTER-THRESHERS
Rupert Fritzmeier, Grosshelfendorf uber Munchen, Germany, assignor to Firma Georg Fritzmeier KG, Grosshelendorf uber Munchen, Germany
Filed Aug. 4, 1966, Ser. No. 3,536
Claims priority, application Germany Feb. 10, 1966
Term of patent 14 years
(Cl. D14—3)



209,665
MULTIPLE SEATING UNIT
Jon W. Hauser, St. Charles, Ill., assignor to Krueger Metal Products Company, Green Bay, Wis., a corporation of Wisconsin
Filed July 14, 1966, Ser. No. 3,076
Term of patent 14 years
(Cl. D15—8)



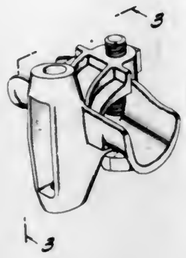
209,666
CASKET DISPLAY BIER
Richard Wareham, Euclid, and Ralph Ellsworth, Willoughby, Ohio, assignors to Superior Funeral Supply Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Jan. 10, 1966, Ser. No. 556
Term of patent 14 years
(Cl. D19—1)



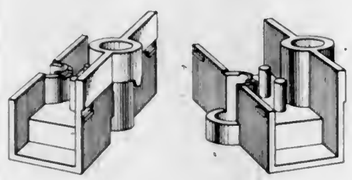
209,667
CONDUCTOR CLAMP
L. E. Lindsey, 222 Vista Ave., Pasadena, Calif. 91107
Filed Apr. 10, 1967, Ser. No. 6,613
Term of patent 14 years
(Cl. D26—1)



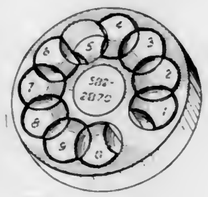
209,668
CONDUCTOR CLAMP
L. E. Lindsey, 222 Vista Ave., Pasadena, Calif. 91107
Filed Apr. 10, 1967, Ser. No. 6,614
Term of patent 14 years
(Cl. D26—1)



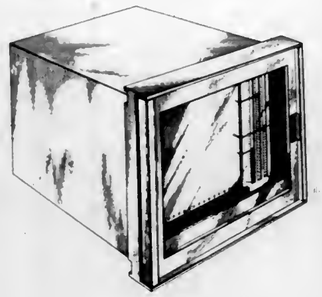
209,669
MODULAR TERMINAL BLOCK
Raymond F. Piasecki, Hazlet, N.J., assignor to The Thomas & Betts Co., Elizabeth, N.J., a corporation of New Jersey
Filed Feb. 25, 1966, Ser. No. 1,195
Term of patent 14 years
(Cl. D26—1)



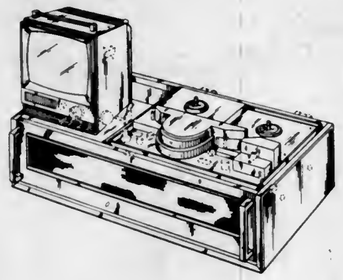
209,670
TELEPHONE DIAL WHEEL OR SIMILAR ARTICLE
David W. Hagelbarger, Morris Township, Morris County, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Oct. 23, 1965, Ser. No. 87,879
Term of patent 14 years
(Cl. D26—14)



209,671
CHART RECORDER
Paul L. Stone, Meadowbrook, Pa., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Apr. 15, 1966, Ser. No. 1,903
Term of patent 14 years
(Cl. D26—14)



209,672
COMBINED MAGNETIC TAPE RECORDER AND VIDEO MONITOR, OR SIMILAR ARTICLE
Takao Takanashi, Funabashi-shi, Japan, assignor to Sony Corporation, Tokyo, Japan, a corporation of Japan
Filed Nov. 9, 1965, Ser. No. 88,055
Claims priority, application Japan May 31, 1965
Term of patent 14 years
(Cl. D26—14)



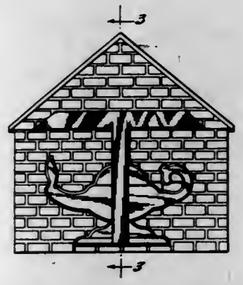
209,673
CASE FOR A WRIST WATCH COMMUNICATION RECEIVER
Seymour G. Saunders, Jr., Los Angeles, and Robert A. Cadaret, Pasadena, Calif., assignors to Classic Industries, Inc., Culver City, Calif., a corporation of California
Filed Jan. 31, 1967, Ser. No. 5,635
Term of patent 14 years
(Cl. D26—14)



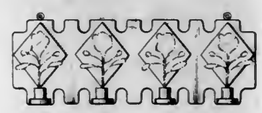
209,674
ILLUMINABLE CHRISTMAS ORNAMENT
Otto Kadmon and Alice Kadmon, both of 144—37 76th Road, Flushing, N.Y. 11367
Filed May 31, 1966, Ser. No. 2,491
Term of patent 7 years
(Cl. D29—1)



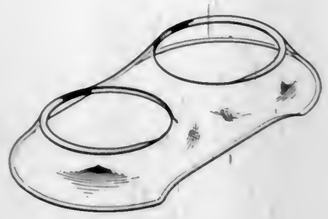
209,675
BADGE OR SIMILAR EMBLEMATIC ARTICLE
James Ray Calhoun, 126 Rommel Ave., Savannah, Ga. 31408
Filed Dec. 7, 1966, Ser. No. 4,952
Term of patent 14 years
(Cl. D29—11)



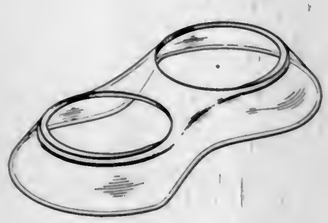
209,676
WALL ORNAMENT
William Earl Crawford, 5428 Spring Road, Bladensburg, Md. 20710
Design application Aug. 24, 1964, Ser. No. 81,417, now Design Patent No. 205,515, dated Aug. 16, 1966, which is a division of application Ser. No. 70,736, June 29, 1962, now Design Patent No. 199,356, dated Oct. 13, 1964. Divided and this application Nov. 22, 1965, Ser. No. 1,091
Term of patent 3½ years
(Cl. 29—23)



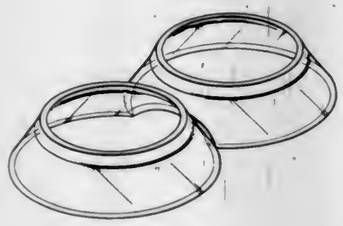
209,677
HOLDER FOR FOOD BOWLS FOR PETS
Tony Robert, 5701 Southwest Freeway, Houston, Tex. 77027
Filed Mar. 27, 1967, Ser. No. 6,389
Term of patent 14 years
(Cl. D30—13)



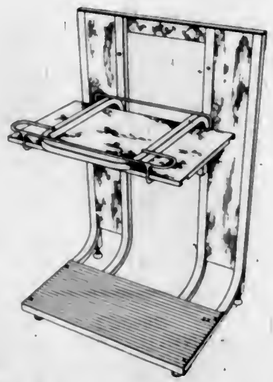
209,678
HOLDER FOR FOOD BOWLS FOR PETS
Tony Robert, 5701 Southwest Freeway, Houston, Tex. 77027
Filed Mar. 30, 1967, Ser. No. 6,449
Term of patent 14 years
(Cl. D30—13)



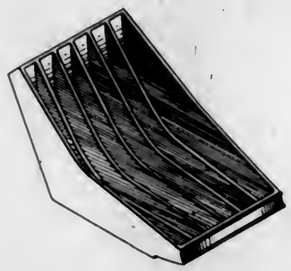
209,679
HOLDER FOR FOOD BOWLS FOR PETS
Tony Robert, 5701 Southwest Freeway, Houston, Tex. 77027
Filed Apr. 19, 1967, Ser. No. 6,754
Term of patent 14 years
(Cl. D30—13)



209,680
SUPPORT STAND FOR AN OFFICE MACHINE
Joel W. Bravo, Montrose, Pa., and Paul Matwey, Binghamton, N.Y., assignors to General Aniline & Film Corporation, New York, N.Y., a corporation of Delaware
Filed Jan. 23, 1967, Ser. No. 5,527
Term of patent 7 years
(Cl. D33—3)



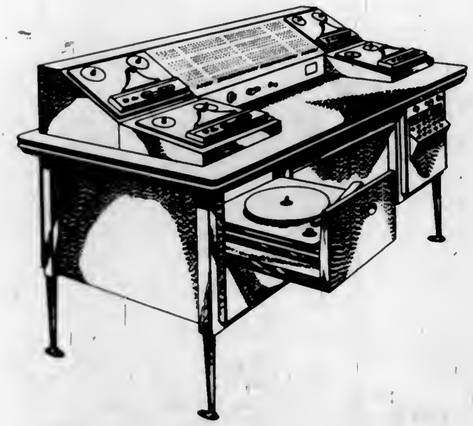
209,681
REEL RACK
George F. Lyman, South Hadley, Mass., assignor to Data Packaging Corp., Cambridge, Mass., a corporation of Massachusetts
Filed June 1, 1965, Ser. No. 85,520
Term of patent 14 years
(Cl. D33—3)



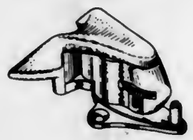
209,682
WALL-MOUNTED RACK FOR SUPPORTING BASEBALL EQUIPMENT
Ruby B. Williams, 54 Shallowford Road, Chattanooga, Tenn. 37404
Filed Nov. 14, 1966, Ser. No. 4,634
Term of patent 14 years
(Cl. D33—3)



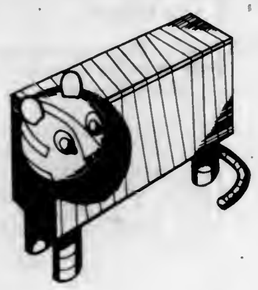
209,683
ELECTRONIC TEACHER CONSOLE
Chester J. Barecki, Grand Rapids, and Carl W. Sundberg and Montgomery Ferar, Southfield, Mich., assignors to American Seating Company, Grand Rapids, Mich., a corporation of Delaware
Filed Jan. 12, 1967, Ser. No. 5,397
Term of patent 14 years
(Cl. D33—7)



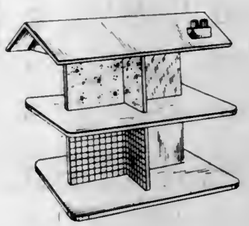
209,684
SKI BINDING
Hannes Marker, Hauptstrasse 51–53, Garmisch-Partenkirchen, Germany
Filed June 5, 1967, Ser. No. 7,353
Claims priority, application Germany Dec. 15, 1966
Term of patent 14 years
(Cl. D34—14)



209,685
TOY CHEST
Robert R. Jackson, Philadelphia, Pa., assignor to George Hough, Philadelphia, Pa.
Filed July 28, 1966, Ser. No. 3,240
Term of patent 14 years
(Cl. D34—15)



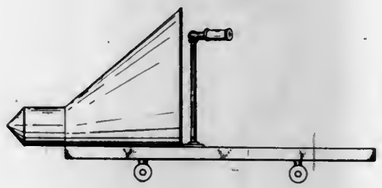
209,686
DOLL HOUSE
Fred R. Fertik, 25 Fairway Drive, Old Bethpage, N.Y. 11804
Filed Aug. 17, 1966, Ser. No. 3,502
Term of patent 14 years
(Cl. D34—15)



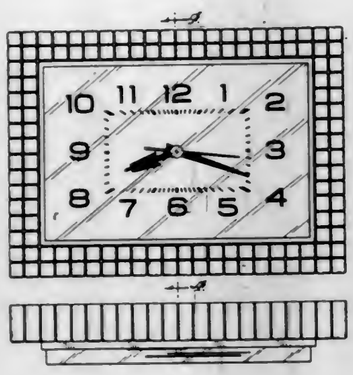
209,687
LION-SHAPED SEAT FOR PLAYGROUND APPARATUS
Robert S. Wormser, Hillsdale, Mich., assignor to Game-Time, Inc., Litchfield, Mich., a corporation of Michigan
Filed Aug. 17, 1966, Ser. No. 3,510
Term of patent 14 years
(Cl. D34—15)



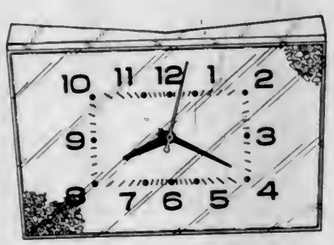
209,688
TOY SCOOTER
Richard J. Flinn, 1005 Otley Ave., and Leo J. McCoy, 1112 Paul St., both of Perry, Iowa 50220
Filed Sept. 2, 1966, Ser. No. 3,723
Term of patent 7 years
(Cl. D34—15)



209,689
CLOCK
Gordon Florian, Fairfield, Conn., assignor to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed Dec. 21, 1965, Ser. No. 261
Term of patent 14 years
(Cl. D42—7)



209,690
CLOCK
Charles A. McLeod, Oak Park, Ill., assignor to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed Sept. 29, 1966, Ser. No. 4,084
Term of patent 14 years
(Cl. D42—7)



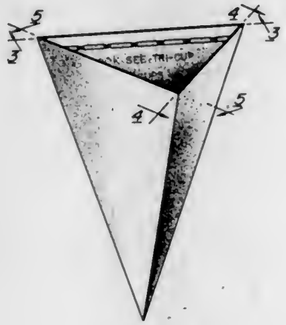
209,691
POURING HANDLE FOR A MILK CARTON
Herman Epstein, 1210 E. 9th St., Kansas City, Mo. 64106
Filed June 27, 1966, Ser. No. 2,816
Term of patent 7 years
(Cl. D44—21)



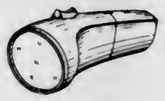
209,692
COFFEE PERCOLATOR
Robert O. Ernest, Oak Park, Ill., and Stephen H. Kaminski, Warren, Mich., assignors to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed Sept. 8, 1966, Ser. No. 3,766
Term of patent 14 years
(Cl. D44—26)



209,693
MEASURING CUP
Hester A. Pittman, Lomita, Calif. (2558 Gundry Ave., Long Beach, Calif. 90806)
Filed Oct. 6, 1965, Ser. No. 87,344
Term of patent 14 years
(Cl. D44—29)



209,694
RECHARGEABLE FLASHLIGHT
Ian A. Tesar, Eastchester, N.Y., assignor to Herbert J. Ashe, % H. J. Ashe Company, Inc., South Norwalk, Conn.
Filed Mar. 6, 1967, Ser. No. 6,085
Term of patent 14 years
(Cl. D48—24)

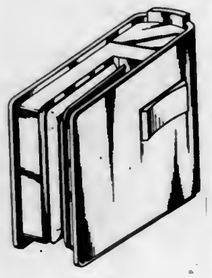


209,695
CASING FOR A CIGARETTE LIGHTER
Frank H. Stephens, Jr., Dunwoody, Ga., assignor to Scripto, Inc., a corporation of Georgia
Filed Oct. 31, 1966, Ser. No. 4,479
Term of patent 3½ years
(Cl. D48—27)



209,696
LAMP FOR A MOTOR VEHICLE
David Warwick Neale, Astley, Stourport, Worcester, England, assignor to Raydyot Limited, Old Hill, England, a British company
Filed Jan. 13, 1967, Ser. No. 5,408
Claims priority, application Great Britain July 13, 1966
Term of patent 3½ years
(Cl. D48—32)

209,697
HAND-HELD STEAMING AND PRESSING UNIT FOR WEARING APPAREL, DRAPERIES AND THE LIKE
Kalman J. Durik, deceased, late of Beverly Hills, Calif., by Rosemary M. Meister, executrix, Cleveland Heights, Ohio, assignor, by mesne assignments, to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Sept. 12, 1966, Ser. No. 3,806
Term of patent 14 years
(Cl. D49—1)



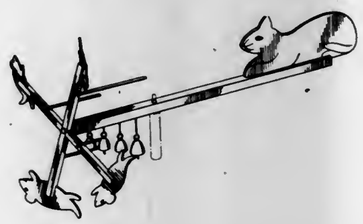
209,698
ELECTRIC FENCE TESTER
Howard Langlie and Albert T. Berg, Jr., Ellendale, Minn., assignors to North Central Plastics, Inc., Ellendale, Minn., a corporation of Minnesota
Filed Nov. 8, 1966, Ser. No. 4,580
Term of patent 14 years
(Cl. D52—1)



209,699
MILEAGE INDICATOR FOR BICYCLES AND THE LIKE
Eugenio Pagani, Milan, Italy, assignor to Fratelli Pagani S.p.A., Milan, Italy
Filed July 18, 1966, Ser. No. 3,116
Claims priority, application Italy Apr. 7, 1966
Term of patent 14 years
(Cl. D52—6)



209,700
MUSICAL WEATHER VANE
Gerald H. Shinkwin, 4748 50th St., San Diego, Calif. 92115
Filed Oct. 14, 1966, Ser. No. 4,280
Term of patent 3½ years
(Cl. D52—6)



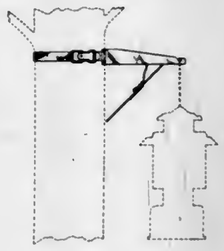
209,701
CABLE BUNDLING CLAMP
L. E. Lindsey, 222 Vista Ave., Pasadena, Calif. 91107
Filed Dec. 19, 1966, Ser. No. 5,097
Term of patent 14 years
(Cl. D54—1)



209,702
CABLE CLAMP
Norman T. Hanrahan, 2377 8th St., East Meadow, N.Y. 11554
Filed Feb. 20, 1967, Ser. No. 5,872
Term of patent 14 years
(Cl. D54—1)



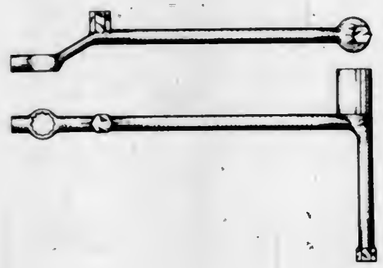
209,703
HANGER BRACKET FOR LANTERNS OR THE LIKE
Donald E. Loch, 3115 Jackson, Wichita, Kans. 67204
Filed June 26, 1967, Ser. No. 7,595
Term of patent 14 years
(Cl. D54—1)



209,704
TABLESPOON OR SIMILAR ARTICLE
Svend Slüne, Tranegilde, Taastrup, Denmark, assignor to Georg Jensens Solosmedie A/S, Copenhagen, Denmark
Filed Jan. 24, 1967, Ser. No. 5,541
Claims priority, application Denmark Sept. 15, 1966
Term of patent 14 years
(Cl. D54—12)



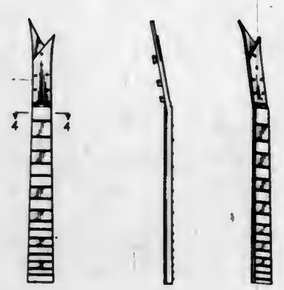
209,705
UNIVERSAL WRENCH
Tony L. Hobbs, 6808 Velda Court, Bakersfield, Calif. 93306
Filed Nov. 14, 1966, Ser. No. 4,661
Term of patent 14 years
(Cl. D54—16)



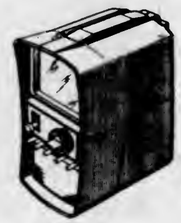
209,706
GUITAR HEAD
Robert Podall, Chicago, Ill., assignor to Kay Musical Instrument Co., a corporation of Illinois
Filed Aug. 23, 1965, Ser. No. 86,682
Term of patent 14 years
(Cl. D56—1)



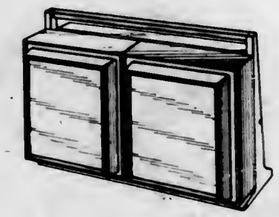
209,707
COMBINED PEG HEAD, NECK AND FINGER BOARD OF A GUITAR OR SIMILAR ARTICLE
Charles A. Gauvin, 805 S. Water St., Silverton, Oreg. 97381
Filed Nov. 15, 1965, Ser. No. 88,093
Term of patent 14 years
(Cl. D56—1)



209,708
TELEVISION RECEIVER
Tadashi Miki, Tokyo, Japan, assignor to Standard Radio Corporation, Sagamihara-shi, Kanagawa-ken, Japan
Filed July 5, 1966, Ser. No. 2,916
Term of patent 7 years
(Cl. D56—4)



209,709
PORTABLE RECORD CHANGER OR SIMILAR ARTICLE
William A. Wagner, Park Ridge, and Donald F. Kaminski, Downers Grove, Ill., assignors to Warwick Electronics Inc., Chicago, Ill., a corporation of Delaware
Filed Sept. 15, 1966, Ser. No. 3,866
Term of patent 14 years
(Cl. D56—4)



209,710
HOUSING FOR A TELEVISION RECEIVER
Geoffrey H. Bruce, Schoolhouse and Grapevine Roads, Cavecreek, Ariz. 85331
Filed Oct. 19, 1966, Ser. No. 4,344
Term of patent 14 years
(Cl. D56—4)



209,711
BASE FOR A PHONOGRAPH TURNTABLE OR SIMILAR ARTICLE
Monte Levin, New York, N.Y., assignor to British Industries Corporation, Westbury, N.Y., a corporation of New York
Filed July 3, 1967, Ser. No. 7,707
Term of patent 14 years
(Cl. D56—4)



209,712
PORTION PACKAGE OF FOOD OR BEVERAGE
Richard J. Zoeller, Murrysville, Frank S. Lazure, New Kensington, and Robert L. Walker, Apollo, Pa., assignors to Aluminum Company of America, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 2, 1966, Ser. No. 3,313
Term of patent 14 years
(Cl. D58—2)



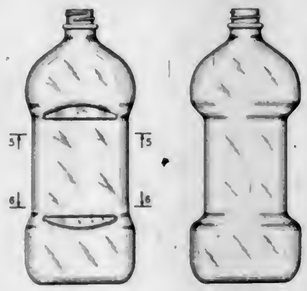
209,713
BOTTLE OR SIMILAR ARTICLE
Victor Koenigsberg, Franklin Square, N.Y., assignor to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware
Filed Apr. 25, 1966, Ser. No. 1,997
Term of patent 14 years
(Cl. D58—6)



209,714
BOTTLE OR THE LIKE
Trevor Gwilym Evans, Welwyn Garden City, England, assignor to Lever Brothers Company, New York, N.Y., a corporation of Maine
Filed Mar. 18, 1966, Ser. No. 1,542
Claims priority, application Great Britain Oct. 7, 1965
Term of patent 14 years
(Cl. D58—8)



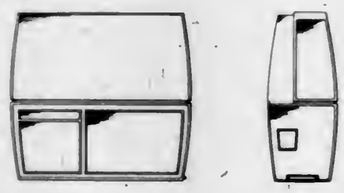
209,715
BOTTLE
Arthur J. Ninesling, Lancaster, Pa., and Donald Q. O'Brien, Bedminster, N.J., assignors to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware
Filed Sept. 21, 1966, Ser. No. 3,947
Term of patent 14 years
(Cl. D58—8)



209,716
MOTION PICTURE PROJECTOR
Gregory F. Fossella, Marblehead, Robert G. Palmer, Canton, and Thomas R. Salvo, Stoneham, Mass., assignors to Keystone Mfg. Corp., Boston, Mass., a corporation of Massachusetts
Filed Oct. 21, 1966, Ser. No. 4,366
Term of patent 14 years
(Cl. D61—1)



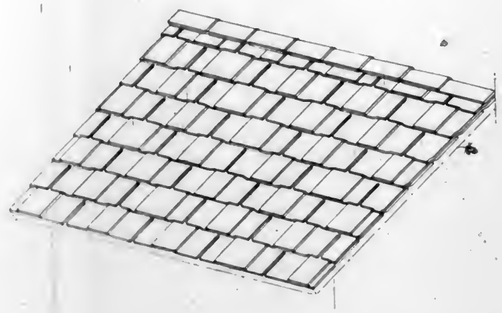
209,717
MOTION PICTURE PROJECTOR
Gregory F. Fossella, Marblehead, Robert G. Palmer, Canton, and Thomas R. Salvo, Stoneham, Mass., assignors to Keystone Mfg. Corp., Boston, Mass., a corporation of Massachusetts
Filed Oct. 21, 1966, Ser. No. 4,367
Term of patent 14 years
(Cl. D61—1)



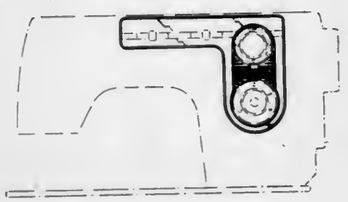
209,718
CALCULATING MACHINE
Hansgunter Tilch, Rothenbach (Pegnitz), Germany, assignor to Diehl, Nuremberg, Germany
Filed Aug. 8, 1966, Ser. No. 3,392
Claims priority, application Germany Feb. 9, 1966
Term of patent 14 years
(Cl. D64—11)



209,719
ROOF OR SIMILAR ARTICLE
Wales E. Ellis, Sr., Oxford, Ga., assignor to Certain-Teed Products Corporation, Ardmore, Pa., a corporation of Maryland
Filed Feb. 6, 1967, Ser. No. 5,687
Term of patent 14 years
(Cl. D68—1)



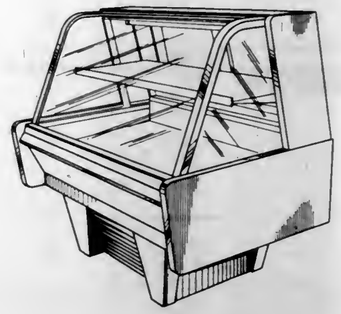
209,720
SEWING MACHINE
Yoshiaki Eguchi, Tokyo, Japan, assignor to Janome Sewing Machine Co., Ltd., Tokyo, Japan
Filed Apr. 26, 1967, Ser. No. 6,845
Term of patent 14 years
(Cl. D70—1)



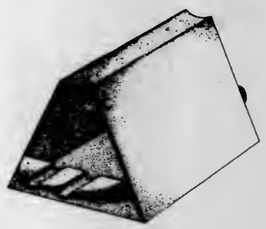
209,721
REFLECTOR
Wallace A. Stanley, Bloomfield Hills, Mich., assignor to Reflex Corporation of America, Troy, Mich., a corporation of Michigan
Filed July 26, 1965, Ser. No. 86,292
Term of patent 14 years
(Cl. D72—1)

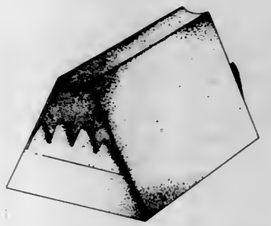


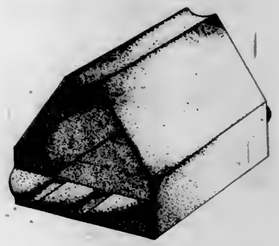
209,722
REFIGERATED DISPLAY CASE
Daniel J. Mangini, 2824 Nature Road, Philadelphia, Pa. 19154
Filed July 28, 1966, Ser. No. 3,243
Term of patent 14 years
(Cl. D80—11)



209,723
ASH TRAY
Walter R. Orell, South St., Blandford, Mass. 01008
Filed Jan. 9, 1967, Ser. No. 5,340
Term of patent 14 years
(Cl. D85—2)



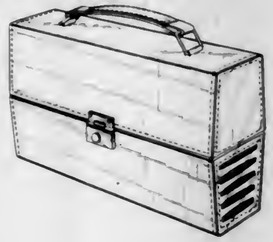




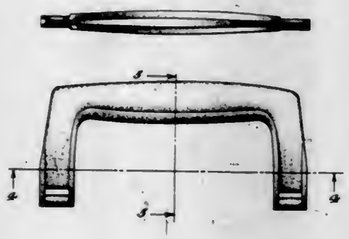
209,724
ELECTRIC COMB
Samuel L. McNair, Overland Park, Kans., and Henry J. Talge, Kansas City, Mo., assignors to The Songrand Corporation, a corporation of Missouri
Filed Mar. 29, 1967, Ser. No. 6,431
Term of patent 14 years
(Cl. D86—8)



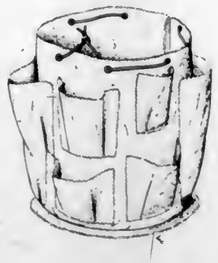
209,725
HAIR DRYER
Theodore Friedman, Glen Ellyn, Ill., assignor to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Filed June 29, 1966, Ser. No. 2,861
Term of patent 14 years
(Cl. D86—10)



209,726
LUGGAGE HANDLE AND THE LIKE
Lou F. Marks, Pittsburgh, Pa., assignor to Bruce Molded Plastic Products, Inc., Moon Run, Pa., a corporation of Pennsylvania
Filed July 17, 1967, Ser. No. 7,818
Term of patent 14 years
(Cl. D37—2)

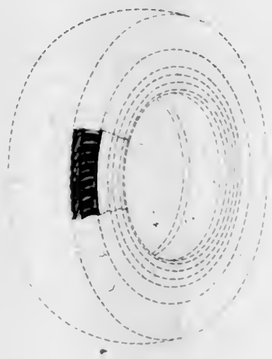


209,727
DRAWSTRING HANDBAG OR THE LIKE
Ruth M. Bollig, 225 Jones St., Sun Prairie, Wis. 53590
Filed Oct. 23, 1965, Ser. No. 87,837
Term of patent 14 years
(Cl. D87—3)

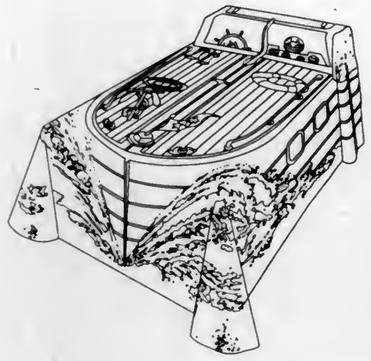


209,728
BICYCLE CHAIN GUARD
Viktor Schreckengost, Cleveland Heights, Ohio, assignor to The Murray Ohio Manufacturing Co., Nashville, Tenn., a corporation of Ohio
Filed Mar. 1, 1967, Ser. No. 6,004
Term of patent 14 years
(Cl. D90—5)

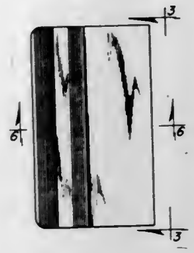
209,729
TIRE
Clarence H. Vizina, Ferndale, Mich., assignor to Uniroyal, Inc., a corporation of New Jersey
Filed Jan. 28, 1966, Ser. No. 811
Term of patent 14 years
(Cl. D90—20)



209,730
BEDSPREAD OR SIMILAR ARTICLE
Sidney Shapiro, 424 E. 57th St., New York, N.Y. 10022; Jerry Shapiro, 585 Lawn Terrace, Mamaroneck, N.Y. 10543; and Philip Shapiro, 90 Riverside Drive, New York, N.Y. 10023
Filed Dec. 19, 1966, Ser. No. 5,092
Term of patent 14 years
(Cl. D92—2)



209,731
COMBINED GUARD AND HOLDING STRIP FOR A CARPET
William W. Smith, 730 S. Garfield, Denver, Colo. 80209
Filed June 20, 1966, Ser. No. 2,733
Term of patent 14 years
(Cl. D92—4)



LIST OF DESIGN PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 26TH DAY OF DECEMBER, 1967

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

Accessory Specialties, Inc.: *See*—
Grasso, Joseph C. and P. 209,658.
Grasso, Joseph C. and P. 209,659.

Aluminum Co. of America: *See*—
Zoeller, Richard J., Lazure, and Walker. 209,712.

American Seating Co.: *See*—
Bareckl, Chester J., Sundberg, and Ferar. 209,683.

Ashe, Herbert J., care of H. J. Ashe Co., Inc.: *See*—
Tesar, Ian A. 209,694.

Barcus, Edward L., to Pontonier, Inc. Buckle for a safety seat belt. 209,657, 12–26–67, Cl. D2—408.

Bareckl, Chester J., C. W. Sundberg, and M. Ferar, to American Seating Co. Electronic teacher console. 209,683, 12–26–67, Cl. D33—7.

Bell Telephone Laboratories, Inc.: *See*—
Hagelbarger, David W. 209,670.

Bemis, Kenneth E., Jr. Roof. 209,661, 12–26–67, Cl. D13—1.

Berg, Albert T., Jr.: *See*—
Langile, Howard, and Berg. 209,698.

Bollig, Ruth M. Drawstring handbag or the like. 209,727, 12–26–67, Cl. D57—3.

Bravo, Joel W., and P. Matwey, to General Aniline & Film Corp. Support stand for an office machine. 209,680, 12–26–67, Cl. D33—3.

British Industries Corp.: *See*—
Levin, Monte. 209,711.

Brown, Dwight L. House. 209,662, 12–26–67, Cl. D13—1.

Bruce, Geoffrey H. Housing for television receiver. 209,710, 12–26–67, Cl. D56—4.

Bruce Molded Plastic Products, Inc.: *See*—
Marks, Lou F. 209,726.

Cadaret, Robert A.: *See*—
Saunders, Seymour G., Jr., and Cadaret. 209,673.

Calhoun, James R. Badge or similar emblematic article. 209,675, 12–26–67, Cl. D29—11.

Certain Teed Products Corp.: *See*—
Ellis, Wales E., Sr. 209,719.

Classic Industries, Inc.: *See*—
Saunders, Seymour G., Jr., and Cadaret. 209,673.

Colgate-Palmolive Co.: *See*—
Koenigsberg, Victor. 209,713.

Crawford, William E. Wall ornament. 209,676, 12–26–67, Cl. D29—23.

Data Packaging Corp.: *See*—
Lyman, George F. 209,681.

Diehl: *See*—
Tilch, Hansgunter. 209,718.

Durik, Halman J., deceased (by R. M. Meister, executrix), to Westinghouse Electric Corp. Hand-held steaming and pressing unit for wearing apparel, draperies and the like. 209,697, 12–26–67, Cl. D49—1.

Eguchi, Yoshiaki, to Janome Sewing Machine Co., Ltd. Sewing machine. 209,720, 12–26–67, Cl. D70—1.

Ellis, Wales E., Sr., to Certain Teed Products Corp. Roof or similar article. 209,719, 12–26–67, Cl. D68—1.

Ellsworth, Ralph: *See*—
Wareham, Richard, and Ellsworth. 209,666.

Epstein, Herman. Pouring handle for a milk carton. 209,691, 12–26–67, Cl. D44—21.

Ernest, Robert O., and S. H. Kaminski, to Sunbeam Corp. Coffee percolator. 209,692, 12–26–67, Cl. D44—26.

Evans, Trevor G., to Lever Brothers Co. Bottle or the like. 209,714, 12–26–67, Cl. D58—8.

Ferar, Montgomery: *See*—
Bareckl, Chester J., Sundberg, and Ferar. 209,683.

Fertik, Fred R. Doll house. 209,686, 12–26–67, Cl. D34—15.

Firma Georg Fritzmeier KG.: *See*—
Fritzmeier, Rupert. 209,664.

Flinn, Richard J., and L. J. McCoy. Toy scooter. 209,688, 12–26–67, Cl. D34—15.

Florian, Gordon, to Sunbeam Corp. Clock. 209,689, 12–26–67, Cl. D42—7.

Fossella, Gregory F., R. G. Palmer, and T. R. Salvo, to Keystone Mfg. Corp. Motion picture projector. 209,716, 12–26–67, Cl. D61—1.

Fossella, Gregory F., R. G. Palmer, and T. R. Salvo, to Keystone Mfg. Corp. Motion picture projector. 209,717, 12–26–67, Cl. D61—1.

Friedman, Theodore, to Sunbeam Corp. Hair dryer. 209,725, 12–26–67, Cl. D58—10.

Fritzmeier, Rupert, to Firma Georg Fritzmeier KG. Cabin for harvester-threshers. 209,664, 12–26–67, Cl. D14—3.

Game-Time, Inc.: *See*—
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Gauvin, Charles A. Combined peg head, neck and finger board of a guitar or similar article. 209,707, 12–26–67, Cl. D56—1.

General Aniline & Film Corp.: *See*—
Bravo, Joel W., and Matwey. 209,680.

Grasso, Joseph C. and P., to Accessory Specialties, Inc. Combined towel dispenser and waste receptacle. 209,658, 12–26–67, Cl. D4—3.

Grasso, Joseph C. and P., to Accessory Specialties, Inc. Combined towel dispenser and waste receptacle. 209,659, 12–26–67, Cl. D4—3.

Grasso, Patrick: *See*—
Grasso, Joseph C. and P. 209,658.
Grasso, Joseph C. and P. 209,659.

Hagelbarger, David W., to Bell Telephone Laboratories, Inc. Telephone dial wheel or similar article. 209,670, 12–26–67, Cl. D26—14.

Hanrahan, Norman T. Cable clamp. 209,702, 12–26–67, Cl. 54—1.

Hauser, Jon W., to Krueger Metal Products Co. Multiple seating unit. 209,665, 12–26–67, Cl. D15—8.

Hobbs, Tony L. Universal wrench. 209,705, 12–26–67, Cl. D54—16.

Honeywell, Inc.: *See*—
Stone, Paul L. 209,671.

Hough, George: *See*—
Jackson, Robert. 209,685.

Isaac, Mamie. Lady's boot. 209,655, 12–26–67, Cl. D2—282.

Jackson, Robert, to G. Hough. Toy chest. 209,685, 12–26–67, Cl. D34—15.

Janome Sewing Machine Co., Ltd.: *See*—
Eguchi, Yoshiaki. 209,720.

Kadmon, Alice: *See*—
Kadmon, Otto and A. 209,674.

Kadmon, Otto and A. Illuminable Christmas ornament. 209,674, 12–26–67, Cl. D29—1.

Kaminski, Donald F.: *See*—
Wagner, William A., and Kaminski. 209,709.

Kaminski, Stephen H.: *See*—
Ernest, Robert O., and Kaminski. 209,692.

Kay Musical Instrument Co.: *See*—
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Keystone Mfg. Corp.: *See*—
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Fossella, Gregory F., Palmer, and Salvo. 209,717.

Koenigsberg, Victor, to Colgate-Palmolive Co. Bottle or similar article. 209,713, 12–26–67, Cl. D58—6.

Kossow, John F. Necktie. 209,656, 12–26–67, Cl. D2—355.

Krueger Metal Products Co.: *See*—
Hauser, Jon W. 209,665.

Langile, Howard, and A. T. Berg, Jr., to North Central Plastics, Inc., Electric fence tester. 209,698, 12–26–67, Cl. D52—1.

Lazure, Frank S.: *See*—
Zoeller, Richard J., Lazure, and Walker. 209,712.

Lever Bros. Co.: *See*—
Evans, Trevor G. 209,714.

Levin, Monte, to British Industries Corp. Base for a phonograph turntable or similar article. 209,711, 12–26–67, Cl. D56—4.

Lind, Clifford W. Pet clean-up rake. 209,660, 12–26–67, Cl. D9—2.

Lindsey, L. E. Conductor clamp. 209,667, 12–26–67, Cl. D26—1.

Lindsey, L. E. Conductor clamp. 209,668, 12–26–67, Cl. D26—1.

Lindsey, L. E. Cable bundling clamp. 209,701, 12–26–67, Cl. D54—1.

Loch, Donald E. Hanger bracket for lanterns or the like. 209,703, 12–26–67, Cl. D54—1.

Lyman, George F., to Data Packaging Corp. Reel rack. 209,681, 12–26–67, Cl. D33—3.

Mangini, Daniel J. Refrigerated display case. 209,722, 12–26–67, Cl. D80—11.

Marker, Hannes. Ski binding. 209,684, 12–26–67, Cl. D34—14.

Marks, Lou F., to Bruce Molded Plastic Products, Inc. Luggage handle and the like. 209,726, 12–26–67, Cl. D87—2.

Matwey, Paul: *See*—
Bravo, Joel W., and Matwey. 209,680.

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McNair, Samuel L., and H. J. Talge, to The Songrand Corp. Electric comb. 209,724, 12–26–67, Cl. D86—8.

Meister, Rosemary M.: *See*—
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Miki, Tadashi, to Standard Radio Corp. Television receiver. 209,708, 12–26–67, Cl. D56—4.

Murray Ohio Mfg. Co., The: *See*—
Schreckengost, Viktor. 209,728.

Neale, David W., to Raydyot Ltd. Lamp for a motor vehicle. 209,696, 12–26–67, Cl. D48—32.

Ninesling, Arthur J., and D. Q. O'Brien, to Warner-Lambert Pharmaceutical Co. Bottle. 209,715, 12–26–67, Cl. D58—8.

North Central Plastics, Inc.: *See*—
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O'Brien, Donald Q.: *See*—
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Orell, Walter R. Ash tray. 209,723, 12–26–67, Cl. D85—2.
Pagani, Eugenio, to Fratelli Pagani S.p.A. Mileage indicator for bicycles and the like. 209,699, 12–26–67, Cl. D52—6.
Pagani, Fratelli, S.p.A.: *See*—
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Fossella, Gregory F., Palmer, and Salvo. 209,717.
Piasecki, Raymond F., to The Thomas & Betts Co. Modular terminal block. 209,669, 12–26–67, Cl. D26—1.
Pittman, Hester A. Measuring cup. 209,693, 12–26–67, Cl. D44—29.
Podall, Robert, to Kay Musical Instrument Co. Guitar head. 209,706, 12–26–67, Cl. D56—1.
Pontonier, Inc.: *See*—
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Robert, Tony. Holder for food bowls for pets. 209,677, 12–26–67, Cl. D30—13.
Robert, Tony. Holder for food bowls for pets. 209,678, 12–26–67, Cl. D30—13.
Robert, Tony. Holder for food bowls for pets. 209,679, 12–26–67, Cl. D30—13.
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Fossella, Gregory F., Palmer, and Salvo. 209,716.
Fossella, Gregory F., Palmer, and Salvo. 209,717.
Sangimino, Vito. Automobile with roller top cover. 209,663, 12–26–67, Cl. D14—3.
Saunders, Seymour G., Jr., and R. A. Cadaret, to Classic Industries, Inc. Case for a wrist watch communication receiver. 209,673, 12–26–67, Cl. D26—14.
Schreckengost, Viktor, to The Murray Ohio Mfg. Co. Bicycle chain guard. 209,728, 12–26–67, Cl. D90—5.
Scripto, Inc.: *See*—
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Shapiro, Jerry: *See*—
Shapiro, Sidney, J., and P. 209,730.
Shapiro, Philip: *See*—
Shapiro, Sidney, J., and P. 209,730.
Shapiro, Sidney, J., and P. Bedspread or similar article. 209,730, 12–26–67, Cl. D92—2.
Shinkwin, Gerald H. Musical weather vane. 209,700, 12–26–67, Cl. D52—6.
Siune, Svend, to Georg Jensens Solvsmedie A/S. Tablespoon or similar article. 209,704, 12–26–67, Cl. D54—12.
Smith, William W. Combined guard and holding strip for a carpet. 209,731, 12–26–67, Cl. D92—4.
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Songrand Corp., The: *See*—
McNair, Samuel L., and Talge. 209,724.
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Takanashi, Takao. 209,672.
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Stanley, Wallace A., to Reflex Corp. of America. Reflector. 209,721, 12–26–67, Cl. D72—1.
Stephens, Frank H., Jr., to Scripto, Inc. Casing for a cigarette lighter. 209,695, 12–26–67, Cl. D48—27.
Stone, Paul L., to Honeywell, Inc. Chart recorder. 209,671, 12–26–67, Cl. D26—14.
Sunbeam Corp.: *See*—
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Florian, Gordon. 209,689.
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Sundberg, Carl W.: *See*—
Barecki, Chester J., Sundberg, and Ferar. 209,683.
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Takanashi, Takao, to Sony Corp. Combined magnetic tape recorder and video monitor, or similar article. 209,672, 12–26–67, Cl. D26—14.
Talge, Henry J.: *See*—
McNair, Samuel L., and Talge. 209,724.
Tesar, Ian A., to H. J. Ashe. Rechargeable flashlight. 209,694, 12–26–67, Cl. D48—24.
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Vizina, Clarence H. 209,729.
Vizina, Clarence H., to Uniroyal, Inc. Tire. 209,729, 12–26–67, Cl. D90—20.
Wagner, William A., and D. F. Kaminski, to Warwick Electronics Inc. Portable record changer or similar article. 209,709, 12–26–67, Cl. D56—4.
Walker, Robert L.: *See*—
Zoeller, Richard J., Lazure, and Walker. 209,712.
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Warwick Electronics Inc.: *See*—
Wagner, William A., and Kaminski. 209,709.
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Williams, Ruby B. Wall-mounted rack for supporting baseball equipment. 209,682, 12–26–67, Cl. D33—3.
Wormser, Robert S., to Game-Time, Inc. Lion-shaped seat for playground apparatus. 209,687, 12–26–67, Cl. D34—15.
Zoeller, Richard J., F. S. Lazure, and R. L. Walker, to Aluminum Co. of America. Portion package of food or beverage. 209,712. 12–26–67, Cl. D58—2.

LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 26TH DAY OF DECEMBER, 1967

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Abel, Martin L. Method of making oil-impregnated wicking material for bearings. 3,359,614, 12–26–67, Cl. 29—149.5.
Abex Corp.: *See*—
Adams, Cecil E., and De Villers. 3,360,304.
Ackermann, Karl, deceased, by K. Siebert, representative, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Production of negative electrodes for fuel cells. 3,360,402, 12–26–67, Cl. 136—120.
Acree, Elick H., and W. G. Tatum, to United States of America, Atomic Energy Commission. Neutron source. 3,360,477, 12–26–67, Cl. 252—301.1.
Adams, Cecil E., and R. E. Griffith, to American Brake Shoe Co. Method and apparatus for improving efficiency of vane pumps. 3,359,914, 12–26–67, Cl. 103—136.
Adams, Cecil E., and G. E. De Villers, to Abex Corp. Retarder systems. 3,360,304. 12–26–67, Cl. 303—18.
Adams, Frank H. Universal joint. 3,359,757, 12–26–67, Cl. 64—8.
Adams, George F., to UOP Process Division (a division of Universal Oil Products Co.). Ethylene production and recovery thereof. 3,360,587, 12–26–67, Cl. 260—683.
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Stevens, Frank L. 3,359,751.
Adomines, Alfred A., to Sperry Rand Corp. Copper layer bonded to a non-conductive layer by means of a copper alloy. 3,360,349, 12–26–67, Cl. 29—195.
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Ain, Herbert. Display panel frame work. 3,360,136, 12–26–67, Cl. 211—162.
Ainley, Brian, to Oxley Developments Co. Ltd. Trimmer capacitors. 3,360,699, 12–26–67, Cl. 317—253.
Ainley, Brian, to Oxley Developments Co. Ltd. Tubular trimmer capacitors. 3,360,700, 12–26–67, Cl. 317—249.
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Stapleton, Earl W., and McKeand. 3,360,761.
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Evans, Dewey M., and Koepke. 3,360,400.
Aktiebolaget Gotaverken: *See*—
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Hellmund, Karl-Heinz. 3,360,254.
Alabama Gas Corp.: *See*—
Carothers, John S. 3,359,972.
Albertson, Fred W., Jr., and F. W. Albertson, Sr. Electrical rail switch and control system. 3,360,645, 12–26–67, Cl. 246—219.
Albertson, Fred W., Sr.: *See*—
Albertson, Fred W., Jr., and F. W. Albertson, Sr. 3,360,645.
Albright, Denton M., W. R. Chilcott, Jr., and T. P. Floridis, to United States Steel Corp. Method of making foamed metal. 3,360,361, 12–26–67, Cl. 75—20.
Albright & Wilson (Mfg.) Ltd.: *See*—
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Alfred-Teves, Maschinen- und Armaturenfabrik K.G.: *See*—
Schanz, Hans. 3,359,730.
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Hucksbold, Elmer J. 3,360,285.
Allen, Andrew J., to Caterpillar Tractor Co. Hitch assembly for tractor-trailer unit. 3,360,281, 12–26–67, Cl. 280—423.
Allen, Herbert, to Cameron Iron Works, Inc. Blowout preventer actuator. 3,360,233, 12–26–67, Cl. 251—1.
Allen, Philip H.: *See*—
Anderson, Earl R. 3,360,159.
Allen, William A. Forklift dumping means. 3,360,143, 12–26–67, Cl. 214—317.
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Fisher, Willis A., and Steiner. 3,360,507.
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Chilstrom, Allan L. 3,360,054.
Johansen, Roy W. 3,360,052.
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Spiering, Glen A., Revolinsky, and Beernsten. 3,360,485.
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Zambrano, Ronald T. 3,360,561.
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Jessen, Paul J., and Tigges. 3,359,642.
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Anderson, Carl W. Combination mower and dispenser. 3,359,710, 12–26–67, Cl. 56—25.4.
Anderson, Claron E., G. P. Bayle, and J. T. Nishimi, to North American Aviation, Inc. Terrain avoidance system. 3,360,794, 12–26–67, Cl. 343—7.
Anderson, Clifford E.: *See*—
Kinley, John C. and M. M., and Anderson. 3,360,060.
Anderson, Donald V., and J. G. Gillman, 30% to W. Luders and 10% to P. D. Jackson. Roller device for removing the meat from king crab legs. 3,359,595, 12–26–67, Cl. 17—2.
Anderson, Duane B., and J. L. Lummus, to Pan American Petroleum Corp. Low solids salt water drilling fluids. 3,360,461, 12–26–67, Cl. 252—8.5.
Anderson, Earl R., to P. H. Allen. Filled can with head space. 3,360,159, 12–26–67, Cl. 220—68.
Anderson, Edwin A. Fluid controlled directional bit and its method of use. 3,360,057, 12–26–67, Cl. 175—67.
Anderson, James H. Power plant including fluid means for supporting rotating shaft in a bearing. 3,359,731, 12–26–67, Cl. 60—64.
Anderson, James H. Vacuum jacketed pipe line and joint construction therefor. 3,360,001, 12–26–67, Cl. 137—375.
Andreasen, Sigurd J., and O. A. Meyer. Apparatus for mixing and dispensing, by hydraulic pressure, an aqueous solution containing plant life. 3,360,166, 12–26–67, Cl. 222—136.
Andreasson, Donald C., to Detroit Reamer & Tool Co. Rotary tool construction. 3,359,837, 12–26–67, Cl. 77—68.
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Appleton, Martin D.: *See*—
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Platus, David L., Marovich, and Cunningham. 3,360,081.
Arlauskas, Alfonsas, B. E. Meland, and B. F. Meyer, to General Motors Corp. Vehicle body door latch and locking system. 3,359,767, 12–26–67, Cl. 70—264.
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Briggs, William H., Armstrong, and Walker. 3,359,943.
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Arndt Charles J., to Westinghouse Air Brake Co. Boring type mining machine having ripper cutter chains guided between boring heads. 3,360,299, 12–26–67, Cl. 299—57.
Arnold, Sieghard, G. Buhrmann, J. Haasis, M. Nitschke, G. Schacht, and E. Spieth, to International Business Machines Corp. Print hammer unit for high speed printers. 3,359,921, 12–26–67, Cl. 101—93.
Arnoldy, Hans., to North American Philips Co., Inc. Method of producing 2,2,6,6-tetrachlorocyclohexanone. 3,360,565, 12–26–67, Cl. 260—586.
Aronson, Theodore F. Apparatus for measuring and filling powders volumetrically into a plurality of containers simultaneously. 3,360,020, 12–26–67, Cl. 141—235.
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Wakasa, Kyoichi, Nakanishi, and Kominami. 3,360,553.
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Asari, Akira, to Kobe Steel Ltd. Method and apparatus for cutting extruded mterials on movable container type metal extruding press. 3,359,770, 12–26–67, Cl. 72—255.
Ashby, Bruce A., to General Electric Co. Fluoroorgano-substituted silanes. 3,360,538, 12–26–67, Cl. 260—448.2.
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Avant Inc.: *See*—
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Ayers, David T., Jr., to Kelsey-Hayes Co. Automatic brake adjuster. 3,360,084, 12–26–67, Cl. 188—79.5.
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Bohlman, Lothar E., to Plasticap Ltd. Closure containers. 3,360,156, 12–26–67, Cl. 220—60.
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Griffin, Thomas F., and Davis. 3,360,394.
Burmeister, Harland R., to United States of America, Agriculture. Microbiological screening process for aflatoxin. 3,360,441. 12–26–67, Cl. 195—103.5.
Burness, Donald M., and B. D. Wilson, to Eastman Kodak Co. Bis(beta-acyloxyethyl)ketones as gelatin hardeners. 3,360,372, 12–26–67, Cl. 96—111.
Burnett, Bob J. Well drilling device. 3,360,047, 12–26–67, Cl. 166—46.
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Burthe, Jack H., to The Perkin-Elmer Corp. High vacuum pump apparatus. 3,360,187, 12–26–67, Cl. 230—69.
Busch, Donald G., C. C. Covert, and C. M. Hawkins, to General Motors Corp. Propeller drive. 3,359,829, 12–26–67, Cl. 74—705.
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Butt, Alan G., to The Trane Co. Method of constructing a plate type heat exchanger. 3,359,616, 12–26–67, Cl. 29—157.3.
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Camossi, Carlo. Process for manufacturing isolators of shock absorbers based on the principle of damping vibrations and/or shocks by means of multistrand cables. 3,360,225, 12–26–67, Cl. 248—358.
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Widmer, Gustav, Batzer, and Nikles. 3,360 501.
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Collis, Ronald T. H., to Stanford Research Institute. Airborne detection and display system. 3,360,793, 12–26–67, Cl. 343—5.
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Cooper, James N., ½ to H. Hurvitz. Editing system utilizing recirculation means. 3,360,613, 12–26–67, Cl. 179—100.2.
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Cours, Donald V., J. K. McGee, and H. L. Lafferty, to Gray Tool Co. Pipe lining method. 3,359,624, 12–26–67, Cl. 29—421.

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Csomor, Istvan: *See*—
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Platus, David L., Marovich, and Cunningham. 3,360,081.

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De Paolo, John. Fume eliminator. 3,359,961, 12–26–67, Cl. 123—119.

Derc, Roman, to English Electric-Leo Computers Ltd. Sequence checking system. 3,360,782, 12–26–67, Cl. 340—172.5.

Derfer, Jon M., to The Glidden Co. Pretreating and isomerizing a-pinene. 3,360,581, 12–26–67, Cl. 260—675.5.

De Ridder, Willem. Apparatus for transferring a row of bakery pans. 3,360,101, 12–26–67, Cl. 198—25.

De Rochi, Carl, to Joh Kleinewefers Sohne. Withdrawing device for web material wound on rollers. 3,360,209, 12–26–67, Cl. 242—58.

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Desmond, Timothy J.: *See*—
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King, William M., and C. R. Cannon, to Aerojet-General Corp. Process for removing water from solutions, using osmotic membranes treated with stabilizing agents. 3,360,459, 12–26–67, Cl. 210—22.
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Bloom, Arnold L., and Mansir. 3,360,717.

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Platus, David L., Marovich, and Cunningham. 3,360,081.

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Martin, John J., to Pullman Inc. Container lifting means and method. 3,360,141, 12–26–67, Cl. 214—38.

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Nauchno-Issledovatelsky Institute Tekhnotogii artomobilnoi promyshlennosti: *See*—
Kotov, Vladimir A., Shlapin, and Kirichinsky. 3,359,769.

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Neely, Joseph E., to Kaiser Aluminum & Chemical Corp. Refractory. 3,360,388, 12–26–67, Cl. 106—60.

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Neilson, John M. S., T. J. Desmond, and H. Weisberg, to Radio Corp. of America. Five-layer symmetrical semiconductor switch. 3,360,696, 12–26–67, Cl. 317—235.

Nelson, Alden W., and F. B. Johnson, to Crompton & Knowles Corp. Stock catenary control in continuous vulcanizer. 3,359,596, 12–26–67, Cl. 18—6.

Nelson, Arthur J. Deep water support system. 3,359,741, 12–26–67, Cl. 61—46.

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Barber, Ronald B. 3,359,708.

Nerheim, Eldon, to Honeywell Inc. Piezoelectric projectile fuze. 3,359,904, 12–26–67, Cl. 102—70.2.

Nester, Stephen, to Dutone Co., Inc. Record spindle adaptor. 3,360,270, 12–26–67, Cl. 274—10.

Nevin, Joseph H.: *See*—
Liu, Chi-Sheng, and Nevin. 3,360,742.

New Britain Machine Co., The: *See*—
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New Zealand Ltd.: *See*—
Nottle, Rupert A., and Brown. 3,360,334.

Newallis, Peter E., and F. A. Spano, to Allied Chemical Corp. Chlorophenyicyclopropanecarboxamide mite ovicides. 3,360,432, 12–26–67, Cl. 167—30.

Newby, Leslie F., Jr.: *See*—
Leibelt, John C., and Newby. 3,359,643.

Newcomer, Jack S.: *See*—
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Newman, Douglas A., to Columbia Ribbon and Carbon Mfg. Co., Inc. Copying process. 3,359,900, 12–26–67, Cl. 101—468.

Newport News Shipbuilding and Dry Dock Co.: *See*—
Briggs, William H., Armstrong, and Walker. 3,359,943.

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Kendall, Eric R., and Newport. 3,359,793.

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Nickelson, Robert W., to Beltone Electronics Corp. Fluid switching device. 3,360,625, 12–26–67, Cl. 200—152.

Nielsen, Milton R., to American Hospital Supply Corp. Cuspidor assembly for dental console. 3,359,575, 12–26–67, Cl. 4—263.

Nier, Erich-Arthur and R. E., and H. E. Gubela. Signboard, more particularly traffic sign. 3,359,671, 12–26–67, Cl. 40—135.

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Nippon Carbide Kogyo Kabushiki Kaisha: *See*—
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Nishimi, John T.: *See*—
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Nitschke, Manfred: *See*—
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Nix, George F. Photocopy paper package. 3,360,258, 12–26–67, Cl. 271—18.

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Overton, Charles F., and Nook. 3,360,227.

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Noritake Iron Works Co., Ltd.: *See*—
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Norman, James M.: *See*—
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North American Aviation, Inc.: *See*—
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De Wit, Cornelis T., Van Hoesel, and Boon. 3,360,312.
Stocker, Brian J., and Weston. 3,360,677.

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Northey, Elmore H., to American Cyanamid Co. Synthetic surgical sutures. 3,359,983, 12–26–67, Cl. 128—335.5.

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Novales, William H. Adjustable storage rack. 3,360,137. 12–26–67, Cl. 211—175.

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Nyberg, David D., and J. T. Bailey, to Shell Oil Co. Preparation of coherent block copolymer films of high tensile strength and extensibility. 3,360,599, 12–26–67, Cl. 264—216.

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Skelskie, Stanley I. 3,360,385.

Odo, Keijiro, and E. Ichikawa, to Nippon Carbide Kogyo Kabushiki-Kaisha. Method of producing a guanyl-O-alkylisourea salt. 3,360,534, 12–26–67, Cl. 260—429.9.

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Oerlikon-Buhrl Holding A.G.: *See*—
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Oerlikon-Buhrle Holding Ltd.: *See*—
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Herlach, Heinrich, and Metzger. 3,359,859.

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Oja, Carl W., and R. L. Scheuerman; said Scheuerman assor., to said Oja. Collapsible chair. 3,360,297, 12–26–67. Cl. 207—36.

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Olson, David A., to Stackpole Carbon Co. Manually and electrically operated potentiometer. 3,360,755, 12–26–67, Cl. 338—116.

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Oppenheimer, Gene A., to Sensatronics, Inc. Telephone alarm device with selective automatic dialing of a plurality of stations. 3,360,607, 12–26–67, Cl. 179—5.

Ormond, Alfred N. Universal flexure unit. 3,360 255, 12–26–67, Cl. 267—1.

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Osipow, Lloyd I.: *See*—
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Osman, Miklos, A. Novak I. Csomor, L. Fernbach, and F. Mezei, to Csavararugyar. Method of producing shaped-head screws and tool for carrying out the method. 3,359,580, 12–26–67, Cl. 10—2.

Ostermann, Max, to W. & M. Ostermann. Carrier for braiding machines. 3,359,848. 12–26–67 Cl. 87—56.

Oswalt, J. B., Jr. Package and holder for light bulbs. 3,360,123. 12–26–67, Cl. 206—65.

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Ottestad, Jack B., and G. J. Farrell, to U.S. Industries, Inc. Valves for use in piston driven machines. 3,359,867. 12–26–67, Cl. 91—422.

Otto, Ferdinand P., Jr., to Mobil Oil Corp. Lubricating oils containing alkylated phenoxy acid derivatives. 3,360,464. 12–26–67. Cl. 252—51.5.

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Overly, William F., and Frost. 3,359,648.

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Overton, Charles F., and Nook. 3,360,227.

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Ainley, Brian. 3,360,700.

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Paganelli, Mario, to Bassani S.p.A. Electric power relay with high sensibility of control. 3,360,691, 12–26–67, Cl. 317—123.

Pailhiez, Andre: *See*—
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Palatinus, Anthony C. Intermodulation distortion test set for independent sideband transmitters. 3,360,729, 12–26–67, Cl. 325—133.

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Weaton, Edward C., and Palfrey. 3,360,000.

Palmer, John F.: *See*—
Barnwell, Stephen D., and Palmer. 3,359,724.

Palmer-Persen, David, to En-Power Co., Inc. Combination battery and recharger. 3,360,708, 12–26–67, Cl. 320—2.

Pals, Raimond, to FMC Corp. Sodium tripolyphosphate. 3,360,342, 12–26–67, Cl. 23—293.

Pan American Petroleum Corp.: *See*—
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Pantages, Rodney A., to Well Sentry, Inc. System responsive to well pumping loads. 3,359,791, 12–26–67, Cl. 73—151.

Papale, Frank A., and R. W. Childers, to Raymond International Inc. Molded manifold construction and method of forming. 3,360,008, 12–26–67, Cl. 137—594.

Parisi, Michael J., and T. Migliore, to Tap-Rite Products Corp. Automatic three-way valve. 3,359,995, 12–26–67, Cl. 137—102.

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Parker, Leland C., deceased (by L. H. Parker, Executrix), to General Motors Corp. Carburetor float valve. 3,360,003, 12–26–67, Cl. 137—448.

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Pastoor, Beno J. Folding closures. 3,359,594, 12–26–67, Cl. 16—178.

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Paul, James H., J. C. Dickinson, Jr., and R. L. Sorrell. Apparatus for forming shaped cushions. 3,360,420, 12–26–67, Cl. 156—492.

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Stevinson, Harry T., Baker, and Paynter. 3,360,728.

Peach, James P. Apparatus for treating seed grain in a seed drill. 3,360,245. 12–26–67, Cl. 259—25.

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Peck, Reese A., E. T. Child, and D. A. Messing, to Texaco, Inc. Hydrocracking process. 3,360,457, 12–26–67, Cl. 208—39.

Pedersen, Soren K., and J. P. K. Jorgensen. Apparatus for applying a layer of thermoplastic material. 3,359,970, 12–26–67, Cl. 126—343.5.

Peerless of America, Inc.: *See*—
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Peffer, John J. Automatic screw machine tube stock extension means. 3,360,276, 12–26–67, Cl. 279—2.

Pelzer, Hans, to Beteiligunga- und Patentverwaltungsgesellschaft mit beschrankter haftung. Conveyor belt installation. 3,360,105, 12–26–67, Cl. 198—129.

Pendleton Tool Industries, Inc.: *See*—
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Pennsalt Chemical Corp.: *See*—
Hauptschein, Murray, and Braid. 3,360,568.
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Perkin-Elmer Corp., The: *See*—
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Peters, Carl I., Jr. Radiation responsive device. 3,360,726, 12–26–67, Cl. 324—119.

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Petersen, Gerald A., ½ to A. E. Petersen. Resilient retainer for excavating teeth fused to tooth holder. 3,359,662, 12–26–67, Cl. 37—142.

Peterson Electronic Die Co., Inc.: *See*—
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Peterson, Everett A. and H. W., to Peterson Electronic Die Co., Inc. Heat sealing machine for bonding flexible strips to thermoplastic surfaces. 3,360,417, 12–26–67, Cl. 156—380.

Peterson, Harold W.: *See*—
Peterson, Everett A., and Peterson. 3,360,417.

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Phillips, Edwin R., to Sperry Rand Corp. Monostable flip-flop for controlling card punch or printer. 3,359,863, 12–26–67. Cl. 91—50.

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Carle, Robert A., and Bennett. 3,359,873.
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Santourian, Melcon. 3,360,041.
Santourian, Melcon. 3,360,045.
Schechter, Alfred. 3,360,150.
Voss, Raymond G. 3,360,108.

Phillipson, Alan, B. H. R. Spiller, R. Smith, and H. Cheesman, to Decca Ltd. Apparatus for packaging phonograph records. 3,359,704, 12-26-67, Cl. 53—59.

Pickles, Wilfred, to J. R. Geigy A.G. Selective hydrogenation. 3,360,577, 12-26-67, Cl. 260—666.

Picou, Claude, to Societe d'Etudes, recherches & Construction Electroniques (sercel) Seine. Electromagnetic telemetric station. 3,360,797, 12-26-67, Cl. 343—14.

Pike, Charles T., to Isomet Corp. Exploding wire high-speed shutter for protecting a human viewer. 3,360,328, 12-26-67, Cl. 350—269.

Pile, Benjamin D. Field hospital bed. 3,359,576, 12-26-67, Cl. 5—111.

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Murray, Donald W., and King. 3,360,351.

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Platus, David L., F. A. Marovich, and P. J. Cunningham; said Marovich assor. to Ara, Inc. Energy absorbing device. 3,360,080, 12-26-67, Cl. 188—1.

Platus, David L., F. A. Marovich, and P. J. Cunningham; said Marovich assor. to Ara, Inc. Energy absorbing device. 3,360,081, 12-26-67, Cl. 188—1.

Pleasants, William W. Suspended overpass. 3,359,587, 12-26-67, Cl. 14—1.

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Porada, Joseph J., to National Dairy Products Corp. Method and apparatus for forming an edible product. 3,359,925, 12-26-67, Cl. 107—1.

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Potter, James A. Scale for measuring change of weight of clinical patient. 3,360,062, 12-26-67, Cl. 177—144.

Powers, Charles W., to Bethlehem Steel Corp. Die assembly for making chamfer headed nails. 3,359,582, 12-26-67, Cl. 10—33.

Powers, Edgar A. Gravel cleaner for aquariums. 3,360,129, 12-26-67, Cl. 210—169.

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Prache, Gerard, to Peckiney-Compagnie de Produits Chimiques et Electrometallurgiques. Revolving flame roasting furnace. 3,360,251, 12-26-67, Cl. 263—36.

Pratt, Leslie J., and A. G. Goss, to Rolls-Royce Ltd. Lubricating system for a bearing of a vertical lift gas turbine engine. 3,360,313, 12-26-67, Cl. 308—187.

Pratt Mfg. Corp.: *See*—
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Preller, Hugh A. Apparatus for recording an integrated record of gas flow. 3,359,797, 12-26-67, Cl. 73—204.

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Price, James W. Ticket and money holder. 3,360,027, 12-26-67, Cl. 150—39.

Price, Lewis C., Jr., to Control Print Corp. Side line bottom coder. 3,359,891, 12-26-67, Cl. 101—35.

Price, Russell W., to H. Zimmon. Conductive covering for shoes. 3,359,658, 12-26-67, Cl. 36—7.1.

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Wygant, James C., Prill, Carter, and Kucia. 3,360,546.

Prince, Richard. Fluid applicator for feed products. 3,359,942, 12-26-67, Cl. 118—303.

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Properzi, Ilario. Machine for coiling continuously supplied tape. 3,360,211, 12-26-67, Cl. 242—80.

Prosser, Lionel E., and C. J. Saunders, to The British Hydromechanics Research Association. Pipeline network simulator. 3,359,652, 12-26-67, Cl. 35—10.

Proulx, Eugene H., to The Hilliard Corp. Filter cartridge. 3,360,133, 12-26-67, Cl. 210—492.

Proulx, Jean. Suction box cover. 3,360,429, 12-26-67, Cl. 162—363.

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Kelley, Lawrence W., Lewis, and Provance. 3,360,386.

Pryor, John A.: *See*—
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Pullman, James O., to Liggett & Myers Tobacco Co. Determination of moisture in tobacco. 3,360,721, 12-26-67, Cl. 324—58.5.

Purcell, Howard M., to Ashtabula Bow Socket Co. Oscillating hydraulic actuator and circuit therefor. 3,359,870, 12-26-67, Cl. 92—121.

Purdy, Roger C.: *See*—
Larsen, Walter N., Purdy, and Schwenker. 3,359,631.

Purtell, Rufus J., to The J. B. Knight Co., Inc. Irrigation apparatus having dirigible wheels. 3,360,200, 12-26-67, Cl. 239—213.

Pyc, Chester F., and E. H. Davis. Advertising device. 3,359,670, 12-26-67, Cl. 40—129.

Quaadgras, Dirk, to Stamicarbon N.V. Apparatus for making and fulling a series of bags. 3,359,703, 12-26-67, Cl. 53—59.

Quackenbush, John J., and H. O. Corbett, to National Distillers and Chemical Corp. Cloud dispersion of pine plastic powder. 3,359,944, 12-26-67, Cl. 118—309.

Quakenbush, James G.: *See*—
Stegenga, Jerry A., Tesch, Bleckner, and Quakenbush. 3,359,874.

Quarzlampen Gesellschaft m.b.H.: *See*—
Seitz, Ernst-Otto, V. and J. Schaefer. 3,360,640.

Quinlan, Frank B., to United States of America, Atomic Energy Commission. Method of making a device for monitoring shut-down nuclear reactors. 3,359,621, 12-26-67, Cl. 29—419.

Radio Corp. of America: *See*—
Liu, Chi-Sheng, and Nevin. 3,360,742.
Martin, Joseph S., Jr., and Trond. 3,360,480.
Neilson, John M. S., Desmond, and Weisberg. 3,360,696.
Triggs, William M. 3,360,688.
Ulary, Russell R. 3,360,111.

Raichle, Karl, and H. Rudolph, to Farbenfabriken Bayer Aktiengesellschaft. Copper-phosphorous complexes colorless stabilizers for unsaturated polyester resins. 3,360,589, 12-26-67, Cl. 260—863.

Ramsay, Alan J., and W. K. Bottomley, to Minneapolis-Honeywell Regulator Co. Apparatus for providing a visual record of the integral of an electrical signal. 3,360,636, 12-26-67, Cl. 235—92.

Ranvier, Gaston J.-L., and G. Richter, to Societe Nationale d'Etude et de Construction de Moteurs d'Aviation. Jet engine silencers with pivotal air induction tubes. 3,360,074, 12-26-67, Cl. 181—51

Rapparlie, Hans, R. Mielert, and E. Ernst, to Telefunken Patentverwertungsgesellschaft G.m.b.H. Conveyor device. 3,360,260, 12-26-67, Cl. 271—45.

Rasmussen, Ray R.: *See*—
Leibson, Irving, and Rasmussen. 3,360,444.

Rasmussen, Robert A., to United States of America, Navy. Bathythermograph system. 3,359,801, 12-26-67, Cl. 73—344.

Ratliff, Harvey L., Jr., 100% to Jetru Inc. Stereophonic systems. 3,360,606, 12-26-67, Cl. 179—1.

Rau, Eric, and W. H. Kibbel, Jr., to FMC Corp. Method of preparing fibers from by-product slag of a phosphorous furnace. 3,360,592, 12-26-67, Cl. 264—8.

Rau, Eric, and W. H. Kibbel, Jr., to FMC Corp. Method of preparing fibers from solidified phosphorous-furnace slag. 3,360 593, 12-26-67, Cl. 264—8.

Rawlings, Herbert L., to Mobay Chemical Co. Stabilized polycarbonates. 3,360,498, 12-26-67, Cl. 260—45.7.

Raychem Corp.: *See*—
Hess, Robert L. 3,360,631.

Raymond International Inc.: *See*—
Papale, Frank A., and Childers. 3,360,008.

Razum, Ernest D., and G. M. Mihalich. Method of preserving frozen material. 3,359,746, 12-26-67, Cl. 62—100.

Ream, Michael D.: *See*—
Borer, Herbert W., and Ream. 3,360,146.

Redfern, Louis R., to Tecnifax Corp. Trigonometric teaching device. 3,359,653, 12-26-67, Cl. 35—34.

Redstreake, Edward M., Jr.: *See*—
Saponara, Domenick, and Redstreake. 3,360,028.

Reffell, Brian R. A., and S. Mitchell, to The Walter Kidde Co. Ltd. Automatic inflatable dinghies. 3,359,579, 12-26-67, Cl. 9—11.

Regan Forge & Engineering Co.: *See*—
Watkins, Bruce J. 3,360,048.

Regenbogen, David, to M & T Chemicals Inc. Carboxylation of grignard reagents in the presence of liquid CO_2. 3,360,551, 12-26-67, Cl. 260—515.

Regie Nationale des Usines Renault: *See*—
De Coye De Castelet, Gaetan. 3,359,950.
De Coye De Castelet, Gaetan. 3,360,303.
Guettler, Michel. 3,359,729.

Reiback, Earl M., and O. A. Kuhl, to United States of America, Atomic Energy Commission. Uniform gamma irradiation of bulk grain material. 3,360,646, 12-26-67, Cl. 250—44.

Reich, Robert W. Oscillating electric motor. 3,360,703, 12-26-67, Cl. 318—128.

Reicheneder, Franz, F. Winter, A. Fischer, and K. Dury, deceased (by F. Winter, representative of the heirs), to Badische Anilin- & Soda-Fabrik AG. Derivatives of pyridazone and a method for their use as herbicides. 3,360,357, 12-26-67, Cl. 71—92.

Reichle, Alfred D.: *See*—
MacLaren, Donald D., and Reichle. 3,360,481.

Reider, John H. Methods for laying soil cement. 3,359,875, 12-26-67, Cl. 94—24.

Rempel, Cornelius, and A. J. Schmitt, to Beloit Corp. Blade holding mechanism for coaters. 3,359,940, 12-26-67, Cl. 118—126.

Renold, Adolph, to Colgate-Palmolive Co. Paint remover composition. 3 360,472, 12-26-67, Cl. 252—170.

Rest, Frederick G.: *See*—
Lamkin, E. B. and R. E., and Rest. 3,360,264.

Revell, Alan E., to American Air Filter Co., Inc. Run-out switch arrangement for side-by-side roll-type filter. 3,359,709, 12-26-67, Cl. 55—354.

Revere Copper and Brass Inc.: *See*—
Dzwonkas, Anthony F. 3,359,692.

Revere Corp. of America: *See*—
Liddell, John A. 3,360,621.

Revolinsky, Eugene: *See*—
Spiering, Glen A., Revolinsky, and Beernsten. 3,360,485.

Rex Chainbelt Inc.: *See*—
Winfield, Herbert S. 3,360,104.

Rexall Drug and Chemical Co.: *See*—
Leibson, Irving, and Rasmussen. 3,360,444.

Reynolds, Donald F. Tractor cab assembly. 3,360,295, 12-26-67, Cl. 296—28.

Reynolds Metals Co.: *See*—
Cvacho, Daniel S., and Hussey. 3,359,841.

Rheinstahl Henschel A.G.: *See*—
Hausenblas, Helmut, Poppe, and Massholder. 3,360,063.

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Murdoch, Colin D. 3,360,228.

Rhodes, Mary L.: *See*—
Murdoch, Colin D. 3,360,228.

Rhorer, Cecil R., to Kimberly-Clark Corp. Method of making cockled paper. 3,360,393, 12-26-67, Cl. 117—38.

Ribka, Joachim, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. 2-chloro-4H-1,3,2-dioxaphosphorin-4-ones and process for preparing them. 3,360,528, 12-26-67, Cl. 260—315.

Rice, Theodore: *See*—
Kosiba, Joseph K., and Rice. 3,360,456.

Richardson, James L. Chain breaker. 3,360,171, 12-26-67, Cl. 225—103.

Richmond, Gus. Tapered rivet. 3,359,847, 12-26-67, Cl. 85—37.

Richter, Gerhard: *See*—
Ranvier, Gaston J.-L., and Richter. 3,360,074.

Richtzenhain, Hermann, and M. Simon, to Dynamit Nobel Aktiengesellschaft. Process for the production of corrosion-resistant and highly wear-resistant coated surface and the coated surface. 3,360,391, 12-26-67, Cl. 117—26.

Rickaby, Albert: *See*—
Benson, Harold, Rickaby, and Beattie. 3,359,853.

Riedl, Frederick J.: *See*—
Bloch, Herman S., and Riedl. 3,360,586.

Riegel Textile Corp.: *See*—
Coleman, Thomas J. 3,360,013.

Riera, Juan: *See*—
Ballester, Manuel, Castaner, and Riera. 3,360,574.

Riesland, David H., to General Electric Co. Lamp ballast. 3,360,687, 12-26-67, Cl. 317—99.

Rightmire, Robert A.: *See*—
Grasselli, Robert, and Rightmire. 3,360,401.

Robertshaw Controls Co.: *See*—
Katchka, Jay R. 3,360,198.
Mueller, Klaus P. 3,360,715.

Robinson, Elmer D.: *See*—
Jeffrey, Joseph O., Robinson, Mueller, and Hawley. 3,359,815.

Robinson, John J.: *See*—
Judge, Robert L., and Robinson. 3,360,596.

Robinson, Robert E.: *See*—
Szymanski, Walter A., Robinson, and Talbot. 3,360,490.

Robinson, William A. Firearm having a collar for cleaning the seat of an internally sealed breech block. 3,359,857, 12-26-67, Cl. 89—25.

Rockford Machine Tool Co.: *See*—
Olson, Bernard E. 3,359,817.

Rodgers, June M. Reversible costume armature. 3,359,570, 12-26-67, Cl. 2—206.

Rodgers, Thomas A., to Shell Oil Co. Iodinative dehydrogenation process. 3,360,576, 12-26-67, Cl. 260—656.

Roemer, Benjamin C. Ice fishing tip-up with light and buzzer. 3,359,673, 12-26-67, Cl. 43—17.

Rogers, Henry C.: *See*—
Klumb, Henry H., and Rogers. 3,360,612.

Rogers, Lee C. Back support. 3,359,577, 12-26-67, Cl. 5—327.

Roggenstein, Edwin O., to Burroughs Corp. Hammer mechanism. 3,359,892, 12-26-67, Cl. 101—93.

Rohm & Haas Co.: *See*—
De Benneville, Peter L., and Exner. 3,360,506.
Kelley, Everett J. 3,360,504.

Rolls-Royce Ltd.: *See*—
Maguire, Addison C. 3,359,736.
Pratt, Leslie J., and Goss. 3,360,313.
Williamson, Douglas H., and Petrie. 3,360,240.

Romanin, Bruno. Method and apparatus for making non-woven twill webs. 3,360,410, 12-26-67, Cl. 156—172.

Romanowski, Albert F., to Bowser Inc. Currency operated fuel dispensing pump. 3,360,094, 12-26-67, Cl. 194—13.

Rongey, Clarence H., and M. G. Zavertnik, to Killark Electric Mfg. Co. Plug and receptacle for use in hazardous locations. 3,360,763, 12-26-67, Cl. 339—14.

Rosbottom, Thomas A., to The Metal Box Co. Ltd. Apparatus for securing deformable sheet metal elements. 3,359,935, 12-26-67, Cl. 113—1.

Rose, Frederick M., to Chrysler Corp. Walking beam rocker arm. 3,359,959, 12-26-67, Cl. 123—90.

Rose, Henry J., and A. F. Turbak, to Tee-Pak, Inc. Gasing for preparation of dry sausages. 3,360,383, 12-26-67, Cl. 99—176.

Rosenberg, Edgar N. Omni-directional current meter. 3,359,794. 12-26-67, Cl. 73—189.

Rosenberg, Richard L., to Associated Chemists, Inc. Wooden pole with electrically isolated sections and a central opening for the introduction of a preservative. 3,360,601, 12-26-67, Cl. 174—45.

Rosenberger, Harold E., R. L. Seidenberg, and J. H. Small, to Bausch & Lomb Inc. Zoom optical system for microscope. 3,360 327, 12-26-67, Cl. 350—184.

Rosenblatt, Carole L., ½ to H. Rosenblatt. Diapers having integral fasteners. 3,359,980, 12-26-67, Cl. 128—284.

Rosenblatt, Henry: *See*—
Rosenblatt, Carole L. 3,359,980.

Rossez, Jean, to Compagnie des Machines Bull (Societe Anonyme). Magnetic friction packings. 3,360,475, 12-26-67, Cl. 252—62.52.

Rossitto, Samuel A. Timer controlled alarm for ash tray. 3,360,790, 12-26-67, Cl. 340—309.1.

Rossnan, Michael. Method of making a fishing device. 3,359,625, 12-26-67, Cl. 29—436.

Roszyk, Leon M.: *See*—
Jepson, Ivar, Roszyk, and Stahly. 3,359,635.

Rota Forg Corp.: *See*—
Bouchard, Arthur J., Hawkinson, Carlson, and Jannenga. 3,359,774.

Rotanz, Robert J., G. W. Scrivens, and J. F. Hanlon, to Johnson & Johnson. Surgical gown. 3,359,569, 12-26-67, Cl. 2—114.

Roth, Robert A. Cap construction. 3,360,149, 12-26-67, Cl. 215—40.

Rotron Mfg. Co., Inc.: *See*—
Harris, Dwight E., and Zoehfeld. 3,360,193.

Rowland, Dan R.: *See*—
Grabowski, Leonard R., and Rowland. 3,360,308.

Rowland, Stanley P., and E. G. Pritchett, to National Distillers and Chemical Corp. Hydroxylated difunctional polymers. 3,360,571, 12-26-67, Cl. 260—618.

Royal Industries, Inc.: *See*—
Avrea, Walter C. 3,359,869.

Royce, Richard K., to United States of America, Navy. Digital voltage integrator system. 3,360,723, 12-26-67, Cl. 324—77.

Rubert, Rodney R., to Varian Associates. Electron discharge device having lossy resonant elements disposed within the electromagnetic field pattern of the slow-wave circuit. 3,360,679, 12-26-67, Cl. 315—3.5.

Ruckert, Karl-Heinz, to Pharmaton S.A. Dual-purpose container. 3,360,122, 12-26-67, Cl. 206—63.5.

Rudolph, Hans: *See*—
Raichle, Karl, and Rudolph. 3,360,589.

Rush, Joseph A., to Keltic Industries, Inc. Radar system for the detection of moving objects. 3,360,796, 12-26-67, Cl. 343—7.7.

Rutledge, William A., and E. E. Kiningham, to General Electric Co. Method of producing machines having proper freedom of revolution for rotatable assemblies therein. 3,359,628, 12-26-67, Cl. 29—596.

Rutzebeck, John D. Woodworking tool. 3,360,023, 12-26-67, Cl. 144—134.

Rydman, Carl E., to Dennison Mfg. Co. Ink roller means in drum series printing apparatus. 3,359,894, 12-26-67, Cl. 101—97.

Rye, John K., to F. Jas. Lamb Co., Inc. Hydrostatic bearing and method of making same. 3,359,613, 12-26-67, Cl. 29—149.5.

Rypkema, Jouke N., to Zenith Radio Corp. Single diode FM stereo multiplex detector. 3,360,608, 12–26–67, Cl. 179—15.

Ryskamp, Neil J., to Allis-Chalmers Mfg. Co. Dead man seat brake using separate hydraulic actuator. 3,360,305, 12–26–67, Cl. 308—19.

Sabet, Huschang. Sealing device. 3,359,951, 12–26–67, Cl. 123—8.

Sabin, Alfred B.: *See*—
Westling, Lester L., and Sabin. 3,359,752.

Sackler, Mortimer D.: *See*—
Halpern, Alfred, M. D. and R. R. Sackler. 3,360,535.

Sackler, Raymond R.: *See*—
Halpern, Alfred, M. D. and R. R. Sackler. 3,360,535.

Sagalow, Morton, to General Precision Inc. Squirrel-cage rotor. 3,360,669, 12–26–67, Cl. 310—211.

Sahmel, Otto H., to Bausch & Lomb Inc. Sample applicator used in electrophoresis. 3,360,454, 12–26–67, Cl. 204—299.

Saito, Kunio: *See*—
Marumo, Hirofuto, and Saito. 3,360,549.

Saito, Yukio, and K. Okamoto, to Sankyo Co., Ltd. Polarographic apparatus. 3,360,719, 12–26–67, Cl. 324—31.

Salgo, Francis J., and G. S. P. Freeman, to General Electrodynamics Corp. Vidicon with connected conductive coatings on both sides of faceplate. 3,360,671, 12–26–67, Cl. 313—65.

Saltz, Morris A. Drapery carriers. 3,359,592, 12–26–67, Cl. 16—93.

Salvo, Mario. Structure for snow skis and the like, of pressed metal plate, preferably of steel. 3,360,277, 12–26–67, Cl. 280—11.13.

Sama, Lawrence, to General Telephone and Electronics Laboratories, Inc. Refractory metal composite and coating composition. 3,360,350, 12–26–67, Cl. 29—197.

Samo, Harvey W., to Margon Corp. Unitary reflection doll eye with integral dark background. 3,359,679, 12–26–67, Cl. 46—165.

Sample-Durick Inc.: *See*—
Hanson, Wallace E., and Pittard. 3,360,118.
Powers, Robert J., Transport, Hanson, and Trauschke. 3,360,117.

Sanders Associates, Inc.: *See*—
Blitz, Daniel, and Kincaid. 3,360,744.

Sanders, Grady H., to Deering Milliken Research Corp. Yarn waste cleaner. 3,359,714, 12–26–67, Cl. 57—56.

Sands, Seymour, to E. I. du Pont de Nemours and Co. Bonded nonwoven backing material having perforate selvage and carpet made therefrom. 3,360,421, 12–26–67, Cl. 161—63.

Sandvikens Jernverks Aktiebolag: *See*—
Enkvist, Sven H. G. 3,360,177.

Sankyo Co., Ltd.: *See*—
Saito, Yukio, and Okamoto. 3,360,719.

Santourian, Melcon, to Phillips Petroleum Co. Igniting an oil stratum for in situ combustion. 3,360,041, 12–26–67, Cl. 166—2.

Santourian, Melcon, to Phillips Petroleum Co. Recovery of heavy crude oil by steam drive. 3,360,045, 12–26–67. Cl. 166—11.

Sapoff, Meyer: *See*—
Froemel, John G., and Sapoff. 3,359,632.

Saponara, Domenick, and E. M. Redstreake, Jr., to Caloric Corp. Gas burning infrared red ray generator. 3,360,028, 12–26–67, Cl. 158—99.

Sargent & Co.: *See*—
Filia, George J. 3,359,779.

Sarson, Roy D.: *See*—
Minnick, Joseph J., and Sarson. 3,359,902.

Sataev, Leonid S.: *See*—
Novikov, Grigory V., Tikhomirov, Baranov, and Sataev. 3,360,418.

Saunders, Carey J.: *See*—
Prosser, Lionel E., and Saunders. 3,359,652.

Saxon, Arthur F., to Blaw-Knox Co. Apparatus for the heating of bulk material and recovery of vaporizable product therefrom. 3,359,649, 12–26–67, Cl. 34—173.

Scalliet, Robert: *See*—
Givry, Jean P., Clair, Pallheiz, and Scalliet. 3,359,882.

Scannell, William R., and H. A. Gardner. Golf tee holder. 3,360,170, 12–26–67, Cl. 224—5.

Schacher, Ralf: *See*—
Kohler, Werner, and Schacher. 3,360,681.

Schacht, Gunter: *See*—
Arnold, Sieghard, Buhrmann, Haasis, Nitschke, Schacht, and Speeth. 3,359,921.

Schaefer, Juergen: *See*—
Seitz, Ernst-Otto, V. and J. Schaefer. 3,360,640.

Schaefer, Paul: *See*—
Schaller, Heinrich, and Schaefer. 3,360,373.

Schaefer, Volker: *See*—
Seitz, Ernst-Otto, V. and J. Schaefer. 3,360,640.

Schaeffer, Robert B., to Pennsalt Chemicals Corp. Safety closure for flexible container. 3,360,147, 12–26–67, Cl. 215—9.

Schaller, Heinrich, and P. Schaefer, to Ciba Ltd. Process for the manufacture of silver halide emulsions by the flocculation method. 3,360,373, 12–26–67, Cl. 96—114.

Schanz, Hans, to Alfred-Teves, Maschinen- und Armaturenfabrik K.G. Fluid-reservoir assembly. 3,359,730, 12–26–67, Cl. 60—54.6.

Schechter, Alfred, to Phillips Petroleum Co. Packing or supporting tray. 3,360,150, 12–26–67, Cl. 217—26.5.

Scheerer, Arthur M.: *See*—
Jones, Charles, Hadaway, Hermes, and Scheerer. 3,359,952.

Scheid, Theodore G., III: *See*—
Erwin, Carl L., and Scheid. 3,360,624.

Scheiman, Jack, and Schwartz, to United States of America, Navy. Magnetic tape wear simulator. 3,359,783, 12–26–67, Cl. 73—7.

Schelter, Milton H., to General Motors Corp. Multiple speed fan drive. 3,359,831, 12–26–67. Cl. 74—761.

Schenck, Leslie M.: *See*—
Walts, John M., and Schenck. 3,360,573.

Scherer, Otto, and K. Uhl, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Water-soluble, metal-containing azo-dyestuffs containing halogenated cyclobutanoic acid amide or cyclobutane acrylic acid amide groups. 3,360,505, 12–26–67, Cl. 260—147.

Scherer, Otto, and K. Uhl, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Water-soluble azo dyestuffs containing halogenated cyclobutyl- and cyclobutenyl-carbonylamino groups. 3,360,509, 12–26–67, Cl. 260—163.

Scherer, Otto, and K. Uhl, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Water-soluble dyestuffs containing halogenated cyclobutene or cyclobutane carboxamide groups. 3,360,524, 12–26–67, Cl. 260—279.

Scheuerman, Richard L.: *See*—
Oja, Carl W., and Scheuerman. 3,360,297.

Schiff & Stein Gesellschaft m.b.H.: *See*—
Stocklocker, Heinrich. 3,359,989.

Schill, Hermann, to MAJA Maschinenfabrik Herman Schill K.G. Machine for removing the rind from bacon or like machine having an adjustable blade holder and a feed roll. 3,360,026, 12–26–67, Cl. 146—130.

Schimitschek, Erhard J., R. B. Nehrich, Jr., and J. A. Trias, to United States of America, Navy. Laser action fluorinated europium chelate dissolved in acetonitrile. 3,360,478, 12–26–67, Cl. 252—301.2.

Schjoln, Hans O., and L. N. Kern, to General Motors Corp. Transmission. 3,359,832, 12–26–67, Cl. 74—781.

Schlegel Mfg. Co., The: *See*—
Kondolf, Karl Q. 3,359,686.
Kondolf, Karl Q. 3,359,688.

Schlitt, Helmut W. E., to Bell Aerospace Corp. Inertial navigation systems. 3,359,805, 12–26–67, Cl. 74—5.6.

Schlumberger Technology Corp.: *See*—
Kisling, James W., III. 3,360,049.
Smith, John S., Viguerie-Noel, and Cavelos. 3,360,774.

Schluttig, Pearl L. Pet carrier for small animals. 3,359,946, 12–26–67, Cl. 119—1.

Schmermund, Alfred. Sensing devices for cigarette packing machines. 3,360,658. 12–26–67, Cl. 250—231.

Schmitt, Arnold J.: *See*—
Rempel, Cornelius, and Schmitt. 3,359,040.

Schneider, Rudolf, and K. H. Haenisch, to E. I. du Pont de Nemours and Co. Process for modifying polyester film bases using irradiation. 3,360,448, 12–26–67, Cl. 204—159.19.

Schneller, Joseph W., to National Gypsum Co. Roof-forming plank clip. 3,359,701, 12–26–67, Cl. 52—712.

Scholfield, Ian M.: *See*—
Cockerill, Bryan J., and Scholfield. 3,360,089.

Schreiner, Horst, to Siemens-Schuckertwerke Aktiengesellschaft. Composite structure of inter-bonded metals for heavy-duty electrical switch contacts. 3,360,348, 12–26–67, Cl. 29—182.1.

Schreyer, Kenneth D., to Lyon Metal Products, Inc. Desk construction. 3,359,930, 12–26–67, Cl. 108—92.

Schroeder, Edward W., to Marriot-Hot Shoppes, Inc. Anti-collision device and method. 3,360,775, 12–26–67, Cl. 340—32.

Schuetzenduebel, Wolfram G., and W. J. Deane, to Combustion Engineering Inc. Method and apparatus for starting a steam generating power plant. 3,359,732, 12–26–67, Cl. 60—105.

Schumacher, Walter C., to General Electric Co. Strain relief cable clamp. 3,360,766, 12–26–67, Cl. 339—103.

Schunda, Anton, to Maschinenfabrik Reinhausen Gebruder Scheubeck K.G. Transfer switch for tap-changing transformers convertible for adaptation to a wide range of currents. 3,360,618, 12–26–67. Cl. 200—11.

Schwartz, Charles E., and J. V. Hawn. Fishing rod holder and bite signal. 3,359,672, 12–26–67, Cl. 43—17.

Schwartz, Harold A., and M. I. Port, to Patchogue-Plymouth Co. Tufted carpet having splittable filling yarns in the primary backing. 3,359,934, 12–26–67, Cl. 112—410.

Schwartz, Robert: *See*—
Scheiman, Jack, and Schwartz. 3,359,783.

Schwarz, J. S. Paul: *See*—
Weisenborn, Frank L., and Schwarz. 3,360,560.

Schwenker, David G.: *See*—
Larsen, Walter N., Purdy, and Schwenker. 3,359,631.

Schwesig, Reinhold, to Dynamit Nobel Aktiengesellschaft. Flexible rocket tail assembly. 3,360,216, 12–26–67, Cl. 244—3.29.

Scientific-Atlanta, Inc.: *See*—
Miller, Harmon B. 3,360,382.

Scientific Chemicals, Inc.: *See*—
Yeager, Charles C. 3,360,431.

Scott, Floyd C., to Hustler Corp. Four wheel drive articulated vehicle. 3,360,067, 12–26–67, Cl. 180—51.

Scovill Mfg. Co.: *See*—
Hansen, John M. 3,359,637.
Hansen, John M. 3,359,810.
Spender, Donald L. 3,359,809.

Scrivens, George W.: *See*—
Rotanz, Robert J., Scrivens, and Hanlon. 3,359,569.

Scully, Patrick T.: *See*—
Webb, James E. 3,360,798.

Sears, Roebuck and Co.: *See*—
Brazier, Jack H. 3,359,823.
Burke, James F. 3,359,571.

Sebestyen, Thomas M., to Ford Motor Co. Pump means in an internal combustion engine. 3,359,722, 12–26–67, Cl. 60—30.

Seekins, John W., to Courier-Citizen Co. Answer sheet indicating correctness and recording errors. 3,359,656, 12–26–67, Cl. 35—48.

Seeloff, Melvin M., to The Taylor-Winfield Corp. Apparatus for making metal rings. 3,360,178, 12–26–67, Cl. 228—15.

Seiden, Hugo, to JFD Electronics Corp. Trimmer capacitor with direct travel mechanism. 3,360,697, 12–26–67, Cl. 317—249.

Seidenberg, Richard L.: *See*—
Rosenberger, Harold E., Seidenberg, and Small. 3,360,327.

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Surber, Albert, and H. Pirchl, to Wacher Wyss Aktiengesellschaft. Water turbine cover. 3,360,237, 12-26-67, Cl. 253—26.
Sureau, Robert F. M., G. V. H. Kremer, and V. M. Dupre, to Etablissements Kuhlmann. Monoazo dyestuffs of the indazole series. 3,360,508, 12-26-67, Cl. 260—163.
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Mikus, Felix F., Mathers, and Pallila. 3,360,675.
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(U.S. States, Territories and Armed Forces, the Commonwealth of Puerto Rico, and the Canal Zone)

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(First number in listing denotes location according to above key. Refer to patent number in body of the Official Gazette to obtain details as to inventor name, location, etc.)

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3,360,126
3,360,176
3,360,316

55 : 3,360,329 3,360,393	55 : 3,360,403 3,360,416	55 : 3,360,428 3,360,485	55 : 3,360,656 3,360,660	55 : 3,360,701	56 : 3,360,047

Design Patents

4 : 209,710	13 : 209,675	20 : 209,724	26 : 209,729	36 : 209,674	42 : 209,680
6 : 209,667	209,695	21 : 209,662	27 : 209,660	209,686	209,685
209,668	209,719	24 : 209,661	209,698	209,694	209,712
209,673	17 : 209,657	209,676	29 : 209,655	209,702	209,715
209,693	209,665	25 : 209,681	209,691	209,711	209,722
209,697	209,690	209,716	34 : 209,669	209,713	209,726
209,700	209,692	209,717	209,670	209,730	47 : 209,682
209,701	209,706	209,723	36 : 209,654	39 : 209,666	48 : 209,677
209,705	209,709	26 : 209,683	209,658	209,728	209,678
8 : 209,731	209,725	209,687	209,659	41 : 209,707	209,679
9 : 209,689	19 : 209,688	209,721	209,663	42 : 209,671	55 : 209,727
12 : 209,656	20 : 209,703				

U.S. DEPARTMENT OF COMMERCE

OFFICIAL GAZETTE of the UNITED STATES PATENT OFFICE

December 26, 1967 Volume 845 Number 4

TRADEMARKS

NOTICES

Search Room Hours

The move of the Public Search Room to Crystal Plaza is now underway and should be completed sometime in January.

Effective Jan. 2, 1968, the Public Search Room at Crystal Plaza will be open from 8 a.m. to 8 p.m. on workdays; it will not be open on Saturdays.

RICHARD A. WAHL,
Assistant Commissioner.

Nov. 30, 1967.

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 22,406 (COCA-COLA), The Coca-Cola Company, Nutrient or tonic beverages; **Reg. No. 47,189**, same, Non-alcoholic maltless beverages and the syrups for making such beverages; **Reg. No. 238,145**, same, Beverages and syrups for the manufacture of such beverages; **Reg. No. 238,146**, same; **Reg. No. 415,755** (COKE), same, Non-alcoholic maltless beverages and the syrups for making such beverages, **filed** Sept. 25, 1967, D.C., E.D. Ark. (Little Rock), Doc. PB67–C–62, *The Coca-Cola Company* v. *Nannie L. Clark and Stanley Clark, doing business as Burger Barn.* **Same, filed** Oct. 16, 1967, D.C., N.D. Calif. (San Francisco), Doc. 48040, *The Coca-Cola Co.* v. *Polco, Inc.* **Same, filed** Oct. 16, 1967, D.C., N.D. Calif. (San Francisco), Doc. 48041, *The Coca-Cola Co.* v. *Red Chimney, Inc.*

Reg. No. 47,179. (See Reg. No. 22,406.)

Reg. No. 201,694 (CADILLAC), General Motors Corporation, Automobiles; **Reg. No. 201,708** (CROWN AND SHIELD DESIGN), same; **Reg. No. 647,241** (CADILLAC), same, Maintenance and repair service for automotive vehicles, parts, and accessories; **Reg. No. 658,918** (DESIGN OF EMBLEM), same, **filed** Dec. 9, 1966, D.C., W.D. Wash. (Seattle), Doc. 6986, *General Motors Corp.* v. *Henry L. Freymueller and Day's Auto Brokers, Inc., doing business as Aurora Cadillac.* Final judgment permanently enjoining defendants, Oct. 5, 1967.

Reg. No. 201,708. (See Reg. No. 201,694.)

Reg. No. 238,145. (See Reg. No. 22,406.)

Reg. No. 238,146. (See Reg. No. 22,406.)

Reg. No. 378,328 (DU PONT IN AN OVAL), E. I. du Pont de Nemours and Company, Cellulose acetate film, cellulose sponges, ceramic clays, and chalk, **filed** Jan. 11, 1966, D.C., E.D.N.Y. (Brooklyn), Doc. 66C–20, *E. I. du Pont de Nemours & Co.* v. *U.S. Precision Die & Tool Co.* Order of dismissal filed June 16, 1967.

Reg. No. 415,755. (See Reg. No. 22,406.)

Reg. No. 548,246 (KING QUALITY AND DESIGN), Quality Dairy Company, Packaged ice cream; **Reg. No. 674,682**, same, Packaged ice cream, butter, fresh cream, fresh milk, etc.; **Reg. No. 802,799**, same, **filed** Sept. 29, 1967, D.C., E.D. Mo. (St. Louis), Doc. 67C333(3), *Quality Dairy Company* v.

CONDITION OF TRADEMARK APPLICATIONS AS OF OCTOBER 31, 1967

Total number of applications awaiting action [excluding renewals and Sec. 12 (c)]	17,038
Date of oldest new application	Dec. 13, 1966
Date of oldest amended application (filing date)	Oct. 21, 1964

C. M. WENDT, Director, Trademark Examining Operation

TRADEMARK EXAMINING DIVISIONS, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application: New	Oldest Application: Amended
(I) L. J. BETTENDORF, Classes 2, 3, 4, 5, 7, 9, 10, 11, 27, 28, 30, 32, 33, 37, 38, 39, 40, 41, 42, 43, 50; Certification Marks, Classes A and B	1-16-67	1-11-66
(II) F. H. WETHERBEE, Classes 1, 6, 15, 18, 45, 46, 47, 48, 49, 51, 52; Collective Membership Mark, Class 200	1-18-67	11-1-65
(III) P. S. BALL, Classes 19, 21, 23, 26, 31, 34, 35, 36	12-13-66	4-16-65
(IV) M. E. ABRAMSON, Classes 8, 12, 13, 14, 16, 17, 20, 22, 24, 25, 29, 44; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, and 107	12-19-66	10-21-64
Renewals (All Classes)	10-16-67	.....
Sec. 12(c) Publications (All Classes)	10-16-67	.....

Applications filed during the month of October 1967—2,473

Registrations Issued ---------- 370—No. 841,063 to No. 841,432
Renewals Issued ---------- 50

The TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed: subscription price, $12.00 per annum, foreign mailing $4.00 additional; single copies, 25 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 20 cents each. Address orders to the Commissioner of Patents, Washington, D.C., 20231.

Nathan Taksel and S. Alex Trust, doing business as King Quality Builders.

Reg. No. 600,018 (PLAYBOY), HMH Publishing Co., Inc., Monthly magazine; **Reg. No. 719,088** (PLAYBOY LIQUOR CADDY AND DESIGN), same, Bottle holder; **Reg. No. 746,367** (THE PLAYBOY CLUB), same, Operating private social clubs which feature food, drinks, and entertainment, **filed** Aug. 18, 1967, D.C., C.D. Calif. (Los Angeles), Doc. 67–1218–JWC, *HMH Publishing Co., Inc., and Playboy Clubs International, Inc.* v. *Seymour Raff, et al., doing business as Playboy Liquors.*

Reg. No. 600,018 (PLAYBOY), HMH Publishing Co., Inc., Monthly magazine; **Reg. No. 719,088** (PLAYBOY LIQUOR CADDY AND DESIGN), same, Bottle holder; **Reg. No. 746,367** (THE PLAYBOY CLUB), same, Operating private social clubs which feature food, drinks, and entertainment; **Reg. No. 769,702** (PLAYBOY), same, Operation of establishments which feature food, drinks, and entertainment, **filed** Sept. 26, 1967, D.C., C.D. California (Los Angeles), Doc. 67–1408–PH, *HMH Publishing Co., Inc., and Playboy Clubs International, Inc.* v. *Seymour Raff, Jean Raff, and Ben Raff, doing business as Playboy Liquors.*

Reg. No. 647,241. (See Reg. No. 201,694.)

Reg. No. 658,918. (See Reg. No. 201,694.)

Reg. No. 674,682. (See Reg. No. 548,246.)

Reg. No. 685,666 (CHEMSEARCH), National Disinfectant Company, Cleaning compositions for building floors and walls; **Reg. No. 725,504** (NATIONAL CHEMSEARCH AND DESIGN), National Chemsearch Corporation of Texas, Liquid dust mop treatment that fireproofs mops; disinfectants, wetting agents, coolants, anti-corroding agents, fumigants, and industrial and institutional deodorants; **Reg. No. 725,717**, same, Industrial and institutional detergents, solvent degreaser, glass cleaner, soap, antiseptic lotion cleaner, sewer and drain pipe cleaners, sewerage system cleaners, and paint remover, **filed** Sept. 8, 1967, D.C., N.D. Ill. (Chicago), Doc. 67c1544, *National Chemsearch Corp.* v. *Madison Chemical Corp.*

Reg. No. 719,088. (See Reg. No. 600,018.)

Reg. No. 725,504. (See Reg. No. 685,666.)

Reg. No. 725,717. (See Reg. No. 685,666.)

Reg. No. 737,967 (WORLD AND DESIGN), World Carpet Mills, Inc., Textile carpeting; **Reg. No. 787,616**, same, World Carpets, Inc. and World Carpet Mills, Inc., same, **filed** Oct. 16, 1967, D.C., N.D. Tex. (Dallas), Doc. CA–3–2269, *World Carpets, Inc.* v. *Dick Littrell's New World Carpets, et al.*

Reg. No. 746,367. (See Reg. No. 600,018.)

Reg. No. 769,702. (See Reg. No. 600,018.)

Reg. No. 787,616. (See Reg. No. 737,967.)

Reg. No. 802,799. (See Reg. No. 548,246.)

Reg. No. 812,470 (GO-GO), Brumberger Co., Inc., Toy guitars, **filed** Apr. 11, 1966, D.C., S.D.N.Y., Doc. 66–C–1027, *Brumberger Co., Inc.* v. *Lorraine Industries Inc.* Consent judgment, defendant enjoined, Mar. 7, 1967.

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 257,641. Modern Aire Company, Des Moines, Iowa. Filed Oct. 31, 1966.

MODERNAIRE

Class 100—Miscellaneous

For Designing of Industrial and Residential Heating Systems.

Class 103—Construction and Repair

For Installing and Servicing of Industrial and Residential Heating Systems.

First use February 1935.

SN 259,366. Oppenheimer Industries, Inc., Kansas City, Mo. Filed Nov. 25, 1966.



The drawing is lined for the color red, but the rights in the instant mark are not limited to a particular color combination.

Class 101—Advertising and Business

For Brokerage Services in the Fields of Industrial, Commercial, and Ranch Real Estate and Cattle Herds; Managing and Appraising Such Real Estate and Cattle Herds for Others.

Class 102—Insurance and Financial

For Financing and Insuring the Purchase by Others of Industrial, Commercial, and Ranch Real Estate and Cattle Herds.

First use September 1952.

SN 259,878. General Cold Corporation, New York, N.Y. Filed Dec. 2, 1966.



The word "Cold" and the abbreviation "U.S.A." are disclaimed apart from the mark as shown.

Class 24—Laundry Appliances and Machines

For Washing Machines.
First use Apr. 10, 1964.

Class 34—Heating, Lighting, and Ventilating Apparatus

For Air Conditioners and Evaporative Air Coolers.
First use Mar. 23, 1964.

SN 263,572. Saunda, Inc., Chicago, Ill., by change of name from Health Products, Inc., Chicago, Ill. Filed Jan. 30, 1967.

SAUNDEX

Owner of Reg. Nos. 825,363 and 826,983.

Class 44—Dental, Medical, and Surgical Appliances

For Mechanical Vaporizer Appliances.

Class 51—Cosmetics and Toilet Preparations

For Medicated Facial Scrub, Facial Lotion, Facial Blemish Foundation Cream, and Facial Talcum Powder.

First use Jan. 20, 1967.

SN 266,273. Nutter Engineering Company, Tulsa, Okla. Filed Mar. 9, 1967.

NUTTER

Class 2—Receptacles

For Fluid Contact Trays and Accessories.
First use at least as early as Aug. 26, 1952.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Flow Control Valves.
First use at least as early as Aug. 26, 1952.

Class 100—Miscellaneous

For Engineering Consultant, Equipment Designing, and Drafting Services.
First use at least as early as Oct. 16, 1954.

Class 101—Advertising and Business

For Data Processing Services.
First use at least as early as Jan. 31, 1964.

SN 278,445. Allied Radio Corporation, Chicago, Ill. Filed Aug. 17, 1967.

ALLIED

Owner of Reg. No. 775,688.

Class 21—Electrical Apparatus, Machines, and Supplies

For High Fidelity Electronic Equipment—Namely, Receivers, Tuners, and Amplifiers; Citizens' Band Communication Systems; Walkie Talkies; Electron Tubes; and Radio Receiving Sets.
First use Oct. 21, 1963.

Class 36—Musical Instruments and Supplies

For Magnetic Tape Recorders and Tapes; and Record Changers.
First use July 3, 1967.

SN 278,635. Harte & Company, Inc., New York, N.Y. Filed Aug. 21, 1967.

Vista Vinyl

No claim is made to the word "Vinyl" apart from the mark as shown. Owner of Reg. Nos. 715,240 and 825,053.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Vinyl Drainboards and Vinyl Sink Mats.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Vinyl Placemats.

First use May 15, 1967.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

SN 242,643. Pacific Vegetable Oil Corporation, San Francisco, Calif. Filed Apr. 4, 1966.

SAFFOLA 161

Owner of Reg. Nos. 775,991, 775,995, and others.
For Safflower Planting Seeds.
First use Mar. 6, 1962.

SN 256,096. Imperial Chemical Industries Limited, Millbank, London, England. Filed Oct. 10, 1966.

'TPX'

For Plastics in the Form of Powders, Pastes, Liquids, Emulsions, Dispersions, Pellets, and Granules, All for Industrial Use.
First use Sept. 8, 1966; in commerce Sept. 8, 1966.

SN 262,000. Pro-phy-lac-tic Brush Company, Florence, Mass. Filed Jan. 5, 1967.

PRO

Owner of Reg. Nos. 349,120, 350,239, and 562,333.
For Synthetic Fiber and Monofilament.
First use Nov. 2, 1966.

SN 262,263. Hercules Incorporated, Wilmington, Del. Filed Jan. 10, 1967.

1900

For Ultra High-Molecular Weight Polyethylene Shapes in the Form of Sheets, Rods, Tubes, Strips, and Bars.
First use June 28, 1966.

SN 263,371. Fromm Bros., Inc., Hamburg, Wis. Filed Jan. 26, 1967.

FROM THE AMBER FAMILY OF FROMM

Owner of Reg. Nos. 272,584 and 699,606.
For Fox Pelts and Furs Used in Ladies' Garments—Namely, Coats, Jackets, Capes, and Scarves.
First use Jan. 11, 1967.

SN 264,818. General Aniline & Film Corporation, New York, N.Y. Filed Feb. 16, 1967.

GAF

Owner of Reg. Nos. 509,124, 744,454, and others.
For Natural and Synthetic Water-Soluble to Water-Insoluble Resins, Polymers and Plastics in Emulsion, Dispersion, Solution and Other Liquid Forms, in Solid Particulate Bulk Forms, and in the Form of Sheets, Films, Rods, Tubes, Filaments, and Other Solid Shapes.
First use Sept. 5, 1951.

SN 276,982. Pittsburgh Plate Glass Company, Pittsburgh, Pa. Filed July 28, 1967.

PITTEX

For Abrasive-Containing Plastic Filaments.
First use at least as early as May 26, 1967.

Class 2—Receptades

SN 250,995. Pro-phy-lac-tic Brush Company, Florence, Mass. Filed July 25, 1966.

PRO

For Plastic Dinnerware.
First use June 16, 1966.

SN 264,668. Inland Container Corporation, Indianapolis, Ind. Filed Feb. 14, 1967.

KRANCOR

For Corrugated Fiberboard Liquid Box.
First use Jan. 18, 1967.

SN 267,282. C. W. Heppenstall, d.b.a. Ever-Flo Products, Delray Beach, Fla. Filed Feb. 7, 1967.

UNCLE BILL'S

For Condiment Shakers.
First use Aug. 15, 1966.

SN 270,057. W. R. Grace & Co., New York, N.Y. Filed Apr. 26, 1967.

SERVE

For Squeeze Dispenser for Dishwashing Compound and Spray Dispenser for All Purpose Cleaner.
First use Mar. 23, 1967.

SN 270,161. Sea & Ski Corporation, San Francisco, Calif. Filed Apr. 27, 1967.

SEA & SKI

For Beach Bags.
First use Apr. 10, 1967.

SN 271,558. G. H. Wood and Company Limited, Toronto, Ontario, Canada. Filed May 15, 1967.

OZAMATIC

Owner of Canadian Reg. No. 147,256, dated Sept. 23, 1966.
For Spray Dispensers for Dispensing Glass Cleaning, Air Freshening, Deodorizing, Disinfecting, Bacteria Controlling, and Insecticidal Sprays.

SN 272,568. Gordon J. Benes, d.b.a. Lakeland Engineering Co., McHenry, Ill. Filed May 29, 1967.

Magic-SPRAY

For Salt and Pepper Servers Made of Synthetic Resin.
First use Aug. 12, 1942.

SN 272,803. Burd & Fletcher Company, Kansas City, Mo. Filed June 1, 1967.

BURD FLETCHER

Owner of Reg. Nos. 650,721 and 651,301.
For Containers Which Have Been Lithographed or Printed, Particularly Paper Cartons and Folding Paper Boxes, Including Those Constructed of Box Board.
First use May 16, 1967.

SN 273,031. CTP Industries Inc., Brooklyn, N.Y. Filed June 5, 1967.

GRIP-ZIP

For Plastic Bags.
First use Apr. 10, 1967.

SN 273,219. Vac Pac, Inc., Baltimore, Md. Filed June 6, 1967.

SUPERVAC

For Heat-Shrinkable Polyester Bags.
First use May 2, 1967.

SN 281,753. Packaging Corporation of America, Evanston, Ill. Filed Oct. 4, 1967.

VIEW-GARD

For Paperboard Package Components.
First use on or about May 1, 1967.

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

SN 279,512. Dogs of Distinction, Inc., New York, N.Y. Filed Sept. 1, 1967.

DUDS BY DOD ASTRO-INSULATED FOR WARMTH

The words "Duds" and "for Warmth" are disclaimed apart from the mark as shown without waiver of any common-law rights.
For Coats for Dogs.
First use Aug. 5, 1967.

Class 4—Abrasives and Polishing Materials

SN 239,613. General Cable Corporation, New York, N.Y. Filed Feb. 25, 1966.

Scour Flower

For Plastic Scouring Pads.
First use October 1965.

SN 262,241. S. C. Johnson & Son, Inc., Racine, Wis. Filed Jan. 10, 1967.

RE-GUARD

For Preparation for Cleaning and Polishing Floors, Woodwork, Furniture, Paneled Walls.
First use on or about Oct. 4, 1966.

SN 262,242. S. C. Johnson & Son, Inc., Racine, Wis. Filed Jan. 10, 1967.

RE-GARD

For Preparation for Cleaning and Polishing Floors, Woodwork, Furniture, Paneled Walls.
First use on or about Oct. 4, 1966.

SN 267,634. S. Jackson & Son, Inc., New Orleans, La. Filed Mar. 27, 1967.

Pol

For Metal Polish.
First use March 1957.

Class 5—Adhesives

SN 264,820. General Aniline & Film Corporation, New York, N.Y. Filed Feb. 16, 1967.

GAF

Owner of Reg. Nos. 509,124, 744,454, and others.
For Water-Soluble, Solvent-Soluble and Reactive Adhesives and Cements in Liquid, Paste, and Solid Particulate Forms.
First use Sept. 5, 1951.

Class 6—Chemicals and Chemical Compositions

SN 234,312. Sumitomo Chemical Co., Ltd., Higashi-ku, Osaka, Japan. Filed Dec. 9, 1965.

SUMITOMO

Priority claimed under Sec. 44(d) on Japanese application filed Sept. 30, 1965; Reg. No. 749,386, dated July 31, 1967.
For Chemical Preparation Used in Agriculture, Horticulture and Forestry—Namely, Insecticides; and Insecticidal Preparations for Prevention of Epidemic Diseases.

SN 250,167. Miles Laboratories, Inc., Elkhart, Ind. Filed July 13, 1966.

TEMPRO

For Heat Stable Protease Enzyme.
First use on or before June 15, 1966.

SN 252,929. John O. Butler Company, Chicago, Ill. Filed Aug. 23, 1966.

CLEAR DIP

For Sterilizing and Defogging Composition for Mirrors and Other Medical and Dental Instruments.
First use in or about 1958.

SN 254,408. Tenneco Chemicals, Inc., New York, N.Y. Filed Sept. 13, 1966.

CAL-TINT

For Pigments and Colorants for Coating Compositions Including Paints.
First use on or about June 1, 1961.

SN 260,587. Rubicon Chemicals Inc., Geismar, La. Filed Dec. 12, 1966.

RUBICON

For Organic Chemicals Used in the Manufacture of Urethane; Organic Chemical Precursors of Isocyanates; and Isocyanates.
First use Aug. 8, 1966.

SN 267,865. Ugine Kuhlmann, Paris, France. Filed Mar. 29, 1967.

ALOXANE

Owner of French Reg. No. 470,864, dated Mar. 7, 1958 (Seine); Natl. Inst. No. 106,671.
For Dyestuffs.

SN 267,867. Ugine Kuhlmann, Paris, France. Filed Mar. 29, 1967.

CRINOLANE

Owner of French Reg. No. 514,984, dated July 26, 1963 (Paris); Natl. Inst. No. 209,641.
For Dyestuffs.

SN 267,868. Ugine Kuhlmann, Paris, France. Filed Mar. 29, 1967.

ELISIANE

Owner of French Reg. No. 702,082, dated Oct. 1, 1965.
For Dyestuffs.

SN 267,871. Ugine Kuhlmann, Paris, France. Filed Mar. 29, 1967.

INTRACETYLE

Owner of French Reg. No. 470,866, dated Mar. 7, 1958 (Seine); Natl. Inst. No. 104,179.
For Dyestuffs.

SN 267,872. Ugine Kuhlmann, Paris, France. Filed Mar. 29, 1967.

NEOREDOX

Owner of French Reg. No. 451,007, dated May 13, 1955 (Seine); Natl. Inst. No. 56,775.
For Dyestuffs.

SN 267,873. Ugine Kuhlmann, Paris, France. Filed Mar. 29, 1967.

NYLOQUINONE

Owner of French Reg. No. 477,583, dated Jan. 16, 1959 (Seine); Natl. Inst. No. 124,325.
For Dyestuffs.

SN 269,337. N.V. Philips-Duphar, Amsterdam, Netherlands. Filed Apr. 17, 1967.

DU-NEMA

For Nematocides.
First use Jan. 13, 1967; in commerce Jan. 13, 1967.

SN 269,374. Guardian Chemical Corporation, Long Island City, N.Y. Filed Apr. 17, 1967.

POLYCOMPLEX

For Water Solubilizing Agents.
First use Oct. 1, 1966.

SN 270,682. International Rectifier Corporation, El Segundo, Calif. Filed May 4, 1967.

DAL CLAY

For Electrolytic Paste Used in Connection With Electro-Cardiogram.
First use Dec. 26, 1966.

SN 270,902. Corn Products Company, New York, N.Y. Filed May 8, 1967.

COVOL

For Polyvinyl Alcohols, Partially Esterified Polyvinyl Alcohols and Copolymers Thereof for Industrial Applications.
First use at least as early as Dec. 27, 1966.

SN 271,335. The American Oil Company, Chicago, Ill. Filed May 12, 1967.

PERMAMUL

For Hydraulic Fluid.
First use May 1, 1962.

SN 279,616. Big Three Industrial Gas & Equipment Co., Houston, Tex. Filed Sept. 5, 1967.

TIRE-LIFE

For Nitrogen Gas Compound To Be Used in Tires To Deter Internal Oxidation and Make Them Last and Wear Longer.
First use Aug. 17, 1967.

SN 282,516. Morton International, Inc., Chicago, Ill. Filed Oct. 16, 1967.

PANOMATIC

Owner of Reg. Nos. 396,910, 819,695, and others.
For Fungicidal Seed Treating Composition.
First use on or about Aug. 23, 1967.

SN 282,563. Faultless Starch Company, Kansas City, Mo. Filed Oct. 16, 1967.

RAGGEDY ANN'S

Owner of Reg. Nos. 829,633 and 829,913.
For Laundry Starch.
First use in or about April 1967.

SN 282,719. Chas. Pfizer & Co., Inc., New York, N.Y. Filed Oct. 17, 1967.

CHE-TEL

For Laboratory Reagent for Cholinesterase Determinations.
First use Sept. 22, 1967.

Class 7—Cordage

SN 273,739. Brownell & Company Incorporated, Moodus, Conn. Filed June 13, 1967.

SPUN-TEX

Ror Ropes and Twines.
First use Feb. 14, 1967.

SN 273,740. Brownell & Company Incorporated, Moodus, Conn. Filed June 13, 1967.

NYCOR

For Ropes and Twines.
First use Dec. 19, 1966.

SN 278,139. Tubbs Cordage Company, San Francisco, Calif. Filed Aug. 11, 1967.

GREAT WESTERN

Owner of Reg. No. 297,454.
For Rope and Twine.
First use about July 1923.

SN 278,140. Tubbs Cordage Company, San Francisco, Calif. Filed Aug. 11, 1967.

TUBBS-GW

Owner of Reg. Nos. 436,047 and 439,580.
For Rope and Twine.
First use about June 22, 1962.

SN 278,615. George L. Soreghen, d.b.a. Diamond Whip Co., Chicago, Ill. Filed Aug. 18, 1967.

BLUE DIAMOND

For Lariat Rope, Rope Lariats and Fittings Therefor.
First use around 1955.

SN 278,804. Kurashiki Rayon Co., Ltd., Kurashiki, Japan. Filed Aug. 22, 1967.

KURALON

Owner of Reg. Nos. 583,099, 628,759, and 639,757.
For Fishing Nets, Ropes, Cords, and Twines.
First use Aug. 1, 1949; in commerce July 1, 1964.

Class 8—Smokers' Articles, Not Including Tobacco Products

SN 263,486. Scripto, Inc., Atlanta, Ga. Filed Jan. 27, 1967.

VU-LIGHTER

Owner of Reg. Nos. 712,694 and 765,736.
For Cigar, Cigarette, and Pipe Lighters, Wicks, and Flints.
First use Nov. 23, 1966.

Class 9—Explosives, Firearms, Equipments, and Projectiles

SN 254,379. Dynamit Nobel Aktiengesellschaft, Troisdorf, Germany. Filed Sept. 13, 1966.

ALFA-SPEED

Priority claimed under Sec. 44(d) on German application filed Apr. 30, 1966; Reg. No. 819,779, dated May 23, 1966.
For Small Arms Ammunition.
First use July 18, 1966; in commerce July 18, 1966.

Class 10—Fertilizers

SN 257,304. Organic Compost Corporation, Germantown, Wis. Filed Oct. 26, 1966.

Gardener's

For the purpose of registration no claim is made to the exclusive right to use the color green as represented in the drawing, but the applicant waives none of its common-law rights therein.
For Sheep and Cattle Manure Compost.
First use Dec. 1, 1959.

Class 12 — Construction Materials

SN 252,741. Memphis Moldings, Inc., Memphis, Tenn. Filed Aug. 19, 1966.



The mark comprises a pair of M's depicted in the manner shown in the drawing.
For Wood Molding for Interior Trim of Residences and Mobile Homes, and Structural Components of Kitchen Countertops.
First use July 20, 1966.

SN 254,593. Empire Petroleum Company, Denver, Colo. Filed Sept. 16, 1966.

BITULIZER

Owner of Reg. Nos. 747,106, 799,377, and 799,378.
For Asphalt, Solvent-Diluted and Cut-Back Asphalts and Asphaltic Emulsions for Stabilizing Soils and Road Bed Material by Blending the Same With Such Materials.
First use on or about July 27, 1966.

SN 254,594. Empire Petroleum Company, Denver, Colo. Filed Sept. 16, 1966.

PENELINE

Owner of Reg. Nos. 747,106, 799,377, and 799,378.
For Asphalt and Solvent-Diluted and Cut-Back Asphalts for Reservoir and Canal Linings.
First use on or about July 27, 1966.

SN 254,595. Empire Petroleum Company, Denver, Colo. Filed Sept. 16, 1966.

PENECIDE

Owner of Reg. Nos. 747,106, 799,377, and 799,378.
For Asphalt and Solvent-Diluted and Cut-Back Asphalts Blended With an Herbicide To Provide a Soil Surface Stabilizer Having Herbicidal Properties.
First use on or about July 27, 1966.

SN 262,497. Morgan Company, Oshkosh, Wis. Filed Jan. 13, 1967.



For Wooden Stairs and Structural Parts Therefor.
First use Dec. 9, 1966.

SN 264,956. Parr Paint and Sealants Inc., Cleveland, Ohio. Filed Feb. 17, 1967.



The drawing is lined for the color blue. No claim is made to the words "Paint and Sealants" apart from the mark as shown. Owner of Reg. Nos. 693,343, 701,189, and others.
For Sealing and Caulking Compounds and Ceramic Tile Mastic.
First use on or about Nov. 25, 1966.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

SN 250,739. Continental Oil Company, Ponca City, Okla. Filed July 21, 1966.

BATH-PAK

For Pipe and Fittings Therefor.
First use Apr. 25, 1966.

SN 256,426. Bethea Company, Inc., Bessemer, Ala. Filed Oct. 14, 1966.

BETHEA

For Electrical Power Line Equipment—Namely, Clamps, Connectors, Guy-Wire, and Suspension Assemblies.
First use January 1951.

SN 261,894. Telsco Industries, Dallas, Tex. Filed Jan. 3, 1967.



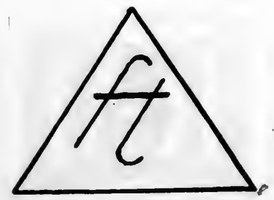
For Spray Heads for Irrigation Systems.
First use on or about Apr. 1, 1965.

SN 264,490. Allenair Corp., Mineola, N.Y. Filed Feb. 13, 1967.



For Valves, Cylinders, Cyl-Checks, Dial Feed Tables, Air Clamps, and Accessories for the Aforementioned Products.
First use January 1959.

SN 265,233. D and G Plastics Co., Kent, Ohio. Filed Feb. 21, 1967.



For Thermoplastic Tube Couplings, and Parts Therefor.
First use Jan. 6, 1967.

SN 265,328. Permco Corporation, Memphis, Tenn. Filed Feb. 23, 1967.

"Shearclamp"

For Pump Box Apparatus for Accommodating Safety Valves for Gasoline Pump Installations.
First use Nov. 3, 1966.

SN 268,994. Republic Steel Corporation, Cleveland, Ohio. Filed Apr. 12, 1967.

X-TRU-COAT

Owner of Reg. Nos. 352,376 and 726,888.
For Plastic Coated Steel Pipe and Tubing.
First use Aug. 15, 1961.

SN 269,524. Eaton Yale & Towne Inc., Cleveland, Ohio. Filed Apr. 19, 1967.

QUINTPOINT

For Metal Fasteners.
First use Mar. 31, 1967.

SN 269,576. Slant/Fin Corporation, Greenvale, N.Y. Filed Apr. 19, 1967.

HYDRO-TITE

For Expansion Couplings.
First use Sept. 21, 1960.

SN 269,733. American Radiator & Standard Sanitary Corporation, New York, N.Y. Filed Apr. 21, 1967.

TOP-LOC

For Hinges for Toilet Seats and Covers.
First use Mar. 30, 1967.

SN 269,894. Joseph A. Iala, d.b.a. The Aero-Stat Co., Los Angeles, Calif. Filed Apr. 24, 1967.

MULTI-DRIVE

For Screw Fasteners.
First use on or about Sept. 29, 1966.

Class 14 — Metals and Metal Castings and Forgings

SN 264,819. General Aniline & Film Corporation, New York, N.Y. Filed Feb. 16, 1967.

GAF

Owner of Reg. Nos. 509,124, 744,454, and others.
For Metal Powders.
First use March 1947.

SN 265,594. American Metal Climax, Inc., New York, N.Y. Filed Feb. 28, 1967.

CLIMELT-MOLY-MESH

Owner of Reg. No. 700,802.
For Molybdenum and Alloys Thereof in Reticulated Form.
First use Oct. 24, 1966.

SN 266,152. Handy & Harman, New York, N.Y. Filed Mar. 7, 1967.

CUNIP

For Copper Alloys Containing Nickel, Copper, and Phosphate.
First use Jan. 31, 1967.

SN 266,816. W. M. Chace Company, Detroit, Mich. Filed Mar. 15, 1967.

MAGNETOFLEXURAL

For Laminated Composite Material, Particularly Laminated Metal in Which at Least Some of the Layers Have Relatively Different Magnetostrictive Coefficients.
First use Mar. 6, 1967.

SN 267,136. Engelhard Industries, Inc., Newark, N.J. Filed Mar. 20, 1967.

SPINNALOY

For Metal Alloy for Spinnerettes.
First use Mar. 3, 1967.

Class 15 — Oils and Greases

SN 250,796. Witco Chemical Company, Inc., New York, N.Y. Filed July 21, 1966.

KEN-START

Owner of Reg. Nos. 628,929, 670,499, and 709,522.
For Starting Fluid for Gasoline and Diesel Engines.
First use Sept. 2, 1964.

SN 270,232. Continental Oil Company, Ponca City, Okla. Filed Apr. 28, 1967.



Owner of Reg. Nos. 653,964, 660,432, and others.
For Lubricating Oils.
First use Jan. 30, 1967.

SN 272,811. Crouch Supply Co., Inc., Fort Worth, Tex. Filed June 1, 1967.

SPRAY-GEL

For Sanitary Lubricants for Dairy and Food Processing Equipment and the Like.
First use Feb. 10, 1967.

SN 273,106. Quaker State Oil Refining Corporation, Oil City, Pa. Filed June 5, 1967.



Owner of Reg. Nos. 106,015 and 769,044.
For Racing Motor Oil.
First use Apr. 3, 1967.

Class 16 — Protective and Decorative Coatings

SN 250,690. Rite-Way Coatings Co., Addison, Ill. Filed July 20, 1966.

SPECTO-TRED

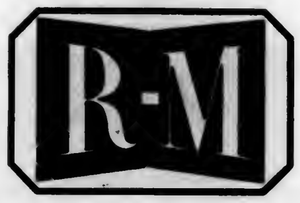
For Seamless Polyurethane Floor Coating for Concrete, Wood, and Metal, and Metal Primer.
First use on or about Apr. 1, 1966.

SN 252,919. Wilson, Walton International Incorporated, Hoboken, N.J. Filed Aug. 22, 1966.

ALOCOAT

For Corrosion Inhibitor Coating for Metals.
First use July 7, 1965.

SN 253,883. Interchemical Corporation, New York, N.Y. Filed Sept. 6, 1966.



Owner of Reg. No. 248,413.
For Synthetic Enamels, Varnishes, Lacquers and Acrylics in Both Liquid and Paste Forms, and Solvents Used in Connection Therewith, Masking Compounds, and Synthetic Enamel, Varnish, Lacquer and Acrylic Tinting Bases.
First use on or about Jan. 1, 1956.

SN 260,762. The Permalux Company, Aurora, Ill. Filed Dec. 14, 1966.

PCA

For Protective Coating for Metals, Particularly Aluminum.
First use at least as early as November 1966.

SN 265,749. Textron Industries, Inc., Orange, N.J. Filed Mar. 1, 1967.



For Paints, Enamels, Varnishes, and Lacquers.
First use 1891.

SN 269,129. U.S. Paint Lacquer and Chemical Company, St. Louis, Mo. Filed Apr. 13, 1967.

ALUMIGRIP

For Coatings, Primers, Enamels, Reducers, and Thinners.
First use Mar. 8, 1956.

SN 270,384. Interchemical Corporation, New York, N.Y. Filed May 1, 1967.



Applicant disclaims the word "Finishes" apart from the mark as shown.
For Paints, Varnishes, Lacquers, and Enamels.
First use on or about Dec. 1, 1964.

SN 271,611. Finch Paint & Chemical Co., Torrance, Calif. Filed May 16, 1967.

CAT-A-LAST

Owner of Reg. No. 616,755.
For Catalyst Type Resistant Coatings for Brush and Spray Application.
First use Mar. 24, 1967.

SN 277,856. Fact-O-Bake of Jacksonville, Inc., Jacksonville, Fla. Filed Aug. 9, 1967.

RPG

For Liquid Rust and Corrosion Preventives for Exposed Metal Surfaces Which Bonds to Such Surfaces and Hardens Into a Flexible and Permanent Coating Thereon.
First use Aug. 3, 1966.

Class 17 — Tobacco Products

SN 264,143. Carreras Limited, Basildon, Essex, England. Filed Feb. 7, 1967.

CONSORT

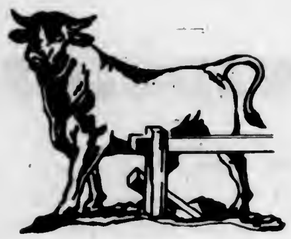
Owner of British Reg. No. 575,981, dated Mar. 18, 1937.
For Smoking Tobacco and Cigarettes.

SN 266,717. The American Tobacco Company, New York, N.Y. Filed Mar. 15, 1967.

ATC

For Cigarettes.
First use Mar. 6, 1967.

SN 269,277. The American Tobacco Company, New York, N.Y. Filed Apr. 17, 1967.



Owner of Reg. No. 136,304.
For Cigarettes.
First use May 31, 1966.

SN 276,671. Liggett & Myers Tobacco Company, New York, N.Y. Filed July 24, 1967.

PROJECT 7

For Cigarettes and Smoking Tobacco.
First use June 16, 1967.

SN 276,799. The American Tobacco Company, New York, N.Y. Filed July 26, 1967.

APACHE

For Cigarettes.
First use July 12, 1967.

SN 276,800. The American Tobacco Company, New York, N.Y. Filed July 26, 1967.

MERMAID

For Cigarettes.
First use July 12, 1967.

SN 277,365. Liggett & Myers Tobacco Company, New York, N.Y. Filed Aug. 2, 1967.



The drawing is lined for the color gold. Owner of Reg. Nos. 582,520, 825,198, and others.
For Cigarettes.
First use June 6, 1967; February 1953 as to "L & M."

Class 18 — Medicines and Pharmaceutical Preparations

SN 235,253. Atomic Basic Chemicals Corporation, Pittsburgh, Pa. Filed Dec. 27, 1965.



For Preparation for Exterminating Worms and Other Parasites From Livestock.
First use Aug. 11, 1958.

SN 247,047. Nejo Pharmacal, Inc., Houston, Tex. Filed June 1, 1966.

ANALONES

For Analgesic Sedative.
First use at least as early as Jan. 11, 1965.

SN 252,479. Imperial Chemical Industries Limited, Millbank, London, England. Filed Aug. 16, 1966.

PEPTAVLON

Owner of British Reg. No. 695,156, dated Jan. 9, 1951.
For Diagnostic Agent for Clinical Testing of Gastric Secretion Used on the Person.

SN 255,969. Dermik Laboratories, Inc., Syosset, N.Y. Filed Oct. 7, 1966.

SULFOGEN

For Pharmaceutical Preparation for the Treatment of Acne.
First use Feb. 10, 1966.

SN 255,970. Dermik Laboratories, Inc., Syosset, N.Y. Filed Oct. 7, 1966.

TINTOGEN

For Pharmaceutical Preparation for the Treatment of Acne.
First use Feb. 10, 1966.

SN 257,920. Aspro-Nicholas Limited, Slough, England. Filed Nov. 4, 1966.

MICROFINED

For Pharmaceutical Preparations for the Relief of Headaches, Nerve Pains, Neuralgia and Rheumatism and Similar Ailments.
First use Aug. 31, 1965; in commerce July 28, 1966.

SN 258,492. Chinoin Gyogyszer es Vegyeszeti Termekek Gyara R.T., Budapest, Hungary. Filed Nov. 14, 1966.

MYELOBROMOL

Owner of Hungarian Reg. No. 107,874, dated May 28, 1964.
For Pharmaceutical Preparation for the Treatment of Chronic Leukemia.

SN 263,467. The Lannett Company, Inc., Philadelphia, Pa. Filed Jan. 27, 1967.

LANNETT

For Oral Antiseptic Preparation.
First use in or about January 1942.

SN 263,474. Foremost-McKesson, Inc., New York, N.Y., by merger and change of name from McKesson & Robbins, Incorporated, d.b.a. McKesson Laboratories, New York, N.Y. Filed Jan. 27, 1967.

EXTOL

For Antiseptic Preparation for Use as a Throat Spray, Gargle, and Mouthwash and for Minor Skin Wounds.
First use July 25, 1922.

SN 264,191. Bristol-Myers Company, New York, N.Y. Filed Feb. 8, 1967.

VERSAMAX

Owner of Reg. No. 817,288.
For Antibiotic.
First use Sept. 22, 1966.

SN 264,817. General Aniline & Film Corporation, New York, N.Y. Filed Feb. 16, 1967.

GAF

Owner of Reg. Nos. 509,124, 744,454, and others.
For Chemical Compounds, Compositions, and Preparations, Particularly for Use as Blood Plasma Substitutes or Extenders, and for Use as Extenders, Diluents, Adjuvants, Protective Colloids, Detoxicants, Film-Formers, or Aqueous Suspension Media in Therapeutic Agents and Compositions in the Form of Solutions, Powders, Tablets, Capsules, and the Like for Topical, Oral, and Parenteral or Other Internal Use.
First use Sept. 5, 1951.

SN 267,135. Eli Lilly and Company, Indianapolis, Ind. Filed Mar. 20, 1967.

BAR-3

For Vaccine Used as an Aid in the Prevention of Cattle Ailments Associated With Shipping Fever.
First use Feb. 13, 1967.

SN 267,290. Societe des Usines Chimiques Rhone-Poulenc, Paris, France. Filed Mar. 14, 1967.

EMTRYSIDINA

Owner of French Reg. No. 14,272, dated June 28, 1966.
For Veterinary Preparation, Specifically Medicinal Supplement Incorporated as an Ingredient in Animal Feeds.

SN 267,396. Bristol-Myers Company, New York, N.Y. Filed Mar. 23, 1967.

KINGPEN

For Antibiotic.
First use Nov. 10, 1966.

SN 267,397. Bristol-Myers Company, New York, N.Y. Filed Mar. 23, 1967.

BROADCIDE

For Antibiotic.
First use Nov. 10, 1966.

SN 267,399. Bristol-Myers Company, New York, N.Y. Filed Mar. 23, 1967.

POLYCILLIN-N

Owner of Reg. No. 773,962.
For Antibiotic.
First use Mar. 29, 1965.

SN 267,496. Purepac Corporation, Elizabeth, N.J. Filed Mar. 24, 1967.

GENERICARE

For Aspirin.
First use Mar. 17, 1967.

SN 267,766. Professional Pharmacal Co., Inc., San Antonio, Tex. Filed Mar. 28, 1967.

PREDULOSE

For Ophthalmic Preparation.
First use Feb. 10, 1965.

SN 267,797. Block Drug Company, Inc., Jersey City, N.J. Filed Mar. 29, 1967.

SENTROL

Owner of Reg. No. 600,913.
For Medicinal Preparation for the Relief of Headaches, Neuralgias, Minor Muscular Aches and Pains, Toothaches, the Discomforts of Colds and Functional Periodic Pains, Upset Stomach, Heartburn, Indigestion, and Gas Pains.
First use Mar. 30, 1954.

SN 267,851. A. H. Robins Company, Incorporated, Richmond, Va. Filed Mar. 29, 1967.

ROBITUSSIN-PE

Owner of Reg. Nos. 515,197 and 606,939.
For Antitussive Decongestant Medicinal and Pharmaceutical Preparation.
First use Mar. 3, 1967.

SN 267,951. Knoll Pharmaceutical Company, Orange, N.J. Filed Mar. 30, 1967.

TARUXAN

For Pharmaceutical Preparation for Treatment of Cardiac Insufficiencies, Senile Heart Condition in the Follow-Up Treatment of Cardiac Infarction.
First use Mar. 9, 1967.

SN 271,561. Kun Hook Yuen, d.b.a. Kun Wing Fook Medicine Company, Hong Kong. Filed May 15, 1967.



For Carminative Oil.
First use Mar. 17, 1948; in commerce Mar. 23, 1966.

SN 275,728. Mead Johnson & Company, Evansville, Ind. Filed July 11, 1967.

MEAD-CYCLINE

Owner of Reg. Nos. 297,187, 690,438, and others.
For Anti-Infective Agent used for Soft Tissue Infections and Infections of the Respiratory Tract, Urinary Tract, and Central Nervous System.
First use on or prior to July 6, 1967.

SN 281,661. Mead Johnson & Company, Evansville, Ind. Filed Oct. 3, 1967.

GYNOJECT

For Progestational Agent.
First use on or prior to Sept. 23, 1967.

SN 281,662. Mead Johnson & Company, Evansville, Ind. Filed Oct. 3, 1967.

GYNOREST

Owner of Reg. No. 691,567.
For Progestational Agent.
First use on or prior to Sept. 23, 1967.

SN 281,663. Mead Johnson & Company, Evansville, Ind. Filed Oct. 3, 1967.

GYNOSTAT

Owner of Reg. No. 801,218.
For Progestational Agent.
First use on or prior to Sept. 23, 1967.

SN 282,234. Diamond Laboratories, Inc., Des Moines, Iowa. Filed Oct. 11, 1967.

TRIANTHEN

For Pharmaceutical and Anthelmintic for Animals.
First use October 1964.

SN 282,238. Diamond Laboratories, Inc., Des Moines, Iowa. Filed Oct. 11, 1967.

RVD

For Vaccine To Prevent Bovine Rhinotracheitis and Virus Diarrhea in Cattle.
First use December 1965.

SN 282,239. Diamond Laboratories, Inc., Des Moines, Iowa. Filed Oct. 11, 1967.

EXTRA-SUL

For Pharmaceutical To Aid in the Treatment and Prevention of Non-Specific Enteric and Pulmonary Infections in Animals.
First use October 1964.

Class 19—Vehicles

SN 248,814. Kelsey-Hayes Company, Romulus, Mich. Filed June 23, 1966.



Owner of Reg. Nos. 799,764, 800,213, and 809,176.
For Automotive Wheels.
First use Apr. 11, 1966.

SN 259,578. Douglas Ben Ian Proctor, Warsash, England. Filed Nov. 28, 1966.

WAYFARER

For Sailboats; Boat Hulls, Masts, Spars and Rigging for Sailboats; and Constructional Kits in the Form of Unassembled or Partly Assembled Boats for Boat Building and Assembly.
First use June 1957; in commerce May 16, 1961.

SN 260,061. Michigan Wheel Company, Grand Rapids, Mich. Filed Dec. 5, 1966.

EQUI-FOIL

For Marine Propellers.
First use on or about June 10, 1966.

SN 260,062. Michigan Wheel Company, Grand Rapids, Mich. Filed Dec. 5, 1966.

DYNA-FOIL

For Marine Propellers.
First use on or about June 10, 1966.

SN 261,577. Fabrica Nacional de Automoviles, S.A., General Escobedo, Nuevo Leon, Mexico. Filed Dec. 28, 1966.

ISABELLA

For Automotive Vehicles—Namely, Passenger Vehicles, Trucks, Tricycles for Use by Adults, Truck Tractors and Structural Parts Thereof, Motor-Equipped Station Wagons and Parts Thereof.
First use Aug. 6, 1954; in commerce Aug. 6, 1954.

SN 282,661. Clyde Uhe, d.b.a. Clyde Body Co., Papillion, Nebr. Filed Oct. 17, 1967.

Clybilt

For Truck Bodies.
First use Aug. 15, 1967.

Class 21—Electrical Apparatus, Machines, and Supplies

SN 251,143. Lucas & Franczek, Inc., Chicago, Ill. Filed July 27, 1966.

L & F

For Electrically Operated Fire Alarms.
First use June 27, 1966.

SN 251,489. Yaou Denki Kabushiki Kaisha, Kawasaki-shi, Kanagawa-ken, Japan. Filed Aug. 1, 1966.

COLORNET

Owner of Japanese Reg. No. 690,886, dated Nov. 29, 1965.
For Television Receivers, Radio Receivers, and Transceivers.

SN 251,594. Luis Arellano, Jr., d.b.a. AED, Willow Grove, Pa. Filed Aug. 3, 1966.

LIFETYME

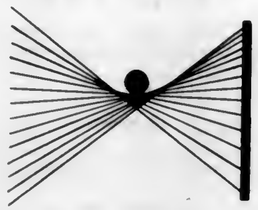
For Piezo-Electric Crystals.
First use Oct. 1, 1963.

SN 253,413. The Associated Press, New York, N.Y. Filed Aug. 30, 1966.

Offsetter

Applicant makes no claim to the word "Offsetter" apart from the mark as shown. Owner of Reg. Nos. 608,647, 755,558, and 755,564.
For Machines and Apparatus for Reception of Telegraph Transmission Copy in Newspaper Justified Column Form.
First use May 3, 1966.

SN 255,358. The Seagrave Corporation, New York, N.Y. Filed Sept. 28, 1966.



For Radio Antennas, and Special Racks and Cases Including Drop Cases and Heat Exchange Housings for Radio and Radar Gear.
First use Sept. 2, 1966.

SN 255,931. Tex-Con Laboratories, Inc., Dallas, Tex. Filed Oct. 6, 1966.

TRASHMASTER

For Electric Operated Domestic Trash and Refuse Compactors.
First use July 1, 1966.

SN 257,342. Alkaline Batteries Corporation, Mountain View, Calif. Filed Oct. 27, 1966.

ALCAD

For Storage Batteries.
First use October 1964.

SN 259,395. Belk Stores Services, Inc., Charlotte, N.C. Filed Nov. 25, 1966.

State Pride

Owner of Reg. Nos. 612,244, 765,989, and others.
For Electric Irons, Electric Toasters/Toaster Broilers, Electric Fry Pans, Electric Blenders, Electric Corn Poppers, Electric Radios, Electric Sweeper Vacuums, Electric Vacuum Cleaners, Electric Coffee Makers, Electric Can Openers/Sharpeners, Electric Mixers/Food Grinders, Electric Grills/Waffle Bakers, Electric Heaters, and Electric Floor Polishers.
First use Feb. 1, 1965.

SN 259,617. H. Bruce Williams, Houston, Tex. Filed Nov. 28, 1966.

ALERTMASTER

For Electrical Sound Making Device for Warning Drivers in Case of Drowsiness—Namely, Foot Operated Switch and Horn.
First use July 1956.

SN 259,629. Acrilamp Lighting Corp., d.b.a. Like Magic Products, Bronx, N.Y. Filed Nov. 29, 1966.

ACRILAMP

For Lamp Fixture.
First use Oct. 4, 1966.

SN 262,057. Nicholl Brothers, Inc., Kansas City, Mo. Filed Jan. 6, 1967.

THROW-LITE

For Battery Operated Lanterns.
First use Sept. 24, 1966.

SN 262,954. Metra Electronics Corporation, Brooklyn, N.Y. Filed Jan. 20, 1967.

INVIS-A-MOUNT

For Combined Speaker and Mount Therefor.
First use September 1966.

SN 263,199. Tandy Corporation, Fort Worth, Tex., assignee of Radio Shack Corporation, Boston, Mass. Filed Jan. 24, 1967.

JETSTREAM

For Radios.
First use at least as early as March 1966.

SN 263,200. Tandy Corporation, Fort Worth, Tex., assignee of Radio Shack Corporation, Boston, Mass. Filed Jan. 24, 1967.

PATROLMAN

For Radios.
First use at least as early as September 1966.

SN 263,906. General Battery and Ceramic Corp., Reading, Pa. Filed Feb. 3, 1967.

MARK IV

For Electric Storage Batteries.
First use Nov. 25, 1964.

SN 266,044. ITT Illumination Inc., Lynn, Mass., by change of name from ITT Champion Inc., Lynn, Mass. Filed Mar. 6, 1967.

CHAMPION

For Incandescent Lamps, Fluorescent Tubes, and Mercury Vapor Lamps.
First use 1920 on incandescent lamps.

SN 269,177. Fedtro, Inc., Rockville Centre, N.Y. Filed Apr. 14, 1967.

EXTEND-O-LET

For Multiple Electric Outlets.
First use May 7, 1964.

SN 269,357. Sears, Roebuck and Co., Chicago, Ill. Filed Apr. 17, 1967.

LI'L CRAFTY

For Portable Electric Power Tools—Namely, Grinders.
First use on or about Nov. 2, 1966.

SN 269,574. The Simco Company, Inc., Lansdale, Pa. Filed Apr. 19, 1967.

AEROSTAT

For Electrical Static Eliminators and Neutralizing Systems.
First use in or about August 1960.

SN 269,904. London Products, Inc., New York, N.Y. Filed Apr. 24, 1967.

THE MAD CLAD COOLIES

For High-Intensity Lamps.
First use Mar. 9, 1967.

SN 269,929. Scanbe Manufacturing Corporation, Monterey Park, Calif. Filed Apr. 24, 1967.

SCANBE

For Printed Circuit Hardware and in Particular, Printed Circuit Card Guides, Printed Circuit Card Ejectors, Printed Circuit Hardware Spacers and Assemblies Thereof With Electrical Connectors, and Equipment Drawers.
First use April 1964.

SN 270,338. Aquadynamics, Inc., North Hollywood, Calif. Filed May 1, 1967.

ANT-N-DYNA

For Television Antennae for Boats.
First use Mar. 3, 1967.

SN 270,770. Electrothermal Engineering Limited, London, England. Filed May 5, 1967.

THERMOTRACE

Owner of British Reg. No. 876,754, dated Mar. 10, 1965.
For Flexible Electrical Heating Elements.

SN 270,797. Mars Signal Light Company, Chicago, Ill. Filed May 5, 1967.

888

For Signal Lights for Emergency Vehicles.
First use on or before Mar. 30, 1967; on or before Aug. 1, 1957, in a different form.

SN 273,831. Television Manufacturers of America Co., Wheeling, Ill. Filed June 14, 1967.

TMA

For Television Sets, Radio Receiving Sets, and Combinations Thereof.
First use Apr. 25, 1967.

SN 273,970. Metal Edge Industries, Barrington, N.J. Filed June 15, 1967.

CHECKPOINT

For Electronic Protection Equipment—Namely, Apparatus for Detecting Articles Being Removed and Locating Lost Articles.
First use May 8, 1967.

SN 274,686. Television Manufacturers of America Co., Wheeling, Ill. Filed June 26, 1967.

TMA | TELEVISION *Manufacturers of America Co.*

Applicant disclaims the term "Television Manufacturers of America Co." apart from the mark as shown.
For Television Sets, Radio Receiving Sets, and Combinations Thereof.
First use Apr. 25, 1967.

SN 276,062. Mining & Chemical Products Limited, London, England. Filed July 17, 1967.

THERMAGOTRONS

Owner of British Reg. Nos. 849,907, dated June 4, 1963, and 872,603, dated Feb. 2, 1965.
For Semi-Conductor Thermoelectric Devices—Namely, Thermoelectric Heat Pumps and Generators Based on Sintered Bismuth Telluride Alloys.

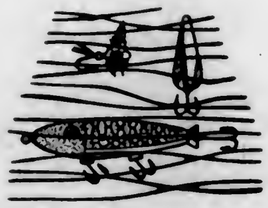
SN 278,558. Minnesota Mining and Manufacturing Company, St. Paul, Minn. Filed Aug. 18, 1967.

3M

For Static Eliminators.
First use Aug. 19, 1965.

Class 22 — Games, Toys, and Sporting Goods

SN 232,020. Old Pal, Inc., Lititz, Pa. Filed Nov. 2, 1965.



The mark consists of the fanciful designation and arrangement of the lures shown in the drawing as superimposed on a series of generally horizontally extending lines. The representations of the fishing lures are disclaimed except in the combination shown.
For Tackle Boxes.
First use Sept. 9, 1965.

SN 247,062. Romper Room, Inc., Baltimore, Md. Filed June 1, 1966.

WiLLie*

For Toys—Namely, Figurines and Dress Accessories for the Same, Cut Out From Sheet Material.
First use February 1956.

SN 247,673. Brandell Products Corporation, Rosemont, Ill. Filed June 9, 1966.

GREEN ARROW

Owner of Reg. No. 792,157.
For Golf Ball Marking Devices.
First use on or about May 11, 1966.

SN 249,042. Mr. Mod Shop, Inc., New Orleans, La. Filed June 27, 1966.



The word "Authentic" is disclaimed apart from the mark as shown. Owner of Reg. No. 826,062.
For Bridge Sets Consisting of Playing Cards, Score Pad, and Pencil.
First use Jan. 21, 1966.

SN 249,419. Effingham Tackle Company, Effingham, Ill. Filed July 1, 1966.

Shady Lady

For Lures.
First use Apr. 1, 1966.

SN 263,941. Production & Marketing Company, Limited, Newtown, Conn. Filed Feb. 3, 1967.

R.S.V.P.

For Equipment for Playing a Word Game.
First use Dec. 14, 1966.

SN 264,957. Homer D. Paulson, Kent, Wash. Filed Feb. 17, 1967.

Shorty-Pac

For Fishing Rods.
First use Nov. 11, 1965.

SN 265,179. Crush International Inc., Evanston, Ill. Filed Feb. 21, 1967.

CRAZY CRUSHAROO

For Inflatable Toy Character.
First use Dec. 19, 1966.

SN 265,304. Head Ski Co., Inc., Timonium, Md. Filed Feb. 23, 1967.

TF-8

For High Molecular Weight Polyethylene Plastic Ski Bottoms.
First use at least as early as Oct. 5, 1966.

SN 267,308. Atech Enterprises, Inc., North Amityville, N.Y. Filed Mar. 22, 1967.

TINY-TETHERED

For Equipment Sold as a Unit for Playing a Parlor-Type Table Tennis Game.
First use Dec. 1, 1966.

SN 267,704. Wilson Sporting Goods Co., River Grove, Ill., assignee of Wilson Sporting Goods Co., River Grove, Ill. Filed Mar. 27, 1967.

PASSMASTER

For Basketballs.
First use in 1959.

SN 267,957. Louis Marx & Co., Inc., New York, N.Y. Filed Mar. 30, 1967.

CAPT. MADDOX

For Toy Figures and Accessories Therefor.
First use Feb. 17, 1967.

SN 268,063. Pflueger Corporation, Akron, Ohio. Filed Mar. 31, 1967.

PAKRON

Owner of Reg. No. 272,144.
For Fishing Reels.
First use in or about August 1952.

SN 268,067. Pflueger Corporation, Akron, Ohio. Filed Mar. 31, 1967.

MEDALIST

Owner of Reg. No. 264,904.
For Reels, Parts for Reels, Rods, and Fishing Lines.
First use on or about Jan. 27, 1967.

SN 269,043. Alexander Doll Company, Inc., d.b.a. Madame Alexander, New York, N.Y. Filed Apr. 13, 1967.

"RUSTY"

For Dolls.
First use Mar. 14, 1967.

SN 269,791. Goldberger Doll Mfg. Co., Inc., Brooklyn, N.Y. Filed Apr. 24, 1967.

SOFTINA

For Dolls.
First use Dec. 14, 1966.

SN 269,890. Hassenfeld Bros. Inc., Pawtucket, R.I. Filed Apr. 24, 1967.

ZOK

For Equipment Sold as a Unit for Playing a Toy Game.
First use on or about Feb. 27, 1967.

SN 270,117. Douglas M. Collins, d.b.a. Collins Ski Products Co., and Collins & Nosworthy, New Milford, N.J. Filed Apr. 27, 1967.

PRISMATIC

For Ski Poles.
First use June 15, 1966.

SN 270,377. The General Tire & Rubber Company, Akron, Ohio. Filed May 1, 1967.

Dutchman

For Golf Balls.
First use at least as early as 1960.

SN 271,443. CO–5 Company, Inc., Benton Harbor, Mich. Filed May 15, 1967.

joltz

For Apparatus Sold as a Unit for Playing a Table Type Parlor Game.
First use Apr. 12, 1967.

SN 271,493. Louis Marx & Co. Inc., New York, N.Y. Filed May 15, 1967.

PANCHO

For Toy Pony and Accessories.
First use Apr. 7, 1967.

SN 272,276. House of Huston, Inc., Spring Valley, N.Y. Filed May 24, 1967.

PLAYTIME TOYS

Applicant disclaims the word "Toys" except in conjunction with the mark as shown, but without however sacrificing any common law rights it might have herein.
For Training and Amusement Devices for Birds, Including Parakeets and Canaries; Dogs, Cats, Kittens, and Monkeys.
First use Apr. 2, 1953.

SN 276,467. Pressman Toy Corporation, New York, N.Y. Filed July 20, 1967.

BLIMPS

For Inflatable Toys.
First use Sept. 27, 1966.

SN 276,735. Cameo Doll Products Co., Inc., Port Allegany, Pa. Filed July 25, 1967.

GIGGLES

For Dolls.
First use September 1947.

SN 276,801. Apparel Corporation of America, Knoxville, Tenn. Filed July 26, 1967.



For Protective Athletic Equipment—Namely, Shoulder Pads, Hip Pads, Thigh Pads, and Knee Pads.
First use Sept. 1, 1966.

SN 277,441. Columbia Industries, Inc., San Antonio, Tex. Filed Aug. 3, 1967.



For Bowling Balls.
First use June 14, 1967.

SN 277,442. Columbia Industries, Inc., San Antonio, Tex. Filed Aug. 3, 1967.

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For Bowling Balls.
First use June 14, 1967.

SN 280,137. The Toney Penna Company, Jupiter, Fla. Filed Sept. 12, 1967.

PIN-GRABBER

For Golf Clubs.
First use Aug. 15, 1967.

SN 281,939. Mattel, Inc., Hawthorne, Calif. Filed Oct. 6, 1967.

COWBOY IN AFRICA

For Toy Guns, and Rifles.
First use Sept. 8, 1967.

SN 281,942. Mattel, Inc., Hawthorne, Calif. Filed Oct. 6, 1967.

PICADOOS

For Toy Bead Making Sets.
First use Sept. 8, 1967.

SN 282,244. Mattel, Inc., Hawthorne, Calif. Filed Oct. 11, 1967.

TRULY SCRUMPTIOUS

For Dolls, Doll Clothing, and Doll Accessories.
First use Sept. 22, 1967.

SN 282,245. Mattel, Inc., Hawthorne, Calif. Filed Oct. 11, 1967.

SQUIRTLES

For Toy Figures, and Toy Plastic Molding Apparatus and Materials for Making Such Figures.
First use Sept. 22, 1967.

SN 282,246. Mattel, Inc., Hawthorne, Calif. Filed Oct. 1, 1967.

CARACTACUS POTTS

For Dolls, Doll Clothing, and Doll Accessories.
First use Sept. 22, 1967.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

SN 235,585. Peters and Russell Inc., Springfield, Ohio. Filed Dec. 30, 1965.

PAR-VAC

For Pumping Units Having Particular, Though Not Limited, Application to the Removal of Crankcase Oil, Sludge, and Like Substance From an Engine.
First use Oct. 1, 1965.

SN 246,615. The Soil Mover Manufacturing Corporation, Columbus, Nebr. Filed May 25, 1966.

SOIL MOVER

For Farm and Industrial Equipment—Namely, Scrapers, Back-Fill Blades, Ditchers, and Levelers.
First use as early as 1946 on scrapers.

SN 248,986. Elliott Manufacturing Co., Omaha, Nebr. Filed June 27, 1966.



Applicant makes no claim to the representation of an aerial platform, apart from the mark as shown.
For Aerial Platforms, Lifts, Ladders, and Beams Adapted for Vehicular Mounting.
First use Jan. 14, 1966.

SN 250,101. Morse Industries, Inc., Ozone Park, N.Y. Filed July 12, 1966.

GEMINI

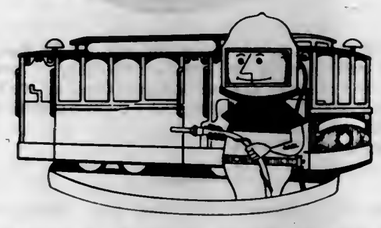
For Sewing Machines and Parts Thereof.
First use June 27, 1966.

SN 250,375. Haverberg Auto Laundry Equipment Co., Inc., Chicago, Ill. Filed July 15, 1966.

HAVERBERG

For Automobile Laundry Equipment—Namely, Wheel Washers, Floor Mat Washers, and Automobile Conveyors.
First use Mar. 19, 1955.

SN 250,561. Clementina Ltd., San Francisco, Calif. Filed July 19, 1966.



For Sandblasting Equipment—Namely, Sandblasting Machines.
First use October 1961.

SN 251,702. Centrala Importowo-Eksportowa "Implexmetal," Warsaw, Poland. Filed Aug. 4, 1966.

FLT

Priority claimed under Sec. 44(d) on Polish application filed Feb. 4, 1966; Reg. No. 45,550, dated Mar. 28, 1966.
For Bearings—Namely, Ball, Roller, Crowned, and Needle Bearings.

SN 251,764. David Manufacturing Co., Mason City, Iowa. Filed Aug. 4, 1966.

STIR-ATOR

For Machines for Stirring and Circulating Grain While Stored in Bins.
First use July 1963.

SN 253,743. Needle Industries Limited, Birmingham, England. Filed July 26, 1966.

PIC-KWIK

For Hand Tool for Ripping Seams and Cutting Thread.
First use January 1966; in commerce January 1966.

SN 258,307. Hydraulic Machinery Company, Butler, Wis. Filed Nov. 9, 1966.

HY-ROVER

For Self-Propelled Vehicle With a Powered Turret Adapted for Material Handling Apparatus.
First use Sept. 7, 1965.

SN 261,875. Power Cleaning Supply Co., Rockford, Ill. Filed Jan. 3, 1967.

AERO VAC

For Power Cleaning Units Adapted To Be Mounted on Trucks and Used in the Contract Cleaning of Residences, Offices, and the Like, and Including the Cleaning of Furniture, Carpet, Floors, Walls, Heating and Air-Conditioning Systems, Garages, and Attics.
First use Dec. 17, 1965.

SN 262,720. Thomson Industries, Inc., Manhasset, N.Y. Filed Jan. 17, 1967.

TOUCH TRANSFER

The word "Transfer" is disclaimed apart from the mark as shown.
For Manually Powered, Template Controlled Transfer Tables for Drilling and Milling.
First use Dec. 30, 1966.

SN 263,758. Fuller Tool Company, Inc., Whitestone, N.Y. Filed Feb. 1, 1967.

LIFELONG

For Screwdrivers, Chisels, and Scratch Awls.
First use 1938.

SN 263,934. Midwest Gruel-Omatic Company, Grimes, Iowa. Filed Feb. 3, 1967.

GRUEL-OMATIC

For Automatic Liquid Feeder for Livestock.
First use about Jan. 25, 1965.

SN 264,214. Hoover Ball and Bearing Company, Saline, Mich. Filed Feb. 8, 1967.

uniloy

For Blow Molding Machines and Related Accessory Equipment Therefor—Namely, Trimmers, Conveyors, Blenders, Blown Article Loading Equipment; and Machine Tools—Namely, Ball Lapping Machines.
First use June 1959.

SN 264,500. Athey Products Corporation, Raleigh, N.C. Filed Feb. 13, 1967.

SNIPER

For Mobile Drilling Machines.
First use on or about Dec. 13, 1966.

SN 265,999. Cole Steel Equipment Co., Inc., New York, N.Y. Filed Mar. 6, 1967.

COLLEGIATE

For Office Equipment—Namely, Typewriters.
First use not later than on or about May 25, 1966.

SN 266,000. Cole Steel Equipment Co., Inc., New York, N.Y. Filed Mar. 6, 1967.

COLLEGIAN

For Office Equipment—Namely, Typewriters.
First use not later than on or about May 25, 1966.

SN 266,366. Southern Saw Service, Inc., Atlanta, Ga. Filed Mar. 9, 1967.

NEEDLE-TIP

For Meat Cutting, Band Saw Blades.
First use on or about Feb. 15, 1967.

SN 266,645. Dresser Industries, Inc., Dallas, Tex. Filed Mar. 14, 1967.

ISOPAC

For Air Compressors.
First use Sept. 19, 1966.

SN 266,701. Sundstrand Corporation, Rockford, Ill. Filed Mar. 14, 1967.

OMNIMIL

Owner of Reg. No. 679,566.
For Machining Centers, and More Specifically, a Multi-Purpose Machine Tool Capable of Performing a Number of Machining Operations Such as Drilling, Reaming, Tapping, End Milling, Face Milling, and Finish Boring.
First use Oct. 12, 1960.

SN 269,787. Pioneer Centrifuging Company, Limited, Houston, Tex. Filed Apr. 21, 1967.

SALAMANDER

For Submersible Pumps for Pumping Viscous Liquids, Slurries, and the Like.
First use Jan. 1, 1965.

SN 278,176. Addison Machine Engineering, Inc., Addison, Ill. Filed Aug. 14, 1967.

AME

For Metal-Forming Parts for Machines of the Nature of Tube Mills, Rolling Mills, and Presses.
First use on or about Dec. 10, 1966.

SN 281,528. Merriman, Inc., Hingham, Mass. Filed Oct. 2, 1967.

HVT

For Rings and Ring Holders for Textile Ring Spinning.
First use Sept. 14, 1967.

Class 26—Measuring and Scientific Appliances

SN 246,384. Stewart-Warner Corporation, Chicago, Ill. Filed May 23, 1966.

SPEEDO

For Bicycle Speedometers.
First use May 2, 1966.

SN 249,061. Orbit Instrument Corporation, Syosset, N.Y. Filed June 27, 1966.

ORBIT X-Y

Applicant disclaims the designation "X–Y" when used apart from the mark as shown.
For Ball Tracker.
First use June 15, 1966.

SN 249,408. Bulova Watch Company, Inc., Flushing, N.Y. Filed July 1, 1966.

ACCUTHERM

For Transducers Used for Measuring Temperature.
First use Oct. 18, 1963.

SN 253,921. Robert A. Stough, d.b.a. Robert A. Stough & Company, Chicago, Ill. Filed Sept. 6, 1966.

FLUI-DRAM

For Plastic Measuring Cups.
First use July 7, 1966.

SN 256,913. Astrosystems International Inc., Fairfield, N.J. Filed Oct. 21, 1966.

LABROC

For Laboratory Rocket Training Devices, Including Means for Storing Fuel and Oxidizer Gases, a Thrust Engine With Meter, Pressure Meters, Flow Meters, and a Control Circuit (Various Fuels and Oxidizers Can Be Burned in the Thrust Engine at a Range of Pressures To Determine the Proportional Thrust).
First use on or before Jan. 1, 1963.

SN 262,648. Joseph B. Walker, d.b.a. Radio Optical Research Co., West Hollywood, Calif. Filed Jan. 16, 1967.

ELECTRA-ZOOM

Owner of Reg. No. 630,869.
For Television and Motion Picture Zoom Lenses, Lens Systems, and Parts Sold Therewith.
First use July 5, 1950.

SN 264,029. Clary Corporation, San Gabriel, Calif. Filed Feb. 6, 1967.

DATACOMP

For Electronic Computers and Associated Computer Peripheral Equipment—Namely, Program Control Boxes Containing Controls for Programming Computers, Tape Readers for Reading Punched Tape and Inputing Data Into Computers, Program Boards for Programming Computers, and Program Displays for Visually Indicating Steps in Computation Performed by Computers.
First use on or about Oct. 14, 1966.

SN 266,336. Kontes Glass Company, Vineland, N.J. Filed Mar. 9, 1967.

WATCHMAN

For Transparent Visual Flow Indicator Components for Inclusion in Scientific Laboratory Glassware Setups—Namely, Condensers, Distillation Columns, and Chromatographic Columns.
First use Dec. 1, 1966.

SN 266,435. Mayes Brothers Tool Manufacturing Company, Johnson City, Tenn. Filed Mar. 10, 1967.

MAYES

Owner of Reg. No. 226,175.
For Spirit Levels.
First use July 15, 1925.

SN 266,885. The House of Vision, Inc., Chicago, Ill. Filed Mar. 16, 1967.

V.I.P. BY H.O.V.

Owner of Reg. Nos. 344,583, 659,994, and 807,265.
For Eyeglasses Having Safety Lenses, and Lenses Therefor.
First use on or before Nov. 24, 1964.

SN 267,248. Hallmark Cards, Incorporated, Kansas City, Mo. Filed Mar. 21, 1967.

EXPOZAC

For Automatic Exposure Computing Device for Use With a Camera and the Like.
First use Mar. 7, 1967.

SN 268,059. Reginald T. Peacock, Oroville, Calif. Filed Mar. 31, 1967.

ADJUST-A-BOB

For Plumb Bob Attachment.
First use Jan. 18, 1967.

SN 268,283. Atlas Supply Company, Springfield, N.J. Filed Apr. 4, 1967.

ATLAS

Owner of Reg. Nos. 506,651, 648,914, and others.
For Generator, Alternator, Regulator Tester.
First use Dec. 7, 1966.

SN 269,180. General Aniline & Film Corporation, New York, N.Y. Filed Apr. 14, 1967.

GAFAX

For Sensitized Paper for Electrophotographic Copying.
First use Jan. 26, 1966.

SN 270,240. General Aniline & Film Corporation, New York, N.Y. Filed Apr. 28, 1967.

GAFAX

For Electrophotographic Copying Machines.
First use Mar. 13, 1967.

SN 271,145. Charles J. Glasser, Hialeah, Fla. Filed May 10, 1967.

DENTA-GRAF

For Dental X-Ray Film.
First use on or about Nov. 29, 1966.

SN 271,521. Litton Business Systems, Inc., New York, N.Y., by merger and change of name from Royal Typewriter Company, Inc., Greenwich, Conn. Filed May 15, 1967.

CODETRONIC

Owner of Reg. No. 708,732.
For Automated Business Data Processing Equipment Including Data Collection Apparatus, Computing Machines, Computing Machines With Punch Tape Output, and Punch Tape Handling Apparatus.
First use not later than Apr. 15, 1960.

SN 274,839. Trans-Meridian International, Inc., Washington, D.C. Filed June 27, 1967.

STINGL BAR

Applicant disclaims the word "Bar" apart from the mark as shown.
For Apparatus for Aiding the Flight of a Vertical Take-Off and Landing Aircraft Relative to a Ship at Sea by Providing a Stabilized Visual Reference So That the Pilot of the VTOL Aircraft May Maintain the Craft in Proper Attitude Relative to the Ship.
First use Mar. 22, 1967.

SN 282,515. Macarr, Inc., Bronx, N.Y. Filed Oct. 16, 1967.

ANDAC

For Battery Analyzer Units.
First use Apr. 13, 1967.

Class 27 — Horological Instruments

SN 272,319. Edward Trauner, Inc., New York, N.Y. Filed May 24, 1967.

SPACETRONIC

For Watches, Watch Movements, and Parts Therefor.
First use Mar. 21, 1967.

Class 28 — Jewelry and Precious-Metal Ware

SN 263,573. Abe Hoffenberg, d.b.a. Ro-Mel Manufacturing Jewelers, Los Angeles, Calif. Filed Jan. 30, 1967.



For Jewelry.
First use Sept. 1, 1964.

SN 272,775. Towle Manufacturing Company, Newburyport, Mass. Filed May 25, 1967.

MEADOW SONG

For Sterling Silver Flatware.
First use Apr. 27, 1967.

SN 273,204. J. L. Newhouse & Son, Inc., New York, N.Y. Filed June 6, 1967.

Two Timers

For Earrings and Costume Jewelry.
First use September 1966.

Class 29 — Brooms, Brushes, and Dusters

SN 236,653. Rubberset Company, East Newark, N.J. Filed Jan. 17, 1966.



The drawing is lined for red, but color is not claimed as a feature of the mark.
For Paint Rollers and Parts Thereof.
First use Oct. 11, 1965.

SN 250,906. Joseph Lieberman and Sons, Inc., Philadelphia, Pa. Filed July 25, 1966.

UNIBODY



For Paint Brushes.
First use June 1, 1966.

SN 268,051. Kanegafuchi Boseki Kabushiki Kaisha, d.b.a. Kanegafuchi Spinning Co., Ltd., Miyakojima-ku, Osaka, Japan. Filed Mar. 31, 1967.

VINYLA

For Spongy Material of a Fabric Reinforced Polyvinyl Formal Compound for Cleaning, Wiping, and/or Polishing Purposes.
First use Feb. 13, 1967; in commerce Feb. 21, 1967.

Class 30 — Crockery, Earthenware, and Porcelain

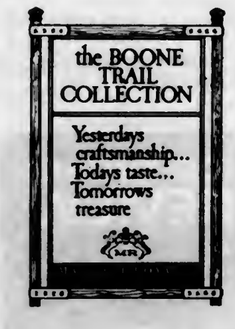
SN 267,150. Haruta & Co., Inc., New York, N.Y. Filed Mar. 20, 1967.

ROYAL CASTLE

For China Dinnerware.
First use Mar. 7, 1967.

Class 32 — Furniture and Upholstery

SN 262,651. Maxwell Royal Chair Company, Hickory, N.C. Filed Dec. 29, 1966.



Applicant hereby disclaims the descriptive term "Collection," the descriptive wording "Yesterdays Craftmanship . . . Todays Taste . . . Tomorrows Treasure," and also the tradename "Maxwell Royal Chair Co., Hickory, North Carolina."
For Furniture—Namely, Sofas, Chairs, and Ottomans.
First use Sept. 30, 1966.

SN 271,180. Robinson Metals Co., Inc., West Boylston, Mass. Filed May 10, 1967.

SUSPENDEX

For Filing Cabinets.
First use Sept. 24, 1966.

SN 271,376. Levolor Lorentzen, Inc., Hoboken, N.J. Filed May 12, 1967.

MAGIC WAND

For Venetian Blind Tilting Mechanism Incorporated in and Sold as a Unit With the Venetian Blind.
First use on or about Oct. 31, 1966.

SN 271,926. Dayco Corporation, Dayton, Ohio. Filed May 19, 1967.

SLEEP-A-JUST

Owner of Reg. No. 767,171.
For Pillows.
First use on or about Mar. 28, 1967.

Class 33 — Glassware

SN 257,979. Pittsburgh Plate Glass Company, Pittsburgh, Pa. Filed Nov. 4, 1966.

GALLERY

For Sheet Glass.
First use at least as early as Oct. 21, 1966.

Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 262,775. The Dow Chemical Company, Midland, Mich. Filed Jan. 18, 1967.

MAPP

Owner of Reg. Nos. 745,630 and 770,339.
For Torch Handles, Torch Tips, High Pressure Hose, and Flow Check Valves, Sold as a Unit and as Separate Parts.
First use Nov. 16, 1962.

SN 279,148. London Chemical Company, Inc., Melrose Park, Ill. Filed Aug. 28, 1967.

LONCOTIN

For Tinning or Topping Oil Used To Enhance Soldering and To Control the Oxidation of Solder in Automatic Soldering Machines.
First use in 1952.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 266,061. The Monarch Rubber Company, Hartville, Ohio. Filed Mar. 6, 1967.

MONO THANE

For Solid Industrial Polyurethane Rubber Tires.
First use Feb. 1, 1967.

Class 36 — Musical Instruments and Supplies

SN 282,163. International Teaching Tapes, Inc., Tulsa, Okla. Filed Oct. 10, 1967.

DRILLTAPES

For Pre-Recorded Magnetic Tapes, and Supplemental Educational Instructional Materials for Use in Connection Therewith.
First use Aug. 18, 1967.

SN 282,330. Jerden Music, Inc., Seattle, Wash. Filed Oct. 12, 1967.

PICCADILLY

For Phonograph Records.
First use Sept. 1, 1966.

Class 37 — Paper and Stationery

SN 264,197. Chadbourn Finance Company, d.b.a. Time Saving Specialties, Minneapolis, Minn. Filed Feb. 8, 1967.

QUICKY INKER

No claim is made to the term "Inker" apart from the mark in its entirety.
For Canister-Type Felt Marking Pen Set.
First use Oct. 15, 1965.

SN 265,918. Pittsburgh National Bank, Pittsburgh, Pa. Filed Mar. 3, 1967.

ZIP-CHECK

For Bank Checks.
First use Feb. 20, 1967.

SN 268,543. West Virginia Pulp and Paper Company, New York, N.Y. Filed Apr. 6, 1967.

FASCINATION

For Greeting-Card Stock.
First use Dec. 6, 1966.

SN 268,731. Hallmark Cards, Incorporated, Kansas City, Mo. Filed Apr. 10, 1967.

CRESTLINE

For Writing Instruments—Namely, Pens and Pencils, and Parts Thereof.
First use Mar. 16, 1967.

SN 268,732. Hallmark Cards, Incorporated, Kansas City, Mo. Filed Apr. 10, 1967.

REGAL

For Writing Instruments—Namely, Pens and Pencils, and Parts Thereof.
First use Mar. 16, 1967.

SN 268,733. Hallmark Cards, Incorporated, Kansas City, Mo. Filed Apr. 10, 1967.

CROWNLINE

For Writing Instruments—Namely, Pens and Pencils, and Parts Thereof.
First use Mar. 16, 1967.

SN 269,222. Simpson Lee Paper Company, Kalamazoo, Mich. Filed Apr. 14, 1967.

COMMANDER

For Bond Paper.
First use June 7, 1915.

Class 38 — Prints and Publications

SN 250,251. Deafness Speech and Hearing Publications, Inc., Washington, D.C. Filed July 14, 1966.

dshABSTRACTS

The drawing is lined for light olive green. No claim is made to the word "Abstracts" apart from the mark as shown.
For Quarterly Publication Containing Summaries of Literature Pertinent to Deafness, Speech, and Hearing.
First use Oct. 1, 1960.

SN 251,520. Edward C. Dawson, Palm Beach, Fla. Filed Aug. 2, 1966.

THE SOCIAL PICTORIAL

For Magazine.
First use on or about Dec. 3, 1960.

SN 258,030. Amway Corporation, Ada, Mich. Filed Nov. 7, 1966.

AMWAY

For Printed Sales Aids and Promotional Materials for Use by Others in the Selling of Goods in the Form of Pamphlets, Leaflets, Cards, Stickers, Labels, Manuals, Catalogs, Brochures, Books, and the Like; and Movie Films and Slides.
First use on or about Nov. 24, 1959.

SN 260,945. The Miller Publishing Company, Minneapolis, Minn. Filed Dec. 16, 1966.

ice cream REVIEW

The words "Manufacturing," "Merchandising," and "Marketing" are disclaimed apart from the mark as shown.
For Monthly Trade Magazine.
First use Dec. 20, 1917.

SN 262,167. Hassenfeld Bros. Inc., Pawtucket, R.I. Filed Jan. 9, 1967.

COMMAND POST NEWS

For Periodic Newspaper Pertaining to Military Matters for Distribution to Children.
First use April 1965.

SN 262,264. Illinois Tool Works Inc., Chicago, Ill. Filed Jan. 10, 1967.

teknique

For House Organ Issued Periodically.
First use Apr. 1, 1965.

SN 262,450. Tompkins' Label Service, Philadelphia, Pa. Filed Jan. 12, 1967.

TOLAS

For Labels.
First use Jan. 5, 1967.

SN 263,626. The Sunday School Times Foundation, Philadelphia, Pa. Filed Jan. 30, 1967.

THE SUNDAY TIMES

Owner of Reg. No. 236,719.
For Weekly Newspaper Devoted to News and Articles of a Religious Nature.
First use Dec. 3, 1966.

SN 264,448. William T. Ryan, d.b.a. William T. Ryan Publishing Company, Chicago, Ill. Filed Feb. 10, 1967.

CARRIAGE TRADE

For Magazine.
First use Nov. 3, 1966.

SN 266,570. Norcross, Inc., New York, N.Y. Filed Mar. 13, 1967.

PUPPET LOVE

For Greeting Cards.
First use Jan. 18, 1967.

SN 266,653. General Features Corporation, New York, N.Y. Filed Mar. 14, 1967.

COINWORD

For Newspaper Puzzle Feature.
First use June 13, 1955.

SN 267,057. The National Life and Accident Insurance Company, Nashville, Tenn. Filed Mar. 17, 1967.

HOME OFFICE SHIELD

For House Organ.
First use June 1935.

SN 267,345. The National Life and Accident Insurance Company, Nashville, Tenn. Filed Mar. 17, 1967.

THE SHIELD NEWS

For House Organ.
First use Mar. 15, 1965.

SN 270,221. Beauty Forecast Publications, Inc., Chicago, Ill. Filed Apr. 28, 1967.

BEAUTY TALK

For Magazine Published Periodically.
First use on or about Jan. 18, 1967.

SN 281,947. Spot-O-Gold Corporation, Philadelphia, Pa. Filed Oct. 6, 1967.

PIZZ-A-GOLD

For Promotional Devices for Promoting the Sale of Merchandise by Others.
First use June 28, 1967.

Class 39 — Clothing

SN 240,356. Steinmetz Bros., Inc., New York, N.Y. Filed Mar. 7, 1966.

STYLEWISE

For Men's and Boys' Shirts, Sport Shirts, Polo Shirts, Pants, and Pajamas.
First use July 1, 1958.

SN 249,724. Imperial Reading Corporation, New York, N.Y. Filed July 7, 1966.

Chap-Man

For Men's, Boys', and Kiddies' Jeans, Slacks, and Jackets.
First use Apr. 15, 1966.

SN 254,283. Honda Associates Inc., New York, N.Y. Filed Sept. 12, 1966.

TOKAIDO

For Karate and Judo Suits, Uniforms, Kimona Sleeves, Straight Hand Collars, and Tie Belts.
First use Feb. 1, 1964.

SN 254,782. Funwear, Inc., New York, N.Y. Filed Sept. 20, 1966.

FUNWEAR

For Girls' Jumpers, Jumper Sets, Slacks, Blouses, Slack and Blouse Sets, Shorts, Pedal Pushers, Shorts and Blouse Sets, Pedal Pusher and Blouse Sets, Dress and Panty Sets, Tennis Sets, and Shift Sets.
First use Aug. 29, 1966.

SN 258,553. Karoll's, Chicago, Ill. Filed Nov. 14, 1966.

WHITNEY & BLAIN

For Men's Outer Clothing—Namely, Suits, Sport Coats, Top Coats, All Weather Coats, and Slacks.
First use Sept. 1, 1966.

SN 260,063. Midwest Outerwear Mfg. Co., Port Washington, Wis. Filed Dec. 5, 1966.



For Men's, Women's, and Boys' Outerwear Garments, Ski Pants, Ski Jackets; Car Coats; Suburban Coats; Jump Suits; Jackets and Coats; and Men's Vests.
First use May 14, 1965.

SN 261,681. Abbie C. Rutherford, Irving, Tex. Filed Dec. 29, 1966.

ABBIE GOWNS

Applicant disclaims the word "Gowns" apart from the mark as shown.
For Examining Gowns for Use in Hospitals, Doctors' Offices and Clinics.
First use Nov. 6, 1966.

SN 261,684. Mr. Bernard Szwagier, Paris, France. Filed Dec. 29, 1966.

Lorentiss

Owner of French Reg. No. 502,573, dated Feb. 15, 1962 (Paris); Natl. Inst. No. 179,467.
For Stockings, Lingerie, Underwear, Shirts, Bathing Suits, Dresses, Skirts, Pants, Coats, and Perfumed Scarves.

SN 266,233. The Juvenile Shoe Corporation of America, Aurora, Mo. Filed Mar. 8, 1967.

Cradle Step

Owner of Reg. No. 127,427.
For Shoes for Women.
First use Feb. 20, 1967.

SN 266,401. Ashear Bros., Inc., New York, N.Y. Filed Mar. 10, 1967.

BAKER'S DOZEN

Owner of Reg. No. 650,115.
For Handkerchiefs and Kerchiefs.
First use Nov. 22, 1954.

SN 266,670. Lisanne, Inc., Brooklyn, N.Y. Filed Mar. 14, 1967.

LISANNE

Owner of Reg. Nos. 631,388 and 817,838.
For Ladies' and Misses' Smocks, Shifts, and House Dresses.
First use Oct. 11, 1965.

SN 267,167. Melville Shoe Corporation, New York, N.Y. Filed Mar. 20, 1967.

Sno-Hoppers

For Rubber Boots and Shoes.
First use Feb. 2, 1967.

SN 267,805. Burlington Industries, Inc., New York, N.Y. Filed Mar. 29, 1967.

WILLOWTRECE

Owner of Reg. No. 289,158.
For Women's Hosiery.
First use Feb. 25, 1966.

SN 267,806. Burlington Industries, Inc., New York, N.Y. Filed Mar. 29, 1967.

WILLOWETTE

Owner of Reg. No. 289,158.
For Women's Hosiery.
First use Feb. 25, 1966.

SN 267,840. McGregor-Doniger Inc., New York, N.Y. Filed Mar. 29, 1967.

SCOT-CLEAN

For Shirts.
First use Mar. 10, 1967.

SN 268,595. Harry & Dan Grossman Furs, Inc., New York, N.Y. Filed Apr. 7, 1967.

POLAR ROC

For Fur Garments—Namely, Coats, Stoles, and Jackets.
First use Mar. 15, 1967.

SN 269,746. Curlee Clothing Company, St. Louis, Mo. Filed Apr. 21, 1967.

CANTERFIELD

For Men's Suits, Topcoats, Sport Coats, and Slacks.
First use Jan. 10, 1967.

SN 270,777. M. Fine & Sons Manufacturing Company, Inc., New York, N.Y. Filed May 5, 1967.

ROOMY RICHARD

For Jackets, Playsuits, Boys' Blouses, Boys' Shirts, Pajamas, Flannel Shirts, Sport Shirts, Dress Shirts, Work Shirts, Work Pants, Walking Shorts, Overalls, Overall Coats, and Underwear of Knitted and Textile Fabric for Men, Women, and Children.
First use at least as early as July 8, 1922.

SN 273,723. Olin Mathieson Chemical Corporation, New York, N.Y. Filed June 13, 1967.

WINCHESTER

Owner of Reg. Nos. 53,994, 584,431, and others.
For Sports Shirts, Shooting Jackets, Vests and Coats for Men, Women, and Children.
First use at least as early as Jan. 1, 1960.

SN 275,810. Poster Dresses Ltd., London, England. Filed July 12, 1967.

POSTER

For Disposable Dresses.
First use on or about Apr. 28, 1967; in commerce on or about Apr. 28, 1967.

Class 40 — Fancy Goods, Furnishings, and Notions

SN 282,160. Fashion Tress, Inc., Miami Beach, Fla. Filed Oct. 10, 1967.

CANDI

For Ladies' Wigs and Hairpieces.
First use Sept. 1, 1967.

SN 282,329. Fashion Tress, Inc., Miami Beach, Fla. Filed Oct. 12, 1967.

PRETTYGIRL

For Ladies' Wigs and Hairpieces.
First use on or about Sept. 12, 1967.

Class 44 — Dental, Medical, and Surgical Appliances

SN 257,984. Regal Dental Corporation, North Massapequa, N.Y. Filed Nov. 4, 1966.



The name "Regal Dental Corporation" is disclaimed apart from the mark as shown. The lining shown in the drawing is part of the mark and does not identify color.
For Dental Appliances—Namely, Dental Casting Gold, False Teeth, Inlays, Crowns, Bridges, and Dental Abrasives.
First use September 1966.

SN 268,105. Ritter Pfaudler Corporation, Rochester, N.Y. Filed Mar. 31, 1967.

AirGlide

For Dental Chair Bases.
First use Dec. 6, 1966.

SN 268,480. Electro-Catheter Corporation, Linden, N.J. Filed Apr. 6, 1967.

ELECATH

Owner of Reg. No. 827,622.
For Bipolar Pacing Styles, Pacemaker Catheters, Right Heart Catheters, Disposable Catheters, and Left Heart Catheters.
First use Sept. 24, 1963.

Class 46 — Foods and Ingredients of Foods

SN 215,939. Cafe Salvador, Inc., San Francisco, Calif. Filed Apr. 7, 1965.

CAFÉ Salvador

Owner of Reg. No. 723,337.
For Instant Coffee.
First use Mar. 5, 1959.

SN 225,781. Lake Shore Products, Inc., Chicago, Ill. Filed Aug. 16, 1965.

FRENCH SOUR

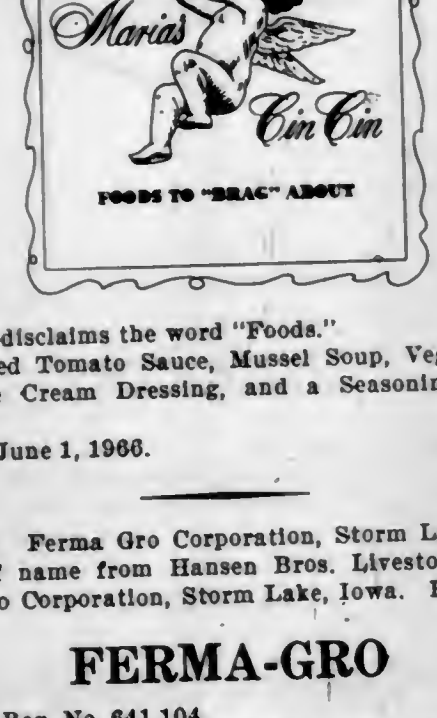
The word "Sour" is disclaimed apart from the mark as shown.
For Ingredient for Use in the Making of Bread To Enhance Flavor, Mellow Gluten, and Hasten Fermentation.
First use on or about Dec. 5, 1956.

SN 244,961. Paul F. Beich Company, Bloomington, Ill. Filed May 4, 1966.

49er

For Candy.
First use Apr. 14, 1965.

SN 248,208. Maria Bragalini, d.b.a. Maria's Cin Cin, New York, N.Y. Filed June 16, 1966.



Applicant disclaims the word "Foods."
For Canned Tomato Sauce, Mussel Soup, Vegetable Soup, Blue Cheese Cream Dressing, and a Seasoning Sauce for Meats.
First use June 1, 1966.

SN 248,606. Ferma Gro Corporation, Storm Lake, Iowa, by change of name from Hansen Bros. Livestock Co., d.b.a. Ferma-Gro Corporation, Storm Lake, Iowa. Filed June 21, 1966.

FERMA-GRO

Owner of Reg. No. 641,104.
For Feed Protein Supplement and Silage Preserver.
First use Jan. 22, 1964.

SN 252,134. Salada Foods Ltd., Don Mills, Ontario, Canada. Filed Aug. 10, 1966.

SALADA

Owner of U.S. Reg. No. 92,805.
For Prepared Fudge Mix.
First use Feb. 11, 1965; in commerce Feb. 11, 1965.

SN 254,064. Ralston Purina Company, St. Louis, Mo. Filed Sept. 8, 1966.

DOG CHOW

Applicant makes no claim to the word "Dog" apart from the mark as shown. Owner of Reg. Nos. 102,843, 781,826, and others.
For Dog Food.
First use Sept. 13, 1926.

SN 254,938. McCormick & Company, Incorporated, Baltimore, Md. Filed Sept. 22, 1966.



No claim is made to the representation of the onions and garlic apart from the mark as shown.
For Dehydrated Garlic and Onions, in Powdered, Granulated, Ground, Minced, Chopped, and Sliced Form.
First use Aug. 29, 1966.

SN 255,794. Foremost Dairies, Inc., San Francisco, Calif. Filed Oct. 5, 1966.

DANDY

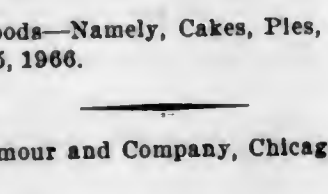
Owner of Reg. No. 770,439.
For Ice Cream Bars.
First use at least as early as Aug. 19, 1966.

SN 258,799. Foremost Dairies, Inc., San Francisco, Calif. Filed Nov. 16, 1966.

HIFALUTIN HAZELNUT

Applicant disclaims any exclusive right to the word "Hazelnut" apart from the mark as shown.
For Ice Cream.
First use at least as early as Sept. 10, 1966.

SN 261,135. American Bakeries Company, Chicago, Ill. Filed Dec. 20, 1966.



For Bakery Goods—Namely, Cakes, Pies, and Cookies.
First use Dec. 5, 1966.

SN 262,843. Armour and Company, Chicago, Ill. Filed Jan. 19, 1967.



For Animal and Animal and Vegetable Shortening.
First use on or prior to Oct. 31, 1966.

SN 263,107. Pet Incorporated, St. Louis, Mo. Filed Jan. 23, 1967.

COMPET

For Hard Candies, Apple Sauce, Mixed Nuts, Evaporated Milk, Canned Asparagus, and Apple Juice.
First use Sept. 14, 1966.

SN 265,122. T.F.H. Publications, Inc., Jersey City, N.J. Filed Feb. 20, 1967.

FISH NIP

The word "Fish" is disclaimed apart from the mark as shown.
For Food for Fishes.
First use July 1966.

SN 268,073. Ralston Purina Company, St. Louis, Mo. Filed Mar. 31, 1967.

HONEY DEW PLUMP

Applicant disclaims any registration rights to the word "Plump," apart from the mark as shown in the drawing, but waives none of its common-law rights in the mark shown in the drawing or any feature thereof.

For Frozen Chicken.
First use Sept. 21, 1964.

SN 268,926. Vasek and Kovar Potato Company, East Grand Forks, Minn. Filed Apr. 12, 1967.

VK

For Potatoes in Their Natural State.
First use Sept. 1, 1962.

SN 269,205. Orrell's Food Products, Inc., Oakland, Calif. Filed Apr. 14, 1967.

MAUNA KEA

For Syrup for Food Purposes and Salad Dressing.
First use Apr. 7, 1967.

SN 269,409. Filigree Foods, Inc., Lyndhurst, N.J. Filed Apr. 18, 1967.

Flavia Farms

For Canned Foods—Namely, Tomatoes; Tomato Puree; Okra; Okra and Tomatoes; Okra, Tomatoes and Corn; Green, Wax, Kidney, and Butter Beans; Pinto Beans; Pork and Beans; Peas; Blackeye Peas; Peas and Carrots; Carrots; Beets; Potatoes; Corn; Kale; Turnip, Mustard, and Collard Greens; Tomato Juice; Tomato Catsup; Pineapple Juice; Apricots; Peaches; Salmon; and Homogenized Evaporated Milk.

First use May 23, 1966, on canned tomatoes.

SN 270,261. Monsanto Company, St. Louis, Mo. Filed Apr. 28, 1967.

SANTOPHYLL

For Chemical Preservatives for Use in Animal Feeds.
First use at least as early as Nov. 30, 1966.

SN 270,339. Austin Packing and Storage Company, Cedaredge, Colo. Filed May 1, 1967.

BLANKET

For Fresh Apples and Peaches.
First use 1914.

SN 270,340. Austin Packing and Storage Company, Cedaredge, Colo. Filed May 1, 1967.

TOMAHAWK

For Fresh Apples.
First use 1914.

SN 270,490. Hoffmann-La Roche Inc., Nutley, N.J. Filed May 2, 1967.

APOTENE

For Food Coloring.
First use Feb. 17, 1967.

SN 272,589. Continental Baking Company, Rye, N.Y. Filed May 29, 1967.

CAPTAIN ASTRO

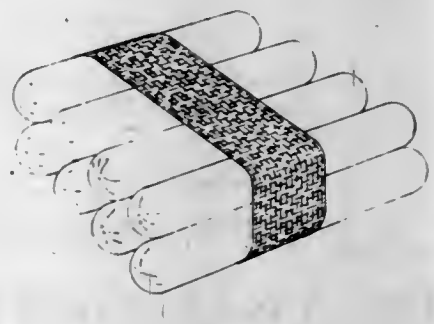
Owner of Reg. No. 795,653.
For Bread.
First use Apr. 1, 1967.

SN 273,946. Continental Baking Company, Rye, N.Y. Filed June 15, 1967.



Owner of Reg. No. 795,653.
For Bread.
First use Apr. 1, 1967.

SN 274,817. Oscar Mayer & Co., Inc., Chicago, Ill. Filed June 26, 1967.



The mark consists of a relatively narrow strip of yellow paper encircling a number of sausages. The drawing is lined to represent the color yellow. No exclusive claim is made to the representation of the sausages or bundle of sausages per se. No claim is made to a label colored yellow, apart from the mark as shown. Owner of Reg. Nos. 353,762, 385,549, and others.

For Sausage.
First use November 1938.

SN 277,863. General Mills, Inc., Minneapolis, Minn. Filed Aug. 9, 1967.

FUNNELS

For Ready To Eat Breakfast Cereal.
First use Nov. 9, 1966.

SN 278,065. General Mills, Inc., Minneapolis, Minn. Filed Aug. 11, 1967.

NOODLES PARMAZZINI

The word "Noodles" is disclaimed apart from the mark as shown.

For Combination of Egg Noodles and Cheese.
First use July 28, 1967.

SN 278,066. General Mills, Inc., Minneapolis, Minn. Filed Aug. 11, 1967.

RICE CAPRICCIO

The word "Rice" is disclaimed apart from the mark as shown.
For Rice Blended With Herbs and Cheese.
First use July 28, 1967.

SN 280,368. J. Mario Tamayo and Brothers, d.b.a. Tamayo Bros., Culiacan, Sinaloa, Mexico. Filed Sept. 15, 1967.

EL REY

The English translation of the wording "El Rey" is "the king." Owner of U.S. Reg. No. 733,878.
For Fresh Vegetables.
First use at least as early as 1938; in commerce at least as early as 1938.

SN 280,675. King Kullen Grocery Co., Inc., Westbury, N.Y. Filed Sept. 19, 1967.

High Chief

Owner of Reg. Nos. 195,504, 826,486, and others.
For Cranberry Sauce and Canned Mandarin Oranges.
First use Nov. 2, 1966.

SN 282,653. The Folger Coffee Company, Cincinnati, Ohio. Filed Oct. 17, 1967.

WHEN I SAY COFFEE, I MEAN FOLGER'S

Owner of Reg. Nos. 68,138, 669,356, and others.
For Coffee.
First use Mar. 28, 1960.

SN 283,061. Campbell Soup Company, Camden, N.J. Filed Oct. 23, 1967.

BOUNTY

Owner of Reg. No. 778,827.
For Puddings; and Canned Prepared Entrees—Namely, Corned Beef Hash, Noodles With Tuna, Noodles With Chicken, Noodles With Beef, Creamed Chipped Beef, and Creamed Chipped Chicken.
First use Feb. 23, 1965.

Class 47 — Wines

SN 236,507. L. M. Opici Inc., Hawthorne, N.J. Filed Jan. 14, 1966.

LADY SCINTILLA

For Wine.
First use Apr. 13, 1965.

SN 264,701. Western Grape Products, Kingsburg, Calif. Filed Feb. 14, 1967.

SOUL

For Wines.
First use Feb. 6, 1967.

SN 268,349. John Aquino Sons, Inc., New York, N.Y. Filed Apr. 5, 1967.

AQUILA ROSSA

The term "Aquila Rossa" is the Italian equivalent of "red eagle."
For Wines.
First use March 1939.

SN 268,532. Schenley Industries, Inc., New York, N.Y. Filed Apr. 6, 1967.

OLD MISSION

For Wines.
First use on or about Jan. 1, 1905.

Class 49 — Distilled Alcoholic Liquors

SN 242,749. Schenley Distillers, Inc., New York, N.Y. Filed Apr. 5, 1966.

MR. SOUR MASH

Applicant claims no exclusive rights in the words "Sour Mash," except as shown in the mark. Owner of Reg. Nos. 638,915, 675,070, and others.
For Whiskey.
First use Feb. 17, 1966.

SN 253,168. Ramada Inns, Inc., Phoenix, Ariz. Filed Aug. 25, 1966.

RAMADA INN

Owner of Reg. Nos. 686,471, 718,705, and 741,047.
For Gin, Scotch Whiskies, Bourbon Whiskies, and Vodka.
First use Feb. 3, 1958.

SN 267,981. Schenley Industries, Inc., New York, N.Y. Filed Mar. 30, 1967.

SCHENLY

Owner of Reg. Nos. 554,397, 770,479, and others.
For Whisky.
First use Jan. 30, 1967.

SN 268,473. Canadian Schenley Distilleries, Ltd., Montreal, Quebec, Canada. Filed Apr. 6, 1967.

CLARION

Owner of Canadian Reg. No. 148,385, dated Dec. 2, 1966.
For Canadian Whisky.

SN 280,916. Joseph E. Seagram & Sons, Inc., New York, N.Y. Filed Sept. 22, 1967.

BULLWHACKER

For Whiskey.
First use Aug. 23, 1967.

SN 281,342. The Huntington Creek Corporation, New York, N.Y. Filed Sept. 28, 1967.

CONCORDE

For Brandy.
First use Aug. 11, 1967.

SN 281,347. Joseph E. Seagram & Sons, Inc., New York, N.Y. Filed Sept. 28, 1967.

PENTHOUSE

For Prepared Alcoholic Cocktails.
First use on or about Aug. 11, 1967.

Class 50 — Merchandise Not Otherwise Classified

SN 263,419. Zip-Up Lighting Tower Co., Inc., Rock Hill, S.C. Filed Jan. 26, 1967.

ZIP-UP

For Collapsible and Extensible Towers for Supporting Lighting Equipment or Similar Accessories.
First use Jan. 3, 1966.

SN 263,433. Afco Rubber Corporation, North Canton, Ohio. Filed Jan. 27, 1967.

COMMANDER

For Stair Treads.
First use Jan. 1, 1965.

SN 263,970. Wolf & Vine, Inc., Los Angeles, Calif. Filed Feb. 3, 1967.

copy·cats THIRTEEN

For Mannequins.
First use no later than Nov. 25, 1966.

SN 270,853. Esco, Inc., Watertown, S. Dak. Filed May 8, 1967.

UNIFRAME

For Unfinished Sign Body.
First use May 1, 1965.

Class 51 — Cosmetics and Toilet Preparations

SN 220,247. Yardley of London, Inc., Totowa, N.J. Filed June 2, 1965.

SUNNY SLICKER

For Lipsticks.
First use Apr. 30, 1965.

SN 231,967. E. R. Squibb & Sons, Inc., New York, N.Y., assignee of Olin Mathieson Chemical Corporation, New York, N.Y. Filed Nov. 2, 1965.

CONFIDENCE

For Antibiotic Containing Anti-Perspirant Deodorant.
First use Oct. 19, 1965.

SN 253,618. Beauty Counselors, Inc., Grosse Pointe, Mich. Filed Sept. 1, 1966.

SUSPENSE

For Perfume Oil and Perfume Stick.
First use Dec. 17, 1965.

SN 258,062. Clairol Incorporated, New York, N.Y. Filed Nov. 7, 1966.

MIDNIGHT SUN

For Hair Lightener Containing a Toner To Impart Color to Hair.
First use Aug. 11, 1966.

SN 264,445. Romel Cosmetics, Inc., d.b.a. Romel Incorporated, Philadelphia, Pa. Filed Feb. 10, 1967.

ROMEL

For Eye Make-Up, Rouge, Liquid Rouge, Face Spray, Suntan Cream, Face Powder, Lipsticks, Liquid Bath Perfume and Bath Oil, and Face Cream.
First use Nov. 19, 1958.

SN 266,421. Hoyl Laboratories, Inc., Dallas, Tex. Filed Mar. 10, 1967.

ZSDEA

For Cuticle Oil, Blemish Cream, Body Lotion, Bath Oil, and Hand Cream.
First use Jan. 1, 1967.

SN 266,445. Odile de Paris, Ltd., New York, N.Y. Filed Mar. 10, 1967.

AQUASHEEN FORMULA

The word "Formula" is disclaimed apart from the mark as shown.
For Cosmetic Preparation Which Cleans and Moistens the Skin.
First use May 10, 1966.

SN 266,464. Shulton, Inc., Clifton, N.J. Filed Mar. 10, 1967.

LE SPORT

Owner of Reg. No. 227,292.
For After Shave Lotion.
First use Mar. 2, 1967.

SN 266,629. Johnson & Johnson, New Brunswick, N.J. Filed Mar. 14, 1967.

GOOD 'N CLEAN

Applicant disclaims the term "Clean" separately and apart from the mark as shown on the accompanying drawing, and reserves unto itself all rights which it now has or may hereafter have arising in the disclaimed term.
For Mouthwash.
First use Feb. 21, 1967.

SN 278,066. General Mills, Inc., Minneapolis, Minn. Filed Aug. 11, 1967.

RICE CAPRICCIO

The word "Rice" is disclaimed apart from the mark as shown.

For Rice Blended With Herbs and Cheese.

First use July 28, 1967.

SN 280,368. J. Mario Tamayo and Brothers, d.b.a. Tamayo Bros., Culiacan, Sinaloa, Mexico. Filed Sept. 15, 1967.



The English translation of the wording "El Rey" is "the king." Owner of U.S. Reg. No. 733,878.

For Fresh Vegetables.

First use at least as early as 1938; in commerce at least as early as 1938.

SN 280,675. King Kullen Grocery Co., Inc., Westbury, N.Y. Filed Sept. 19, 1967.



Owner of Reg. Nos. 195,504, 826,486, and others.

For Cranberry Sauce and Canned Mandarin Oranges.

First use Aug. 1, 1967.

SN 264,701. Western Grape Products, Kingsburg, Calif. Filed Feb. 14, 1967.



For Wines.

First use Feb. 6, 1967.

SN 268,349. John Aquino Sons, Inc., New York, N.Y. Filed Apr. 5, 1967.

AQUILA ROSSA

The term "Aquila Rossa" is the Italian equivalent of "red eagle."

For Wines.

First use March 1939.

SN 268,532. Schenley Industries, Inc., New York, N.Y. Filed Apr. 6, 1967.

OLD MISSION

For Wines.

First use on or about Jan. 1, 1905.

Class 49 — Distilled Alcoholic Liquors

SN 242,749. Schenley Distillers, Inc., New York, N.Y. Filed

SN 277,593. Eversharp, Inc., Milford, Conn. Filed Aug. 7, 1967.

WILD WOODS

Owner of Reg. Nos. 808,956 and 811,843.
For Men's Toiletries—Namely, After Shave Lotion and Cologne.
First use June 21, 1967.

SN 277,594. Eversharp, Inc., Milford, Conn. Filed Aug. 7, 1967.

WILD WOODS BY SCHICK

Owner of Reg. Nos. 224,639, 831,579, and others.
For Men's Toiletries—Namely, After Shave Lotion and Cologne.
First use June 21, 1967.

SN 282,249. Redken Laboratories, Inc., Van Nuys, Calif. Filed Oct. 11, 1967.

EXTREME

For Hair Reconditioning Product.
First use Sept. 6, 1967.

Class 52 — Detergents and Soaps

SN 254,869. Embassy Chemicals Corp., Farmingdale, N.Y. Filed Sept. 21, 1966.

REAL-E-QUIK

For Chemical Preparation for Opening Drain and Sewage Lines.
First use Aug. 30, 1966.

SN 256,929. Densco, Incorporated, Denver, Colo. Filed Oct. 21, 1966.

DENS·CHEM

Owner of Reg. Nos. 418,052 and 424,499.
For Cleaning Compound for Dental Equipment and for General Use in the Dental Profession.
First use on or about May 1, 1966.

SN 259,766. Sea-Air Chemical Corporation, Long Island City, N.Y. Filed Nov. 30, 1966.

FOILZOIL

For Emulsifier Dispersant Compound in Liquid Form for Cleaning of Tanks and Solid Surfaces in General.
First use 1958.

SN 259,768. Sea-Air Chemical Corporation, Long Island City, N.Y. Filed Nov. 30, 1966.

SUPER METONE GEL

The words "Super" and "Gel" are disclaimed apart from the mark as shown.
For Rust, Oxide, and Oil Film Removing Compound in Jelly Form Used To Prepare Metal Surfaces for Application of Protective Coating or the Like.
First use 1958.

SN 263,905. General Aniline & Film Corporation, New York, N.Y. Filed Feb. 3, 1967.

gaf

Owner of Reg. No. 658,185 and others.
For Washing, Scouring and Cleansing Agents, Detergents, Pencil and Ink Eradicators, Spot Cleaners, and Solvent Cleaners in Liquid, Solid Particle, and Shaped Solid Form for Household and Industrial Uses.
First use Oct. 14, 1965, on washing and scouring agents.

SN 267,614. Colgate-Palmolive Company, New York, N.Y. Filed Mar. 27, 1967.

LIVING GODDESS

Owner of Reg. Nos. 430,977, 799,244, and others.
For Toilet Soap.
First use Oct. 10, 1966.

SN 267,801. John H. Breck, Inc., Springfield, Mass. Filed Mar. 29, 1967.

LIGHTS-UP

For Hair Shampoo.
First use Mar. 16, 1967.

SN 268,040. W. H. Feronce Company, Philadelphia, Pa. Filed Mar. 31, 1967.

SHOWERMATE

For Hair Shampoo.
First use Feb. 1, 1967.

SN 268,571. Caron Corporation, New York, N.Y. Filed Apr. 7, 1967.

NUIT DE NOEL

The English translation of "Nuit de Noel" is "Christmas Eve." Owner of Reg. No. 172,520.
For Hand, Bath, and Facial Soap.
First use August 1961.

SN 268,632. Union Carbide Corporation, New York, N.Y. Filed Apr. 7, 1967.

GREASE-EATER

For General-Purpose Cleaner for Removing Grease, Oil, and Dirt.
First use on or about Feb. 16, 1967.

Class 100 — Miscellaneous

SN 226,477. Signatron, Inc., Lexington, Mass. Filed Aug. 25, 1965.

SIGNATRON

For Research and Consulting Services Relating to Signal Processing, Communication Systems, Control Systems, Computer Applications, Statistics and Mathematics, Data Processing, Detection of Signals in Noise, and the Like.
First use February 1962.

SN 249,773. Kentucky Fried Chicken Corporation, Nashville, Tenn. Filed July 7, 1966.



The mark is a representation of an actual person, namely, Harland Sanders, whose consent is of record. Owner of Reg. Nos. 806,104, 807,043, and others.
For Restaurant Services.
First use Aug. 13, 1962.

SN 251,192. Cuna International, Inc., Madison, Wis. Filed July 28, 1966.



For Association Services to Member Credit Unions To Promote Their Operations.
First use Mar. 17, 1966.

SN 251,193. Cuna International, Inc., Madison, Wis. Filed July 28, 1966.



For Association Services to Member Credit Unions to Promote Their Operations.
First use Mar. 17, 1966.

SN 251,454. The Ohio Corrugating Company, Warren, Ohio. Filed Aug. 1, 1966.



For Engineering Consultation and Product Development Services Relating to Shipping Containers.
First use on or about Jan. 6, 1965; on or about May 29, 1964, in a different form.

SN 252,279. Ramada Inns, Inc., Phoenix, Ariz. Filed Aug. 12, 1966.

MISS RAMADA

Owner of Reg. Nos. 686,471, 718,705, and 741,047.
For Hotel, Motel, and Theatre Ticket Reservation Services.
First use Dec. 19, 1960; July 15, 1958, as to "Ramada."

SN 258,621. Veterans of Foreign Wars National Home, Eaton Rapids, Mich. Filed Nov. 14, 1966.



For Establishing and Maintaining a Charitable Home for Orphans, Widows, Members, and Other Needy Dependents of Veterans of Foreign Wars of the United States.
First use October 1960.

SN 262,448. George P. Smith, Cincinnati, Ohio. Filed Jan. 12, 1967.

OLD-FARM

For Restaurant and Catering Services.
First use July 1, 1965.

SN 262,916. Automated Concepts, Inc., New York, N.Y. Filed Jan. 20, 1967.

aci

For Providing Data Processing Management With Programming and Systems Support.
First use Mar. 2, 1966.

Class 101 — Advertising and Business

SN 251,779. American Girl Service, Inc., New York, N.Y. Filed Aug. 5, 1966.

AMERICAN SERVICES

Owner of Reg. Nos. 773,837 and 814,189.
For Employment Agency and Temporary Help Services—Namely, Furnishing Permanent and Temporary Secretarial, Clerical, and Technical Personnel, Such as Engineers, Chemists, Laboratory Technicians, Draftsmen, and the Like; and Management and Coordination of Such Services.
First use Feb. 5, 1964.

SN 252,350. City Products Corporation, Chicago, Ill. Filed Aug. 15, 1966.



For Retail Variety Store Services.
First use July 25, 1966.

SN 253,347. Special Telephone Service, Inc., Harlingen, Tex. Filed Aug. 29, 1966.

PHONE-AID

For Telephone Answering Services.
First use May 15, 1966.

SN 253,349. Special Telephone Service, Inc., Harlingen, Tex. Filed Aug. 29, 1966.

PHONE-AMERICA

For Telephone Answering Services.
First use May 15, 1966.

SN 260,722. Bradfute Corporation, Eastchester, N.Y. Filed Dec. 14, 1966.

STAMPAREE

For Promoting the Sale of Goods and Services of Others by Means of a Game.
First use Oct. 31, 1966.

SN 277,480. Shendo Corporation, Boston, Mass. Filed Aug. 3, 1967.



The mark comprises a continuous chain of segments generally in the shape of the letter "S" with a horizontal bar at the top having upwardly pointed ears at each end.
For Rendering Technical Assistance to Operators of Restaurants in All Phases of Their Business.
First use at least as early as May 15, 1967.

Class 102 — Insurance and Financial

SN 218,311. Pioneer Fund, Inc., Boston, Mass. Filed May 7, 1965.

A BASIC VALUE FUND

For Mutual Fund Service.
First use June 1, 1964.

SN 260,133. Bankamerica Service Corporation, San Francisco, Calif., assignee of Bank of America National Trust and Savings Association, San Francisco, Calif. Filed Dec. 6, 1966.



Owner of Reg. No. 696,899.
For Credit Financing Services Including Administering Consumer Credit Plans and Collecting Through Central Billing Systems.
First use on or before Apr. 17, 1960.

SN 262,695. First Fund of Virginia, Inc., Richmond, Va. Filed Jan. 17, 1967.



The applicant disclaims the term "Fund of Virginia," separate and apart from the mark as shown on the drawing, reserving unto itself all common-law rights which it may have or acquire in said term.
For Mutual Fund Services.
First use July 20, 1966.

Class 103 — Construction and Repair

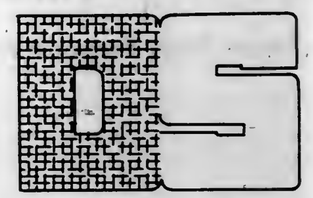
SN 261,962. Alma Desk Company, High Point, N.C. Filed Jan. 5, 1967.

ALMA TREND PROGRAM

The word "Program" is disclaimed apart from the mark as shown. Owner of Reg. No. 824,434.
For Interior Decoration Services Rendered Solely in the Field of Business Offices.
First use during February 1956.

Class 105 — Transportation and Storage

SN 253,080. Norman V. Katz, d.b.a. Delivery Service Company, Winston-Salem, N.C. Filed Aug. 25, 1966.



The drawing is lined for yellow, but color is not claimed as a feature of the mark.
For Freight Forwarding Services.
First use Oct. 1, 1964.

Class 107 — Education and Entertainment

SN 263,743. California Reading Clinics, Ventura, Calif. Filed Feb. 1, 1967.

OPERATION COMEBACK

For Educational Services—Namely, Teaching Basic Educational Skills To Develop College Proficiency.
First use Dec. 2, 1966.

TRADEMARK REGISTRATIONS ISSUED
PRINCIPAL REGISTER

Class 1 — Raw or Partly Prepared Materials

841,063. DUTCH BOY (FIGURE). National Lead Company. SN 248,154. Pub. 10–10–67. Filed 6–15–66.

841,064. FURSEALCO AND DESIGN. The Fur Seal Processing Corporation. MULTIPLE CLASS (Classes 1 and 39). SN 253,027. Pub. 10–10–67. Filed 8–24–66.

Class 2 — Receptacles

841,065. BOND XX. The Ohio Art Company. SN 244,611. Pub. 10–10–67. Filed 4–29–66.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

841,066. DALES BETTER PADS AND DESIGN. Brumley-Donaldson Company. SN 248,295. Pub. 10–10–67. Filed 6–17–66.

841,067. CHARLES JOURDAN AND DESIGN. Societe des Chaussures Seducta Charles Jourdan & Fils. SN 265,660. Pub. 10–10–67. Filed 2–28–67.

Class 4 — Abrasives and Polishing Materials

841,068. QUINTUS. Allmänna Svenska Elektriska Aktiebolaget. MULTIPLE CLASS (Classes 4 and 23). SN 242,699. Pub. 10–10–67. Filed 4–5–66.

841,069. LADY KOZAK. Kozak Auto Drywash, Inc. SN 250,977. Pub. 10–10–67. Filed 7–25–66.

841,070. GREEN STAR. Star Diamond Industries, Inc. SN 264,858. Pub. 10–10–67. Filed 2–16–67.

841,071. TONE. Simoniz Company. SN 270,533. Pub. 10–10–67. Filed 5–3–67.

Class 5 — Adhesives

841,072. CYBOND. American Cyanamid Company. SN 242,178. Pub. 10–10–67. Filed 3–30–66.

841,073. WIZARD. Western Auto Supply Company. SN 251,852. Pub. 10–10–67. Filed 8–5–66.

841,074. MISCELLANEOUS DESIGN. Chemical Development Corporation. SN 275,626. Pub. 10–10–67. Filed 7–10–67.

Class 6 — Chemicals and Chemical Compositions

841,075. BACIDOR. Badische Anilin- & Soda-Fabrik Aktiengesellschaft. SN 255,284. Pub. 10–10–67. Filed 9–28–66.

Class 7 — Cordage

841,076. WELD-LOC. Global Strapping Company. SN 255,148. Pub. 10–10–67. Filed 8–5–66.

Class 8 — Smokers' Articles, Not Including Tobacco Products

841,077. AB AND DESIGN. Peterson's Ltd., Inc. SN 242,044. Pub. 10–10–67. Filed 3–28–66.

Class 10 — Fertilizers

841,078. VALMOR. Armour Agricultural Chemical Company. SN 255,764. Pub. 10–10–67. Filed 10–5–66.

841,079. TURKEY PEAT. George Sroda, d.b.a. Turkey Peat Co. SN 262,633. Pub. 10–10–67. Filed 1–16–67.

841,080. MISCELLANEOUS DESIGN. W. R. Grace & Co. SN 263,665. Pub. 10–10–67. Filed 1–31–67.

841,081. GRACE AND DESIGN. W. R. Grace & Co. SN 263,666. Pub. 10–10–67. Filed 1–31–67.

841,082. COM-PEL AND DESIGN. Community Gin Company. SN 266,505. Pub. 10–10–67. Filed 3–13–67.

Class 11 — Inks and Inking Materials

841,083. ROCKET. Allied Carbon and Ribbon Manufacturing Corp. SN 257,748. Pub. 10–10–67. Filed 11–2–66.

841,084. KEMSPERSE. The Sherwin-Williams Company. SN 276,509. Pub. 10–10–67. Filed 7–21–67.

Class 12 — Construction Materials

841,085. PRONTO. Pronto Plastics, Inc. SN 249,069. Pub. 7–11–67. Filed 6–27–66.

841,086. GT (DESIGN). Wilhelm Gail'sche Tonwerke K.G.a.A. SN 253,186. Pub. 10–10–67. Filed 8–25–66.

841,087. COMPRESSEAL. Middlestadt Corporation. SN 253,771. Pub. 10–10–67. Filed 9–2–66.

841,088. "HEWNRITE." Woodcraft Guild Inc. SN 261,694. Pub. 10–10–67. Filed 12–29–66.

841,089. IS (STYLIZED LETTERS). International Stanley Corporation. SN 262,172. Pub. 10–10–67. Filed 1–9–67.

841,090. JET SET. Republic Powdered Metals, Inc. SN 262,349. Pub. 10–10–67. Filed 1–11–67.

841,091. FORMCO AND DESIGN. Formco, Inc. MULTIPLE CLASS (Classes 12, 13, and 32). SN 262,538. Pub. 10–10–67. Filed 1–16–67.

841,092. STANDARD K MIX AND DESIGN. Martin-Marietta Corporation. SN 262,599. Pub. 10–10–67. Filed 1–16–67.

841,093. THRESHOLDER. Paltier Corporation. SN 262,806. Pub. 10–10–67. Filed 1–18–67.

841,094. INSULGUARD. Simpson Timber Company. SN 267,987. Pub. 10–10–67. Filed 3–30–67.

841,095. J H BAXTER. J. H. Baxter & Co. SN 273,554. Pub. 10–10–67. Filed 6–12–67.

841,096. MISCELLANEOUS DESIGN. Chemical Development Corporation. SN 275,628. Pub. 10–10–67. Filed 7–10–67.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

841,091. (See Class 12 for this trademark.)

841,097. FAST-FLO. Water Refining Company, Inc. SN 243,204. Pub. 10–10–67. Filed 4–11–66.

841,098. WELDAN AND DESIGN. Kabushiki Kaisha Wadagen (Wadagen Co., Ltd.) MULTIPLE CLASS (Classes 13, 23, and 28). SN 244,330. Pub. 10–10–67. Filed 4–26–66.

841,099. SU-PLATE. Supreme Automotive Manufacturing Corp. SN 246,497. Pub. 10–10–67. Filed 5–24–66.

841,100. CUSH-N-STOP. Schlage Lock Company. SN 254,193. Pub. 10–10–67. Filed 9–9–66.

841,101. FLOWRITE. The Powers Regulator Company. SN 261,251. Pub. 10–10–67. Filed 12–21–66.

841,102. SLC. The Lamson & Sessions Co. SN 263,387. Pub. 10–10–67. Filed 1–26–67.

841,103. "BOMARCO." Bob Martin Corporation. SN 268,508. Pub. 10–10–67. Filed 4–6–67.

Class 14—Metals and Metal Castings and Forgings

841,104. SMI MADE IN ITALY AND DESIGN. Societa Metallurgica Italiana. SN 230,915. Pub. 10–10–67. Filed 10–21–65.

841,105. SMIBRAL. Societa Metallurgica Italiana. SN 230,918. Pub. 10–10–67. Filed 10–21–65.

841,106. MBT AND DESIGN. Societa Metallurgica Italiana. SN 230,921. Pub. 10–10–67. Filed 10–21–65.

841,107. TOM AND DESIGN. Societa Metallurgica Italiana. SN 230,933. Pub. 10–10–67. Filed 10–21–65.

841,108. TOP AND DESIGN. Societa Metallurgica Italiana. SN 230,934. Pub. 10–10–67. Filed 10–21–65.

841,109. TOV AND DESIGN. Societa Metallurgica Italiana. SN 230,935. Pub. 10–10–67. Filed 10–21–65.

841,110. S.M.I.-LIMESTRE. Societa Metallurgica Italiana. SN 230,938. Pub. 10–10–67. Filed 10–21–65.

841,111. LEONITE AND DESIGN. Nippon Kokan Kabushiki Kaisha. SN 244,345. Pub. 10–10–67. Filed 4–26–66.

841,112. DURA-BAR. Wells Manufacturing Company. SN 260,792. Pub. 10–10–67. Filed 12–14–66.

Class 15—Oils and Greases

841,113. V VALVOLINE IN A CIRCLE. Ashland Oil & Refining Company. SN 247,174. Pub. 10–10–67. Filed 6–3–66.

841,114. HANCOCK 550. Signal Oil and Gas Company. SN 247,632. Pub. 10–10–67. Filed 6–8–66.

841,115. LIQUID TOW. Cristy Chemical Corporation. SN 250,250. Pub. 10–10–67. Filed 7–14–66.

Class 16—Protective and Decorative Coatings

841,116. SUN STOP DON'T SQUINT—TINT!! AND DESIGN. Transparent Glass Coatings Company. SN 219,741. Pub. 10–10–67. Filed 5–25–65.

841,117. MASCO. Alvin A. Sobel, d.b.a. Masco Chemical Co. SN 242,509. Pub. 10–10–67. Filed 4–1–66.

841,118. "TWIN-POUR." The Valspar Corporation. SN 247,984. Pub. 10–10–67. Filed 6–13–66.

841,119. VELVA-HUE. Blue Ridge Talc Company, Inc., d.b.a. Blue Ridge Paint Works. SN 248,884. Pub. 10–10–67. Filed 6–24–66.

841,120. MARK-OUT. Mason Marking Systems Corporation. SN 251,312. Pub. 10–10–67. Filed 7–29–66.

841,121. TORQUE-SEAL. John C. Walter, d.b.a. Organic Products Company. SN 251,761. Pub. 10–10–67. Filed 8–4–66.

841,122. KOOL-X. Harris Paint Company. SN 253,434. Pub. 10–10–67. Filed 8–30–66.

Class 18—Medicines and Pharmaceutical Preparations

841,123. ENTROPHEN. Charles E. Frosst & Co. SN 253,749. Pub. 10–10–67. Filed 9–2–66.

841,124. BJR BLACK AND RED. BJR Laboratories, Inc. SN 259,895. Pub. 10–10–67. Filed 12–1–66.

841,125. AKLOMIX. Salsbury Laboratories. SN 260,961. Pub. 10–10–67. Filed 12–16–66.

841,126. LINQUELL. American Home Products Corporation. SN 265,387. Pub. 10–10–67. Filed 2–24–67.

Class 19—Vehicles

841,127. VELOCE. Alfa Romeo S.p.A. SN 238,139. Pub. 10–10–67. Filed 12–7–65.

841,128. KAWASAKI SUPER LUBE AND DESIGN. Kawasaki Aircraft Co., Ltd. SN 244,412. Pub. 10–10–67. Filed 4–27–66.

841,129. EAGLE. Harsco Corporation. SN 248,037. Pub. 10–10–67. Filed 6–14–66.

841,130. FLOAT-WELL. Thomas R. Hubbard, d.b.a. Hubbard Sheet Metal Works. SN 248,231. Pub. 10–10–67. Filed 6–16–66.

841,131. WIZARD. Western Auto Supply Company. SN 250,067. Pub. 10–10–67. Filed 7–11–66.

841,132. TROTTER. Moto Guzzi S.p.A. SN 250,589. Pub. 10–10–67. Filed 7–19–66.

841,133. HA DEES. Hupp Corporation. SN 252,658. Pub. 10–10–67. Filed 8–18–66.

841,134. APE (DESIGN). Trans-Dapt of California. MULTIPLE CLASS (Classes 19 and 23). SN 264,992. Pub. 10–10–67. Filed 2–17–67.

Class 20—Linoleum and Oiled Cloth

841,135. CORALTONE. Congoleum-Nairn Inc. SN 275,236. Pub. 10–10–67. Filed 7–3–67.

841,136. CASA GRANDE. Congoleum-Nairn Inc. SN 275,237. Pub. 10–10–67. Filed 7–3–67.

841,137. TANGLEWOOD. Kentile Floors Inc. SN 275,532. Pub. 10–10–67. Filed 7–7–67.

Class 21—Electrical Apparatus, Machines, and Supplies

841,138. DURA-LITE. Whitaker Cable Corporation. SN 182,991. Pub. 5–17–66. Filed 12–13–63.

841,139. DURALITE. Co-Operative Industries, Inc. SN 206,834. Pub. 5–10–66. Filed 11–24–64.

841,140. SMIMEC AND DESIGN. Societa Metallurgica Italiana. SN 230,936. Pub. 10–10–67. Filed 10–21–65.

841,141. AUTO-MONITOR. The Autocall Company. SN 241,417. Pub. 10–10–67. Filed 3–21–66.

841,142. CANALIS. La Telemecanique Electrique Société Anonyme. SN 242,368. Pub. 10–10–67. Filed 4–7–66.

841,143. FTI AND DESIGN. Fabri-Tek Incorporated. SN 243,110. Pub. 10–10–67. Filed 4–11–66.

841,144. SPARKTRONIC. Liberty Combustion Corporation. SN 251,684. Pub. 10–10–67. Filed 8–4–66.

841,145. BRITE GLO. Francis A. Schafer, d.b.a. Brite Glo Enterprises. SN 251,749. Pub. 10–10–67. Filed 8–4–66.

841,146. VARIAN. Varian Associates. SN 255,373. Pub. 10–10–67. Filed 9–28–66.

841,147. INTERSTATE. Interstate Battery System of America, Inc. SN 255,443. Pub. 10–10–67. Filed 9–29–66.

841,148. SPHERE-O. Lahti of Ann Arbor Incorporated. SN 256,943. Pub. 10–10–67. Filed 10–21–66.

841,149. PREMIER. Advance Transformer Co. SN 257,446. Pub. 10–10–67. Filed 10–28–66.

841,150. BLH. Baldwin-Lima-Hamilton Corporation. MULTIPLE CLASS (Classes 21, 23, 26, 31, and 34). SN 257,550. Pub. 10–10–67. Filed 10–31–66.

841,151. VISTA-CHROME. Avnet, Inc., assignee of Channel Master Corporation. SN 257,765. Pub. 10–10–67. Filed 11–2–66.

841,152. NIGHT WATCH. I.M.S. Corporation. SN 257,781. Pub. 10–10–67. Filed 11–2–66.

841,153. LIFE-TERM. The Filtron Company, Inc. SN 258,521. Pub. 10–10–67. Filed 11–14–66.

841,154. LUSTER BOND. Engelhard Industries, Inc. SN 258,794. Pub. 10–10–67. Filed 11–16–66.

841,155. SATINBOND. Engelhard Industries, Inc. SN 258,985. Pub. 10–10–67. Filed 11–18–66.

841,156. MAGGIE. S & A Electronics, Inc. SN 259,027. Pub. 10–10–67. Filed 11–18–66.

841,157. XP–6. Fisher Radio Corporation. SN 259,654. Pub. 10–10–67. Filed 11–29–66.

841,158. SLIMPAC JR. Semtech Corporation. SN 259,971. Pub. 10–10–67. Filed 12–2–66.

841,159. ALPAC. Semtech Corporation. SN 259,972. Pub. 10–10–67. Filed 12–2–66.

841,160. SLIMPAC SR. Semtech Corporation. SN 259,973. Pub. 10–10–67. Filed 12–2–66.

841,161. SLIMPAC. Semtech Corporation. SN 259,974. Pub. 10–10–67. Filed 12–2–66.

841,162. TRIDURA. The Hobart Manufacturing Company. SN 261,843. Pub. 10–10–67. Filed 1–3–67.

841,163. XP–55. Fisher Radio Corporation. SN 262,416. Pub. 10–10–67. Filed 1–12–67.

Class 22 — Games, Toys, and Sporting Goods

841,164. SEAFARER. Canor Plarex Inc. SN 251,512. Pub. 10–10–67. Filed 8–2–66.

841,165. CHAMP MAT. Joseph Elesh, assignee of Flexi-Mat Corporation. SN 254,044. Pub. 10–10–67. Filed 9–8–66.

841,166. ART-A-MATIC. Brumberger Co., Inc. SN 255,414. Pub. 10–10–67. Filed 9–29–66.

841,167. ½ PINTS. My-Toy Company, Inc. SN 255,451. Pub. 10–10–67. Filed 9–29–66.

841,168. "WORDS, WORDS, WORDS." Springbok Editions, Inc. SN 256,382. Pub. 10–10–67. Filed 10–13–66.

841,169. SKI DRY AND DESIGN. Diane Mecham Casebolt, d.b.a. Ski Dry Boot Co. SN 256,996. Pub. 10–10–67. Filed 2–24–66.

841,170. STEVE FALCON. De Luxe Topper Corporation. SN 257,167. Pub. 10–10–67. Filed 10–25–66.

841,171. SUPER-STROKE. Wilson Sporting Goods Co., assignee of Wilson Sporting Goods Co. SN 258,185. Pub. 10–10–67. Filed 11–7–66.

841,172. ROADRUNNER. First Flight Company. SN 260,838. Pub. 10–10–67. Filed 12–15–66.

841,173. ARROWCOPTER. Basic Products Development Company. SN 261,139. Pub. 10–10–67. Filed 12–20–66.

841,174. MIRACLE. Miracle Equipment Company, Inc. SN 261,314. Pub. 10–10–67. Filed 12–22–66.

841,175. MIRACLE AND DESIGN. Miracle Equipment Company, Inc. SN 261,315. Pub. 10–10–67. Filed 12–22–66.

841,176. BILTMORE. Wilson Sporting Goods Co., assignee of Wilson Sporting Goods Co. SN 261,542. Pub. 10–10–67. Filed 12–27–66.

841,177. AER FLO. Wilson Sporting Goods Co., assignee of Wilson Sporting Goods Co. SN 261,543. Pub. 10–10–67. Filed 12–27–66.

841,178. SNAP ACTION. Wilson Sporting Goods Co., assignee of Wilson Sporting Goods Co. SN 261,547. Pub. 10–10–67. Filed 12–27–66.

841,179. RA RECREACTION AND DESIGN. Rexall Drug and Chemical Company, d.b.a. The Seamless Rubber Company. SN 262,621. Pub. 10–10–67. Filed 1–16–67.

841,180. AE (DESIGN). Austin E. Cox, d.b.a. Austin Enterprises. SN 263,897. Pub. 10–10–67. Filed 2–3–67.

841,181. E AND DESIGN. Glen L. Evans, Inc. SN 275,107. Pub. 10–10–67. Filed 6–30–67.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

841,068. (See Class 4 for this trademark.)

841,098. (See Class 13 for this trademark.)

841,134. (See Class 19 for this trademark.)

841,150. (See Class 21 for this trademark.)

841,182. GRIFFITH'S MINCE MASTER. The Griffith Laboratories, Inc. SN 212,531. Pub. 3–8–66. Filed 2–23–65.

841,183. MIDWEST LAWN-SAVER. Killoren Company. SN 233,915. Pub. 10–10–67. Filed 12–3–65.

841,184. PETERSON TUFEDGE. Paul D. Peterson, d.b.a. American Supply Company. SN 233,944. Pub. 12–6–66. Filed 12–3–65.

841,185. ROBBER. Waggon- und Maschinenbau Aktiengesellschaft. SN 238,374. Pub. 10–10–67. Filed 2–8–66.

841,186. M/8D. Waukesha Foundry Company. SN 238,584. Pub. 10–10–67. Filed 2–10–66.

841,187. KLEENCUT. The Acme Shear Company. MULTIPLE CLASS (Classes 23 and 44). SN 239,571. Pub. 10–10–67. Filed 2–18–66.

841,188. ELECTRO COATER AND DESIGN. Electro-Seal Corporation. SN 240,422. Pub. 10–10–67. Filed 3–8–66.

841,189. ARBOGARD. Plant Protection Limited. SN 241,513. Pub. 10–10–67. Filed 3–21–66.

841,190. WATERGUN. Goulds Pumps, Inc. SN 244,322. Pub. 10–10–67. Filed 4–26–66.

841,191. ADJUST-A-FLOW. Carrier Manufacturing Co. SN 246,537. Pub. 10–10–67. Filed 5–25–66.

841,192. ST REGIS. St. Regis Paper Company. SN 250,037. Pub. 10–10–67. Filed 7–11–66.

841,193. SELECTOMATIC. The Warner & Swasey Company. SN 250,063. Pub. 10–10–67. Filed 7–11–66.

841,194. IMS AND GLOBE DESIGN. Industrial & Merchandising Services S.A. SN 250,485. Pub. 10–10–67. Filed 7–18–66.

841,195. BOOKMAKER. Collator Corporation. SN 252,547. Pub. 10–10–67. Filed 8–17–66.

841,196. FLEXANDER. Rockwell Manufacturing Company. SN 252,681. Pub. 10–10–67. Filed 8–18–66.

841,197. P & N. Patience & Nicholson Limited. SN 253,241. Pub. 10–10–67. Filed 8–26–66.

841,198. VARIAN. Varian Associates. SN 255,374. Pub. 10–10–67. Filed 9–28–66.

841,199. ODIN. Bristol Siddeley Engines Limited. SN 255,593. Pub. 10–10–67. Filed 10–3–66.

841,200. KREISELHEUER CRYZALHOYER. Maschinenfabrik Fahr Aktiengesellschaft. SN 256,111. Pub. 10–10–67. Filed 10–10–66.

841,201. K. Kennametal Inc. MULTIPLE CLASS (Classes 23 and 35). SN 256,253. Pub. 10–10–67. Filed 10–12–66.

841,202. FASTRACK. The Hobart Manufacturing Company. SN 257,389. Pub. 10–10–67. Filed 10–27–66.

841,203. ANGLERS AIDE. Imperial Knife Associated Companies, Inc. SN 258,231. Pub. 10–10–67. Filed 11–8–66.

841,204. CARVEL HALL AND DESIGN. Towle Manufacturing Company. SN 258,850. Pub. 10–10–67. Filed 11–16–66.

841,205. PRECEDENT. Towle Manufacturing Company, d.b.a. Carvel Hall. SN 258,851. Pub. 10–10–67. Filed 11–16–66.

841,206. EXETER. Towle Manufacturing Company. SN 258,853. Pub. 10–10–67. Filed 11–16–66.

841,207. DESCAL. A. P. de Sanno & Son, Inc. SN 258,900. Pub. 10–10–67. Filed 11–17–66.

841,208. PLEWS AND DESIGN. Plews Oiler, Inc. SN 258,922. Pub. 10–10–67. Filed 11–17–66.

841,209. RDC RECORD-A-NOTE. Ready Devices Corporation. SN 259,158. Pub. 10–10–67. Filed 11–21–66.

841,210. CLICK-STICK. Shimano American Corporation. SN 259,269. Pub. 10–10–67. Filed 11–22–66.

841,211. HYDRA-SPRAY. Gray Company, Inc. SN 265,517. Pub. 10–10–67. Filed 2–27–67.

841,212. HYDRA-CLEAN. Gray Company, Inc. SN 265,518. Pub. 10–10–67. Filed 2–27–67.

841,213. TORNADO SYSTEMS INC. Tornado Systems Inc. SN 274,575. Pub. 10–10–67. Filed 6–23–67.

841,214. WAND-A WASH AND DESIGN. Citation Manufacturing Co., Inc. SN 275,513. Pub. 10–10–67. Filed 7–7–67.

Class 24 — Laundry Appliances and Machines

841,215. 3M. Minnesota Mining and Manufacturing Company. SN 273,234. Pub. 10–10–67. Filed 6–7–67.

841,216. NYPOR. Minnesota Mining and Manufacturing Company. SN 273,239. Pub. 10–10–67. Filed 6–7–67.

Class 25 — Locks and Safes

841,217. O1122A. Independent Lock Company. SN 188,875. Pub. 5–11–65. Filed 3–17–64.

Class 26 — Measuring and Scientific Appliances

841,150. (See Class 21 for this trademark.)

841,218. SOLARAMA. Bachmann Bros., Inc. SN 192,349. Pub. 12–15–64. Filed 4–30–64.

841,219. GUILDLINE. Guildline Instruments Ltd. SN 234,563. Pub. 10–10–67. Filed 12–14–65.

841,220. TRU-AX. The Bendix Corporation, assignee of A. D. Schneider & Co. SN 234,683. Pub. 10–10–67. Filed 12–15–65.

841,221. GEOMEDOODLE. The Kendrey Company. SN 242,022. Pub. 10–10–67. Filed 3–28–66.

841,222. LINEMASTER. Rol-Ruler Co. SN 243,587. Pub. 10–10–67. Filed 4–15–66.

841,223. DSR. Pittsburgh Plate Glass Company. 259,959. Pub. 10–10–67. Filed 12–2–66.

841,224. FOCUS-GRIP. Recson Incorporated. SN 259,9 Pub. 10–10–67. Filed 12–2–66.

841,225. COLD-CHEK. Thexton Manufacturing Compa SN 267,472. Pub. 10–10–67. Filed 3–22–67.

841,226. SEA-FIX. Decca Limited. SN 267,879. P 10–10–67. Filed 3–30–67.

841,227. C CRANE AND DESIGN. Crane Co. SN 267, Pub. 10–10–67. Filed 3–30–67.

841,228. CRANE AND C DESIGN. Crane Co. SN 267, Pub. 10–10–67. Filed 3–30–67.

841,229. DURAMIL 7. Wabash Magnetics, Inc. 270,023. Pub. 10–10–67. Filed 4–26–67.

841,230. WW AND DESIGN. Weight Watchers Inter tional, Inc. SN 273,334. Pub. 10–10–67. Filed 6–7-

841,231. QUADRA-SCAN. Washington Scientific Industr Inc. SN 273,928. Pub. 10–10–67. Filed 6–15–67.

Class 28 — Jewelry and Precious-Metal Wa

841,098. (See Class 13 for this trademark.)

841,232. ELOQUENCE. Rogers, Lunt & Bowlen Compa d.b.a. Lunt Sterling. SN 247,623. Pub. 10–10–67. F 6–8–66.

841,233. CAMPBELL HOUSE AND DESIGN. Stephen Campbell, d.b.a. Campbell House. SN 266,729. P 10–10–67. Filed 3–15–67.

Class 29 — Brooms, Brushes, and Dusters

841,234. REACH-MASTER. EZ Paintr Corporation. 260,413. Pub. 10–10–67. Filed 12–9–66.

Class 30 — Crockery, Earthenware, a Porcelain

841,235. SYRACUSE CHINA 1871. Syracuse China Co ration. SN 242,939. Pub. 10–10–67. Filed 4–7–66.

Class 31 — Filters and Refrigerators

841,150. (See Class 21 for this trademark.)

841,236. C CRANE AND DESIGN. Crane Co. SN 267, Pub. 10–10–67. Filed 3–30–67.

841,237. CRANE AND C DESIGN ABOVE. Crane Co. 267,927. Pub. 10–10–67. Filed 3–30–67.

Class 32 — Furniture and Upholstery

841,091. (See Class 12 for this trademark.)

841,238. ULTRA KING. Dayco Corporation (Delaware poration), by merger from Dayco Corporation (Ohio poration). SN 224,523. Pub. 3–8–66. Filed 7–29–65.

841,239. PEG-TAPE AND DESIGN. Selfix, Inc. 250,041. Pub. 10–10–67. Filed 7–11–66.

841,240. CONWED. Wood Conversion Company. 252,505. Pub. 10–10–67. Filed 8–15–66.

841,241. WORLD BAZAAR. Atlantic Company. SN 257, Pub. 10–10–67. Filed 10–25–66.

841,242. DURALOUNGER. Duralite Company, Inc. SN 263,035. Pub. 10–10–67. Filed 1–23–67.

841,243. ELECTRO-EASE. Goodman Brothers Mfg. Co. SN 263,562. Pub. 10–10–67. Filed 1–30–67.

841,244. HOT-N-TOTE. Heckethorn Manufacturing Company, d.b.a. Heco. SN 263,831. Pub. 10–10–67. Filed 2–2–67.

841,245. TOUCH-N-GLO. Heckethorn Manufacturing Company, d.b.a. Heco. SN 263,832. Pub. 10–10–67. Filed 2–2–67.

Class 34 — Heating, Lighting, and Ventilating Apparatus

841,150. (See Class 21 for this trademark.)

841,246. AX-CENT-AIR FANS ETC. AND DESIGN. The Harvey P. Bertram Company. SN 246,533. Pub. 10–10–67. Filed 5–25–66.

841,247. AGITAIR AGITRAK. Air Devices, Inc. SN 247,556. Pub. 10–10–67. Filed 6–8–66.

841,248. WHEN THE HEAT'S ON BE SURE IT'S HYDRO-THERM. Hydrotherm, Inc. SN 248,078. Pub. 8–22–67. Filed 6–9–66.

841,249. ADCOLA AND DESIGN. Adcola Products Pty. Limited. SN 252,334. Pub. 10–10–67. Filed 8–15–66.

841,250. CHEFS CHOICE. Charmglow Products, Inc. SN 255,063. Pub. 10–10–67. Filed 9–26–66.

841,251. RCA AND DESIGN. Radio Corporation of America. SN 255,355. Pub. 10–10–67. Filed 9–28–66.

841,252. ST REGIS. St. Regis Paper Company. SN 256,236. Pub. 10–10–67. Filed 10–11–66.

841,253. C CRANE AND DESIGN. Crane Co. SN 267,928. Pub. 10–10–67. Filed 3–30–67.

841,254. C CRANE AND DESIGN. Crane Co. SN 267,929. Pub. 10–10–67. Filed 3–30–67.

841,255. C CRANE AND DESIGN. Crane Co. SN 270,233. Pub. 10–10–67. Filed 4–28–67.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

841,201. (See Class 23 for this trademark.)

841,256. DURANGO. Town Tire, Inc. SN 211,006. Pub. 9–7–65. Filed 1–29–65.

Class 36 — Musical Instruments and Supplies

841,257. MANNA RECORDS AND DESIGN. Manna Music Inc. SN 242,620. Pub. 10–10–67. Filed 4–4–66.

841,258. OCTAMATIC. H. & A. Selmer, Inc. SN 247,121. Pub. 10–10–67. Filed 6–2–66.

841,259. AKAI. Akai Electric Company Limited. SN 247,558. Pub. 10–10–67. Filed 6–8–66.

841,260. SPARKLTONE. Remo, Inc. SN 257,650. Pub. 10–10–67. Filed 10–31–66.

Class 37 — Paper and Stationery

841,261. E-Z-UP. Lectro-Stik Company. SN 225,331. Pub. 1–17–67. Filed 8–9–65.

841,262. PEN AND PENCIL OUTLINE (DESIGN). Union Pen & Pencil Corp. SN 248,864. Pub. 8–29–67. Filed 6–23–66.

841,263. EXQUISITE. Crystal Greetings, Inc. MULTIPLE CLASS (Classes 37 and 40). SN 250,358. Pub. 10–10–67. Filed 7–15–66.

Class 38 — Prints and Publications

841,264. WORK SAFELY AND DESIGN. The Granet Corp. SN 244,408. Pub. 10–10–67. Filed 4–27–66.

841,265. MISCELLANEOUS DESIGN. Childrens Press, Inc. SN 277,250. Pub. 10–10–67. Filed 8–1–67.

Class 39 — Clothing

841,064. (See Class 1 for this trademark.)

841,266. PLATINUM LABEL. The Alligator Company, Inc., assignee of The Alligator Company. SN 79,968. Pub. 5–21–63. Filed 8–21–59.

841,267. GOLD LABEL. The Alligator Company, Inc., assignee of The Alligator Company. SN 79,969. Pub. 5–21–63. Filed 8–21–59.

841,268. PETALS BY WINDSOR AND DESIGN. A. S. Beck Shoe Corporation. SN 143,337. Pub. 10–10–67. Filed 4–30–62.

841,269. THE SOFT TOUCH OF EDITH HENRY. Kenrich Shoe Corporation, by change of name from Lucky Stride Shoes, Inc. SN 189,784. Pub. 8–9–66. Filed 3–27–64.

841,270. SILHOUETTE. Corsets Silhouette Limited. SN 202,018. Pub. 12–13–66. Filed 9–16–64.

841,271. JEUNIQUE. Con-Stan Industries, Inc. SN 228,642. Pub. 2–21–67. Filed 9–27–65.

841,272. FOXHEAD. Goodstein Bros. & Co., Inc. SN 238,425. Pub. 11–15–66. Filed 2–9–66.

841,273. PRESTO NET. The Thomas Holmes Corporation. SN 247,796. Pub. 10–10–67. Filed 6–10–66.

841,274. DENA OF ITALY. Shoe Corporation of America. SN 248,641. Pub. 10–10–67. Filed 6–21–66.

841,275. ANTHE AND DESIGN. Coast Empire, Inc. SN 251,895. Pub. 10–10–67. Filed 8–8–66.

841,276. ROYAL J AND DESIGN. J. Eulan Johnson, d.b.a. Royal J Hosiery Co. SN 252,011. Pub. 10–10–67. Filed 8–9–66.

841,277. PARADOR. Dexter Company, Inc. SN 254,591. Pub. 10–10–67. Filed 9–16–66.

841,278. PERFECT DAY. Cannon Shoe Company. SN 259,220. Pub. 10–10–67. Filed 11–22–66.

841,279. FIFTH AVE. DESIGNERS GROUP. Plymouth Wholesale Corporation. SN 259,574. Pub. 10–10–67. Filed 11–28–66.

841,280. LOVERALLS AND DESIGN. Joseph Love Inc. SN 260,574. Pub. 10–10–67. Filed 12–12–66.

841,281. FUN CITY. Ferdinand Nusbaum. SN 260,761. Pub. 10–10–67. Filed 12–14–66.

841,282. BANISTER. Freeman-Toor Corporation. SN 260,931. Pub. 10–10–67. Filed 12–16–66.

841,283. GUIDO BRUSTIA. Guido Brustia Couture S.p.A. SN 261,213. Pub. 10–10–67. Filed 12–21–66.

841,284. SLIT SHELL. Maidenform, Inc. SN 262,247. Pub. 10–10–67. Filed 1–10–67.

841,285. VOULEZ-VOUS. Kayser-Roth Corporation. SN 263,671. Pub. 10–10–67. Filed 1–31–67.

841,286. IPPY BY GREGG DRADDY. Gregg Draddy, Inc. SN 265,874. Pub. 10–10–67. Filed 3–3–67.

841,287. CRYSTAL. David Crystal, Inc. SN 276,903. Pub. 10–10–67. Filed 7–27–67.

841,288. TECH-TWILL. The H. D. Lee Company, Incorporated. SN 277,103. Pub. 10–10–67. Filed 7–31–67.

Class 40 — Fancy Goods, Furnishings, and Notions

841,263. (See Class 37 for this trademark.)

841,289. CAMELOT. Fashion Tress, Inc. SN 276,992. Pub. 10–10–67. Filed 7–28–67.

841,290. TREND-WIG. Fashion Tress, Inc. SN 276,993. Pub. 10–10–67. Filed 7–28–67.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

841,291. RAVLINE. Victor S. Noerdlinger, Inc. SN 255,542. Pub. 10–10–67. Filed 9–30–66.

841,292. GAMO RAMA. Comptoir de l'Industrie Textile de France. SN 261,974. Pub. 10–10–67. Filed 1–5–67.

841,293. HONESTY. Callaway Mills Company. SN 264,195. Pub. 10–10–67. Filed 2–8–67.

841,294. MERRYWEATHER. J. P. Stevens & Co., Inc. SN 264,452. Pub. 10–10–67. Filed 2–10–67.

841,295. WW/75. The General Tire & Rubber Company. SN 275,372. Pub. 10–10–67. Filed 7–5–67.

841,296. ULTRA VINO. Burlington Industries, Inc. SN 275,913. Pub. 10–10–67. Filed 7–13–67.

841,297. SUPER VINO. Burlington Industries, Inc. SN 275,914. Pub. 10–10–67. Filed 7–13–67.

841,298. BEM. Beaunit Corporation. SN 276,301. Pub. 10–10–67. Filed 7–19–67.

Class 43 — Thread and Yarn

841,299. FIBRLON. Hudson Mills, Inc. SN 263,913. Pub. 10–10–67. Filed 2–3–67.

841,300. BEM. Beaunit Corporation. SN 274,171. Pub. 10–10–67. Filed 6–19–67.

Class 44 — Dental, Medical, and Surgical Appliances

841,187. (See Class 23 for this trademark.)

841,301. WEAVENIT. Meadox Medicals, Incorporated. SN 157,232. Pub. 7–23–63. Filed 11–14–62.

841,302. STREAKIT. Richard d'Agostino. SN 241,842. Pub. 10–10–67. Filed 3–25–66.

841,303. BROWN AIR DERMATONE. Zimmer Manufacturing Company. SN 242,698. Pub. 10–10–67. Filed 4–4–66.

841,304. UNIFLEX. Ritter Pfaudler Corporation. SN 245,239. Pub. 10–10–67. Filed 5–9–66.

841,305. BENSON WHIRL JET AND DESIGN. Whirl Jet Corporation. SN 246,505. Pub. 10–10–67. Filed 5–24–66.

841,306. OPTIMA-102. Standard X-Ray Company. SN 247,640. Pub. 10–10–67. Filed 6–8–66.

841,307. SURGIFIX. F.R.A. di Mignone & Cherio. SN 248,795. Pub. 10–10–67. Filed 6–23–66.

841,308. DIFFUSIONET. Instrumentation Associates Inc. SN 276,900. Pub. 10–10–67. Filed 7–27–67.

841,309. DIFFUSIONETTE. Instrumentation Associates Inc. SN 276,902. Pub. 10–10–67. Filed 7–27–67.

Class 45 — Soft Drinks and Carbonated Waters

841,310. LOMBARDI. Lombardi—Societa Italiana Lavorazioni Alimentari S.I.L.A. S.p.A. MULTIPLE CLASS (Classes 45 and 46). SN 235,759. Pub. 10–10–67. Filed 1–4–66.

841,311. TROPIC SURF. PepsiCo, Inc. SN 270,783. Pub. 10–10–67. Filed 5–5–67.

841,312, SURF. PepsiCo, Inc. SN 273,922. Pub. 10–10–67. Filed 6–15–67.

Class 46 — Foods and Ingredients of Food

841,310. (See Class 45 for this trademark.)

841,313. CASCADE. Industrial Sugars, Inc. SN 193,... Pub. 3–30–65. Filed 5–11–64.

841,314. LAZY MAPLE. Swift & Company. SN 221,... Pub. 10–4–66. Filed 6–24–65.

841,315. LAZY "W." Waldman's Meats, Inc. SN 231,... Pub. 10–4–66. Filed 10–29–65.

841,316. HULL AND 2 TRIANGLE DESIGNS. Ellen ... Leonard, d.b.a. A. S. Hull Co. SN 237,130. Pub. 10–10... Filed 1–24–66.

841,317. BIG "D." Big D Foods Co. SN 240,245. ... 10–10–67. Filed 3–7–66.

841,318. BRASWELL'S JUICED-RITE AND DESIGN. ... M. Braswell, Jr. Food Company, Inc. SN 241,579. ... 10–10–67. Filed 3–22–66.

841,319. LEMON MASTER. General Flavors Inc. 244,483. Pub. 10–10–67. Filed 4–28–66.

841,320. FRUIT PIZZA. Carnation Company. SN 245,... Pub. 10–10–67. Filed 5–18–66.

841,321. SMOKEZEST. Red Arrow Products Corpora... SN 253,243. Pub. 10–10–67. Filed 8–26–66.

841,322. CADILLAC SNOW BIRDS AND DESIGN. G... L. McKellop, d.b.a. The Sweet Shop. SN 257,503. 10–10–67. Filed 10–28–66.

841,323. BUTTERSNAP. Edward Sharp & Sons Lim... SN 257,655. Pub. 10–10–67. Filed 10–31–66.

841,324. FRITO-LAY. Frito-Lay, Inc. SN 257,848. 10–10–67. Filed 11–3–66.

841,325. SPRING-HEARTH. Seaboard Allied Milling ... poration, d.b.a. George Urban Milling Company. 257,991. Pub. 10–10–67. Filed 11–4–66.

841,326. DONA PURA. The Theobald Industries. 258,169. Pub. 10–10–67. Filed 11–7–66.

841,327. SUAVE. Wajay Bakery, Inc. SN 260,615. 10–10–67. Filed 12–12–66.

841,328. LIPTON FROSTEA. Thomas J. Lipton, Inc. 261,091. Pub. 6–20–67. Filed 12–19–66.

841,329. NOVELICE. Horner Sales Corporation. 261,988. Pub. 10–10–67. Filed 1–5–67.

841,330. MONTE CARLO. Caravetta Foods Co. SN 262... Pub. 10–10–67. Filed 1–9–67.

841,331. MASTER CHEF. Potter McCune Company. 263,291. Pub. 10–10–67. Filed 1–25–67.

841,332. RED KEY. Morgan Packing Co., Inc. SN 263... Pub. 10–10–67. Filed 1–26–67.

841,333. RICH-MO-LASS. Kees & Company. SN 263... Pub. 10–10–67. Filed 1–30–67.

841,334. JACK IN THE BOX. Foodmaker, Inc., by ch... of name from Jack-in-the-Box, Inc. SN 268,652. 10–3–67. Filed 4–10–67.

841,335. TASTE CRUISE. Laura Lee Candies, Inc., ... Laura Lee. SN 270,034. Pub. 10–10–67. Filed 4–2...

841,336. WHITE WING AND DESIGN. Bruce Church ... SN 276,998. Pub. 10–10–67. Filed 7–28–67.

841,337. KITCHEN KING. Rolland Jones Potatoes, ... SN 277,503. Pub. 10–10–67. Filed 8–4–67.

Class 47 — Wines

841,338. VIZCONDE DE AYALA. Bodegas Rioja Santiago, S.A. SN 238,394. Pub. 6-27-67. Filed 2-9-66.

Class 50 — Merchandise Not Otherwise Classified

841,339. WORLD BAZAAR. Atlantic Company. SN 257,151. Pub. 10-10-67. Filed 10-25-66.

841,340. HUGGER PUF. Marlo Company. SN 258,238. Pub. 10-10-67. Filed 11-8-66.

Class 51 — Cosmetics and Toilet Preparations

841,341. BARBATONE. Barbatone Company, Inc., d.b.a. Barbatone Company. SN 207,471. Pub. 10-19-65. Filed 12-4-64.

841,342. ZAZINE. Robert Miles Sherman, d.b.a. Madeleine de Martel Cosmetics. SN 255,037. Pub. 1-31-67. Filed 9-26-66.

841,343. ZACHINE. Robert Miles Sherman, d.b.a. Madeleine de Martel Cosmetics. SN 255,039. Pub. 1-31-67. Filed 9-26-66.

841,344. ZOBRIST Z AND DESIGN. J. C. Zobrist Company. MULTIPLE CLASS (Classes 51 and 106). SN 255,493. Pub. 10-10-67. Filed 10-3-66.

841,345. SLICK TRICK. Chadbourn Gotham, Inc. SN 264,021. Pub. 10-10-67. Filed 2-6-67.

841,346. TWO-ACTS. Chadbourn Gotham, Inc. SN 264,022. Pub. 10-10-67. Filed 2-6-67.

841,347. BLACK GARTER. Sandi Kelz, d.b.a. Black Garter Dist. SN 268,002. Pub. 10-10-67. Filed 3-31-67.

Class 52 — Detergents and Soaps

841,348. ZACHINE. Robert Miles Sherman, d.b.a. Madeleine de Martel Cosmetics. SN 255,253. Pub. 1-31-67. Filed 9-28-66.

841,349. ZAZINE. Robert Miles Sherman, d.b.a. Madeleine de Martel Cosmetics. SN 255,260. Pub. 1-31-67. Filed 9-28-66.

841,350. SATURN. General Foods Corporation. SN 262,783. Pub. 10-10-67. Filed 1-18-67.

841,351. CONTACT. Texize Chemicals, Inc. SN 262,979. Pub. 10-10-67. Filed 1-20-67.

Service Marks

Class 100 — Miscellaneous

841,352. ABC ASSOCIATED BUILDING CENTERS AND DESIGN. Cape Supply Company, d.b.a. ABC Associated Building Centers. SN 226,895. Pub. 10-10-67. Filed 9-1-65.

841,353. JACK IN THE BOX ETC. AND DESIGN. Foodmaker, Inc., by change of name from Jack-in-the-Box, Inc. SN 235,989. Pub. 9-26-67. Filed 1-7-66.

841,354. FLEXOTIR. Institut Francais du Pétrole, des Carburants et Lubrifiants. SN 245,714. Pub. 10-10-67. Filed 5-16-66.

841,355. DR. SIMS. Illinois State Medical Society. SN 252,101. Pub. 10-10-67. Filed 8-10-66.

841,356. MAN WEARING A TOP HAT (DESIGN). Master's Fashions. SN 253,829. Pub. 10-10-67. Filed 8-29-66.

841,357. LADY HILTON. Hilton Hotels Corporation. SN 254,389. Pub. 10-10-67. Filed 9-13-66.

841,358. TACO TIME. National Taco Company. SN 256,959. Pub. 10-10-67. Filed 10-21-66.

841,359. CONEY KING AND DESIGN. Coney King International, Inc. SN 257,253. Pub. 10-10-67. Filed 10-26-66.

841,360. BLUE CIRCLE. Wometco Blue Circle, Inc. SN 261,342. Pub. 10-10-67. Filed 12-22-66.

Class 101 — Advertising and Business

841,361. COLOR-LOC. Photo-Eye Film Service Corporation. SN 239,793. Pub. 10-10-67. Filed 2-28-66.

841,362. CPS. College Placement Services, Inc. SN 243,847. Pub. 10-10-67. Filed 4-20-66.

841,363. ACTION LINE. Action Listings, Inc. SN 250,626. Pub. 10-10-67. Filed 7-20-66.

841,364. ACTION LISTINGS. Action Listings, Inc. SN 250,627. Pub. 10-10-67. Filed 7-20-66.

841,365. ACTION. Action Listings, Inc. SN 250,628. Pub. 10-10-67. Filed 7-20-66.

841,366. FOUR INTERLOCKING LETTER M's (DESIGN). Multiples, Inc. SN 251,451. Pub. 10-10-67. Filed 8-1-66.

841,367. SUPER A. Associated Food Stores, Inc. SN 258,880. Pub. 10-10-67. Filed 11-17-66.

841,368. MELODYGRAM AND DESIGN. The Western Union Telegraph Company. SN 263,499. Pub. 10-10-67. Filed 1-27-67.

Class 102 — Insurance and Financial

841,369. CCC AND DESIGN. Commercial Credit Corporation. SN 248,896. Pub. 10-10-67. Filed 6-24-66.

841,370. STOREPAK. La Salle National Insurance Company, by merger and change of name from La Salle Casualty Company. SN 252,263. Pub. 10-10-67. Filed 8-12-66.

841,371. THE PEOPLE WHO DIG DEEP. Dean Witter & Co. SN 253,127. Pub. 10-10-67. Filed 8-25-66.

841,372. MISCELLANEOUS DESIGN. Nassau Insurance Company. SN 253,162. Pub. 10-10-67. Filed 8-25-66.

841,373. QUAD. Provident Life and Accident Insurance Company. SN 255,018. Pub. 10-10-67. Filed 9-23-66.

841,374. RETURN PREMIUMS ETC. AND DESIGN. Return Premiums, Inc. SN 256,862. Pub. 10-10-67. Filed 10-20-66.

841,375. MF AND DESIGN. Marion Federal Savings and Loan Association of Grant County. SN 268,131. Pub. 10-10-67. Filed 4-3-67.

841,376. MACK AND BULLDOG DESIGN. Mack Trucks, Inc. SN 269,825. Pub. 10-10-67. Filed 4-24-67.

Class 103 — Construction and Repair

841,377. D-150. D-150 Incorporated. SN 232,675. Pub. 10-10-67. Filed 11-15-65.

841,378. DIMENSION 150. D-150 Incorporated. SN 232,676. Pub. 10-10-67. Filed 11-15-65.

841,379. TELEDRIFT. Borg-Warner Corporation. SN 243,083. Pub. 10-10-67. Filed 4-11-66.

841,380. AAA-A1 FLOORS. James F. Rice, Jr., d.b.a. AAA-A1 Floors. SN 249,798. Pub. 10-10-67. Filed 7-7-66.

841,381. OI AND DESIGN. Oberson Insulation Co. SN 256,960. Pub. 10-10-67. Filed 10-21-66.

Class 104 — Communication

841,382. TRY A LITTLE TENDERNESS. WAIT. SN 254,345. Pub. 10–10–67. Filed 9–12–66.

Class 105 — Transportation and Storage

841,383. TAIL (DESIGN). Northwest Airlines, Inc., d.b.a. Northwest Orient Airlines. SN 254,620. Pub. 10–10–67. Filed 9–16–66.

841,384. FIESTA MIAMI BEACH. Empress Travel Service Inc. SN 255,887. Pub. 10–10–67. Filed 10–6–66.

841,385. EUROP'RAMA. Cityrama Corp. SN 257,459. Pub. 10–10–67. Filed 10–28–66.

841,386. GOLDEN NUGGET JETS AND DESIGN. Alaska Airlines, Inc. SN 258,465. Pub. 10–10–67. Filed 11–14–66.

841,387. S (DESIGN). Southern Airways, Inc. SN 259,271. Pub. 10–10–67. Filed 11–22–66.

841,388. GOLDEN NUGGET FREIGHTER AND DESIGN. Alaska Airlines, Inc. SN 263,241. Pub. 10–10–67. Filed 1–25–67.

841,389. ATLAS AND DESIGN. Atlas Van-Lines, Inc. SN 273,923. Pub. 10–10–67. Filed 6–15–67.

841,390. ATLAS. Atlas Van-Lines, Inc. SN 273,924. Pub. 10–10–67. Filed 6–15–67.

Class 106 — Material Treatment

841,344. (See Class 51 for this trademark.)

841,391. CARICATURE OF A CRAB IN CIRCLE (DESIGN). Crab Machine Company. SN 250,246. Pub. 10–10–67. Filed 7–14–66.

Class 107 — Education and Entertainment

841,392. AI. C-E-I-R, Inc., assignee of Automation Institute of America, Inc. SN 242,540. Pub. 10–10–67. Filed 4–4–66.

841,393. TRADIO. J. Kent Hackleman. SN 246,077. Pub. 10–10–67. Filed 5–19–66.

841,394. BITS ABOUT LEARNING. Heart O'Wisconsin Broadcasters, Inc. SN 246,687. Pub. 10–10–67. Filed 5–26–66.

841,395. PSYCHOLOGICALLY SPEAKING. Mrs. Samuel Melitzer, d.b.a. Lee R. Steiner. SN 262,246. Pub. 10–10–67. Filed 1–10–67.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

841,396. Miller Harness Company, Inc., New York, N.Y. SN 263,677. Filed P.R. 1–31–67; Am. S.R. 10–2–67.

BORELLI

For Saddles for Horses.
First use May 1965.

Class 7 — Cordage

841,397. Puritan Cordage Mills, Louisville, Ky. SN 259,061. Filed P.R. 11–21–66; Am. S.R. 10–10–67.

GOLD BRAID

For Rope.
First use Oct. 3, 1966.

Class 10 — Fertilizers

841,398. The Cleveland Builders Supply Company, Cleveland, Ohio. SN 215,186. Filed P.R. 3–29–65; Am. S.R. 10–11–67.

MICA-MOSS

For Soil Conditioner.
First use Feb. 5, 1965.

Class 16 — Protective and Decorative Coatings

841,399. Ultra Gloss Coatings Corp., Boston, Mass. SN 246,405. Filed P.R. 5–23–66; Am. S.R. 8–31–67.

KALENDERKOTE

For Lacquer Coating for Printed Matter.
First use May 17, 1966.

841,400. Wade, Wenger Servicemaster Co., Downers Grove, Ill. SN 246,409. Filed P.R. 5–23–66; Am. S.R. 6–8–67.

CHECKSTAIN

For Protective Finish Coating for Furniture, Drapery, Clothing, and Other Fabrics.
First use Sept. 1, 1961.

841,401. Calgon Corporation, Pittsburgh, Pa. SN 252,071. Filed P.R. 8–10–66; Am. S.R. 9–19–67.

EZE-PEEL

For Masking Composition for Paint Spray Booths.
First use June 22, 1966.

Class 20 — Linoleum and Oiled Cloth

841,402. Congoleum-Nairn Inc., Kearny, N.J. SN 254,589. Filed P.R. 9–16–66; Am. S.R. 10–27–67.

ENGLISH BRICK

For Plastic Coverings of the Smooth Surface, Resilient Type for Surfaces Such as Floors, Walls, Countertops, and the Like in the Form of Rolls, Rugs, and Tiles.
First use Aug. 10, 1966.

Class 22 — Games, Toys, and Sporting Goods

841,403. Herbert J. Slade, d.b.a. Window Well Cover Co., Prospect Heights, Ill. SN 247,071. Filed P.R. 6–1–66; Am. S.R. 10–2–67.

ROD-SAV'R

For Carrying Cases for Fishing Rods.
First use Mar. 15, 1966.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

841,404. Skil Corporation, Chicago, Ill. SN 243,353. Filed P.R. 4–13–66; Am. S.R. 9–27–67.

DRIVE-R-DRILL

For Electrically Powered Hand Drills—Namely, Electrically Powered Hand Drills of the Reversible Type.
First use November 1965.

Class 26 — Measuring and Scientific Appliances

841,405. Seneca Falls Machine Company, Seneca Falls, N.Y. SN 233,406. Filed P.R. 11–26–65; Am. S.R. 10–17–67.

PHOTOTRACE

For Tracer Control Unit for Controlling Machine Tools and Other Manufacturing Equipment and Point to Point Positioning, Utilizing a Photoelectric Sensor and Electronic Controller.
First use April 1964.

Class 32 — Furniture and Upholstery

841,406. Howe Plastics & Chemical Co., Inc., New York, N.Y. SN 264,152. Filed 2–7–67.



For Inflatable Bucket Seat.
First use Apr. 20, 1965.

Class 37 — Paper and Stationery

841,407. West Virginia Pulp and Paper Company, New York, N.Y. SN 262,361. Filed P.R. 1–11–67; Am. S.R. 10–23–67.

ENAMELKOTE

For Coated Bleached Paperboard.
First use Nov. 2, 1965.

Class 38 — Prints and Publications

841,408. C-E-I-R, Inc., Washington, D.C., assignee of Automation Institute of America, Inc., San Francisco, Calif. SN 242,541. Filed P.R. 4–4–66; Am. S.R. 9–29–67.

AUTOMATION INSTITUTE

For News Bulletins Issued Periodically.
First use Feb. 1, 1956.

841,409. McGraw-Hill, Inc., New York, N.Y. SN 257,973. Filed P.R. 11–4–66; Am. S.R. 10–31–67.

AIR & WATER NEWS

For Weekly News Bulletin.
First use Oct. 24, 1966.

Class 39 — Clothing

841,410. Doby Girl Coat Corporation, New York, N.Y. SN 248,025. Filed P.R. 6–14–66; Am. S.R. 10–26–67.

SNUGGLECOAT

For Girls' Coats.
First use May 2, 1962.

Class 40 — Fancy Goods, Furnishings, and Notions

841,411. Fashion Tress, Inc., Miami Beach, Fla. SN 233,258. File P.R. 11–24–65; Am. S.R. 10–26–67.

TRESSETTE

For Hairpieces.
First use Nov. 2, 1965.

841,412. The Vassar Corp., Bronx, N.Y. SN 262,358. Filed P.R. 1–11–67; Am. S.R. 10–3–67.

FAST SET

For Hair Curlers.
First use Sept. 1, 1966.

Class 44 — Dental, Medical, and Surgical Appliances

841,413. Masti-Kure Products Co., Norwich, Conn. SN 248,352. Filed P.R. 6–17–66; Am. S.R. 9–26–67.

DIAL-A-DOSE

For Syringes.
First use at least as early as Apr. 26, 1966.

Class 46 — Foods and Ingredients of Foods

841,414. Tel-Aviv Kosher Dressed Poultry Corp., Bronx, N.Y. SN 237,051. Filed P.R. 1–21–66; Am. S.R. 3–29–67.

KOSHER-RITE

For Frozen Fowl.
First use Oct. 5, 1965.

841,415. Golden Grain Macaroni Company, San Leandro, Calif. SN 280,130. Filed 9–12–67.

1 PAN
NO BOILING • RICHER FLAVOUR

For Prepared Packaged Rice and Vermicelli Dinner.
First use Aug. 15, 1966.

Class 49 — Distilled Alcoholic Liquors

841,416. Sazerac Company, Inc., d.b.a. Macaulay and Company, New Orleans, La. SN 259,172. Filed P.R. 11–21–66; Am. S.R. 10–16–67.

MACAULAY'S

For Scotch Whisky.
First use May 5, 1964.

Class 51 — Cosmetics and Toilet Preparations

841,417. Weeks & Leo Company, Inc., Des Moines, Iowa. SN 211,605. Filed P.R. 2–8–65; Am. S.R. 10–13–67.

SMOOTH

For Face Powder, Creme Hair Rinse, Hand Cream, Hand and Body Lotion, Suntan Cream, Skin Cream, Anti-Perspirant and Deodorant, Spray Hair Set, Bath Oil, After Shave Lotion, Pre-Electric Shave Lotion, Push Button Shave Cream, Hair Dress, Mouth Wash, and Oral Spray.
First use July 13, 1936.

841,418. Revlon, Inc., New York, N.Y. SN 250,591. Filed P.R. 7–19–66; Am. S.R. 10–27–67.

OYSTER PINK

For Nail Enamel.
First use June 15, 1966.

841,419. Revlon, Inc., New York, N.Y. SN 250,592. Filed P.R. 7–19–66; Am. S.R. 10–27–67.

SNOW LILAC

For Nail Enamel.
First use June 15, 1966.

841,420. Revlon, Inc., New York, N.Y. SN 250,593. Filed P.R. 7–19–66; Am. S.R. 10–27–67.

MILK GLASS

For Nail Enamel.
First use June 15, 1966.

841,421. Revlon, Inc., New York, N.Y. SN 250,594. Filed P.R. 7–19–66; Am. S.R. 10–27–67.

TOFFEE TAN

For Nail Enamel.
First use June 15, 1966.

841,422. Revlon, Inc., New York, N.Y. SN 250,595. Filed P.R. 7–19–66; Am. S.R. 10–27–67.

HONEYFROST

For Nail Enamel.
First use June 15, 1966.

841,423. Revlon, Inc., New York, N.Y. SN 250,596. Filed P.R. 7–19–66; Am. S.R. 10–27–67.

PALOMINO PINK

For Nail Enamel.
First use June 15, 1966.

841,424. Revlon, Inc., New York, N.Y. SN 250,597. Filed P.R. 7–19–66; Am. S.R. 10–27–67.

LEMON ORANGE

For Nail Enamel.
First use June 15, 1966.

841,425. Chesebrough-Pond's Inc., New York, N.Y. SN 260,823. Filed P.R. 12–15–66; Am. S.R. 10–23–67.

BE A BAREFOOT GIRL WITH SHOES ON

For Foot Balm and Talcum Powder.
First use Feb. 20, 1966.

Service Marks

Class 100 — Miscellaneous

841,426. Ramada Inns, Inc., Phoenix, Ariz. SN 242,284. Filed P.R. 3–30–66; Am. S.R. 10–19–67.

SURERATE

For Hotel Reservation and Confirmation Services at Guaranteed Rates to Participating Companies.
First use Dec. 6, 1965.

Class 101 — Advertising and Business

841,427. Cortland Industries, Inc., d.b.a. Cortland Line Company, Cortland, N.Y. SN 220,618. Filed P.R. 6–7–65; Am. S.R. 3–27–67.

CERTIFIED CORTLAND FISHING PRO SHOP

For Promoting the Business of Fishing Tackle Shop Owners by Furnishing Expert Advice in the Use of Fishing Tackle on Said Shop Owners' Premises.
First use Mar. 5, 1965.

Class 102 — Insurance and Financial

841,428. The Bank of New York, New York, N.Y. SN 250,344. Filed P.R. 7–15–66; Am. S.R. 8–8–67.

THE BANK OF NEW YORK

For Banking Services.
First use during 1952.

841,429. Aldo E. Cesarini, d.b.a. Cesarini Insurance Agency, Boston, Mass. SN 264,144. Filed 2–7–67.

Insurance is The Best Policy

For Insurance Brokerage Services.
First use June 17, 1954.

Class 103 — Construction and Repair

841,430. The Standard Oil Company, Cleveland, Ohio. SN 236,020. Filed P.R. 1–7–66; Am. S.R. 10–25–67.

GAS AND GO

For Services Rendered at a Service Station, More Particularly Dispensing Gasoline.
First use about Oct. 1, 1964.

Class 106 — Material Treatment

841,431. Calgon Corporation, Pittsburgh, Pa. SN 205,150. Filed P.R. 10–30–64; Am. S.R. 9–15–67.

TOTAL WATER TREATMENT

For Consulting Analytical and Chemical Treatment Services in Connection With Treatment of Industrial and Other Water Systems for the Inhibition of Corrosion and Scale Formation, Clarification, Bacterial Inhibition and Filtration.
First use February 1964.

Class 107 — Education and Entertainment

841,432. Connelly L. Graham, d.b.a. National Director of "Christians in Action," Columbus, Ind. SN 258,982. Filed 11–18–66.

CHRISTIANS *Action*

For Educational Services—Namely, Providing Lectures on Religion, and Disseminating Related Religious Literature to Churches, Church Groups, and Clubs.
First use Jan. 13, 1964.

TRADEMARK REGISTRATIONS RENEWED

65,422. GOODRICH. Cl. 35. 9–24–07.
66,032. CREMO. Cl. 46. 11–5–07.
165,644. CLARK. Cl. 19. 3–13–23.
166,313. CLARK. Cl. 23. 3–27–23.
180,487. REPRESENTATION OF A CANDY DISC. Cl. 46. 2–26–24.
184,434. "NICOLSON FILE CO." ETC. AND DESIGN. Cl. 23. 5–20–24.
226,426. SHEAFFER'S. Cl. 37. 4–5–27.
230,742. THREE FLOWERS PERFUME PATS. Cl. 51. 8–2–27.
230,872. ESTELLE. Cl. 46. 8–9–27.
230,899. KRASDALE. Cl. 46. 8–9–27.
234,670. COURIER. Cl. 35. 11–1–27.
234,693. INFANTOL. Cl. 52. 11–1–27.
234,839. SUPRE-MACY. Cl. 22. 11–8–27.
234,840. MAYFLOWER. Cl. 42. 11–8–27.
235,845. ROTARY. Cl. 27. 11–29–27.
236,873. KELO FORM. Cl. 18. 12–27–27.
237,811. TANNATE AND DESIGN. Cl. 4. 1–17–28.
238,465. GREEK LETTERS KA. Cl. 28. 2–7–28.
239,462. DIOTEX. Cl. 18. 3–6–28.
240,223. WHITE GOOSE. Cl. 46. 3–20–28.
240,689. "OLD ABE" ETC. AND PORTRIAT OF ABRAHAM LINCOLN. Cl. 17. 4–3–28.
433,724. MISCELLANEOUS DESIGN. Cl. 15. 10–28–47.
433,756. PETROHOL. Cl. 11. 10–28–47.
433,760. VPI. Cl. 6. 10–28–47.
433,888. MUMBLE JUMBLE. Cl. 46. 11–4–47.
433,936. MISCELLANEOUS DESIGN. Cl. 36. 11–4–47.
433,956. VANSHERRI. Cl. 46. 11–4–47.
434,073. ACM. Cl. 46. 11–4–47.
434,129. TORQMATIC. Cl. 23. 11–11–47.
434,509. VERDOL. Cl. 6. 11–18–47.
434,587. SOUTHERN LILY. Cl. 46. 11–25–47.
434,800. SUPERTHON. Cl. 15. 12–9–47.
435,023. METHISCHOL. Cl. 18. 12–9–47.
435,034. JAZ. Cl. 27. 12–9–47.
435,539. AL AND DESIGN. Cl. 14. 12–30–47.
435,889. BEACON. Cl. 26. 1–13–48.
435,957. DURACEL. Cl. 16. 1–20–48.
436,028. TABOU. Cl. 51. 1–20–48.
436,086. THIOMERIN. Cl. 18. 1–20–48.
436,156. EUFIX. Cl. 6. 1–27–48.
436,613. GAY LOOK. Cl. 51. 2–17–48.
436,948. SILASTIC. Cl. 1. 3–2–48.
436,968. QUALIKEY. Cl. 46. 3–2–48.
437,017. EMBRO. Cl. 1. 3–2–48.
437,599. HITEMP. Cl. 9. 3–30–48.
437,814. PRIORITY. Cl. 52. 3–30–48.
438,332. FUTURA. Cl. 37. 4–13–48.
438,462. LEBLOND. Cl. 23. 4–20–48.
438,463. DESIGN OF FLEUR D ELIS. Cl. 23. 4–20–48.
438,513. GATES POWERCORD. Cl. 35. 4–27–48.

TRADEMARK REGISTRATIONS CANCELED

Section 7(d)

704,017. SETSNUG. Cl. 39. 9–6–60.
805,772. COL. SANDERS RECIPE KENTUCKY FRIED CHICKEN. Cl. 100. 3–15–66.
821,340. BANFI ETC. AND DESIGN. Cl. 18. 12–27–66.
841,790. LANDA. Cl. 31. 7–11–67.
831,791. LANDA SOFT AND DESIGN. Cl. 31. 7–11–67.

Section 8

20,526. J & P COATS AND DESIGN. Cl. 43. 12–29–1891.
20,527. DESIGN OF SCALE OF INCHES. Cl. 43. 12–29–1891.
141,854. GRIFFIN AND DESIGN. Cl. 14. 5–3–21.
389,705. SALYSAL AND DESIGN. Cl. 6. 8–19–41.
390,476. COCAROO. Cl. 39. 9–23–41.
392,129. TOPPER. Cl. 16. 12–9–41.
392,370. PEARL "B." Cl. 50. 12–23–41.
392,400. SUGAR PLUM. Cl. 51. 12–23–41.

The following registrations issued Nov. 7, 1961

723,432. LIRELLE. Cl. 1.
723,439. JUDO. Cl. 2.
723,445. TREY. Cl. 6.
723,455. GLIDE-WIDE. Cl. 12.
723,460. PANEL-LIFT. Cl. 12.
723,462. SCOTCH LADDY. Cl. 12.
723,463. PANEL-LIFT DOOR AND DESIGN. Cl. 12.
723,464. VERSAFLAKE. Cl. 12.
723,465. WEYTONE. Cl. 12.
723,468. POMPEIIAN AND DESIGN. Cl. 12.
723,469. C CHEMCO-CO. Cl. 12.
723,472. CONSTEL. Cl. 12.
723,474. JIFFY ROOMS. Cl. 12.
723,475. JIFFY-STRIP. Cl. 12.
723,483. VARI-HEIGHT. Cl. 13.
723,487. ISOLOY. Cl. 14.
723,489. TIGER TOP. Cl. 14.
723,495. PARA-STREP DUST. Cl. 18.
723,497. PROLO. Cl. 18.
723,500. PAR-CAPS. Cl. 18.
723 502. FERRO-LAC. Cl. 18.
723,508. SEDARAUPIN. Cl. 18.
723.512. MATCO. Cl. 18.
723,522. SPAN-O-WIDE. Cl. 19.
723,523. KASE-KING. Cl. 19.
723,529. VACOMAGIC. Cl. 21.
723.538. BUTCH. Cl. 22.
723,540. BARCELONA. Cl. 22.
723,547. DUMPMOR AND DESIGN. Cl. 23.
723,555. ROLAND NONPLUSULTRA. Cl. 23.
723,557. FUJISYNCHRO. Cl. 26.
723,560. G-RATER AND DESIGN. Cl. 26.
723,563. INSTANT-X. Cl. 26.
723,564. DIAL-X. Cl. 26.
723,568. XACTLINE. Cl. 26.
723,590. DISTRIBUTAPE AND DESIGN. Cl. 26.
723,595. RETORT AND DIAL DESIGN. Cl. 26.
723,596. VETTA. Cl. 26.
723,599. CELESTE. Cl. 28.
723,602. TIZ. Cl. 29.
723,604. RECORD AND DESIGN. Cl. 31.
723,605. CERTIPORE. Cl. 31.
723,607. TOY CHESTER AND DESIGN. Cl. 32.
723,608. SIGNET. Cl. 32.
723,609. CERTIFIED SERVICE AND DESIGN. Cl. 34.
723,610. PERMA-HEAT. Cl. 34.
723,611. PREPARIZER. Cl. 34.
723,616. RC AND DESIGN. Cl. 36.
723,617. VOICE-MASTER. Cl. 36.
723,618. CONNOISSEUR COLLECTION. Cl. 37.
723,620. TEL-O-GIFT. Cl. 37.
723,624. JACQUES MONET. Cl. 39.
723,625. CRIMPLON. Cl. 39.
723,626. CRIMPLAN. Cl. 39.
723,628. 'HOT HEADS' ETC. AND DESIGN. Cl. 39.
723,631. PUFF & FLUFF. Cl. 39.
723,632. 7-HI. Cl. 39.
723,636. UPPER PENINSULA. Cl. 39.
723,638. COOL N' SOFT. Cl. 39.
723,639. GREEN MARKER. Cl. 39.
723,647. SALTA. Cl. 39.
723,653. EAU RIANTE. Cl. 42.
723,657. ANIMAL FARM. Cl. 42.
723,661. VARI-TEK. Cl. 44.
723,664. FACEX. Cl. 44.
723,665. EMERGIKART. Cl. 44.
723,669. MAPLE LANE FARM. Cl. 46.
723,670. SONJA AND PICTURE OF A FEMALE. Cl. 46.
723,671. PEP POP. Cl. 46.
723,678. CASPOIL. Cl. 51.
723,680. DANDY TAN AND DESIGN. Cl. 51.
723,684. NATURAL CHARM. Cl. 51.
723,691. SAC. Cl. 100.
723,692. ARMS. Cl. 101.
723,693. TELE-PROCESSING. Cl. 101.
723,704. C.A.R. Cl. B.
723,705. CROP BOOSTER. Cl. 10.
723,711. TRU KUT. Cl. 23.
723,715. DUALTUBE. Cl. 35.
723,717. YOUR FINISHING TOUCH OF FASHION. Cl. 39.

TRADEMARK REGISTRATIONS AMENDED, DISCLAIMED, CORRECTED, ETC.

229,695. JASMINIQUE. Cl. 6. 7–5–27. Albert Verley, Inc. Albert Verley & Company, South Plainfield, N.J. Amended to appear:

JASMINIQUE

427,481. PARCOLENE AND DESIGN. Cl. 6. 2–11–47. Parker Rust Proof Company. Hooker Chemical Corporation, Niagara Falls, N.Y. Amended to appear:

PARCOLENE

530,775. VICKERS. Cl. 23. 9–19–50. Vickers, Incorporated. Sperry Rand Corporation, Troy, Mich. Amended to appear:

VICKERS

543,780. VICKERS. Cl. 21. 6–12–51. Vickers, Incorporated. Sperry Rand Corporation, Troy, Mich. Amended to appear:

VICKERS

551,076. VICKERS. Cl. 13. 11–20–51. Vickers, Incorporated. Sperry Rand Corporation, Troy, Mich. Amended to appear:

VICKERS

TRADEMARK REGISTRATIONS—NEW CERTIFICATES

New Certificates issued under sections 7(c), 7(f), 7(g) of the Trademark Act of 1946 for the unexpired term of the original registrations.

213,665. TURN STYLE AND DESIGN. Cl: 39. Craddock-Terry Company. 6–1–26. New Cert. Sec. 7(c) to Jewel Companies, Inc., Melrose Park, Ill.

619,579. PLUMBRIDGE NEW YORK. Cl. 46. Madelyn C. Hoey, doing business as Plumbridge. 1–17–56. New Cert. Sec. 7(c) to Douglas Petrillo, Montvale, N.J.

680,602. GUSSET-PAK. Cl. 2. Lengsfield Brothers, Inc. 6–23–59. New Cert. Sec. 7(c) to Container Corporation of America, Chicago, Ill.

752,265. SPEC-DATA. Cl. 101. The Producers' Council, Inc. 7–2–63. New Cert. Sec. 7(c) to The Construction Specifications Institute, Inc., Washington, D.C.

815,347. CHARM PEDERMA AND DESIGN. Cl. 18. Wayne J. Sarri. 9–20–66. New Cert. Sec. 7(c) to Charm Pederma Company, Inc., Union, Miss.

INDEX OF REGISTRANTS

DECEMBER 26, 1967

(Registered; Renewed; Canceled; Amended, Disclaimed, Corrected, etc.; New Certificates; 12c Publications.)

AAA–A1 Floors: *See*—
Rice, James F., Jr.
ABC Associated Bldg. Centers: *See*—
Cape Supply Co.
Acme Shear Co., The, Bridgeport, Conn. 841,187, pub. 10–10–67. Multiple Class (Classes 23 and 44).
Action Listings, Inc., Chicago Heights, Ill. 841,363–5, pub. 10–10–67. Cl. 101.
Adcola Products Pty. Ltd., Mont Albert, Victoria, Australia. 841,249, pub. 10–10–67. Cl. 34.
Addison Products Co., Addison, Mich. 723,455, canc. Cl. 12.
Advance Transformer Co., Chicago, Ill. 841,149, pub. 10–10–67. Cl. 21.
Air Devices, Inc., New York, N.Y. 841,247, pub. 10–10–67. Cl. 34.
Air Reduction Co., Inc., New York, N.Y. 723,665, canc. Cl. 44.
Akai Electric Co., Ltd., Ohta-ku, Tokyo, Japan. 841,259, pub. 10–10–67. Cl. 36.
Alaska Airlines, Inc., Seattle, Wash. 841,386, pub. 10–10–67. Cl. 105.
Alaska Airlines, Inc., Seattle, Wash. 841,388, pub. 10–10–67. Cl. 105.
Alaska-Werk Dieter Schildbach K-G, Bergneustadt, Germany. 723,604, canc. Cl. 31.
Alfa Romeo S.p.A., Milan, Italy. 841,127, pub. 10–10–67. Cl. 19.
Allegheny Ludlum Steel Corp., Pittsburgh, Pa. 435,539, ren. 12–26–67. Cl. 14.
Allied Carbon & Ribbon Mfg. Corp., New York, N.Y. 841,088, pub. 10–10–67. Cl. 11.
Alligator Co., Inc., The, from The Alligator Co., St. Louis, Mo. 841,266–7, pub. 5–21–63. Cl. 39.
Alligator Co., The: *See*—
Alligator Co., Inc., The.
Allmanna Svenska Elektriska Aktiebolaget, Vasteras, Sweden. 841,068, pub. 10–10–67. Multiple Class (Classes 4 and 23).
American Cyanamid Co., Wayne, N.J. 841,072, pub. 10–10–67. Cl. 5.
American Home Products Corp.: *See*—
Campbell Products, Inc.
American Home Products Corp., New York, N.Y. 841,126, pub. 10–10–67. Cl. 18.
American Oil Co., The: *See*—
Standard Oil Co.
American Supply Co.: *See*—
Peterson, Paul D.
Armour Agricultural Chemical Co., Chicago, Ill. 841,078, pub. 10–10–67. Cl. 10.
Arma Institute, Inc., St. Louis, Mo. 723,692, canc. Cl. 101.
Ashland Oil & Refining Co., Ashland, Ky. 841,113, pub. 10–10–67. Cl. 15.
Associated Food Stores, Inc., Jamaica, N.Y. 841,367, pub. 10–10–67. Cl. 101.
Atlantic Co., Atlanta, Ga. 841,241, pub. 10–10–67. Cl. 32.
Atlantic Co., Atlanta, Ga. 841,339, pub. 10–10–67. Cl. 50.
Atlas Lubricant Corp., New Orleans, La. 433,724, ren. 12–26–67. Cl. 15.
Atlas Van-Lines, Inc., Evansville, Ind. 841,389–90, pub. 10–10–67. Cl. 105.
Austin Enterprises: *See*—
Cox, Austin E.
Autocall Co., The, Shelby, Ohio. 841,141, pub. 10–10–67. Cl. 21.
Automation Institute of America, Inc.: *See*—
C-E-I-R, Inc.
Avnet, Inc., New York, from Channel Master Corp., Ellenville, N.Y. 841,151, pub. 10–10–67. Cl. 21.
Avon Products, Inc., New York, N.Y. 436,613, ren. 12–26–67. Cl. 51.
BJR Laboratories, Inc., Shawnee Mission, Kans. 841,124, pub. 10–10–67. Cl. 18.
Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany. 841,075, pub. 10–10–67. Cl. 6.
Bachmann Bros., Inc., Philadelphia, Pa. 841,218, pub. 12–15–64. Cl. 26.
Baldwin-Lima-Hamilton Corp., Chicago, Ill. 841,150, pub. 10–10–67. Multiple Class (Classes 21, 23, 26, 31, and 34).
Balfour, Arthur, & Co., Ltd., Sheffield, England. 141,854, canc. Cl. 14.
Banfi Products Corp., New York, N.Y. 821,340, canc. Cl. 18.
Bank of New York, The, New York, N.Y. 841,428. Cl. 102.
Barbatone Co.: *See*—
Barbatone Co., Inc.
Barbatone Co., Inc., d.b.a. Barbatone Co., San Antonio, Tex. 841,341, pub. 10–19–65. Cl. 51.
Basic Products Development Co., Oakland, Calif. 841,173, pub. 10–10–67. Cl. 22.
Baxter, J. H., & Co., San Francisco, Calif. 841,095, pub. 10–10–67. Cl. 12.
Beaunit Corp., New York, N.Y. 841,298, pub. 10–10–67. Cl. 42.
Beaunit Corp., New York, N.Y. 841,300, pub. 10–10–67. Cl. 43.
Beck, A. S., Shoe Corp., New York, N.Y. 841,208, pub. 10–10–67. Cl. 39.
Beech-Nut Life Savers, Inc.: *See*—
Mint Products Co., Inc.
Bendix Corp., The, Detroit, from A. D. Schneider & Co., Lansing, Mich. 841,220, pub. 10–10–67. Cl. 26.
Bertram, Harvey P., Co., The, Cincinnati, Ohio. 841,246, pub. 10–10–67. Cl. 34.
Best, Richard, Pencil Co., Inc., Springfield, N.J. 438,332, ren. 12–26–67. Cl. 37.
Bickford Mfg. Co.: *See*—
Bickford, Walter S.
Bickford, Walter S., d.b.a. Bickford Mfg. Co., Napa, Calif. 723,483, canc. Cl. 13.
Biflex Foundations, Inc., New York, N.Y. 723,638, canc. Cl. 39.
Big D Foods Co., Chicago, Ill. 841,317, pub. 10–10–67. Cl. 46.
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Blue Ridge Paint Works: *See*—
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Blue Ridge Talc Co., Inc., d.b.a. Blue Ridge Paint Works, Henry, Va. 841,119, pub. 10–10–67. Cl. 16.
Bodegas Rioja Santiago, S.A., Haro, Logrono, Spain. 841,338, pub. 6–27–67. Cl. 47.
Boehringer, C. F., & Soehne G.m.b.H., Mannheim-Waldhof, Germany. 723,508, canc. Cl. 18.
Bonaly, Verne J., d.b.a. Facex Electronics, Kansas City, Mo. 723,664, canc. Cl. 44.
Borden Co., The, New York, N.Y. 436,968, ren. 12–26–67. Cl. 46.
Borg-Warner Corp., Chicago, Ill. 841,379, pub. 10–10–67. Cl. 103.
Braswell, A. M., Jr., Food Co., Inc., Statesboro, Ga. 841,318, pub. 10–10–67. Cl. 46.
Bristol Siddeley Engines, Ltd., Bristol, England. 841,199, pub. 10–10–67. Cl. 23.
Brite Glo Enterprises: *See*—
Schafer, Francis A.
Brooks, Thomas E., & Co., to Thomas E. Brooks & Co., Red Lion, Pa. 240,689, ren. 12–26–67. Cl. 17.
Brumberger Co., Inc., Brooklyn, N.Y. 841,166, pub. 10–10–67. Cl. 22.
Brumley-Donaldson Co., Huntington Park, Calif. 841,066, pub. 10–10–67. Cl. 3.
Brustia, Guido, Couture S.p.A., Vigevano, Pavia, Italy. 841,283, pub. 10–10–67. Cl. 39.
Budd & Votaw, San Francisco, Calif. 723,632, canc. Cl. 39.
Bunte Candles, Inc.: *See*—
Clinton Industries, Inc.
Burlington Industries, Inc., New York, N.Y. 723,657, canc. Cl. 42.
Burlington Industries, Inc., New York, N.Y. 841,296–7, pub. 10–10–67. Cl. 42.
C-E-I-R, Inc., Washington, D.C., from Automation Institute of America, Inc., San Francisco, Calif. 841,392, pub. 10–10–67. 107.
C-E-I-R, Inc., Washington, D.C., from Automatic Institute of America, Inc., San Francisco, Calif. 841,408. Cl. 38.
Calgon Corp., Pittsburgh, Pa. 841,401. Cl. 16.
Calgon Corp., Pittsburgh, Pa. 841,431. Cl. 106.
Callaway Mills Co., La Grange, Ga. 841,293, pub. 10–10–67. Cl. 42.
Campbell Fertilizer Co., Inc., Houston, Tex. 723,705, canc. Cl. 10.
Campbell Products, Inc., to American Home Products Corp., New York, N.Y. 436,086, ren. 12–26–67. Cl. 18.
Campbell, Stephen L., d.b.a. Campbell House, Estes Park, Colo. 841,233, pub. 10–10–67. Cl. 28.
Cannon Shoe Co., Baltimore, Md. 841,278, pub. 10–10–67. Cl. 39.
Canor Plarex, Inc., Seattle, Wash. 841,164, pub. 10–10–67. Cl. 22.
Cape Supply Co., d.b.a. ABC Associated Building Centers, Cape Girardeau, Mo. 841,352, pub. 10–10–67. Cl. 100.
Caradco, Inc., Dubuque, Iowa. 723,608, canc. Cl. 32.
Caravetta Foods Co., Chicago, Ill. 841,330, pub. 10–10–67. Cl. 46.
Carnation Co., Los Angeles, Calif. 841,320, pub. 10–10–67. Cl. 46.
Carrier Mfg. Co., Jeffersonville, Ind. 841,191, pub. 10–10–67. Cl. 23.
Carvel Hall: *See*—
Towle Mfg. Co.
Casebolt, Diana M., d.b.a. Ski Dry Boot Co., Saratoga, Calif. 841,169, pub. 10–10–67. Cl. 22.
Certified Associated Restaurants, Inc.: *See*—
Motor Travel Services, Inc.
Cesarini, Aldo E., d.b.a. Cesarini Insurance Agency, Boston, Mass. 841,429. Cl. 102.
Cesarini Insurance Agency: *See*—
Cesarini, Aldo E.
Chadbourn Gotham, Inc., Charlotte, N.C. 841,345–6, pub. 10–10–67. Cl. 51.
Challenger Mfg. Co., Inc., Jackson, Tenn. 723,462, canc. Cl. 12.

Channel Master Corp. : *See*—
Avnet, Inc.
Charm Pederma Co., Inc. : *See*—
Sarri, Wayne J.
Charmglow Products, Inc., Antioch, Ill. 841,250, pub. 10–10–67. Cl. 34.
Chemical & Color Co. of America, Inc., Newark, N.J. 723,469, canc. Cl. 12.
Chemical Development Corp., Danvers, Mass. 841,074, pub. 10–10–67. Cl. 5.
Chemical Development Corp., Danvers, Mass. 841,096, pub. 10–10–67. Cl. 12.
Chesebrough-Pond's, Inc., New York, N.Y. 841,425. Cl. 51.
Childrens Press, Inc., Chicago, Ill. 841,265, pub. 10–10–67. Cl. 38.
Church, Bruce, Inc., Salinas, Calif. 841,336, pub. 10–10–67. Cl. 46.
Ciba, Ltd., Basle, Switzerland. 436,156, ren. 12–26–67. Cl. 6.
Citation Mfg. Co., Inc., Siloam Springs, Ark. 841,214, pub. 10–10–67. Cl. 23.
Cityrama Corp., New York, N.Y. 841,385, pub. 10–10–67. Cl. 105.
Clark Equipment Co. : *See*—
Clark Tructractor Co.
Clark Tructractor Co., to Clark Equipment Co., Buchanan, Mich. 165,644, ren. 12–26–67. Cl. 19.
Clark Tructractor Co., to Clark Equipment Co., Buchanan, Mich. 166,313, ren. 12–26–67. Cl. 23.
Cleveland Builders Supply Co., The, Cleveland, Ohio. 841,398. Cl. 10.
Clinton Industries, Inc., Chicago, Ill., to Bunte Candies, Inc., Oklahoma City, Okla. 433,888, ren. 12–26–67. Cl. 46.
Coast Empire, Inc., Charlotte, N.C. 841,275, pub. 10–10–67. Cl. 39.
Coats, J. & P., Ltd., Paisley, Scotland, from Coats & Clark Inc., New York, N.Y. 20.526–7, canc. Cl. 43.
Collator Corp., Seattle, Wash. 841,195, pub. 10–10–67. Cl. 23.
College Placement Services, Inc., Washington, D.C. 841,362, pub. 10–10–67. Cl. 101.
Colorado Milling & Elevator Co., The : *See*—
Colorado Milling & Elevator Co.
Colorado Milling & Elevator Co., The, Denver, Colo., and Claflin, Kans., to The Colorado Milling & Elevator Co., Denver, Colo. 240,223, ren. 12–26–67. Cl. 46.
Colorado Milling & Elevator Co., The, Denver, Colo. 434,587, ren. 12–26–67. Cl. 46.
Commercial Credit Corp., Baltimore, Md. 841,369, pub. 10–10–67. Cl. 102.
Community Gin Co., Scottsdale, Ariz. 841,082, pub. 10–10–67. Cl. 10.
Comptoir de l'Industrie Textile de France, Paris, France. 841,292, pub. 10–10–67. Cl. 42.
Coney King International, Inc., Fort Wayne, Ind. 841,359, pub. 10–10–67. Cl. 100.
Congoleum-Nairn, Inc., Kearny, N.J. 841,135–6, pub. 10–10–67. Cl. 20.
Congoleum-Nairn, Inc., Kearny, N.J. 841,402. Cl. 20.
Consolidated Cosmetics, Chicago, Ill., to Les Parfums de Dana, Inc., New York, N.Y. 436,028, ren. 12–26–67. Cl. 51.
Con-Stan Industries, Inc., El Monte, Calif. 841,271, pub. 2–21–67. Cl. 39.
Construction Specification Institute, Inc., The : *See*—
Producers' Council, Inc., The.
Container Corp. of America : *See*—
Lengsfield Bros., Inc.
Cook, William, New York, N.Y. 723,439, canc. Cl. 2.
Co-Operative Industries, Inc., Chester, N.J. 841,139, pub. 5–10–66. Cl. 21.
Corsets Silhouette, Ltd., London, England. 841,270, pub. 12–13–66. Cl. 39.
Cortland Industries, Inc., d.b.a. Cortland Line Co., Cortland, N.Y. 841,427. Cl. 101.
Cortland Line Co. : *See*—
Cortland Industries, Inc.
Courtaulds, Ltd., London, England. 723,432, canc. Cl. 1.
Cox, Austin E., d.b.a. Austin Enterprises, Akron, Ohio. 841,180, pub. 10–10–67. Cl. 22.
Crab Machine Co., Rockford, Ill. 841,391, pub. 10–10–67. Cl. 106.
Craddock-Terry Co., to Jewel Companies, Inc., Melrose Park, Ill. 213,665, new cert. Cl. 39.
Crane Co., New York, N.Y. 841,227–8, pub. 10–10–67. Cl. 26.
Crane Co., New York, N.Y. 841,236–7, pub. 10–10–67. Cl. 31.
Crane Co., New York, N.Y. 841,253–5, pub. 10–10–67. Cl. 34.
Cristy Chemical Corp., Worcester, Mass. 841,115, pub. 10–10–67. Cl. 15.
Crystal, David, Inc., New York, N.Y. 841,287, pub. 10–10–67. Cl. 39.
Crystal Greetings, Inc., Waukegan, Ill. 841,263, pub. 10–10–67. Multiple Class (Classes 37 and 40).
D'Agostino, Richard, Detroit, Mich. 841,302, pub. 10–10–67. Cl. 44.
Dayco Corp., from Dayco Corp., Dayton, Ohio. 841,238, pub. 10–10–67. Cl. 32.
Decca, Ltd., London, England. 841,226, pub. 10–10–67. Cl. 26.
Degerfors Jarnverks Aktiebolag, Degerfors, Sweden. 723,489, canc. Cl. 14.
De Luxe Topper Corp., Elizabeth, N.J. 841,170, pub. 10–10–67. Cl. 22.
De Martel, Madeleine, Cosmetics : *See*—
Sherman, Robert M.
Densco, Inc., Denver, Colo. 723,661, canc. Cl. 44.
De Sanno, A. P., & Son, Inc., Phoenixville, Pa. 841,207, pub. 10–10–67. Cl. 23.
Detroiter Mobile Homes, Inc., St. Louis, Mich. 723,522, canc. Cl. 19.
Devoe & Raynolds Co., Inc., Louisville, Ky. 723,618, canc. Cl. 37.
Dexter Co., Inc., Watertown, Mass. 841,277, pub. 10–10–67. Cl. 39.
Doby Girl Coat Corp., New York, N.Y. 841,410. Cl. 39.
Dolan Sponge Co. : *See*—
Dolan, William A.
Dolan, William A., d.b.a. Dolan Sponge Co., New York, N.Y. 723,602, canc. Cl. 29.
D–150, Inc., Los Angeles, Calif. 841,337–8, pub. 10–10–67. Cl. 103.
Dow Corning Corp., Midland, Mich. 436,948, ren. 12–26–67. Cl. 1.
Draddy, Gregg, Inc., New York, N.Y. 841,286, pub. 10–10–67. Cl. 39.
Dreyfuss, Moise, London, England, to Fabrique de Montres Rotary S.A., La Chaux-de-Fonds, Switzerland. 235,845, ren. 12–26–67. Cl. 27.
Duofold, Inc., Mohawk, N.Y. 704,017, canc. Cl. 39.
Du Pont de Nemours, E. I., & Co., Wilmington, Del. 723,445, canc. Cl. 6.
Duralite Co., Inc., New York, N.Y. 841,242, pub. 10–10–67. Cl. 32.
EZ Paintr Corp., Milwaukee, Wis. 841,234, pub. 10–10–67. Cl. 29.
Electro-Seal Corp., Maywood, N.J. 841,188, pub. 10–10–67. Cl. 23.
Elesh, Joseph, Skokie, from Flexi-Mat Corp., Chicago, Ill. 841,105, pub. 10–10–67. Cl. 22.
Empress Travel Service, Inc., New York, N.Y. 841,384, pub. 10–10–67. Cl. 105.
Engelhard Industries, Inc., Newark, N.J. 841,154–5, pub. 10–10–67. Cl. 21.
Evans, Glen L., Inc., Caldwell, Idaho. 841,181, pub. 10–10–67. Cl. 22.
Exline Products, Inc., Cincinnati, Ohio. 723,563–4, canc. Cl. 26.
F.R.A. di Mignine & Cherio, Cisterna d'Asti, Italy. 841,307, pub. 10–10–67. Cl. 44.
Fabrique de Montres Rotary S.A. : *See*—
Dreyfuss, Moise.
Fabri-Tek, Inc., Minneapolis, Minn. 841,143, pub. 10–10–67. Cl. 21.
Facex Electronics : *See*—
Bonaly, Verne J.
Fashion Tress, Inc., Miami Beach, Fla. 841,289–90, pub. 10–10–67. Cl. 40.
Fashion Tress, Inc., Miami Beach, Fla. 841,411. Cl. 40.
Filtron Co., Inc., The, Flushing, N.Y. 841,153, pub. 10–10–67. Cl. 21.
Firestone Tire & Rubber Co., The, Akron, Ohio. 234,670, ren. 12–26–67. Cl. 35.
First Flight Co., Chattanooga, Tenn. 841,172, pub. 10–10–67. Cl. 22.
Fisher Radio Corp., Long Island City, N.Y. 841,157, pub. 10–10–67. Cl. 21.
Fisher Radio Corp., Long Island City, N.Y. 841,163, pub. 10–10–67. Cl. 21.
Flexi-Mat Corp. : *See*—
Elesh, Joseph.
Flex-O-Glass, Inc., d.b.a. Warp Brothers, Chicago, Ill. 723,475, canc. Cl. 12.
Foodmaker, Inc., from Jack-In-The-Box, Inc., San Diego, Calif. 841,334, pub. 10–3–67. Cl. 46.
Foodmaker, Inc., from Jack-In-The-Box, Inc., San Diego, Calif. 841,353, pub. 9–26–67. Cl. 100.
Formco, Inc., Cincinnati, Ohio. 841,091, pub. 10–10–67. Multiple Class (Classes 12, 13, and 32).
Freeman-Toor Corp., Beloit, Wis. 841,282, pub. 10–10–67. Cl. 39.
Fries Bros. : *See*—
Fries, Harold H.
Fries, Harold H., d.b.a. Fries Bros., to Interchemical Corp., New York, N.Y. 236,873, ren. 12–26–67. Cl. 18.
Frito-Lay, Inc., Dallas, Tex., 841,324, pub. 10–10–67. Cl. 46.
Frosst, Charles E., & Co., Montreal, Quebec, Canada. 841,123, pub. 10–10–67. Cl. 18.
Fuji Photo Film Co., Ltd., Ashigara-Kamigum, Kanagawa, Japan. 723,557, canc. Cl. 26.
Fur Flyers, Inc., New York, N.Y. 723,628, canc. Cl. 39.
Fur Seal Processing Corp., The, New York, N.Y. 841,064, pub. 10–10–67. Multiple Class (Classes 1 and 39).
G.N.R. Co. : *See*—
Rodriguez, Guillermo.
Gates Rubber Co., The, Denver, Colo. 438,513, ren. 12–26–67. Cl. 35.
General Flavors, Inc., Jamaica, N.Y. 841,319, pub. 10–10–67. Cl. 46.
General Foods Corp., White Plains, N.Y. 841,350, pub. 10–10–67. Cl. 52.
General Motors Corp., Detroit, Mich. 434,129, ren. 12–26–67. Cl. 23.
General Tire & Rubber Co., The, Akron, Ohio. 841,295, pub. 10–10–67. Cl. 42.
Gilbert, M., & Sons Co., South Bend, Ind. 723,636, canc. Cl. 39.
Global Strapping Co., Dalton, Ga. 841,076, pub. 10–10–67. Cl. 7.
Goebel, W., Porzellanfabrik Oestau und Nilhelmsfeld, Bavaria, Germany. 723,538, canc. Cl. 22.
Golden Grain Macaroni Co., San Leandro, Calif. 841,415. Cl. 46.
Goodman Brothers Mfg. Co., Philadelphia, Pa. 841,243, pub. 10–10–67. Cl. 32.
Goodrich, B. F., Co., The, to The B. F. Goodrich Co., Akron, Ohio. 65,422, ren. 12–26–67. Cl. 35.

Goodstein Bros. & Co., Inc., New York, N.Y. 841,272, pub. 11–15–66. Cl. 39.
Gordon, Claud S., Co., Cleveland, Ohio. 723,568, canc. Cl. 26.
Goulds Pumps, Inc., Seneca Falls, N.Y. 841,190, pub. 10–10–67. Cl. 23.
Grace, W. R., & Co. : *See*—
Vestal Chemical Co.
Grace, W. R., & Co., New York, N.Y. 841,080–1, pub. 10–10–67. Cl. 10.
Graham, Connelly L., d.b.a. Christians in Action, Columbus, Ind. 841,432. Cl. 107.
Granet Corp., The, Framingham, Mass. 841,264, pub. 10–10–67. Cl. 38.
Gray Co., Inc., Minneapolis, Minn. 841,211–2, pub. 10–10–67. Cl. 23.
Griffith Laboratories, Inc., The, Chicago, Ill. 841,182, pub. 3–8–66. Cl. 23.
Guardian Better-Pak Corp., New York, N.Y. 723,607, canc. Cl. 32.
Guildline Instruments, Ltd., Smith's Falls, Ontario, Canada. 841,219, pub. 10–10–67. Cl. 26.
Gutman-Lann Glove Co., Inc., New York, N.Y. 723,717, canc. Cl. 39.
Gyrex Corp., The, Santa Monica, Calif. 723,560, canc. Cl. 26.
Hackleman, J. Kent, Houston, Tex. 841,393, pub. 10–10–67. Cl. 107.
Hagan Chemicals & Controls, Inc., Pittsburgh, Pa. 723,595, canc. Cl. 26.
Harris Paint Co., Tampa, Fla. 841,122, pub. 10–10–67. Cl. 16.
Harsco Corp., Harrisburg, Pa. 841,129, pub. 10–10–67. Cl. 19.
Heart O'Wisconsin Broadcasters, Inc., Madison, Wis. 841,394, pub. 10–10–67. Cl. 107.
Heckethorn Mfg. Co., d.b.a. Heco, Dyersburg, Tenn. 841,244–5, pub. 10–10–67. Cl. 32.
Hercules, Inc. : *See*—
Hercules Powder Co.
Hercules Powder Co., to Hercules, Inc., Wilmington, Del. 437,599, ren. 12–26–67. Cl. 9.
Hilton Hotels Corp., Chicago, Ill. 841,357, pub. 10–10–67. Cl. 100.
Hobart Mfg. Co., The, Troy, Ohio. 841,162, pub. 10–10–67. Cl. 21.
Hobart Mfg. Co., The, Troy, Ohio. 841,202, pub. 10–10–67. Cl. 23.
Hoey, Madelyn C., d.b.a. Plumbridge, to Douglas Petrillo, Montvale, N.J. 619,579, new cert. Cl. 46.
Holmes, Thomas, Corp., The, Philadelphia, Pa. 841,273, pub. 10–10–67. Cl. 39.
Holsum Products : *See*—
Jewett & Sherman Co.
Horner Sales Corp., Pittsburgh, Pa. 841,329, pub. 10–10–67. Cl. 46.
Howe Plastics & Chemical Co., Inc., New York, N.Y. 841,406. Cl. 32.
Hubbard Sheet Metal Works : *See*—
Hubbard, Thomas R.
Hubbard, Thomas R., d.b.a. Hubbard Sheet Metal Works, Rocky Mount, Va. 841,130, pub. 10–10–67. Cl. 19.
Hudnut, Richard, Morris Plains, N.J. 230,742, ren. 12–26–67. Cl. 51.
Hudson Mills, Inc., Paterson, N.J. 841,299, pub. 10–10–67. Cl. 43.
Hull, A. S., Co. : *See*—
Leonard, Ellen H.
Humble Oil & Refining Co. : *See*—
Standard Alcohol Co.
Hupp Corp., Cleveland, Ohio. 841,133, pub. 10–10–67. Cl. 19.
Hydrotherm, Inc., Northvale, N.J. 841,248, pub. 8–22–67. Cl. 34.
I.M.S. Corp., Albuquerque, N. Mex. 841,152, pub. 10–10–67. Cl. 21.
Illinois State Medical Society, Chicago, Ill. 841,355, pub. 10–10–67. Cl. 100.
Imerman, Arthur, Undergarment Corp., Jersey City, N.J. 723,631, canc. Cl. 39.
Imperial Chemical Industries, Ltd., London, England. 723,625–6, canc. Cl. 39.
Imperial Knife Associated Companies, Inc., Providence, R.I. 841 203, pub. 10–10–67. Cl. 23.
Independent Lock Co., Fitchburg, Mass. 841,217, pub. 5–11–65. Cl. 25.
Industrial & Merchandising Services S.A., Brussels, Belgium. 841,194, pub. 10–10–67. Cl. 23.
Industrial Sugars, Inc., St. Louis, Mo. 841,313, pub. 3–30–65. Cl. 46.
Institut Francais du Petrole, des Carburants et Lubrifiants, Hauts-de-Seine, France. 841,354, pub. 10–10–67. Cl. 100.
Instrumentation Associates, Inc., New York, N.Y. 841,308–9, pub. 10–10–67. Cl. 44.
Interchemical Corp. : *See*—
Fries, Harold H.
International Business Machines Corp., New York, N.Y. 723,693, canc. Cl. 101.
International Stanley Corp., Omaha, Nebr. 841,089, pub. 10–10–67. Cl. 12.
Interstate Battery System of America, Inc., Dallas, Tex. 841,147, pub. 10–10–67. Cl. 21.
Jack-in-the-Box, Inc. : *See*—
Foodmaker, Inc.
Jaz, S.A. : *See*—
Societe Anonyme Compagnie Industrielle de Mecanique Horiogere.
Jewell Companies, Inc. : *See*—
Craddock-Terry Co.
Jewett & Sherman Co., d.b.a. Holsum Products, Waukesha, Wis. 433,956, ren. 12–26–67. Cl. 46.
Johnson, J. Eulan, d.b.a. Royal Hosiery Co., Hickory, N.C. 841,276, pub. 10–10–67. Cl. 39.
Jones, Rolland, Potatoes, Inc., Rupert, Idaho. 841,337, pub. 10–10–67. Cl. 46.
Kabushiki Kaisha Wadagen (Wadagen Co., Ltd.), Tokyo, Japan. 841,098, pub. 10–10–67. Multiple Class (Classes 13, 23, and 28).
Kappa Delta Sorority, Spencerport, N.Y. 238,465, ren. 12–26–67. Cl. 28.
Kawasaki Aircraft Co., Ltd., Kobe, Japan. 841,128, pub. 10–10–67. Cl. 19.
Kayser-Roth Corp., New York, N.Y. 841,285, pub. 10–10–67. Cl. 39.
Kees & Co., Chicago, Ill. 841,333, pub. 10–10–67. Cl. 46.
Kelz, Sandi, d.b.a. Black Garter Dist., New York, N.Y. 841,347, pub. 10–10–67. Cl. 51.
Kendrey Co., The, San Mateo, Calif. 841,221, pub. 10–10–67. Cl. 26.
Kennametal, Inc., Latrobe, Pa. 841,201, pub. 10–10–67. Multiple Class (Classes 23 and 35).
Kenrich Shoe Corp., from Lucky Stride Shoes, Inc., Maysville, Ky. 841,269, pub. 8–9–66. Cl. 39.
Kentile Floors, Inc., Brooklyn, N.Y. 841,137, pub. 10–10–67. Cl. 20.
Kentucky Fried Chicken Corp., Shelbyville, Ky. 805,772, canc. Cl. 100.
Killoren Co., Appleton, Wis. 841,183, pub. 10–10–67. Cl. 23.
Knox Co., The, Kansas City, Mo., to The Knox Co., Los Angeles, Calif. 239,462, ren. 12–26–67. Cl. 18.
Kozak Auto Drywash, Inc., Batavia, N.Y. 841,069, pub. 10–10–67. Cl. 4.
Krasdale Foods, Inc. : *See*—
Krasne, Abraham.
Krasne, A. : *See*—
Krasne, Abraham.
Krasne, Abraham, d.b.a. A. Krasne, to Krasdale Foods, Inc., New York, N.Y. 230,872, ren. 12–26–67. Cl. 46.
Krasne, Abraham, d.b.a. A. Krasne, to Krasdale Foods, Inc., New York, N.Y. 230,899, ren. 12–26–67. Cl. 46.
Lahti of Ann Arbor, Inc., Ann Arbor, Mich. 841,148, pub. 10–10–67. Cl. 21.
Lamson & Sessions Co., The, Cleveland, Ohio. 840,102, pub. 10–10–67. Cl. 13.
Landa Co., The, St. Paul, Minn. 841,790–1, canc. Cl. 31.
La Salle Casualty Co. : *See*—
La Salle National Insurance Co.
La Salle National Insurance Co., from La Salle Casualty Co., Chicago, Ill. 841,370, pub. 10–10–67. Cl. 102.
La Telemecanique Electrique Societe Anonyme, Haute-de-Seine, France. 841,142, pub. 10–10–67. Cl. 21.
Le Blond, R. K., Machine Tool Co., The, Cincinnati, Ohio. 438,462–3, ren. 12–26–67. Cl. 23.
Lectro-Stik Co., Chicago, Ill. 841,261, pub. 10–10–67. Cl. 37.
Lee, H. D., Co., Inc., The, Shawnee Mission, Kans. 841,288, pub. 10–10–67. Cl. 39.
Lee, Laura : *See*—
Lee, Laura, Candies, Inc.
Lee, Laura, Candies, Inc., d.b.a. Laura Lee, Miami, Fla. 841,335, pub. 10–10–67. Cl. 46.
Lengsfield Brothers, Inc., to Container Corp. of America, Chicago, Ill. 680,602, new cert. Cl. 2.
Leonard, Ellen H., d.b.a. A. S. Hull Co., Burington, Vt. 841,316, pub. 10–10–67. Cl. 46.
Les Parfums de Dana, Inc. : *See*—
Consolidated Cosmetics.
Les Parfums de Dana, Inc., New York, N.Y. 437,814, ren. 12–26–67. Cl. 52.
Levin, Charles, & Co., Lincolnwood, Ill. 723,711, canc. Cl. 23.
Liberty Combustion Corp., Syracuse, N.Y. 841,144, pub. 10–10–67. Cl. 21.
Lipton, Thomas J., Inc., Englewood Cliffs, N.J. 841,328, pub. 6–20–67. Cl. 46.
Lombardi—Societa Italiana Lavorazioni Alimentari S.I.L.A. S.p.A., Ferrara, Italy. 841,310, pub. 10–10–67. Multiple Class (Classes 45 and 46).
Love, Joseph, Inc., New York, N.Y. 841,280, pub. 10–10–67. Cl. 39.
Lowe, Joe, Corp., New York, N.Y. 723,671, canc. Cl. 46.
Lucky Stride Shoes, Inc. : *See*—
Kenrich Shoe Corp.
M.A.R.S. Manifattura Articoli Resine Sintetiche S.R.L., Milan, Italy. 723,596, canc. Cl. 26.
Maas & Waldstein Co., to Maas & Waldstein Co., Newark, N.J. 435,957, ren. 12–26–67. Cl. 16.
Macaulay & Co. : *See*—
Sazerac Co., Inc.
Mack Trucks, Inc., Allentown, Pa. 841,376, pub. 10–10–67. Cl. 102.
Macy, R. H., & Co., Inc., New York, N.Y. 234,839–40, ren. 12–26–67. Cl. 22.
Magnetic Recording Industries, New York, N.Y. 723,617, canc. Cl. 36.
Maidenform, Inc., New York, N.Y. 841,284, pub. 10–10–67. Cl. 39.
Mangelsdorf, Ed. F., & Bro., Inc., St. Louis, Mo. 437,017, ren. 12–26–67. Cl. 1.
Mangren Furs, Inc., New York, N.Y. 723,624, canc. Cl. 39.
Manhattan Specialty, Yonkers, N.Y. 723,684, canc. Cl. 51.
Manna Music Inc., Hollywood, Calif. 841,257, pub. 10–10–67. Cl. 36.
Marathon Oil Co. : *See*—
Ohio Oil Co., The.
Marion Federal Savings & Loan Assn. of Grant County, Marion, Ind. 841,375, pub. 10–10–67. Cl. 102.
Marlo Co., St. Paul, Minn. 841,340, pub. 10–10–67. Cl. 50.

Martin, Bob, Corp., Washington, D.C. 841,103, pub. 10–10–67. Cl. 13.
Martin-Marietta Corp., New York, N.Y. 841,092, pub. 10–10–67. Cl. 12.
Maschinenfabrik Fahr Aktiengesellschaft, Konstanz, Germany. 841,200, pub. 10–10–67. Cl. 23.
Masco Chemical Co.: *See*—
Sobel, Alvin.
Mason Marking Systems Corp., Norfolk, Va. 841,120, pub. 10–10–67. Cl. 16.
Master's Fashions, Youngstown, Ohio. 841,356, pub. 10–10–67. Cl. 100.
Masti-Kure Products Co., Norwich, Conn. 841,413. Cl. 44.
Matco Drug Corp., Memphis, Tenn. 723,512, canc. Cl. 18.
McCune, Potter, Co., McKeesport, Pa. 841,331, pub. 10–10–67. Cl. 46.
McGraw-Hill, Inc., New York, N.Y. 841,409. Cl. 38.
McKellop, Grace L., d.b.a. The Sweet Shop, Cadillac, Mich. 841,322, pub. 10–10–67. Cl. 46.
McKiernan-Terry Corp., Harrison, N.J. 723,715, canc. Cl. 35.
Meadox Medicals, Inc., Haledon, N.J. 841,301, pub. 7–23–63. Cl. 44.
Melitzer, Samuel, Mrs., d.b.a. Lee R. Steiner, New York, N.Y. 841,395, pub. 10–10–67. Cl. 107.
Mercantile Canning Co. A/S, Stavanger, Norway. 723,670, canc. Cl. 46.
Metakloth Co., Lodi, N.J., from Reeves Brothers, Inc., New York, N.Y. 392,370, canc. Cl. 50.
Middlestadt Corp., Baltimore, Md. 841,087, pub. 10–10–67. Cl. 12.
Miller Harness Co., Inc., New York, N.Y. 841,396. Cl. 3.
Minnesota Mining & Mfg. Co., St. Paul, Minn. 841,215–6, pub. 10–10–67. Cl. 24.
Mint Products Co., Inc., Port Chester, to Beech-Nut Life Savers, Inc., New York, N.Y. 180,487, ren. 12–26–67. Cl. 46.
Miracle Equipment Co., Inc., Grinnell, Iowa. 841,174–5, pub. 10–10–67. Cl. 22.
Monroe Calculating Machine Co., Orange, N.J. 723,590, canc. Cl. 26.
Morgan Packing Co., Inc., Austin, Ind. 841,332, pub. 10–10–67. Cl. 46.
Morse Sewing Machine & Supply Corp., New York, N.Y. 723,529, canc. Cl. 21.
Moto Guzzi S.p.A., Milan, Italy. 841,132, pub. 10–10–67. Cl. 19.
Motor Travel Services, Inc., from Certified Associated Restaurants, Inc., Minneapolis, Minn. 723,704, canc. Cl. B.
Multiples, Inc., New York, N.Y. 841,366, pub. 10–10–67. Cl. 101.
Murray, James, Trenton, N.J. 723,599, canc. Cl. 28.
My-Toy Co., Inc., Brooklyn, N.Y. 841,167, pub. 10–10–67. Cl. 22.
N.V. Betonfabriek "De Meteoor," De Steeg, Netherlands. 723,472, canc. Cl. 12.
Nassau Insurance Co., Jamaica, N.Y. 841,372, pub. 10–10–67. Cl. 102.
National Biscuit Co.: *See*—
Standard Wafer Co.
National Director of "Christians in Action": *See*—
Graham, Connelly L.
National Lead Co., New York, N.Y. 841,063, pub. 10–10–67. Cl. 1.
National Remedy Products Co., Inc., Springfield, Mo. 723,502, canc. Cl. 18.
National Taco Co., Eugene, Oreg. 841,358, pub. 10–10–67. Cl. 100.
Nicholson File Co., Providence, R.I. 184,434, ren. 12–26–67. Cl. 23.
Nippon Kokan Kabushiki Kaisha, Tokyo, Japan. 841,111, pub. 10–10–67. Cl. 14.
Noerdlinger, Victor S., Inc., New York, N.Y. 841,291, pub. 10–10–67. Cl. 42.
Norman, Van, Industries, Inc., New Bedford, Mass. 723,523, canc. Cl. 19.
Northwest Airlines, Inc., d.b.a. Northwest Orient Airlines, St. Paul, Minn. 841,383, pub. 10–10–67. Cl. 105.
Northwest Orient Airlines: *See*—
Northwest Airlines, Inc.
Nusbaum, Ferdinand, New York, N.Y. 841,281, pub. 10–10–67. Cl. 39.
Oberson Insulation Co., Royal Oak, Mich. 841,381, pub. 10–10–67. Cl. 103.
Ohio Art Co., The, Bryan, Ohio. 841 065. pub. 10–10–67. Cl. 2.
Ohio Oil Co., The, to Marathon Oil Co., Findlay, Ohio. 434,800, ren. 12–26–67. Cl. 15.
Organic Products Co.: *See*—
Walter, John C.
Pall Corp., Glen Cove, N.Y. 723,605, canc. Cl. 31.
Paltier Corp., Michigan City, Ind. 841,093, pub. 10–10–67. Cl. 12.
Panel-Lift Door Corp., Philadelphia, Pa. 723,460, canc. Cl. 12.
Panel-Lift Door Corp., Philadelphia, Pa. 723,463, canc. Cl. 12.
Parker Rust Proof Co., to Hooker Chemical Corp., Niagara Falls, N.Y. 427,481. Am. 7(d). Cl. 6.
Patience & Nicholson, Ltd., Victoria, Australia. 841,197, pub. 10–10–67. Cl. 23.
PepsiCo, Inc., New York, N.Y. 841,311–12, pub. 10–10–67. Cl. 45.
Perma Heat, Inc., Westbury, N.Y. 723,610, canc. Cl. 34.
Peterson, Paul D., d.b.a. American Supply Co., Berkeley, Calif. 841,184, pub. 12–6–66. Cl. 23.
Peterson's, Ltd., Inc., New York, N.Y. 841,077, pub. 10–10–67. Cl. 8.
Petrillo, Douglas: *See*—
Hoey, Madelyn C.
Pfizer, Chas., & Co., to Chas. Pfizer & Co., Inc., New York, N.Y. 434,073, ren. 12–26–67. Cl. 46.
Photo-Eye Film Service Corp., Youngstown, Ohio. 841,361, pub. 10–10–67. Cl. 101.
Pittsburgh Plate Glass Co., Pittsburgh, Pa. 841,223, pub. 10–10–67. Cl. 26.
Plant Protection, Ltd., Kent, England. 841,189, pub. 10–10–67. Cl. 23.
Plews Oiler, Inc., Minneapolis, Minn. 841,208, pub. 10–10–67. Cl. 23.
Plumbridge: *See*—
Hoey, Madelyn C.
Plymouth Wholesale Corp., New York, N.Y. 841,279, pub. 10–10–67. Cl. 39.
Pompeilan, Inc., Upper Darby, Pa. 723,468, canc. Cl. 12.
Porter, H. K., Co., Inc., Pittsburgh, Pa. 723,487, canc. Cl. 14.
Powers Regulator Co., The, Skokie, Ill. 841,101, pub. 10–10–67. Cl. 13.
Prep Foods, Inc., Chicago, Ill. 723,611, canc. Cl. 34.
Producers' Council, Inc., The, to The Construction Specification Institute, Inc., Washington, D.C. 752,265, new cert. Cl. 101.
Pronto Plastics, Inc., San Mateo, Calif. 841,085, pub. 7–11–67. Cl. 12.
Provident Life & Accident Insurance Co., Chattanooga, Tenn. 841,373, pub. 10–10–67. Cl. 102.
Puritan Cordage Mills, Louisville, Ky. 841,397. Cl. 7.
Queens Packing Corp., Jamaica, N.Y. 723,669, canc. Cl. 46.
Radio Corp. of America, New York, N.Y. 841,251, pub. 10–10–67. Cl. 34.
Ramada Inns, Inc., Phoenix, Ariz. 841,426. Cl. 100.
Rare Chemicals, Inc., Flemington, from White Laboratories, Inc., Kenilworth, N.J. 389,705, canc. Cl. 6.
Ready Devices Corp., Monrovia, Calif. 841,209, pub. 10–10–67. Cl. 23.
Recson Inc., Chicago, Ill. 841,224, pub. 10–10–67. Cl. 26.
Red Arrow Products Corp., Milwaukee, Wis. 841,321, pub. 10–10–67. Cl. 46.
Remo, Inc., North Hollywood, Calif. 841,260, pub. 10–10–67. Cl. 36.
Republic Powdered Metals, Inc., Cleveland, Ohio. 841,090, pub. 10–10–67. Cl. 12.
Return Premiums, Inc., New York, N.Y. 841,374, pub. 10–10–67. Cl. 102.
Revlon, Inc., New York, N.Y. 841,418–24. Cl. 51.
Rexall Drug & Chemical Co., d.b.a. The Seamless Rubber Co., Los Angeles, Calif. 841,179, pub. 10–10–67. Cl. 22.
Rheem-Califone Corp., Hollywood, Calif. 723,616, canc. Cl. 36.
Rhoads, J. E., & Sons, Philadelphia, Pa., to J. E. Rhoads & Sons, Inc., Wilmington, Del. 237,811, ren. 12–26–67. Cl. 4.
Rhoads, J. E., & Sons, Inc.: *See*—
Rhoads, J. E., & Sons.
Rice, James F., Jr., d.b.a. AAA–A1 Floors, Lubbock, Tex. 841,380, pub. 10–10–67. Cl. 103.
Ritter Pfaudler Corp., Rochester, N.Y. 841,304, pub. 10–10–67. Cl. 44.
Rockland Chemical Co., Inc., West Caldwell, N.J. 723,495, canc. Cl. 18.
Rockwell Mfg. Co., Pittsburgh, Pa. 841,196, pub. 10–10–67. Cl. 23.
Rodriguez, Guillermo, d.b.a. G.N.R. Co., Brooklyn, N.Y. 723,678, canc. Cl. 51.
Rogers, Lunt & Bowlen Co., d.b.a. Lunt Sterling, Greenfield, Mass. 841,232, pub. 10–10–67. Cl. 28.
Roland Offsetmaschinenfabrik Faber & Schleicher AG, Offenbach (Main), Germany. 723,555, canc. Cl. 23.
Rol-Ruler Co., Riegelsville, Pa. 841,222, pub. 10–10–67. Cl. 26.
Royal Hosiery Co.: *See*—
Johnson, J. Eulan.
Ruud Mfg. Co., Kalamazoo, Mich. 723,609, canc. Cl. 34.
S & A Electronics, Inc., Toledo, Ohio. 841,156, pub. 10–10–67. Cl. 21.
St. Regis Paper Co., New York, N.Y. 841,192, pub. 10–10–67. Cl. 23.
St. Regis Paper Co., New York, N.Y. 841,252, pub. 10–10–67. Cl. 34.
Salant & Salant, Inc., New York, N.Y. 723,639, canc. Cl. 39.
Salsbury Laboratories, Charles City, Iowa. 841,125, pub. 10–10–67. Cl. 18.
Salta Mfg., Inc., New York, N.Y. 723,647, canc. Cl. 39.
Sarri, Wayne J., to Charm Pederma Co., Inc., Union, Miss. 815,347, new cert. Cl. 18.
Sazerac Co., Inc., d.b.a. Macaulay & Co., New Orleans, La. 841,416. Cl. 49.
Schafer, Francis A., d.b.a. Brite Glo Enterprises, McHenry, Ill. 841,145, pub. 10–10–67. Cl. 21.
Schlage Lock Co., San Francisco, Calif. 841,100, pub. 10–10–67. Cl. 13.
Schneider, A. D., & Co.: *See*—
Bendix Corp., The.
Schulmerich Carillons, Inc.: *See*—
Schulmerich Electronics, Inc.
Schulmerich Electronics, Inc., to Schulmerich Carillons, Inc., Sellersville, Pa. 433,936, ren. 12–26–67. Cl. 36.
Scully-Anthony Corp., La Grange, Ill. 723,691, canc. Cl. 100.
Seaboard Allied Milling Corp., d.b.a. George Urban Milling Co., Kansas City, Mo. 841,325, pub. 10–10–67. Cl. 46.
Seamless Rubber Co., The, New Haven, Conn. 723,540, canc. Cl. 22.
Seamless Rubber Co., The: *See*—
Rexall Drug & Chemical Co.
Selfix, Inc., Chicago, Ill. 841,239, pub. 10–10–67. Cl. 32.
Selmer, H & A, Inc., Elkhart, Ind. 841,258, pub. 10–10–67. Cl. 36.

Semtech Corp., Newbury Park, Calif. 841,158–61, pub. 10–10–67. Cl. 21.
Seneca Falls Machine Co., Seneca Falls, N.Y. 841,405. Cl. 26.
Sharp, Edward, & Sons, Ltd., Maidstone, Kent, England. 841,323, pub. 10–10–67. Cl. 46.
Shayne Corp., The, Washington, D.C. 723,547, canc. Cl. 23.
Sheaffer, W. A., Pen Co., Fort Madison, Iowa, to Textron, Inc., Providence, R.I. 226,426, ren. 12–26–67. Cl. 37.
Shell Chemical Corp., San Francisco, Calif., to Shell Oil Co., New York, N.Y. 433,760, ren. 12–26–67. Cl. 6.
Shell Oil Co.: *See*—
Shell Chemical Corp.
Sherman, Robert M., d.b.a. Madeleine De Martel Cosmetics, New York, N.Y. 841,342–3, pub. 1–31–67. Cl. 51.
Sherman, Robert M., d.b.a. Madeleine De Martel Cosmetics, New York, N.Y. 841,348–9, pub. 1–31–67. Cl. 52.
Sherwin-Williams Co., The, Cleveland, Ohio. 841,084, pub. 10–10–67. Cl. 11.
Shimano American Corp., New York, N.Y. 841,210, pub. 10–10–67. Cl. 23.
Shoe Corp. of America, Columbus, Ohio. 841,274, pub. 10–10–67. Cl. 39.
Signal Oil & Gas Co., Los Angeles, Calif. 841,114, pub. 10–10–67. Cl. 15.
Simoniz Co., Chicago, Ill. 841,071, pub. 10–10–67. Cl. 4.
Simpson Timber Co., Seattle, Wash. 841,094, pub. 10–10–67. Cl. 12.
Ski Dry Boot Co.: *See*—
Casbeolt, Diana M.
Skil Corp., Chicago, Ill. 841,404. Cl. 23.
Slade, Herbert J., d.b.a. Window Well Cover Co., Prospect Heights, Ill. 841,403. Cl. 22.
Sobel, Alvin A., d.b.a. Masco Chemical Co., New York, N.Y. 841,117, pub. 10–10–67. Cl. 16.
Societa Metallurgica Italiana, Florence, Italy. 841,104–10, pub. 10–10–67. Cl. 14.
Societa Metallurgica Italiana, Florence, Italy. 841,140, pub. 10–10–67. Cl. 21.
Societe Anonyme Compagnie Industrielle de Mecanique, Horlogere, Puteaux, France, to Jaz. S.A., Paris, France. 435,034, ren. 12–26–67. Cl. 27.
Societe des Chaussures Seducta Charles Jourdan & Fils, Romans (Drome), France. 841,067, pub. 10–10–67. Cl. 3.
Somay Products, Inc., Miami, Fla. 392,129, canc. Cl. 16.
Southern Airways, Inc., Atlanta, Ga. 841,387, pub. 10–10–67. Cl. 105.
Springbok Editions, Inc., New York, N.Y. 841,168, pub. 10–10–67. Cl. 22.
Sroda, George, d.b.a. Turkey Peat Co., Amherst Jct, Wis. 841,079, pub. 10–10–67. Cl. 10.
Standard Alcohol Co., Wilmington, Del., and New York, N.Y., to Humble Oil & Refining Co., Houston, Tex. 433,756, ren. 12–26–67. Cl. 11.
Standard Oil Co., Whiting, Ind., and Chicago, Ill., to The American Oil Co., Chicago, Ill. 434,509, ren. 12–26–67. Cl. 6.
Standard Oil Co., The, Cleveland, Ohio. 841,430. Cl. 103.
Standard Wafer Co., to National Biscuit Co., New York, N.Y. 66,032, ren. 12–26–67. Cl. 46.
Standard X-Ray Co., Chicago, Ill. 841,306, pub. 10–10–67. Cl. 44.
Star Diamond Industries, Inc., Harbor City, Calif. 841,070, pub. 10–10–67. Cl. 4.
Steiner, Lee R.: *See*—
Melitzer, Samuel, Mrs.
Stevens, J. P., & Co., Inc., New York, N.Y. 723,653, canc. Cl. 42.
Stevens, J. P., & Co., Inc., New York, N.Y. 841,294, pub. 10–10–67. Cl. 42.
Sullivan, Raymond E., from Tel-O-Gift Service Co., Inc., d.b.a. Tel-O-Gift Service Co., San Francisco, Calif. 723,620, canc. Cl. 37.
Supreme Automotive Mfg. Corp., Brooklyn, N.Y. 841,099, pub. 10–10–67. Cl. 13.
Sweet Shop, The: *See*—
McKellop, Grace L.
Swift & Co., Chicago, Ill. 841,314, pub. 10–4–66. Cl. 46.
Syracuse China Corp., Syracuse, N.Y. 841,235, pub. 10–10–67. Cl. 30.
Tel-Aviv Kosher Dressed Poultry Corp., Bronx, N.Y. 841,414. Cl. 46.
Tel-O-Gift Service Co.: *See*—
Sullivan, Raymond E.
Tel-O-Gift Service Co., Inc.: *See*—
Sullivan, Raymond E.
Texize Chemicals, Inc., Greenville, S.C. 841,351, pub. 10–10–67. Cl. 52.
Textron, Inc.: *See*—
Sheaffer, W. A., Pen Co.
Theobald Industries, The, Harrison, N.J. 841,326, pub. 10–10–67. Cl. 46.
Thexton Mfg. Co., Hopkins, Minn. 841,225, pub. 10–10–67. Cl. 26.
Tornado Systems, Inc., Phoenix, Ariz. 841,213, pub. 10–10–67. Cl. 23.
Towle Mfg. Co., Newburyport, Mass. 841,204–6, pub. 10–10–67. Cl. 23.
Town Tire, Inc., Akron, Ohio. 841,256, pub. 9–7–65. Cl. 35.
Trans-Dapt of California, Long Beach, Calif. 841,134, pub. 10–10–67. Multiple Class (Classes 19 and 23).
Transparent Glass Coatings Co., Los Angeles, Calif. 841,116, pub. 10–10–67. Cl. 16.
Turkey Peat Co.: *See*—
Sroda, George.
Ultra Gloss Coatings Corp., Boston, Mass. 841,399. Cl. 16.
Union Pen & Pencil Corp., Mount Vernon, N.Y. 841,262, pub. 10–10–67. Cl. 37.
United States Shoe Corp., The, Cincinnati, Ohio. 390,476, canc. Cl. 39.
U.S. Vitamin Corp. to U.S. Vitamin & Pharmaceutical Corp., New York, N.Y. 435,023, ren. 12–26–67. Cl. 18.
U.S. Vitamin & Pharmaceutical Corp.: *See*—
U.S. Vitamin Corp.
Universal Camera Corp., New York, to Whitehouse Products, Inc., Brooklyn, N.Y. 435,889, ren. 12–26–67. Cl. 26.
Upjohn Co., The, Kalamazoo, Mich. 723,497, canc. Cl. 18.
Urban, George, Milling Co.: *See*—
Seaboard Allied Milling Corp.
Valspar Corp., The, Rockford, Ill. 841,118, pub. 10–10–67. Cl. 16.
Varian Associates, Palo Alto, Calif. 841,146, pub. 10–10–67. Cl. 21.
Varian Associates, Palo Alto, Calif. 841,198, pub. 10–10–67. Cl. 23.
Vassar Corp., The, Bronx, N.Y. 841,412. Cl. 40.
Verley, Albert, Inc., to Albert Verley & Co., South Plainfield, N.J. 229,695. Am. 7(d). Cl. 6.
Vestal Chemical Co., St. Louis, Mo., to W. R. Grace & Co., New York, N.Y. 234,693, ren. 12–26–67. Cl. 52.
Vickers, Inc., to Sperry Rand Corp., Troy, Mich. 530,775. Am. 7(d). Cl. 23.
Vickers, Inc., to Sperry Rand Corp., Troy, Mich. 543,780. Am. 7(d). Cl. 21.
Vickers, Inc., to Sperry Rand Corp., Troy, Mich. 551,076. Am. 7(d). Cl. 13.
WAIT, Chicago, Ill. 841,382, pub. 10–10–67. Cl. 104.
Wabash Magnetics, Inc., Wabash, Ind. 841,229, pub. 10–10–67. Cl. 26.
Wade, Wenger Servicemaster Co., Downers Grove, Ill. 841,400. Cl. 16.
Waggon- und Maschinebau Aktiengesellschaft, Donauworth, Germany. 841,185, pub. 10–10–67. Cl. 23.
Wajay Bakery, Inc., Miami, Fla. 841,327, pub. 10–10–67. Cl. 46.
Waldman's Meats, Inc., New Castle, Pa. 841,315, pub. 10–4–66. Cl. 46.
Walter, John C., d.b.a. Organic Products Co., Irving, Tex. 841,121, pub. 10–10–67. Cl. 16.
Warner & Swasey Co., The, Cleveland, Ohio. 841,193, pub. 10–10–67. Cl. 23.
Warp Bros.: *See*—
Flex-O-Glass, Inc.
Warren, Northam, Corp., Stamford, Conn. 392,400, canc. Cl. 51.
Washington Scientific Industries, Inc., Minnetonka, Minn. 841,231, pub. 10–10–67. Cl. 26.
Water Refining Co., Inc., Middletown, Ohio. 841,097, pub. 10–10–67. Cl. 13.
Waukesha Foundry Co., Waukesha, Wis. 841,186, pub. 10–10–67. Cl. 23.
Weeks & Leo Co., Inc., Des Moines, Iowa. 841,417. Cl. 51.
Weight Watcher International, Inc., Forest Hills, N.Y. 841,230, pub. 10–10–67. Cl. 26.
Wells Mfg. Co., Skokie, Ill. 841,112, pub. 10–10–67. Cl. 14.
West Virginia Pulp & Paper Co., New York, N.Y. 841,407. Cl. 37.
Western Auto Supply Co., Kansas City, Mo. 841,073, pub. 10–10–67. Cl. 5.
Western Auto Supply Co., Kansas City, Mo. 841,131, pub. 10–10–67. Cl. 19.
Western Union Telegraph Co., The, New York, N.Y. 841,368, pub. 10–10–67. Cl. 101.
Weyerhaeuser Co., Tacoma, Wash. 723,464–5, canc. Cl. 12.
Whirl Jet Corp., Encino, Calif. 841,305, pub. 10–10–67. Cl. 44.
Whitaker Cable Corp., North Kansas City, Mo. 841,138, pub. 5–17–66. Cl. 21.
Whitehouse Products, Inc.: *See*—
Universal Camera Corp.
Wilhelm Gail'sche Tonwerke KG. A.A., Giessen, Germany. 841,086, pub. 10–10–67. Cl. 12.
Wilson, L. S., Mfg. Co., Chicago, Ill. 723,474, canc. Cl. 12.
Wilson Sporting Goods Co., from Wilson Sporting Goods Co., River Grove, Ill. 841,171, pub. 10–10–67. Cl. 22.
Wilson Sporting Goods Co., from Wilson Sporting Goods Co., River Grove, Ill. 841,176–8, pub. 10–10–67. Cl. 22.
Window Well Cover Co.: *See*—
Slade, Herbert J.
Witter, Dean, & Co., San Francisco, Calif. 841,371, pub. 10–10–67. Cl. 102.
Wolins Pharmacal Corp., Mineola, N.Y. 723,500, canc. Cl. 18.
Wometco Blue Circle, Inc., Knoxville, Tenn. 841,360, pub. 10–10–67. Cl. 100.
Wood Conversion Co., St. Paul, Minn. 841,240, pub. 10–10–67. Cl. 32.
Woodcraft Guild, Inc., New York, N.Y. 841,088, pub. 10–10–67. Cl. 12.
Zimmer Mfg. Co., Warsaw, Ind. 841,303, pub. 10–10–67. Cl. 44.
Zimmerman, Richard J., d.b.a. Zimmy's Pool, Dallastown, Pa. 723,680, canc. Cl. 51.
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Zimmerman, Richard J.
Zobrist, J. C., Co., Charleston, W. Va. 841,344, pub. 10–10–67. Multiple Class (Classes 51 and 106).

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